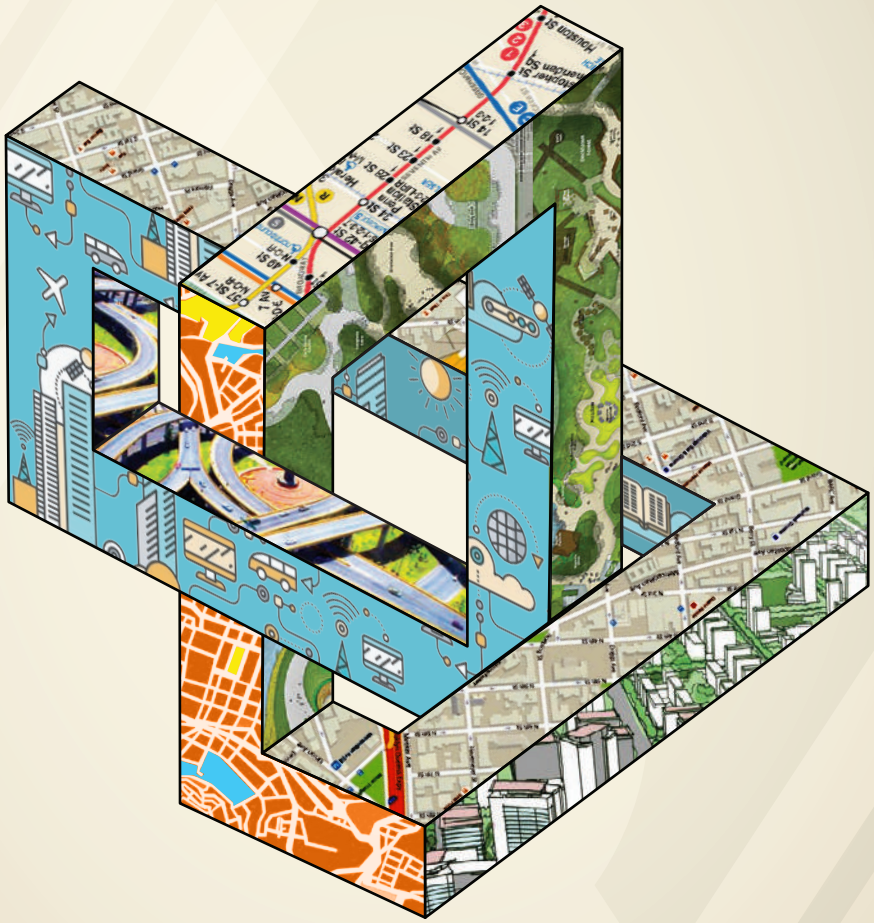
Steering the Metropolis

Metropolitan Governance for Sustainable Urban Development



Editors

David Gómez-Álvarez • Robin Rajack • Eduardo López-Moreno • Gabriel Lanfranchi

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UN HABITAT
FOR A BETTER URBAN FUTURE

CAF DEVELOPMENT BANK OF LATIN AMERICA

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the Metropolis

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David Gómez-Álvarez
Coordinator

David Gómez-Álvarez
Robin Rajack
Eduardo López-Moreno
Gabriel Lanfranchi
Editors

Deborah Gonzalez Canada
Assistant editor

Sheila Mahoney and Alexis Arthur
Proofreaders

Alfonso Avalos
Graphic editorial designer

Melissa Amezcua
Managing editor

IDB Inter-American Development Bank

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David Gómez-Álvarez (Transversal), **Robin Rajack** (Inter-American Development Bank), **Eduardo López-Moreno** (UN-Habitat), and **Gabriel Lanfranchi** (CIPPEC)

This publication, like many of its kind, is the result of a long process and the collaboration of many people. It is important for us to take a moment to recognize each and every contributor's effort and talent.

The Steering the Metropolis project was born out of the preparations for the International Metropolitan Governance Forum that took place in November 2015 in Guadalajara, Mexico. The event brought together over a hundred renowned specialists, and remains a reference for metropolitan discussions worldwide. At the time, many panelists agreed to write a chapter for a joint publication. Those became the first steps for the book project. Though it is not possible to name each of the 64 book authors here, we want to acknowledge the quality of their work and their patience with the editorial processes as a whole.

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Foreword

Dr. Joan Clos, Executive Director, UN-Habitat

Steering the Metropolis is an enriching in-depth comparative analysis of metropolitan governance worldwide that comes at a crucial moment of the implementation process of the New Urban Agenda, the outcome document of Habitat III, adopted in Quito (Ecuador).

Habitat III consolidated the vision of urbanization as a strategic issue for sustainable development. This new vision builds on the transformative power of urbanization as an endogenous source of prosperity and growth and of how urbanization contributes to the national economy and to generating employment. Indeed, metropolises have become key actors in this process as true engines of innovation, economic growth and development.

However, urbanization is taking place at a very rapid speed and many national, metropolitan and local governments can no longer control the process. In many cases, metropolitan and local governments have not been given the means to address these challenges, paving the way for dysfunctional problems of the metropolis. If the challenges of our metropolises are not steered and governed properly, urbanization could become in a serious strategic risk for humanity, deepening the existing social inequalities, poverty, insecurity, and lack of efficient transport systems among other problems.

In fact, metropolitan governance tends to be a politically contested issue that intrudes into existing governance models, between the layer of subnational and local levels. As cities are growing and metropolitan areas are getting more complex, there is an emerging need to find a specific solution to the governance of that reality.

This process tends to conflict with the existing government structures. In many places of the world it ends in lack of action, postponement and protracted political negotiations between the different levels of power. Attention is therefore required to serve the needs of the people and to solve the political architecture for effective metropolitan governance.

The book presents a rigorous analysis of the most pressing challenges of metropolitan governance and policy measures to address them, constituting an invaluable and innovative tool for subnational (regional/provincial) and local governments in their efforts in achieving sustainable urban development.

By examining these complex issues surrounding metropolitan governance, *Steering the Metropolis* serves as an authoritative study on urban governance developed by senior renowned experts on the science and art of urbanization.

Foreword

Juan Pablo Bonilla, Sector Manager, Climate Change and Sustainable Development, Inter-American Development Bank

While metropolitan development is expanding the size of labor and consumer markets in many cities, it is creating new demands for the effective management of basic services, mobility, investment, social interaction and a shared environment. In Latin America and the Caribbean these challenges are especially acute because of the rapidly increasing urbanization levels in the latter half of the twentieth century and weak productivity growth.

Coming shortly after the formal launch of the Sustainable Development Goals and the New Urban Agenda, and amid a growing understanding of the critical role that urban centers will need to play if they are to be achieved, the book "Steering the Metropolis: Metropolitan Governance for Sustainable Urban Development" offers an organized set of reflections of many of the world's leading urban scholars and practitioners on urban governance. The book adds significant value to the existing literature by organizing reflections on three distinct but interconnected aspects of metropolitan governance: elaboration of core concepts and rationales; dedicated discourses on sectoral applications of those core concepts; and case study illustrations of actual attempts to bring those concepts and sectoral applications to bear on the metropolitan space taking into account complex political, administrative and demographic factors.

Since the turn of the century, we at the Inter-American Development Bank have been helping governments in the Latin America and Caribbean region confront the implications of this new reality. We have been doing so through innovative urban lending operations that incentivize coordinated metropolitan planning and implementation, technical cooperation and research. While some progress has been achieved, much remains to be done, particularly in devising and implementing the appropriate governance arrangements, which may vary according to contextual factors. Such factors include the prevailing form of governance and degree of subsidiarity; the stage of urbanization; and the sector in question.

This book, developed in conjunction with several of our partners and sister institutions, complements our ongoing efforts to provide guidance to our government counterparts in the region. To catalyze innovation and change, our new Housing and Urban Development Division, under the Climate Change and Sustainable Development Sector, has recently launched the Cities Lab which, together with the Network of Cities and our policy research teams, will support metropolitan leaders' experimentation and exchange of experiences and best practices. We expect this book to be a key ingredient in such lateral exchanges and help these leaders improve the quality of life in our cities.

Foreword

CAF-Development Bank of Latin America

The transformations of productive structures that took place after the so-called post-Fordist period have exerted a determining influence on the morphology of the territory on a global scale. New urban agglomeration models respond to logics differently from previous configurations. Current processes of territorial metropolization are much more complex in terms of heterogeneity than the polarity between center and periphery that existed in previous decades.

These new metropolitan configurations introduce us to an undefined governmental modality that is moving political power away from traditional sources, and fitting together diverse urban centers, landscapes of dispersion, infrastructures, equipment, and territorial discontinuities, chained by the interaction between economic, environmental, and cultural policies. The organization of these intermediate-scale pieces represents an important legal and administrative challenge for tackling the negative effects of externalities on a global system that, until now, has been promoting competitiveness over collaboration.

It is well known that the states of emerging economies find it difficult to effectively participate as part of a network of global competitiveness as they struggle to sustain effective national policies; at the same time, local governments of these countries—in spite of the advances in the decentralization processes—do not have the state capacities to coordinate integral urban development, particularly in Latin America which, according to the UN-Habitat report, registers the highest rates of urbanization and simultaneously the highest levels of social inequality and violence in the world. This paradox raises two questions: How to govern this territorial complexity from an inclusive local perspective? Is the scope of metropolitan areas the new space of opportunity to promote sustainable development of emerging economies?

We at CAF-Development Bank of Latin America are interested in the answers to these questions as we are, more than a financial institution, an instrument of regional integration present in 17 countries of Latin America and the Caribbean, Spain and Portugal. Most of the projects we support from our different departments and vice-presidencies have direct impact on a metropolitan scale (real estate development projects, transportation and environmental infrastructures, etc.); however, we promote through them a model of sustainable development that seeks to improve the quality of life of Latin Americans.

From the institutional point of view, CAF's Corporate Direction of Institutional Development works together with local, subnational and national governments to improve of their capacities to deal with territorial and administrative decentralization processes, paying special attention to training their human capital through our capacity building programs, designed to build stronger inter-institutional coordination, shared leadership, and multi-sector governance. Over the last 16 years, we have created a potential network of more than 60,000 participants composed of young high-level executives from business and innovation sectors, public officials, leaders of civil society organizations and senior officials from Latin America.

Steering the Metropolis comes in time to further respond to this urgent call. It is compelling information that will help us to better understand the logic behind this contemporary phenomenon, providing us a comprehensive theoretical approach and a set of good practices required to better manage technical, social and political aspects of Metropolitan Governance. Without a doubt, it is a great opportunity to democratize dispersed knowledge worldwide, as it gathers together most relevant documentation from global experts and international practitioners; and particularly for us, it is a reminder of our commitment to the cohesion of the systems of cities of our Member States, as the main drivers of shared human and economic development.

Foreword

Itzcóatl Tonatiuh Bravo Padilla, M.A.**,** President of the University of Guadalajara

Cities have been transformed into key economic elements of global networks. They are no longer seen as human settlements that only provide basic needs to their inhabitants. Instead, urbanization, as seen in the second half of 20th century, has created a complex network of economic functions, societies and territories. In this context, the need for metropolitan governance is emerging. However, there is still little experience in the development of this field of theory and practice, as some authors have stated.

The International Metropolitan Governance Forum held in the City of Guadalajara in 2015 brought together a large number of specialists interested in a new way of governing big cities. It is an interest that has also guided the discussion at other international forums, such as the recent third World Forum on Human Settlements and Habitat III, which gave rise to the New Urban Agenda.

The present work, Steering the Metropolis, provides a deep insight into metropolitan governance, coordination and planning approaches in order to better understand the political constraints of traditional governance structures along with the challenges involving different government functions and levels. It encompasses an enriched discussion in over thirty essays regarding this new discipline, provided by top scholars and practitioners worldwide.

This international perspective provides a set of tools particularly relevant for developing countries, which experience greater difficulties due to the current conditions of rapid urbanization, population growth and inequality; conditions that are reproduced in most Latin American metropolises. In Mexico, the metropolitan approach is often analyzed by describing the constraints and limitations to create multilevel governance or new local structures. The metropolis can no longer be understood simply as an aggregate of spatially continuous territories as seen in the past four decades; metropolises are complex areas that require collaboration schemes that warranty long-term actions, involvement of different stakeholders and decentralization of processes.

Despite urbanization externalities of overcrowding, congestion, pollution and crime, cities and metropolises nowadays are increasingly seen as the national economic power generators and the places for social interaction, innovation and development. The dilemma is how to make the city a catalyst for innovation and economic development, and, at the same time, how to guarantee sustainable growth.

The University of Guadalajara, whose mandate and mission is to support innovation and knowledge creation for the betterment of society, is pleased to support this relevant work, which explores new directions to organize and govern the metropolis in a sustainable way for the generations to come.

Foreword

Reza Pourvaziry, Global Advocate of UN-Habitat, President of International City Leaders and the international secretariat of City Prosperity Initiative for Metropolitan Cities

Sustainable urban development is a key and fundamental concept that will be realized in interaction with other cities' experiences, cities that have different dimensions, performances, and approaches. Different parts of this fact are formed as a result of successes and failures of urban management systems.

Various methods that exist for solving urban issues and have been developed by urban managers as a result of their efforts combined with global knowledge of urban management must be exchanged and shared between urban authorities. Understanding complex dimensions of urban issues does not become possible without focusing on existing solutions. The uniformity of lifestyles in the world that is the consequence of uniform and consistent use of technologies and tools and is further enhanced by being addressed by the virtual networks, the media, and the global village have caused the metropolitan issues to be mainly common across the cities.

Problems associated with infrastructures, public transportation networks, quality of air and other biological resources among other major problems of metropolises have nearly the same structures and patterns in different cities. Therefore, in order to reduce urban issues, save costs, and improve the quality of life, fundamental research about managing and steering the metropolises is required. *Steering the Metropolis* is one of the most significant attempts to gain support from other metropolises.

It is assumed that the pace of urbanization based on the circumstances of the contemporary world and the advancement of technology has been beyond all expectations. Developing urbanization is an introduction to the formation of metropolises and megapolises. Managing the quality of life of these large populations needs special planning. Such planning should take into account all diverse dimensions of development, understand them, and to take steps to fulfill those plans considering the real resources of the cities.

The *New Urban Agenda* is a basic document of the United Nations Human Settlements Program (UN-Habitat) and has been specially formulated by this organization. This is an applied program which can be realized in metropolises if the managers of those cities can formulate exact executive plans for performing it. It is essential that an interactive relation should be formed between the book *Steering the Metropolis* and *The New Urban Agenda* so that this document can be used as a basis for designing action plans for metropolises. Besides, from a strategic point of view it will be required to develop the structured network of researchers associated with *Steering the Metropolis* so that they can build capacities to define metropolitan issues within the frameworks of a structured plan with the support of UN-Habitat.

On the other hand, the global foundation International City Leaders, as the international secretariat of City Prosperity Initiative for Metropolitan Cities (CPI-MC), developed and transformed into a study platform for urban managers.

The World Assembly of Islamic Cities acknowledges this valuable scientific endeavor and expresses its readiness to convey the scientific content of this research to Middle East metropolises. It is necessary to translate this set of research and submit them to urban managers and researchers on urban issues, and to undertake similar measures with a special focus on diverse civil sphere of the Islamic cities. It is hoped that such international interactions can pave the way for the improvement of content and functions of urban managerial methods and to increase the quality of residence in cities significantly.

Prologue

Bruce Katz, Brookings Institution

It may be overstated that our current moment feels like one of great change, but today's economic and political dynamics seem to be ushering in a transition from an era of nation-states to one of city-states—an era in which globally connected metropolitan areas are the key unit of the economy. At the same time that city power is rising, so too are a suite of super-sized challenges—from climate change, to industrial transition, to economic inequality—which demand new models of local governance and a fundamental reframing and re-focusing of the leadership class in cities. We need to better understand what local and metropolitan governance is and what powers those leaders have. This collection of essays, the product of more than two years of work by dozens of the world's top scholars, provides a roadmap for understanding these big questions.

It could not come at a better time. Local governance and problem-solving is being reinvented in real time, creating what I call a New Localism, in places that not only deploy the formal and informal powers of government but also create and steward new multi-sector networks to advance inclusive, sustainable, and innovative growth. The practice of networked regional governance has run far ahead of the scholarship, but many of the benefits are clear: merging public accountability with private sector expertise; breaking down silos between traditional government bureaucracies and across municipal boundaries, and creating a leadership constituency that is focused on long-term outcomes, rather than election-cycle victories.

Today's great challenges require this type of governance. Take, for example, climate change, one of the most existential issues facing major cities. Sustainable physical development is a critical tool for both decelerating and mitigating the impact of a changing climate and rising seas. Yet, most major infrastructure and development projects are designed and delivered in rapidly urbanizing metropolitan areas where governance is dispersed and divided while incentives for sustainable practices are opaque at best. Without improved governance structures and better coordination across municipal boundaries, growing megacities are liable to repeat many mistakes of the recent past and, as a global community, we will fail to realize a lower-carbon future.

Any study of metropolitan governance and development benefits from the perspective of the United States—perhaps the first modern "metropolitan" nation. By the 1950's, from east coast to west, development patterns and governance in the country varied wildly—from older, European-style cities surrounded by small, fragmented municipal fiefdoms in the Northeast, to sprawling Sun Belt cities in the south whose municipal boundaries expanded along with their population. Through the second half of the 20th century, the urban form continued to evolve, with the building of the Federal Highway System, an acceleration of suburban sprawl fueled by white flight, and a continued fragmentation of regional governance and identity. For a long time, the only constant in regional governance was strife and distrust between cities and their suburbs.

Today, at the beginning of a truly urban century, city and metropolitan leaders in the United States are working to disentangle themselves from this legacy. Population and employment is beginning to collapse back into the urban core, leading to hot downtown real estate markets and chilling demand for exurban office parks and housing developments. Small suburban municipalities who relied on buoyant housing markets for tax revenue are scaling back services and facing hard facts about the fiscal sustainability of these micro-governments. At the same time, transformative infrastructure projects and policies critical to regional competitiveness stretch across artificial municipal boundaries, requiring coordination and cooperation

of multiple actors to solve challenges such as traffic congestion and pollution. To respond to these new dynamics, places are repairing their fragmented governance working toward a new regionalism.

And yet, urbanization (and metropolitanization) of a scale and pace that dwarfs that of America has been a dominant trend in developing countries around the world for decades now. And even as Latin America is approaching the ceiling of its own urbanization, many parts of Africa and Asia are still in the midst of a massive migration. As a UN report released in advance of Habitat III observed, over 500 cities around the world have now crossed the threshold of one million residents, often growing well beyond established municipal boundaries and the legal authorities of local governments.

The question as these counties urbanize at such a rapid pace is two-fold: How can they build cities that don't repeat the mistakes of the past that are prosperous, sustainable, and inclusive? And, within these complicated and expansive settlements, what forms of governance can incentivize sustainable growth while also offering the capacity to enable it?

These were difficult questions 50 years ago; they have only grown more complex in the years since as city responsibilities have grown. Many of the most pressing economic and social challenges we face are coming to ground in cities themselves: economic inequality and technological upheaval, environmental degradation and unsustainable development, energy and climate pressures; demographic change and social unrest. These dynamics require a problem-solving apparatus beyond the capabilities of national governments alone; metropolitan governance can provide the solution.

Metropolitan governance itself is not without its own hurdles. Regional leaders must resist parochialism—understanding that collaboration with neighbors is imperative at a time when competition is global, not local. The limits of municipal capacity within government demand a broader conception of governance, one which includes the private and civic sectors as co-stewards of the metropolitan agenda. This type of networked, distributed governance can provide "checks and balances" on any central governing party, mitigating a third unfortunately prevalent threat: corruption. And, in the worst cases, responsibilities are shifted down to the local level without concomitant increases in fiscal power or any formal legal framework.

Yet, despite these challenges, governing at the metropolitan scale offers benefits beyond its cost—especially in the realm of sustainable development. With policy at the regional level delivered by cross-disciplinary networks of actors—local government, but also private sector innovators, civic organizations, and research institutions—metropolitan areas are more flexible and nimble than national governments, and thus more able to experiment and solve complex problems. As the third section of this publication illustrates, innovations in governance and policy that are tested and proven in one region can quickly be adapted and tailored for other areas.

What Will It Take to Make this Happen?

First, we need continued culture change that elevates the role of urban policy and metropolitan governance. The inclusion of cities within the UN's sustainable development goal is clearly encouraging, as was the presence of urban and metropolitan leaders at the UN's 2015 Climate Change Conference in Paris. Still, while bringing the urban agenda to international attention is critical, so too is developing a shared urban agenda within a given metropolitan area. More understanding is needed broadly about the importance of metropolitan governance and the mechanisms to make it most effective.

The invention of this effective metropolitan governance will only happen with innovation and experimentation. Higher levels of government must enable this through supportive devolution and consolidation policies (such as those underway in the U.K., France, or Chile) and by relaxing regulations that encourage competition rather than cooperation at the regional level. Local governments must set aside parochialism in favor of collaborative governance. Ultimately,

innovations outside of the public sector will be necessary too—new institutions that coordinate development goals across sectors and municipal boundaries; and new intermediaries that bridge the capacity gap within government to implement new development technologies or techniques.

Finally, these models must be replicated and scaled throughout the world. While formal political structures differ across countries, many solutions can be scaled, such as new financial instruments that allow cities to fund sustainable projects with limited resources or new institutional designs that offer metropolitan coordination without formal consolidation.

As I have stated, much of the practice of metropolitan governance has run far ahead of its scholarship. Most local leaders I meet are pragmatic and motivated problem solvers, who are constantly experimenting with new ways of getting things done. This volume offers an opportunity to reflect on what works and what does not. The papers within contain our best understanding of the why and the how of metropolitan governance. As a series of case studies from across the world, they should be viewed not just a list of static best-practice but rather as a set of solutions that can be adapted and tailored to individual metropolitan systems. Metropolitan governance is an iterative, messy, and practical exercise, not an academic one. My greatest hope for any work of scholarship such as this one is that it inspires and informs action on the ground and remains, as the editors wisely encourage, a living document that catalogs the never-ending invention of evolution of local governance systems.

Steering
the Metropolis

Metropolitan Governance for Sustainable Urban Development

Introduction

David Gómez-Álvarez (Transversal), **Robin Rajack** (Inter-American Development Bank), and **Eduardo López-Moreno** (UN-Habitat)

There is a growing (and exciting) debate around how to govern metropolitan areas. Metropolitan issues are complex, since they refer to themes of sustainability, prosperity, equity, and quality of life, and in many cases they involve issues of both domestic and transnational development. Discussing a metropolitan area can involve national, regional, and local scales, as well as urban and rural spaces (EU, 2013). Metropolitan governance can be strongly conditioned by competition, conflict, and fragmentation, and at the same time be a testimony of cooperation, collaboration, and concerted arrangements (Feiock, 2004). Such complexity is one of the factors that led to the crafting of *Steering the Metropolis,* a project that commenced in 2015, and a debate that remains open. The other is the momentum that the Sustainable Development Goals and the *New Urban Agenda* created for discussing urban and metropolitan issues.

Metropolitan governance is determined by the nature of the governance structures with relation to the levels of fragmentation or consolidation, the degree and level of control over urban functions, and the degree of formality or informality in the coordination of metropolitan area units.

The Sustainable Development Goals explicitly acknowledge the importance of subnational governments in achieving the 2030 Agenda. One of the 17 SDGs, Global Goal number 11, seeks to "make cities and human settlements inclusive, safe, resilient, and sustainable." Global sustainable development requires urban sustainable development, particularly now that the majority of the human population lives in urban areas. The book *Steering the Metropolis* has been written with the SDGs in mind, under the premise that metropolitan governance is key to achieving Goal 11 and others.

Urbanization is environmentally sustainable when its growth is based in responsible consumerism, when it does not degrade the environment or deplete the natural resources, when surrounding ecosystems are preserved, and when green areas and biodiversity corridors are planned for and included in the urban mesh. In order to reach higher sustainability levels, cities and their governments need to become aware of how much they depend on the natural environment and the resources it provides, of the "externalities" that urban lifestyle produces, and of the collective responsibility that urban settlers have toward the preservation and enhancement of the natural environment.

The following pages summarize the main topics and arguments in the book in order to help the reader navigate the material, which consists of 37 chapters. We hope this introduction offers you a glimpse of the book's richness, allowing you to appreciate the many layers to be uncovered. The book is structured in three sections followed by a chapter with final remarks. Section 1 contains foundational contributions on the transversal topic of metropolitan governance, mainly the underlying rationales for metropolitan coordination and the challenges to achieving it. Section 2 deepens the discussion by addressing sectoral themes such as mobility, land planning, environmental concerns, and economic production, as well as cross-cutting topics of metropolitan governance finance, and monitoring and evaluation. If Section 1 offers an entry point to the topic of metropolitan

* We thank Deborah Gonzalez Canada, who provided insight and assistance in reviewing this chapter.

governance as a whole, Section 2 analyzes its parts, to help researchers and practitioners arrive at their own understanding and synthesis. Section 3 tests the ideas and theoretical positions against the practice, with cases from Africa, America, Asia, and Europe. The final remarks, far from "concluding", highlight provocative thoughts of *Steering the Metropolis*, and invites readers to think about a future agenda for metropolitan theory and practice.

Section 1. Theoretical Perspectives on Metropolitan Governance

A distinctive feature of urbanization in the past 50 years is the expansion of urban populations beyond what was earlier conceived as the city limit. This has rendered traditional municipal boundaries, and by extension, traditional governing structures and institutions, outdated (UN-Habitat, 2008). The response to this ongoing change, which results in metropolitan areas, has not been clear. Some metropolitan areas have attempted to tackle this by adopting more complex forms of organized multi-level governance, while others still have quite fragmented administrative units with limited forms of coordination.

Urbanization is a transformative force, and large metropolises are the engines of the transformation.

This section discusses the conceptual underpinnings of metro governance, analyzing why political, technical, and administrative arrangements at this level of government are needed. It also expounds on the benefits and the added value of metropolitan authorities and the social and economic impacts they produce. Metropolitan governance models are diverse and complex, and the contributions in Section 1 present both complementary and competing arguments about the rationale, development patterns, capacities, and experiences of these models.

Despite the need for, and importance of, metro governance structures, several authors also discuss the major constraints or challenges for achieving such governance structures, notably Roberts and Abbott, Xu and Yeh, and Lanfranchi and Contin. Section 1 concludes by presenting the main factors that contribute to more effective and sustained metropolitan governance arrangements, primarily covered by Andersson in Chapter 1.3 and by Ahrend, Kim, Lembcke, et al. in Chapter 1.1.

Urbanization Trends and the Metropolitan Phenomenon

There are no unique, universal definitions as to what are metropolitan areas, global metropolises, metropolitan regions, and so on. Definitions vary in the literature and, through this publication, the use of these concepts varies across authors, cases, and contexts. Regardless of the name and definition, the phenomena is that the functional areas of cities continue to transcend their political boundaries, with labor, service, and financial markets, as well as physical extensions of cities, spreading across the jurisdictional territories of several municipalities. Even intermediate cities have spillover effects of population growth into adjacent areas. The subsequent dominant urban development pattern is a multitude of small administrative units–municipalities, communes, and districts, among others–comprising a larger physical agglomeration that is the metropolitan area. According to the UN-Habitat Global Sample of Cities (200 cities), more than 90 percent of cities with more than 100,000 inhabitants are composed of two or more administrative units, in some cases up to 30 or 40 administrative units. More often than not, they are loosely coordinated, managed, or governed.

Urbanization is a transformative force, and large metropolises are the engines of the transformation. As a recent OECD study revealed, metropolises tend to be more efficient and productive than cities (OECD, 2015), largely due to the economies of scale they generate. This is corroborated by the

UN-Habitat City Prosperity Initiative analysis, which shows a moderate correlation between productivity and city size in Colombia and Mexico, with larger agglomerations being more productive than smaller ones (López-Moreno, and Orvañanos, Chapter 2.5). In general, metropolises are engines of innovation, economic growth, and development, and magnets for immigration and social and economic diversity (EU, 2011). Still, Xu and Yeh (Chapter 1.8) argue that more theoretical and practical work is needed to explain the performance of regions and metropolises and the form they articulate with other levels of government for better results.

Metropolitan areas are both affected by the phenomenon of global transformation, while at the same time they strongly influence it. Xu and Yeh develop this idea, stressing that mega-city regions are not only competitive nodes of global capitalism but they also contribute to reconstituting state spaces. Metropolitan areas are not only the interface between the global space and cities, but in many cases they are also the interface between nation-states and regions, as Ortiz and Kamiya point out in Chapter 1.5. Ortiz and Kamiya note that the galvanizing power of proximity, density, economies of scale, and agglomeration of metropolises contributes to major national decision-making on infrastructure provision and economic development, playing a fundamental political role in the governance of cities and nations.

Section 1 authors conceptualize metropolitan areas and metropolitan governance, with each position enriching the next.

According to Ahrend et al. (Chapter 1.1), many attempts to reduce administrative fragmentation have fallen short of creating administrative cohesion and territorial coherence, with a large number of local governments having the power to veto metropolitan projects. Governance, in the conventional sense, is sometimes reduced to governance bodies that are not able to make binding decisions and depend on the political willingness of actors. Large metropolitan areas call for a mechanism to govern them in a coherent fashion.

At the same time, Ahrend et al. acknowledge that no specific model of metropolitan governance is necessarily better or more efficient than another. They suggest an incremental experimentation with a selection of a few pilot experiences, as opposed to a one-shot uniform model. These authors highlight that many metropolitan governance arrangements will not be easily transferable and must be tailored to local contexts.

According to Birch (Chapter 1.2), however, there is a need for what some have labeled a new global bargain and a new social contract to define the details of these new arrangements for managing metropolitan urbanization forms. Birch points out that, in order to make urban places productive, a political, multi-tier, multi-stakeholder governance mechanism must be built. According to Xu and Yeh (Chapter 1.8), this mechanism is essential to reconstruct the regulatory power of the state. Xu and Yeh believe that metropolitan governance structures are reinterpreting the geographies of state space under transition, creating new spatial strategies that are more democratic, open, and selective, and responding to dynamic processes of co-production.

In Chapter 1.4, Subirats picks up on the notion of co-production and suggests that there is a need to accept and promote the politicization of metropolitan governance in order to "advance from hierarchical, logical, segmented, technocratic, and traditional organizations to structures and reticular (networked) relations." Andersson (Chapter 1.3) notes that regional and metropolitan development is a new normal that requires common issues to create a need for cooperation among local governments. Finally, Lanfranchi and Contin (Chapter 1.6) pursue this idea, calling for a new metropolitan discipline that can handle the metropolitan phenomenon differently based on an integrated vision of the various disciplines at the territorial scale.

The diversity of practices and examples of metropolitan governance models and the complexity of issues are still a challenge for clear taxonomy. Operative terms such as management, collaboration, and smart growth are often presented as substitutes

for metropolitan governance, not dealing directly with the fundamental notions of powers, hidden interests, and conflicts that are essential components of governance mechanisms (Pieterse, 2015). Even Section 1 contributors refer to forms of metropolitan governance using diverse terms, such as supra-urban systems, confederate associations, collaborative governance mechanisms, inter-dependent bodies, functional urban areas (as opposed to administrative borders), functional regional spaces, structure of networks, governance of flows, functional thinking areas, and polycentric responsibility architecture, among others.

Some basic consensus, however, is possible and the following ideas are widely accepted. First, metropolitan governance is determined by the nature of the governance structures with relation to the levels of fragmentation or consolidation, the degree and level of control over urban functions, and the degree of formality or informality in the coordination of metropolitan area units. Second, public and private sectors have a role to play in the formation and functioning of these models and the legal status of the metropolitan area (Xu and Yeh, Chapter 1.8). Third, there is real need to include social and political participation in the governance structures (Subirats, Chapter 1.4).

Although competition among cities is common, proponents of collaborative metropolitan governance argue that such competition is inefficient.

The Importance of Metropolitan Governance

Metropolitan governance matters a great deal more than one might think (OECD, 2015). It impedes or facilitates the sustainable development of regions, as expounded by Roberts and Abbott in Chapter 1.7 and by Birch in Chapter 1.2.

Various authors of this section present complementary positions concerning the importance of metropolitan governance. Roberts and Abbott advocate for further elaborated forms of collaborative governance as a critical factor for enhanced sustainable approaches to planning, managing, and developing metropolitan areas in both developed and developing economies. Many metropolises, regions, and cities are engaged in some form of lower order cooperation that obstructs the pathway to sustainability. From the strategic planning perspective of regions, Xu and Yeh note that metro governments are encouraged as mechanisms of economic development policy and political devices through which the state attempts to regain control over their territory. These authors believe that metropolitan areas are needed as new institutional spaces, and they can represent significant strategic sites in the performance of regulation. Finally, from a political economy point of view, Ortiz and Kamiya (Chapter 1.5) point out that metropolitan management and governance represent a framework for economics, planning, and financing, and a new approach to reconfigure states and cities at the international and national levels. These authors pursue their analysis in noting that metro structures with clear rules and governance infrastructure are needed to steer between unacceptable social inequity and unsustainable economic inefficiency. Finally, from a broader development perspective, Ahrend et al. (Chapter 1.1) point out that the wellbeing and economic prosperity of nations is largely determined by their metro areas.

The benefits of a better-structured governance mechanism with a clear status are patent. The authors of this section repeatedly highlight the following advantages:

Metropolitan governance is better positioned to use strategic spatial planning and the management of the urban development process to promote a sustainable compact form (Gwyndaf, 1999). Ahrend et al. estimate that up to 60 percent of metro areas' functions focus on different forms of spatial and land use planning activities. According to the authors, planning at the metropolitan level encourages more efficient land use, which can result in

the reducing urban sprawl and a concomitant increase in densities. The empirical evidence provided by their study is supported by other successful examples, such as Manchester, Melbourne, and Toronto, which prove that, despite inherent tensions involved in the governance of these metropolises, it is still possible to translate metropolitan visions into local implementation with better coordination at different scales (Gwyndaf, 1999).

Metropolitan governance can better integrate the entire public transport system in conjunction with planning and land uses. In Chapter 1.8, Xu and Yeh cite transportation as the most salient task for metropolitan governance, representing up to 70 percent of work of OECD metro governance bodies, as reported in a recent study (OECD, 2015). The efficient integration of metropolitan public transport can increase connectivity at the sub-city level, enhance coherence across transit modes, improve infrastructure provision—inducing new urban developments—and influence the operation of the system. Frankfurt, Copenhagen, Berlin, and Hong Kong are some of the successful multimodal metro transport solutions that have adequately adapted to the urban form of the city and contributed to the region's economic buoyancy. The urban economy and access to jobs are strongly connected to efficient forms of metro governance and efficient transport systems, as the UN-Habitat report on sustainable urban mobility demonstrated (UN-Habitat, 2013).

Effective metropolitan governance has direct effects on productivity. Ahrend et al. provide compelling evidence that the increase in population is associated with productivity gains to a certain limit. However, an OECD study (2015) showed that an increase in the number of municipalities is negatively correlated with productivity. Effective metropolitan structures are said to be key in amplifying productivity and/or limiting productivity loss due to municipality fragmentation. This opinion is shared by Andersson (Chapter 1.3), who points to a need to broaden and deepen the understanding of productivity of the urban economy in order to address economic development on the metropolitan scale. A forceful metropolitan vision with the appropriate supra-municipal structures can enhance agglomeration economies and produce higher multiplier effects over the economy and the productivity of the region.

Metropolitan governments have a crucial role in promoting equity and social cohesion. Metro areas are more efficient and productive than administratively defined cities, but they are not necessarily more equitable. Many metropolises perform below the national average in sectors such as income, productivity, skills, and employment (Ortiz, 2016). Many others exhibit significant intra-metropolitan inequalities that are reflected in access to public goods, services, and opportunities, as documented by the UN-Habitat City Prosperity Initiative (López-Moreno and Orvañanos, Chapter 2.5). Most studies on the performance of metropolitan areas place emphasize the ability of metro structures to achieve economies of scale and agglomeration and to reduce negative externalities, but in general, fewer references are made to their ability to reduce inequality and cope with tensions and conflict. In Chapter 1.5, Ortiz and Kamiya note that economic efficiency and social equity are in permanent struggle, and the role of metro governance is to address and reduce this dichotomy, although this does not always happen. For Ortiz and Kamiya, metropolitan management must therefore steer between unacceptable social inequity and unsustainable economic inefficiency.

Metropolitan governance can improve the financial base and render a more efficient tax system. In most cases, municipalities belonging to the same metropolitan area exhibit differences in the structure of revenue and expenditures, fiscal disparities, degree of financial autonomy, difficulties in planning and financing important investments, and serious impediments in terms of revenue and tax-base sharing. Ortiz and Kamiya underscore the fact that certain areas of knowledge, such as metropolitan finance, are still exploratory fields. The lack of metropolitan finance arrangements among different layers of government makes it difficult to mobilize adequate investments for metropolitan infrastructure development and public goods. For Ortiz and Kamiya, it is clear that financial constraints and fiscal crisis perpetuate poverty,

inequality, and social exclusion in lagging municipalities and areas of the metropolises. More success stories, and the evaluation of their performance, are needed in areas such as metropolitan financial coordination, better use of incentives for inter-municipal cooperation and governance, well-defined fiscal redistribution mechanisms, and innovative forms to diversify and expand the tax portfolio. Relevant examples are provided in Section 3 of this book.

Section 1 authors also referred to other benefits brought about by metropolitan structures. Birch (Chapter 1.2) elaborates on the role of metropolises serving as a stabilization tool after an internal conflict among local authorities and stakeholders. Xu and Yeh (Chapter 1.8) link metropolitan governance with economic resilience, and Andersson (Chapter 1.3) with the notion of health risks and risk management. Subirats (Chapter 1.4) points to the phenomenon of social segmentation and urban segregation and the increase in forms of urban insecurity and violence that metropolitan structures can better address. The widening gap in accessibility to social and community services, and the goal to use service delivery as part of equalizing programs over the metro area are also referred to by Roberts and Abbott (Chapter 1.7).

The constitution of an efficient metro government is not only a technical decision, it is, fundamentally, a political one.

Challenges to Effective Metropolitan Governance

Contributors to Section 1 clearly expound the problems associated with poor administration and governance of metropolitan areas. Ahrend et al. (Chapter 1.1) observe that urbanization problems such as uncontrolled suburban growth and sprawl, excessive low-density urbanization, environmental problems, and sometimes depletion of biodiversity and agricultural land result to a large extent from a lack of supra-municipal management. Andersson (Chapter 1.3) highlights that the lack of formal or informal governance arrangements on a metropolitan scale tends to create fragmentation of service delivery and other forms of inefficiencies, such as environmental sub-optimization and under-utilization of land. Roberts and Abbott (Chapter 1.7) note that important metropolitan problems, such as traffic congestion, air and water pollution, and access to resources, are also largely attributed to the lack of integrated metropolitan responses. It is apparent to these scholars that existing administrative structures cannot fully cope with the challenges connected to economic and social realities in agglomerations, an argument clearly made by Ahrend et al.

As Xu and Yeh (Chapter 1.8) point out, the changing political and economic landscapes of these distinctive spatial formations do not only create or exacerbate negative externalities if they are poorly managed, but also result in strategically valuable development opportunities being missed in areas such as transport, open space preservation, quality of life, and equitable growth, among others. Moreover, as explained by Andersson in Chapter 1.3, the spatial mismatch of economic integration and political fragmentation impedes commerce, reduces efficiency, and encourages wasteful competition.

Contributors to this section repeatedly highlighted major challenges in the constitution of more coordinated and effective mechanisms of governance. In an attempt to organize the authors' thoughts, we identified four types of challenges.

Political resistance, institutional problems, and related legal factors. Authors of this section are in unanimous accord that a significant obstacle to creating metropolitan governance systems is resistance from other levels of government, including the national government, provinces, and regions, as well as the municipalities themselves. "No existing level of government is likely to gracefully hand over power to a new metropolitan authority that could become a rival

center of power," point out Ahrend et al. in Chapter 1.1, particularly in cases where metropolitan authorities were created by the central government.

In addition, several studies have shown that local governments tend to compete more than cooperate among themselves, particularly those with fragmented metropolitan structures (Shirley, 2002; UN-Habitat, 2008). Although competition among cities is common, proponents of collaborative metropolitan governance argue that such competition is inefficient.

Territorial mismatch and sectoral fragmentation. Institutions, territory, and administrative demarcations do not coincide in most metropolitan areas. Usually metro governments do not cover the whole agglomeration, leaving out municipalities that are the fastest growing areas or those facing serious development challenges. Data and information about the metropolis are often produced at a lower or higher administrative level, making it difficult to produce policies and plans based on evidence for the entire metro area. A study on metropolitan governance in Europe, for instance, found that with the increasing metropolitanization of the territory, any created structure quickly becomes obsolete and few metropolitan governments possess the mechanisms to expand the perimeter of action (Tomàs, 2015). The mismatch between economic integration and political fragmentation is highlighted by Andersson (Chapter 1.3) and Xu and Yeh (Chapter 1.8), with the latter authors calling for strategic visioning that encompasses entire regions.

Absent or limited public participation. Social and political participation is often poor at the metropolitan level. In Chapter 1.4, Subirats notes the remarkable obsolescence of the mechanisms of representation and decision-making that have been used in governing big cities. In the same vein, Birch (Chapter 1.2) observes that many stakeholders have self-referential histories, lack experience (and/or perhaps interest) in participation, and experience difficulties in agreeing on the priorities or urgency of the work that emerges in collective discussions. The lack of public participation is exacerbated by the fact that most metropolitan governance bodies do not comprise members directly elected by the people. Subirats argues that it is necessary to better articulate the will of different actors, looking for scenarios with greater capacity for effective decision-making and governance in order to address the challenges of coordination and problems of management. Lanfranchi and Contin (Chapter 1.6) call for more effective forms of negotiation and participation techniques that require a metropolitanist, a different kind of professional profile, to deal with conflict and disagreement through new mediation techniques.

Funding problems and structural financial limitations. Metropolitan areas lack stable revenue sources not only to meet day-to-day demands and needs, but also to address long-term problems. With lack of fiscal powers, structural problems in raising financial resources, and legal and institutional difficulties in making good use of their assets, metropolitan governments are chronically poor. This is a common theme throughout this section. Ahrend et al. (Chapter 1.1) note that internal differences in revenues, expenditure needs, and investment capacities are further aggravated by legal and institutional constraints to dealing with territorial disparities.

Birch (Chapter 1.2) believes that metropolises have not yet developed a set of principles and governance institutions responsive to the pace and trajectory of 21st century urbanization. In relation to that, the next paragraphs indicate some ideas for efficient metropolitan governance.

Elements of Success for Efficient Metropolitan Governance

The constitution of an efficient metro government is not only a technical decision, it is, fundamentally, a political one. Without political legitimacy, decisions and actions would not be accepted, particularly by local authorities. Everyone involved in the process needs to see clear advantages in bringing together the institutional system with the economic and social development of cities in a territory. Lefebvre's (2011) critical review of metropolitan governments and governance in Western countries concludes that "effective metro governance entails the modernization of the institutional structure

of the territory with a powerful, autonomous, and legitimate (political) unit."

Various authors in Section 1 believe that an incremental approach to the constitution of metropolitan governments is needed, starting with low-risk examples that can mature over time to a more comprehensive system of governance (see references to the project-to-policy approach in Section 3 of this book as well, particularly in Chapter 3.5). Still others believe that full-fledged structures are to be defined and implemented at once.

Several authors in this section put forward specific proposals and road maps to constitute a metropolitan government. Based on their views, this final part of the Section 1 summary lays out some of the key elements for successful, efficient metropolitan governance.

In the discussion of national urban policy and intergovernmental scales, Birch (Chapter 1.2) contends that a national urban policy to promote institutional coordination can define a stronger role for metropolitan governments. She recommends providing robust links between different territorial scales, in such a way that metropolises can have a function of control and intermediation.

Governing the metropolis embodies some of our greatest societal challenges: cooperation, coordination, financial mobilization and prioritization, strategic planning, and redistribution.

Leadership and multi-stakeholder participation, as addressed by Ortiz and Kamiya (Chapter 1.5), are fundamental conditions to achieve the convergence of political forces dispersed across the metropolitan political economy. Ortiz and Kamiya note that strong metropolitan leaders can promote a sustained, comprehensive vision of regional development, redefining a new form of inclusive public action. Both Ortiz and Kamiya, and Birch note that metropolitan governments must use a variety of participatory channels and other inclusive tools to engage civil society, resident associations, and local communities in decision-making and implementation. A different matrix of dialog is needed to ensure peer discussions of all institutions and actors in order to bring metro governments to ordinary people through enhanced mutual engagement. Along these lines, Subirats (Chapter 1.4) refers to the alternative of cooperative and social economy and the need to innovate, looking for new forms of democratic decision-making and participation. Ahrend et al. (Chapter 1.1), in turn, advocate for the strong participation of the private sector. In addition to the voice of the local mayor, the business community can play a powerful role in initiating a metropolitan reform.

Birch claims that an effective metropolitan governance system includes the presence of state and non-state participants with well-established collaboration mechanisms to design and implement policies. Subirats, referencing Slack's work on managing the coordination of metropolitan areas (Slack, 2007), points in the same direction. Subirats emphasizes the need to articulate the will of different actors (public, private, and not-for-profit) in search of scenarios with a greater capacity for government and decisional effectiveness.

With respect to finance, Andersson devotes the final part of Chapter 1.3 to proposing five strategies to enable effective metropolitan governance, highlighting the need for reliable sources of metropolitan financing, a position that is shared by Ahrend et al. (Chapter 1.1). These authors note that whichever financial schemes are adopted, metro governments need well-established and secure sources of income, potentially offering incentives and compensation to encourage metropolitan compromise. This topic is further explored in Section 2 and in Section 3 where some successful practices to address metropolitan finance are presented.

Finally, monitoring and evaluation can be an element of success for metropolitan governance. Comprehensive assessments produce benchmarks and help define targets against which policies and practices can be measured, enabling metropolitan authorities to monitor progress and evaluate change.

These and other approaches are further analyzed in Section 2 and summarized in the next subsection of this introduction.

Section 2. Sectoral Approaches to Metropolitan Governance

Governing the metropolis embodies some of our greatest societal challenges: cooperation, coordination, financial mobilization and prioritization, strategic planning, and redistribution. While these are familiar conceptual tasks at the national and state level in federal countries, at the metropolitan level there is a need to reconcile these pursuits with a discrete and contiguous physical territory. In the metropolitan territory, this reconciliation is primarily pursued not at the conceptual level but by producing and providing tangible goods and services in three areas: serviced land and housing, including transportation infrastructure; economic production; and environmental services and externalities. Section 2 of this book includes chapters that examine each of these three sets of goods and services on the metropolitan scale. It also addresses the cross-cutting dimensions of finance and monitoring and evaluation.

Getting their governance right is of critical importance given that cities and metropolitan areas are responsible for approximately three-quarters of global greenhouse gas emissions from final energy use.

In looking at each of these sets of public goods and services, the emphasis is on the specific rationale and to some extent on existing mechanisms for coordination and management. Among the rationales or incentives for a cooperative approach are economies of scale; competitive advantage of one part of a metropolitan area over another to produce particular goods and services; reducing negative externalities; maximizing the welfare of those who live or work in the metropolitan area; and bolstering of fiscal strength and autonomy.

Serviced Land and Housing, Including Transportation Infrastructure

In this section of the book, the theme of serviced land and housing, including transportation infrastructure, is primarily covered in the two chapters by Goytia (Chapter 2.2) and Zegras (Chapter 2.8), as well as partially in the chapter by López-Moreno and Orvañanos (Chapter 2.5). The common thread is emphasis on the potential gains from metropolitan-wide coordination of land use regulation and the linkage between the location of built development, especially housing, and connective infrastructure. Implicit in the perspective of most contributing authors on this theme is advocacy for compact urban form and/or for improved accessibility (see Zegras, Chapter 2.8).

Goytia argues from several distinct perspectives. First, and perhaps most fundamentally, like López-Moreno and Orvañanos, she contends that a failure to coordinate land use regulation in the metropolitan area runs the risk of undermining the formation of agglomeration economies associated with the co-location and interaction of firms (Glaeser, 1998). Indeed, as Cohen points out in Chapter 2.1, urban density is a proxy for a set of necessary urban services and interactions that make cities attractive places to live and work (Buckley, Kallergis, and Wainer, 2015) and therefore leveraging land use regulation and planning to achieve optimal density while maximizing productivity and employment ought to be a metropolitan policy priority.

Given that such benefits are at the heart of our understanding of what makes cities the productive engines of growth and magnets for population and innovation, this is a critically important line of analysis. At its essence is the notion that within a metropolis, inter-jurisdictional competition to attract investments can create perverse incentives associated with a race to the bottom whereby, in pursuit of an advantage over

the competition, some municipalities relax aspects of their land use regulatory regimes. The critique is that this is being carried out with little regard for the benefits of achieving agglomeration economies in strategic parts of the metropolis to produce or provide specific products or services, and as a result harms the overall competitiveness of the metropolis. Moreover, the resulting variability in regulatory provisions for land use and construction creates a less than predictable investment framework thereby adding to the transaction costs of doing business in that metropolis. At the core of an effective metropolitan method is a coordinated approach to land use and construction regulation in which the focus on productivity associated with strategic co-location of complimentary firms and the advantage of presenting a common real-property investment interface are never lost.

The chapters by Goytia and by López-Moreno and Orvañanos also raise alarms over the inefficient pattern of spatial expansion that characterizes both the past and future trajectory of metropolitan physical growth. They cite a recent body of empirical evidence demonstrating that, in the cities of less developed countries, urban extension increased on average by a factor of 3.5 between 1990 and 2015, while urban population growth doubled over the same period (UN-Habitat, New York University, and Lincoln Institute of Land Policy, 2016). The result—as cited by López-Moreno and Orvañanos—is that urban sprawl and suburbanization is becoming more prevalent across all regions and residential densities are drastically declining. Goytia contends that this is spatially inefficient as a high ratio of land consumption to population growth increases the amount of undeveloped land converted to urban development, thereby increasing the per capita cost to provide basic services and other hard infrastructure. Low-density development also compromises the cost-efficiency and viability of providing public transportation, especially mass transit options.

Referencing the same UN-Habitat led study (2016), Goytia (Chapter 2.2) notes that, globally, since 2000, there has been a significant gap in the amount of land allocated to arterial roads within the newly built expansion areas of most metropolises. Some studies (e.g., Altshuler, Morrill, Wolman, et al., 1999) have asserted that adequate coordination facilitates timely and more cost-effective infrastructure investment and planning for large-scale metropolitan urban development and found that metropolises with more fragmented land use planning governance are more likely to have less dense suburban development, in addition to favoring decentralized, dispersed development and sprawl (e.g., Altshuler et al., 1999; Burchfield, Overman, Puga, et al., 2006). Goytia contends that this observed inefficient pattern of expansion in the global south is largely a result of administrative fragmentation and uncoordinated land use governance across metropolises.

While Goytia's resulting call for a more coordinated approach to land use allocation in order to reduce future sprawl seems reasonable, the extent of causality that can be attributed to the governance arrangements has not been empirically verified. Instead, the same study led by UN-Habitat found that less than half of cities' expansion areas between 1990 and 2015 were formally planned, leaving open this question of causality. Inefficient urban expansion in the global south has been occurring first and foremost in a governance context of limited influence at the municipal level over formal land use planning and construction regulation. It is not obvious that stronger coordination among these municipal planning arrangements would have created greater land use efficiencies on the metropolitan scale in the absence of more fundamental restructuring in the approach to urban planning and land use regulation.

Uncoordinated urban land use and construction regulation across a metropolis also has adverse environmental sustainability impacts. As Goytia points out, consequential environmental functions such as watershed and flood management require supra-municipal coordination as their land use footprint does not typically coincide with municipal boundaries. Therefore, associated land use actions in one municipality can create positive or negative impacts in others. Further, sprawling suburban development and deficient metropolitan land use governance inevitably takes more land out of its potential as a provider of environmental services and necessitates higher

dependence on private vehicle usage for transportation, which exacerbates production of greenhouse gases.

In Chapter 2.8, Zegras picks up on this latter theme of sustainable metropolitan mobility, which he had previously defined as "maintaining the capability to provide non-declining accessibility in time" (Zegras, 2011). Referencing the classic urban economy theories of von Thünen and Heinrich (1966) and Alonso (1964), he reminds readers that within a metropolis, people, firms, and other institutions interact with their land use and mobility sub-systems, creating accessibility to the daily requirements to survive and thrive. He argues that the generalized transport costs (e.g., time and money) dictate the shape of the curve (willingness to pay for proximity) and the "end" of the built-up zone (e.g., urban area boundary). For a monocentric city, a mobility improvement vis-à-vis the central business district will lower the land value of the district, flatten the slope of the bid-–rent curve, and extend the built-up area boundary——a significant feature of metropolitan management as earlier discussed. Zegras contends that mobility is actually a key functional metric to define the boundaries of a metropolis. In support, he cites evidence from the European Union where, metropolitan areas (functional urban areas) are defined based on the extent of a commuting zone, and from the United States, where the spatial scope of metropolitan statistical areas is determined by the degree of local jurisdictions' social and economic integration as measured by commuting ties based on an employment interchange measure.

Zegras also addresses the governance dimension of urban mobility, identifying four salient factors: the scale and scope of the mobility problem, the nature of the infrastructure and services, disciplinary and technocratic differences, and the need to balance potential scale-related benefits versus localized preferences related to jurisdictional sorting. Using evidence from the United States, Portugal, the European Union, Mexico, and Canada, he draws attention to the influence of a nation's historical and political approach to decentralization in determining metropolitan governance capabilities and realistic models. He identifies the constituent elements of metropolitan transportation governance as:

- planning infrastructure and services for public and private transport, roads and rails, passengers, and freight;
- managing and regulating infrastructure and services, including parking, traffic, operating, and infrastructure concessions, and licensing;
- designing, financing, investing in, and sometimes constructing and operating infrastructure and services; and
- collaborating with relevant authorities in related sectors, including land use planning and development, environmental protection, public health, and safety.

He notes that while technical barriers in these aspects of metropolitan transportation governance have largely been overcome, political barriers remain.

Economic Production

The theme of metropolitan governance and economic production is primarily covered in Chapter 2.1 by Cohen and partially by López-Moreno and Orvañanos (Chapter 2.5), although other contributors to this section inevitably touch on this important topic. For example, in Chapter 2.4, McCarney points out that metropolises represent the coincidence of major markets, including those for labor, real estate, finance and business, and services. She makes the point that such economic clout demands sound governance arrangements to facilitate their roles as sites for economic production, agglomeration, and proximity, and as staging grounds for connections to the global economy. Indeed, the aforementioned OECD study found that for a given population size, a metropolitan area with twice the number of municipalities is associated with around 6 percent lower productivity (OECD, 2015). However, this effect is mitigated by almost half if a governance body exists at the metropolitan level.

This global economy is dynamic. In Chapter 2.1, Cohen emphasizes that potential and comparative advantage are only realized in such an environment if metropolises are able to adapt. He notes that the industrial structure of a metropolitan area produces

a specific level and distribution of salaries and that macroeconomic policies such as import substitution in the 1950s have direct effects on the formation and level of income and productivity of metropolitan areas. A fundamental question that he asks is whether the industrial structures of developing countries' metropolises are sufficiently responsive, or whether new urban residents can only find jobs in the informal sector.

Cohen notes that technology and the way in which capital and labor are dynamically combined in the production process determines the levels of productivity and associated job creation (Anas and Lee, 1989). He goes further by contending that productive employment also relies on the existence of public goods such as infrastructure, a clean environment, public space, and an institutional regulatory framework, most of which in turn depends on the capacity to generate own-source public revenue. Although they may be an exception, in Chapter 2.5 López-Moreno and Orvañanos appear to contradict this assertion. Within metropolitan Guadalajara, Mexico, the productivity sub-index of the UN-Habitat's City Prosperity Initiative (CPI) was highest in the municipality of El Salto, home to an important industrial corridor specializing in the electronic and automotive industries but whose ratings for the other CPI sub-components of infrastructure, quality of life, equity and inclusion, environmental sustainability, and governance and legislation were so poor that the municipality's overall CPI rating was the lowest in the metropolis. Perhaps out of implicit recognition of such statistical differences, Cohen concludes by calling for a wider definition of metropolitan productivity that includes both the positive and negative externalities that firms and sectors generate at the city and metropolitan levels, not dissimilar to the approach adopted by Hseih and Moretti (2015).

In Chapter 2.5, López-Moreno and Orvañanos observe only a moderate correlation between productivity and city size in Mexico. In general, they find that larger Mexican agglomerations are more productive than smaller ones as evidenced by average CPI productivity ratings of 48 and 43 points, respectively. They point out that this is consistent with the economic literature on the importance of the spatial concentration of the factors of production, residential densities, and economies of agglomeration as key factors for productivity and economic growth. And they note that the finding also resonates with those of other CPI studies, such as those in 23 Colombian metropolises (see Chapter 3.4 on Bogotá, and UN-Habitat, FINDETER, APC, SDDE, and CAF, 2015). The correlation also aligns with those reported in the OECD's recent Metropolitan Century Report (2015) where for the most part OECD countries experience their highest labor productivity in metropolitan areas with populations greater than 5 million.

A fundamental monitoring and evaluation question is whether observed outcomes on the metropolitan scale are the result of the prevailing form of metropolitan governance.

Environmental Services and Externalities

The third major theme in Section 2 of the book is metropolitan governance in the context of environmental services and associated externalities. In contemporary debates, this is usually framed around the phenomenon of climate change, as is the case with the chapters by Bulkeley and Luque-Ayala (Chapter 2.6), and Dinshaw, Giroux Lane, and Elias-Trostmann (Chapter 2.7). As pointed out in the earlier discussion on serviced land and housing, including transportation infrastructure, and as noted by McCarney in Chapter 2.4, metropolitan environmental resources and infrastructure typically spread across municipal boundaries. As a result, their effective protection and management requires a coordinated approach to overcome sub-optimal outcomes resulting from administrative fragmentation.

Getting their governance right is of critical importance given that cities and metropolitan areas are

responsible for approximately three-quarters of global greenhouse gas emissions from final energy use (IPCC, 2014) and are disproportionately vulnerable to climate impacts due to their concentration of risks in terms of lives, cultural heritage, infrastructure, built environment, and the economy. As Bulkeley and Luque-Ayala point out, the urban scale focuses attention on large- and small-scale metropolitan infrastructure systems, positioning urban networks of energy, water, waste, transport, information and communications technology, and others as potential sites of intervention for effective climate responses, even if most of those efforts to date have been measures to support a reduction in greenhouse gases primarily through enhanced energy efficiency.

As tempting as it may be to view climate change and managing environmental risks in predominantly technological and hazard terms, both Bulkeley and Luque-Ayala and Dinshaw et al. stress the importance of political, socioeconomic, equity, and governance lenses. As the former note, policy development such as decarbonization or resilience action plans needs to be fully cognizant of how such policies are limited by prevailing social and material realities of the city (Lovell, Bulkeley, and Owens, 2009). Among those realities are the perceived fairness of how specific risks, vulnerabilities, and mitigation targets are distributed across the metropolitan space. Dinshaw et al. illustrate this point through the story of the redevelopment of New Orleans after hurricane Katrina. In that case, an initial plan to convert badly flooded neighborhoods into parks and green spaces for ecological functions and storm water management had to be abandoned due the disproportionate displacement it would have created for predominantly black and lower-income families—the reality and implications of which were not immediately apparent due to participation defects in the planning process.

In terms of the political dimension of metropolitan climate management, Bulkeley and Luque-Ayala note that metropolitan authorities are not responding to climate change in isolation or solely through internal pressures. They observe that instead transnational networks, partnerships, and innovation and experimentation are the hallmarks of their responses to climate change.

Bulkeley and Luque-Ayala note that the transnational organization of cities is creating a horizontal form of climate governance with internationally standardized reporting on progress that is helping cities gain room for political maneuvering in pursuit of domestic targets. They also recognize that partnerships with the private sector and civil society both within and outside of the city are likewise emboldening city responses to climate change even when national momentum may be slower than desired. However, they are careful to warn that metropolitan governance via partnerships can be exclusive and omit direct participation of the poor and other marginalized groups, raising questions of legitimacy and transparency in decision-making, as discussed in Section 1. In a similar vein, in Chapter 2.7, Dinshaw et al. contend that resilience planning at the metropolitan level needs to be the result of the scaling up local level planning. They note that the typical practice of scaling down to the local level. Plans conceived at a higher level often overlook community participation, community-driven data or assets, capacities, and present vulnerabilities (Von Aalst, Cannon, and Burton, 2008). They describe Quito, Ecuador, with its Panel on Climate Change and the Climate Change Metropolitan Committee, as a model of this kind of intra- and inter-institutional articulation.

More generally, Dinshaw et al. acknowledge the challenge of determining who has the authority and the incentive to implement metropolitan resilience plans and ensure their effectiveness. In citing the relatively positive experience with PlaNYC in New York City, they note that most metropolitan areas do not have a powerful coordinating agency such as that city's Mayor's Office of Long-Term Planning and Sustainability and, therefore, to effectively coordinate resilience may need to develop a consortium or create such an agency—not a simple task in resource and capacity-constrained environments of the global south.

Appropriately governing environmental issues and the two other thematic areas—serviced land and housing and economic production—also requires adequate finance mechanisms and the constructive feedback that strong monitoring and evaluation systems allow.

Metropolitan Finance

All expressions of metropolitan governance require finance. As Cohen points out in Chapter 2.1, unreliable sources of public revenue and a financial system that does not routinely permit long-term finance are major constraints to meeting investment needs. Still, on a global scale, subnational governments reportedly account for nearly two-thirds of public infrastructure spending (Martinez-Vazquez and Timofeev, 2012). Smoke (Chapter 2.3) addresses this topic of finance directly, although there are also references in Zegras' contribution (Chapter 2.8).

Smoke reviews the key elements of intergovernmental and local finance systems, while arguing that the historic under-performance of reforms is largely due to an overly technical approach at the expense of due consideration of the larger institutional and political economy framework in which urban finance operates. He reminds readers of the core fiscal decentralization principles, most notably, the finance follows function principle and contends that ambiguity in local government powers and mandate can result in gaps and redundancies in service delivery, complicating mobilization and allocation of resources and associated accountability. He asserts that, due to their larger economies and revenue bases, metropolitan governments are better positioned to handle greater empowerment than other subnational entities. Moreover, he notes that proponents of a more holistic empowering of local governments—especially metropolitan governments—as autonomous entities with a general mandate to provide for the overall welfare of their constituents, favor the discretion it allows to customize planning and budgeting (Romeo, 2013).

Focus must be on structures, interactions of those structures, and innovative arrangements that create new forms of metropolitan governance.

In terms of sources of finance, Smoke highlights the limited documentation of major transfers from central governments dedicated to metropolitan areas, although programs such as the Jawaharlal Nehru Urban Renewal Mission in India (being replaced by a Smart Cities program) and the Municipal Development Fund in the Philippines approximate such a focus. He also observes that when it comes to borrowing, the access of subnational governments of the global south to capital markets lags behind those in wealthier countries. Further, using public or quasi-public municipal development banks or funds to bridge this gap has been handicapped by capacity issues and politicization. He briefly surveys related experiences such as taxable and tax-free municipal bonds (with and without guarantees), pooled financing, grants, loans, and co-financing in countries such as India, Mexico, the Philippines, and South Africa. And as for own-source revenues, such as property taxes and user fees, he acknowledges the scope for improvement in their administration, a point also made by Cohen in Chapter 2.1 where readers are reminded that local taxes account for only 2.3 percent of GDP in developing countries compared to 6.4 percent in industrialized countries (Bird and Bahl, 2008).

Smoke acknowledges the complexity of metropolitan finance reform, including technical and capacity issues, and the need to establish or modify structures and processes of local administration and governance, including accountabilities. As noted earlier, Smoke emphasizes political economy realities such as metropolitan governments being kept weak if their leadership is not well aligned with the national government or the risk of metropolitan governments being undermined by influential actors and associated corruption. He concludes by noting some common reforms, such as using objective allocation formulas tied to specific national goals while being careful not to undermine own-source revenue collection efforts and performance-based transfers (Steffensen, 2010), all the while stressing the importance of credible implementation strategies. Consistent

with the premise of performance-based transfers, in Chapter 2.1, Cohen advocates for urban finance to embrace a regulatory function in its structure to incentivize firms to produce positive externalities and multipliers while minimizing negative ones.

While in Chapter 2.3 Smoke focuses primarily on concepts and principles, in his contribution, Zegras (Chapter 2.8) critiques some specific metropolitan finance arrangements in the field of transportation, citing examples primarily from Europe and the United States. In particular, he notes the fate of Metropolitan Transportation Authorities in Portugal, which lacked adequate administrative and financial authority and were dominated by central government influence, and whose responsibilities were eventually subsumed into the respective metropolitan governments (Assembleia da República, 2015). With regard to the experience of the United States, he briefly surveys the role of incentives from state and/or national government, including through federal conditional grants-in-aid and the emergence of Metropolitan Special Districts, which were created to address specific area-wide service problems related to the cross-boundary benefits associated with highways or public transportation and often given special financing capabilities (Zimmer, 1974). He also traces the birth of Metropolitan Planning Organizations primarily for metropolitan transportation planning, the scope of which has expanded over the years but whose performance has depended on the design and practical implementation of governance structures.

Citizen engagement and participation is important for metropolitan governance, not only as an ethical commitment but also for economic reasons.

Metropolitan Monitoring and Evaluation

Metropolitan monitoring and evaluation is a common theme in this section of the book. While Chapter 2.4 by McCarney is entirely devoted to the topic, various monitoring instruments are explicitly discussed in the chapters by López-Moreno and Orvañanos (Chapter 2.5) and Dinshaw et al. (Chapter 2.7). Both Zegras (Chapter 2.8) and Cohen (Chapter 2.1) also express some views on the topic.

McCarney (Chapter 2.4) lays the foundation by noting the heightened contemporary relevance of data-driven management and evidence-based policymaking in today's large urban infrastructure deficits, fiscal space limitations, and climate-related challenges, which are occurring in a governance environment where accountability and transparency is increasingly demanded. She navigates readers through the challenges of scarce and uneven data, often collected through different methodologies and under different definitions of what constitutes the physical extent of a metropolis. This is a point that Zegras also laments in Chapter 2.8 in relation to concepts and indicators such as sustainable mobility and congestion.

McCarney then asserts that the International Standard on City Indicators, ISO 37120, that was developed using the Global City Indicators Facility, represents a fundamental shift when it comes to city data as the indicators allow cities and citizens to evaluate municipal performance and progress in standardized terms. ISO 37120 comprises 100 indicators of a city's social, economic, and environmental performance with published definitions and methodologies. As these data points are then analyzed and reported in the same way, comparative lessons can be drawn from other local and global cities. Municipal indicators can be aggregated to formulate metropolitan-scale indicators. McCarney cites examples from cities across multiple continents that were among the 20 cities that formed part of the first-year pilot, where results have been incorporated into city planning and policymaking and have facilitated collaboration between levels of government and different departments.

Since the ISO indicators are hosted on an online open data platform, an argument is also made that it is serving to improve transparency, reduce corruption, and enhance public services through more effective oversight (Janssen, Charalabidis, and Zuiderwijk, 2012)

and may ultimately lead to greater metropolitan competitiveness if effects observed by Fikru (2013) for companies are replicated on the metropolitan scale.

In Chapter 2.5, López-Moreno and Orvañanos describe another metropolitan assessment tool, the CPI, developed by UN-Habitat. The CPI goes a step further than individual indicators by creating an index comprising six components of prosperity: productivity, infrastructure, quality of life, equity and inclusion, environmental sustainability, and governance and legislation. Implemented in over 300 cities since 2014, and comprising both aggregate and component scores for both the metropolis and its constituent administrative units, the authors argue out that by including standard deviation analysis, the CPI gives insight into internal disparities within a metropolis. This is potentially valuable information in relation to environmental services and associated externalities. The authors also note that analysis of the data facilitates an understanding of the potential consequences of contemplated actions under one dimension on the overall prosperity score as well as on performance in other individual dimensions of prosperity. And like the ISO standard for city indicators described by McCarney, the CPI now features in the development and implementation of national urban policies in places such as Colombia and is facilitating local and international benchmarking and comparisons.

In an analysis of the metropolitan scene in Mexico, López-Moreno and Orvañanos find little correlation between the different dimensions of prosperity on one hand and the size of a metropolis on the other. Only productivity showed a positive correlation and the relatively modest size of this correlation led the authors to question whether large Mexican metropolises are sufficiently leveraging the potential advantages of their network effects and production scales. Indeed, the need for the metropolitan economy and productivity to be streamlined into diagnostics, assessments, monitoring, and development discourse at all levels is a salient point in Cohen's Chapter 2.1.

In the more specialized context of climate change, Dinshaw et al. (Chapter 2.7) describe another assessment tool, the National Adaptive Capacity Framework, which evaluates the performance of national institutions across five adaptation functions: assessment, prioritization, coordination, information management, and climate risk management. They contend that the framework can be usefully adapted to the metropolitan scale because it was developed to function across complex landscapes with multiple agencies creating data and plans, necessitating coordination and streamlining. They purport that the conduct of metropolitan level assessments could lead to more implementable metropolitan resilience plans while acknowledging it is not obvious which agency would typically conduct such assessments. It is not clear whether the data to perform the assessment on a metropolitan scale is readily available.

Finally, a fundamental monitoring and evaluation question is whether observed outcomes on the metropolitan scale are the result of the prevailing form of metropolitan governance. A secondary question is whether metropolitan governance coordination is equally important in metropolises of widely varying population and sizes as well as in metropolises composed of relatively few versus many municipal administrative units. Only Zegras (Chapter 2.8) directly addresses this line of inquiry. He notes that answering the question of whether governance matters requires some ability to measure performance across different governance structures. An intermediate question that he attempts to answer from prior work is which factors give rise to inter-municipal collaboration. In that study (Rayle and Zegras, 2013), ad hoc inter-municipal collaboration in relation to land use and mobility in Lisbon and Porto, Portugal, was found to be facilitated by positive incentives (e.g., money), flexibility in the institutional system, the presence of an external catalyst, existing networks, and specific organizational characteristics. The authors found that nearly all of these factors must be present for collaboration to occur.

Section 3. Building Metropolitan Governance: Lessons and Good Practices

The third section of this book comprises a broad compilation of metropolitan cases from almost all continents: Africa, America, Asia, and Europe. As

occurs with most large compilations of cases, those included in this volume are the result of both selection and accessibility based on the criteria of representativeness and diversity. All 19 metropolitan cities have both unique and similar features that, from an aggregated perspective, contribute to a better empirical understanding of metropolitan governance.

Despite the fact that the metropolitan cities included are not in-depth case studies, they are structurally consistent. All cases focus on the metropolitan governance framework, processes, and outcomes, but from different angles and entry points. They share common content: general diagnostics, local context, map of stakeholders, and identification of key challenges. This consistency makes some comparative analysis feasible.

The broader question is whether we can extrapolate from one case to another. We believe we can, as long as we take metropolises as complex systems and avoid simplistic, formulaic thinking. If we do use the complexity paradigm, then our focus must be on structures, interactions of those structures, and innovative arrangements that create new forms of metropolitan governance. What are the interactions between, say, local authorities with decentralized responsibilities and metropolitan authorities? In what way do structures change when national legislation enables subnational governments to collaborate and, at the same time, when incentives make them compete for resources? How do vertical, top-down decisions from upper levels of government co-exist with more horizontal, bottom-up initiatives and participation in metropolitan contexts? The cases tackle such questions and in so doing analyze the intersection between metropolitan governance schemes, their challenges, and good practices.

What can we learn from the innovative metropolitan governance of Portland, Oregon, in the United States (Chapter 3.9)? How about the lessons from the massive, vertical relocation processes in Shanghai (China) detailed in Chapter 3.16? By engaging with the chapters in Section 3, we hope our readers will learn from the experiences of others. The following paragraphs present some of our main takeaways, and later we introduce each metropolitan case.

Main Takeaways from Metropolitan Case Studies

The first realization is that we do not have a unique working definition of metropolis, let alone of metropolitan governance for the nineteen 19 cases. In fact, most chapters in Section 3 do not provide a working definition of their own metropolis nor do they explicitly specify their ideal form of metropolitan governance. That is something to be mindful of when making comparisons. Despite the common usage of the term metropolitan, the nature of the metropolitan cases varies significantly. Shanghai, for instance, is a single municipality, while Greater New York comprises three states (New York, New Jersey, and Connecticut) and more than 700 towns and counties. The 2.4 million inhabitants of Portland's Metropolitan Area in the United States seem like a small village next to the approximately 100 million people living in the Beijing-Tianjin-Hebei Metropolitan Region. Some metropolitan areas or regions are solely urban built-up areas (that is, urbanized), while others are territories that include peri-urban, suburban, and rural areas, such as Lagos, eThekwini-Durban, Mumbai, or Delhi.

Not all metropolitan areas result from the aggregation of local governments' polygons. Some conurbations can be seen and studied as integrated labor markets, like Greater London, or as functional urban areas, like Greater New York, while others lack the infrastructure to be considered properly integrated. Furthermore, in some cases, significant sectors of their populations are severely marginalized and the practice of integration is highly questionable. Thus, the idea of the metropolis has significantly different connotations from one context to another, even within the same country.

The second takeaway is that there are common facilitators for metropolitan coordination and governance and their absence tends to be highlighted as an obstacle or barrier. Some of these facilitators are: legal recognition of metropolitan governance in national legislation, the project-to-policy approach, shared partisanship among governments and key stakeholders, and the existence of a culture of public–private partnership, among others.

The recognition of metropolitan governance in the national constitution is highlighted as a positive

influence in promoting more effective metropolitan governance in São Paulo (Chapter 3.10), Stuttgart (Chapter 3.19), and eThekwini-Durban (Chapter 3.2). Conversely, the chapters on Toronto (Chapter 3.11), Guadalajara (Chapter 3.6), and Mexico City's (Chapter 3.7) acknowledge the problems created by the lack or deficient recognition of metropolitan realities in their respective national constitutions.

The project-to-policy approach is explained in Chapter 3.5 about the Buenos Aires. This approach suggests that motivating local actors to collaborate on tangible projects to solve well-defined problems is a first step to building trust and might lead to more stable collaborative arrangements for metropolitan governance and policy. The national legal recognition and the project-to-policy approach might appear to contradict one another in terms of what should be done first, but that is not necessarily the case. While recognizing metropolitan layers of government in the constitution can grant legitimacy and incentives to effectively organize the collaboration of local governments, the project-to-policy approach is about learning by doing and some form of capacity building. In other words, municipalities might have the legal mandate to coordinate efforts but do not do so because the mayors are unwilling to sit at the negotiation table with each other.

Defining not only the role of the government, but also the responsibility of the real estate sector in urban development

Many of the chapters in this section mention examples of metropolitan or inter-municipal cooperation accelerated by joint transit, waste, or green/blue infrastructure projects. Several decades ago, the Port Authority of New York and New Jersey effectively united the two urban centers, while recently the Metro project did the same for local governments in Grand Paris. Other examples include the Jubilee Line Extension in London and the incipient extension of Metrobus lines (bus rapid transit) in the Buenos Aires Metropolitan Area. Chapter 3.15 on Seoul, for instance, provides a detailed account of how waste and water management projects have improved regional governance.

Whether shared partisanship is a facilitator of or an obstacle to metropolitan governance is more controversial. Chapter 3.9 highlights that Portland Metro representatives are non-partisan, a condition that has contributed to achieving good metropolitan governance according to the author, Liberty. However, in the case of Toronto (Chapter 3.11), the lack of partisanship is seen as an obstacle by Eidelman, Horak, and Stren: "Canada lacks the intergovernmental partisan ties that facilitate the coordination of urban policies in many other advanced industrial democracies." Furthermore, shared partisanship or political alliances are mentioned as crucial for collaboration in the cases of Greater New York (Chapter 3.8), Greater London (3.17), Mexico City (3.7), Buenos Aires Metropolitan Area (3.4), and Mumbai metropolitan area. Political closeness or alienation does not work the same way in every country; while in some cases it has a positive effect on metropolitan governance, in others it does not.

Another issue to consider is that mayors and local authorities may see their peers as competitors for power and financial resources, which could undermine collaboration. Authors in Section 1 also stressed this point of friction. In theory, local competition should have the effect of increasing provision of public services to attract investments and human resources to each local government (Tiebout, 1956). However, in practice, this model does not always work as Tiebout (1956) conceived it: competition can also undermine collaboration, a necessary condition for metropolitan coordination and governance. The structure of incentives—fiscal, economic, and political—are key factors for collaboration and, therefore, for governance.

Finally, examples of metropolitan collaboration carried out by public–private partnerships can be found across different chapters: Grand Paris, London, Lagos, Greater New York, São Paulo, Shanghai, and Stuttgart. Insufficient resources and limited institutional capacities of local governments make public–private partnerships a common arrangement for metropolitan development.

The third lesson is how important citizen engagement and participation is in metropolitan governance, not only as an ethical commitment but also for economic reasons. In cities like Portland, Toronto, London, and Stuttgart, participation of citizens and civil organizations are central, but the chapters about Shanghai and Seoul show that they are stronger cases in favor of participation as an efficient way to deal with metropolitan issues. However, in other cases in Section 3, this aspect of governance is not addressed at all. From an open government perspective, civic collaboration is a key dimension of governance, particularly at the local level where citizens' involvement is motivated by proximity and the potential for direct impact (Open Government Partnership, 2016).

It is worth noting that not all the cases are similar in terms of democratic culture, a key variable in governance schemes. If we look at the past 100 years, only a few cities in Section 3 had a context of uninterrupted democracies while they became the metropolises they are today (Toronto, New York, Portland, Mexico City, and Guadalajara). Some cases are relatively new democracies, as the democratic processes in some countries have been severely disrupted by dictatorships and/or armed conflicts (Buenos Aires, Lagos, São Paulo, Bogotá, and Seoul) or the apartheid struggle in South Africa (Durban-eThekwini). Some metropolises suffered particularly during the Second World War (Tokyo, Paris, London, and Stuttgart), while others are in countries that went through independence processes in the 20th century (Mumbai, Delhi, and Lagos). Although the historical perspective is not the focus of this book, and metropolitan governance is a relatively new phenomenon, the political trajectories of countries explain the institutional framework that shapes metropolitan regimes, as mentioned in Section 1. An interesting observation, however, is the non-linearity of the metro governance maturity process, with some cases making steady progress and others losing momentum and capacity to evolve.

Brief Introduction to the Metropolitan Case Studies

The cases in Section 3 are organized by continent (Africa, America, Asia, and Europe, in that order) and alphabetically within each subgroup by the main city's short name (not by the name of the metropolitan area), which is the most common reference.

Map of the Cases in Section 3

Chapter 3.1 on **Cairo** is the first case and the only Arab metropolitan area in the book. The agglomeration has 20 million inhabitants—almost one-quarter of the entire population—and generates 44 percent of the country's GDP. In this chapter, Sims' explicit objective is to present Cairo as a cautionary tale for other countries lacking metropolitan governance in a context of political centralization and institutional fragmentation. On one hand, the management of Greater Cairo is fragmented across a wide range of central authorities, with little participation of local governments and no participation of the civil society in the governance architecture. On the other hand, informal areas of the metropolis—which host two-thirds of Greater Cairo's population—are places with certain levels of social capital and community cohesion despite the lack of infrastructure, appropriate services, or quality public transport to reach the job market. Urban sprawl has dominated in the past decades, with a "misplaced faith that low-density, sprawling, car-oriented new towns operating under top-down would quickly create jobs [and] absorb the increasing metropolitan population." The result, as explained by Sims, is a dichotomic landscape: unsustainable desert hinterlands capturing investments and the attention of the government and the rest, where almost everyone lives, being ignored by the metropolitan government.

Issues like fog haze, water shortages, and environmental pollution know no political boundaries, just like the flow of material, information, and population.

Chapter 3.2 is in the opposite extreme of the African continent. The **eThekwini Metropolitan Area** is a highly diverse South African region that includes the city of Durban. This metropolitan area, created in 2000 comprises urban, peri-urban, and rural land, almost evenly split, and a mix of racial and cultural diversity. It has almost 4 million inhabitants. Unlike other cases around the world, South Africa's constitution provides the legal basis for metropolitan governance. The principle of the law is "One city, one tax base…an inclusive, integrated metropolitan city and tax base will ensure the fair and equitable distribution of resources, financial and otherwise, in the municipal area." The constitution also impels municipalities to develop. They have a mandate to respond to the socioeconomic challenges of their communities. This chapter explains how eThekwini aimed to be a learning city and how procurement policies fostered the use of local resources, mainly from disadvantaged communities. Reddy, the author, highlights that, in over two decades of local democracy, the metropolis has been able to improve equity in political participation. Yet a significant challenge remains, as poverty levels in the eThekwini Metropolitan Area are higher than in any other South African metropolis. Other challenges include fragmented and uneven service delivery by the government, climate change, and a combination of unemployment and low literacy.

In Chapter 3.3, Olokesusi and Wapwera address how the city of **Lagos** has grown dramatically in recent decades, going from approximately half a million people in the late 1960s to over 17 million today. Similar to other cases in this book, some of Lagos' greatest challenges include, but are not limited to, climate change adaptation and mitigation, as well as pollution and poverty alleviation toward a more inclusive and equitable metropolis. Those challenges are being faced by a state (regional) government that aims to transform Lagos into Africa's model mega-city against the backdrop of some projections that Lagos could be the largest city on the planet by 2040.

Lagos is an example of internally generated revenue for metropolitan governance, which Olokesusi and Wapwera claim is the result of thinking outside the box after national government funding became less accessible. Metropolitan funding comes from land, personal, and business taxes, value added tax, market and motor park fees, parking fees, and fines, among other sources. The chapter also underscores the

role of multi-stakeholder partnerships and strategic investments, such as a bus rapid transit scheme and light rails, and the improvement of waste management and canopy cover.

Chapter 3.4 is the first on the American continent. Córdoba and González analyze territorial planning in Colombia in terms of current dichotomies and tensions, with a focus on **Bogotá**. The first tension is centralization versus devolution. Colombia has a highly centralized government scheme that reduces the capacity for autonomous decisions in territorial entities such as Bogotá. The second tension is agency. Should local territorial planning be carried out by the 32 Colombian departments or should it be a responsibility of the 1,101 municipalities? At present, territorial planning is carried out by departments or ad hoc zoning. If the departments continue to be in charge, their capacity to plan must be strengthened, including funding. The other option is to follow a planning model of a system of cities, which distinguishes two types of urban areas: urban agglomerations (with several local governments) and uni-nodal cities. The system of cities model would also consider the flows within urban agglomerations, between urban and rural areas, and among cities. It would imply that, instead of managing six disconnected agglomerations, for example, policies would address an urban-regional continuum and take advantage of the proximity economies. The authors found that in Colombia living conditions in agglomerations are better than in uni-nodal cities and far better than in rural areas. They also found that there are several inequalities to be addressed within the different sub-regions of a single urban agglomeration like Bogotá, a phenomenon they refer to as lack of convergence. Thus, they conclude that public policy should enhance the intrinsic benefits of agglomerations and should explicitly target convergence.

Chapter 3.5 on the **Buenos Aires Metropolitan Area** (BAMA) sheds light on both the multidimensional complexities of BAMA and the current opportunities for advancing metropolitan governance. In the chapter, Rojas presents an overview of existing metropolitan arrangements and, based on her experience with other metropolitan areas in Argentina, she proposes a projects-to-policy approach to create legitimate metropolitan coordination. According to Rojas, the political conjuncture is encouraging as the national government, the capital (Buenos Aires Autonomous City), the adjacent province of Buenos Aires, and a third of the metropolitan municipalities in the province are now governed by the same political coalition. She argues that two critical issues stand out for their potential to be addressed through a project-to-policy approach: transit and parks. In addition to that, Rojas mentions other sectors for which metropolitan coordination is progressing but still facing several challenges, such as waste management, health services, risk management, and socio-environmental issues regarding heavily polluted watersheds.

The following two cases are concerned with Mexican metropolises: **Guadalajara** and **Mexico City** (Chapters 3.6 and 3.7). The two conurbations have differences worth mentioning. While the Metropolitan Area of the Valley of Mexico includes over 20 million people and 79 different jurisdictions, belonging to three different state governments, Guadalajara has only 5 million inhabitants in nine municipalities of the same state. Despite the differences in scale, the two chapters share a concern for the lack of a national metropolitan legal framework in Mexico, and the authors agree that the faculties of association and collaboration among the municipalities and the state governments, recognized in Article 115 of the constitution, have not been sufficient to guarantee adequate metropolitan governance in Mexico. However, national urban legislation was passed in 2016, opening the door for improved metropolitan coordination mechanisms and modalities.

In Chapter 3.6, Blanco, Osorio, and Gómez-Álvarez present a plausible path to manage conurbations in Mexico. Guadalajara Metropolitan Area, the second largest city in Mexico, has a tripartite system of metropolitan coordination formed by three main metropolitan coordination entities: the Metropolitan Coordination Commission (integrated by the State Governor and the nine mayors), the Metropolitan Planning Institute, and the Citizen Metropolitan Council. The metropolitanization

process has been subject to state legislation, the most recent and significant being the 2011 *Law on Metropolitan Coordination*. Metropolitan development is also facilitated by inter-municipal, sectoral institutions for transportation, and water and sanitation, while a metropolitan security agency has recently been created. Finally, in 2016 Guadalajara launched its metropolitan territorial plan, which for the first time has a metropolitan perspective for land use and regulation. The authors claim that Guadalajara's unique institutional setting and innovative planning instruments constitute, in practice, a metropolitan governance laboratory in the country.

In Chapter 3.7, Iracheta highlights the urgency of achieving metropolitan coordination, arguing that all major metropolises in the country have been sprawling in an unsustainable and inefficient way. Between 1980 and 2010, the urban population expanded two-fold whereas urban areas expanded eight-fold, with negative implications in terms of social exclusion, low quality of public services, transit congestion, and environmental externalities. Iracheta urges for reforms that align spatial planning, metropolitan mobility, and social housing policies, and for defining not only the role of the government, but also the responsibility of the real estate sector in urban development. The author remains hopeful for future metropolitan governance in Mexico in light of the creation of a National Sustainable Land Institute in late 2016, as well as the recognition of metropolises in the *General Law on Human Settlements and Urban Development* (2016).

Rather than avoiding tension, metropolitan governance should ensure open communication and include the conflicts in constructive discussions about processes and procedures.

The **New York** metropolitan area presents a case of historical decline in metropolitan governance, according to Wright (Chapter 3.8). Institutions created roughly a century ago continue to govern Greater New York without adequate adaptation to the present time, such as The Port Authority of New York and New Jersey and the Tri-Borough Bridge and Tunnel Authority. The region has grown and changed, yet the institutions have remained stagnant. Wright explains that in the beginning, those institutions were not linked to political cycles because they were given semi-autonomous governance structures and the ability to self-finance their investments. Additionally, they were seen as professional and modern.

However, since the 1950s, the metropolitan institutions became increasingly negatively influenced by politics, resulting in inefficient projects and poor coordination. Wright's biggest critique is that "there is no federal, state, county, or municipal agency tasked with thinking about the wellbeing of the whole—built environment, infrastructure, and natural systems—and there is no single vision for the region." The three states (New York, New Jersey, and Connecticut) compete for business and funding, rather than collaborating to create synergies, which results in a lack of policy coordination. The chapter provides concrete examples of current and future issues, such as the lack of capacity at JFK and Newark airports and the collapse of the transport options to cross the Hudson River. Another problem is that land use is governed at the municipal level, so in the New York metropolitan area, close to 600 cities create their own local plans, often in direct conflict with neighboring cities.

The next Chapter (3.9) narrates a different story in another U.S. metropolis. The **Metropolitan Area of Portland**, with over 2.4 million inhabitants, is one of the most sustainable cities in North America. It has also recently been recognized as the second fastest growing metropolitan economy (Redden, 2015) and best-performing one in the United States (Winkler, 2016). The chapter focuses on what makes this metropolitan area function the way it does, distinguishing those characteristics that could be replicated elsewhere from those that are unique to this case. Among those unique characteristics, according to the author, Liberty, the state of Oregon has an unusually rigorous

land use planning system and both the state legislation and metropolitan government focus on sustainability. As a consequence, "[the] Metro has been effective in reshaping regional growth patterns in ways that vary dramatically from the standard pattern of development for urban areas in the United States," that is, reducing sprawl and promoting compact growth. Another important aspect is that Metro—the authority of Metropolitan Portland—is governed by an elected president representing the entire metropolitan area and a council of six members elected from districts of equal population. Those district boundaries do not correspond to local government boundaries, which gives the council a metropolitan perspective, not a political one. In addition, the Metro representatives are non-partisan positions, and the staff has been recognized nationwide for its competency in addressing metropolitan issues.

Chapter 3.10 reflects on recent changes in Brazilian metropolitan governance, paying close attention to the case of **Greater São Paulo**. Klink critically reviews the governance heritage of the dictatorship era, fiscal crisis, and the 1990s restructuring reforms. The last of these, particularly in São Paulo, led to public–private partnerships, innovative bottom-up experimentation, and participatory governance among municipalities. Klink later analyzes the current expectations regarding the *Federal Statute of the Metropolis*, which was approved in January 2015. The author considers that strengthening institutions and building technical capacity are necessary but insufficient conditions to improve metropolitan governance: leadership and political will are required to improve the city. After a description of recent planning processes in Greater São Paulo, Klink highlights that further efforts need to be made to achieve political consensus among different government levels and civil society, and to devise clear sources of finance for metropolitan planning and management. The case of São Paulo seems to reinforce the notion that political alignment is a prerequisite to achieve state and municipal coordination, at least in current political scenarios.

Grand Paris owes its success to continuous "conflicting cooperation".

In Chapter 3.11, Eidelman, Horak, and Stren refer to **Toronto**, a city within the Greater Golden Horseshoe, the largest and most economically important city-region in Canada. It is a significant case for this book for two reasons: it was the first urban area in North America to adopt a two-tier metropolitan system, and it is one of the most ethno-culturally diverse city-regions in the world, with nearly half of the population in the Greater Toronto Area being foreign-born. This case is particularly interesting from the perspective of under-representation of groups and minority dynamics in metropolitan governance, a key dimension in multicultural societies. The chapter focuses on the three main socio-environmental challenges of Greater Toronto: dealing with social polarization and integrating new immigrants and low-income residents into the fabric of city life, controlling urban sprawl in the outer suburbs, and effectively planning and funding regional transit. Additional, overarching challenges relate to metropolitan governance constraints: strong provincial control, high dependence on local revenues, and weak intergovernmental political integration. According to the authors, improving governance requires creating or modifying incentive structures for intergovernmental relations rather than changing the metropolitan government architecture.

In Chapter 3.12, Tang, Yang, Chen, et al. present the complexities of the **Beijing-Tianjin-Hebei Metropolitan Region** (BTH region), which comprises 10 local governments and a population greater than 100 million inhabitants, the most populated mega-city region in the world. As a city-region, this case is one of only a few in Section 3 in which the focus is on a series of economically linked metropolises rather than a single metropolis. In other words, the BTH region is a hybrid example of regional and metropolitan governance.

The case explains the historical evolution of regional cooperation as well as the strategic role that each sub-region currently plays. The authors argue that the traditional vertical bureaucracy mechanism formed during the planned economy period is still the main administrative approach in China. Thus, the central government resolves regional issues in a highly centralized, top-down manner.

Issues like fog, haze, water shortages, and environmental pollution know nothing about political boundaries, just like the flow of material, information, and population. Improving regional collaboration is required, for which the chapter proposes future scenarios and policy recommendations, noting power imbalances should be taken into account (since out of the 10 local governments, two are more powerful than the rest, that is, Beijing and Tianjin). The development of this region, together with Pearl River Delta and Yangtze River Delta, will determine China's metropolitan development.

Section 3 of the book contains two metropolitan cases in India: in Chapter 3.13, Kundu considers **Delhi**, and in Chapter 3.14, Pethe, Gandhi, and Tandel look at the **Mumbai Metropolitan Region**. Among 52 metropolitan areas in India, these two are the largest: Mumbai with 22 million inhabitants and Delhi with over 18 million. Despite the demographic significance of these metropolises, metropolitan governance is far from well-functioning. Both chapters critique the lack of coordination of metropolitan government entities —fragmented structures that hinder strategic metropolitan planning—and the difficulties in devolution of power to local governments.

There are peculiarities of Delhi and Mumbai metropolitan areas worth noting. In terms of organization, the National Capital Territory of Delhi is at the same time a city and a union territory, with special political and administrative status in India. In terms of economy, Delhi has outperformed other Indian metropolises on several issues. Delhi has better accessibility to basic infrastructure on average and greater monthly per capita income than metropolitan India, and the share of households containing a computer or laptop with internet access is nearly two times higher than the average. Delhi has also achieved a steady decline in the unemployment rate and people living below the poverty line. However, the Gini coefficient indicates a rising trend in inequality in this metropolis.

The Mumbai Metropolitan Region, on the other hand, comprises the districts of Mumbai and Mumbai Suburban (together Greater Mumbai), as well as parts of the Thane, Raigad, and Palghar districts. The chapter examines the Mumbai metropolitan area in terms of polycentric governance, a perspective that conceives the city as comprising several development nodes. This fruitful analysis could be replicated in other metropolises in the world in order to understand the conundrums that arise due to the nature of the governance system. Authors Pethe, Gandhi, and Tandel suggest reforming the present system in the Mumbai Metropolitan Region to a two-tier set-up with clearly delineated functions between local and metropolitan levels.

In Chapter 3.15, Kang provides a historical account of Seoul's metropolitan governance through concrete examples of how waste and water management have evolved regionally. **Seoul Metropolitan Area** is located in Sudokwon, the Capital Region, along with the Incheon and Gyeonggi provinces. Together they constitute a metropolitan region rather than a single metropolis, similar to the Beijing-Tianjin-Hebei Metropolitan Region. Seoul's metropolitan region has 23 million inhabitants, almost half of South Korea's population. This is why the author insists that the development of this region has been a matter of national importance, requiring the involvement of the national government in planning and implementation. From the 1960s to the 1990s, South Korea experienced a time of rapid industrialization and urbanization in which economic growth was led vertically by the central government. After the country's population became middle-income and the decentralization processes started in the 1990s, vertical governance changed and incorporated horizontal governance structures, with greater participation (and collaboration) from municipalities and local residents. This process was

not free of conflict. The author argues that, rather than avoiding tension, metropolitan governance should ensure open communication and include the conflicts in constructive discussions about processes and procedures. The detailed examples of waste and water management in the chapter provide several good examples of how to identify conflict and address it in a way that facilitates sustainable development. The research on water quality improvement in the Paldang Reservoir, for instance, suggests that conservation, restoration, and economic growth can co-exist.

Unlike Chapter 3.12 on the Beijing-Tianjin-Hebei Metropolitan Region, in Chapter 3.16, the focus is on a single Chinese municipality: **Shanghai**, one of the largest single-jurisdiction cities in the world. Leaving aside the metropolitan coordination of Yangtze River Delta Metropolitan Region, the Shanghai chapter will probably amaze readers due of the scale of change to which it refers: a transformation directly linked to massive urban redevelopment. The data analysis carried out by authors Chen and Xu implies that "roughly one in four (permanent) households in Shanghai experienced forced relocation." The relocation process, thoroughly described in their chapter, led to an improvement in the average quality of residential housing stock. In the past three decades, "the share of modern-style housing (villa, condo, and apartment) has increased from 33 percent in 1978 to 94 percent in 2014, while the share of low-quality old housing (lanes and shanties) dropped from 65 percent in 1978 to under 3 percent in 2014." These changes took place in a context of socioeconomic transformation. The chapter highlights that, from 1980 to 2010, the per capita income of the registered population in Shanghai Municipality increased over 44-fold.

The Shanghai case argues that large-scale relocation processes are more efficient in terms of time and money when they are participative. It is important to note that more participation in Shanghai was possible after to the adoption of a 2011 Chinese regulation for to improve the urban redevelopment processes in the country. Being participative, in this context, included a consultation stage with affected residents, a door-to-door household survey, a compensation and resettlement plan crafted with residents' feedback, and a pre-established consensus rate, which means that the redevelopment project could only proceed after receiving 90 percent approval from the affected residents. Going through these processes allowed the planners to obtain a majority consensus with less money drained by conflicts before the relocation plans moved on. An important question is whether relocation processes would work similarly in socio-cultural contexts different than China. In other words, we must consider how replicable is the Shanghai experience in other countries?

Metropolitan change in Europe is represented in the book by three cases: **Greater London**, **Grand Paris**, and **Verband Region Stuttgart**. The history of Greater London's governance is the main topic of Chapter 3.17, by Clark, Moonen, and Couturier. The chapter provides an interesting example of the search for a power balance among the boroughs, London's mayor, and the central government. It narrates four cycles in London governance that have consolidated the city's nascent system of negotiated consensus. The first cycle began with the abolition of the Greater London Council, followed by no citywide government. In the second cycle, a national office was created to govern London. The third cycle consisted of the creation of the GLA-Mayor model and the organization Transport for London. In this era, it became possible to achieve unity: the GLA and the mayor negotiated on London's behalf with all tiers of government and businesses to secure the resources to manage London's continued growth. The final cycle is seen by Clark, Moonen, and Couturier as a mature two-tier system, in which the local governments show austerity.

The GLA-Mayor model has been successful in at least five areas: securing central government's backing of London's global roles, improving education and transport, creating and implementing a strategy of strategies regarding space management to improve housing density and transport-oriented development, and contributing to the growth of London by improving its global reputation. Despite

this mature metropolitan governance and success stories, challenges remain. Housing demand, displacement of low-income populations and social exclusion, and the need for investment in mobility options and greater sustainability are only some of them. In addition, one key issue to be resolved is the dependence on central government funding—as much of two-thirds of borough and GLA expenditures still come from central government.

Bochoud's account of Grand Paris' history in Chapter 3.18 includes a commentary on the major debates that were instrumental to re-imagining the metropolitan area of the French capital. The article explores symbolic and factual motivations to push forward the Grand Paris agenda, suggesting crises that are instead opportunities. In the face of the drama of France losing its status as a global leader, argues Bochoud, Grand Paris has emerged as a project to reboot the country's capital. For the author, Grand Paris highlights that metropolis governance is about understanding and managing complex urban ecosystems (with innovation) more than about delineating new boundaries and forcing the creation of new institutions. The case of Grand Paris also proves what can be achieved thanks to public–private co-production of projects and to the durable involvement of civil society. Grand Paris owes its success first to continuous conflicting cooperation and second to professionals and politicians who acted as champions of metropolitan integration.

In that context, there is still room to improve metropolitan governance. "Grand Paris was built on the assumption that bigger meant stronger, but several big players, namely the Paris City Hall, Ile de France's regional government, the national government, and the newly created Métropole du Grand Paris, compete for the metropolitan lead." The Métropole du Grand Paris (the Grand Paris government body) has limited human resources and is not yet working as a comprehensive, lasting institution with room to maneuver. Thus, Bochoud thinks Grand Paris must get smarter about human capital. Going back to the lessons mentioned at the beginning of Section 3, Grand Paris showcases the need to find the right balance between formal (or legal) metropolitan integration and project-led metropolitan development by design built on years of pragmatic inter-municipal cooperation.

Chapter 3.19, the final chapter of Section 3, narrates the evolution of the Verband Region Stuttgart, in Germany, a region that comprises 176 local governments and 2.7 million inhabitants. Against the backdrop of the crisis that originated metropolitan governance at the beginning of 1990s to the present, Stuttgart represents a shining example of societal, environmental, economic, and political integration. It is interesting how Verband Region Stuttgart and its regional assembly have faced one of the major concerns that existed at the moment of its inception. Local governments were worried about losing autonomy under the new metropolitan scheme. However, the Verband Region Stuttgart was designed with a joined forces approach to take charge of functions that go beyond local authorities' boundaries and their specific responsibilities, namely land use planning, mobility, and economic development. Finally, another aspect from the regional assembly worth noting is the importance granted to informing the general public and fostering public participation. Participation efforts included special measures, such as involving young people. This has helped create awareness around metropolitan issues and, according to authors Kiwitt and Lang, "plays a part in markedly improving the quality of the planning."

The 19 cases selected in Section 3 constitute a diverse sample of the different institutional, organizational, and procedural settings shaping metropolitan governance around the world. While each case is unique, there are some similarities that facilitate comparisons. From the cases presented, it is clear that there is no single superior metropolitan governance model, nor one institutional arrangement to best govern metropolises, as mentioned in Section 1. Although each one is a story in itself, when read together, the case study approach produces a broader narrative of how metropolises are steering their way toward sustainable urban development.

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Section 1

Theoretical perspectives on metropolitan governance

1.1 Why Metropolitan Governance Matters and How to Achieve It

Rudiger Ahrend (OECD), **Soo Jin Kim** (OECD), **Alexander C. Lembcke** (OECD), and **Abel Schumann** (OECD)

Abstract

When thinking about bustling metropolitan areas like Berlin, London, New York, Paris, or Tokyo, "governance" is unlikely to be the first issue that comes to mind. But metropolitan governance matters a great deal more than most of us might think. Put simply, a lack of effective metropolitan governance structures has large economic costs and strong negative effects on the quality of life in cities. In this chapter, we explain why governance matters and quantify its impact. In doing so, we introduce the Organisation for Economic Co-operation (OECD) Metropolitan Governance Survey, which provides a representative overview of different governance approaches across 275 OECD metropolitan areas. We argue that most countries' prospects for wellbeing and economic prosperity are in large part determined by their metro areas, implying that effective metropolitan governance has country-wide importance. Understanding what constitutes good governance arrangements for metropolitan areas is only the first step. It is equally important to know how to get there or, in other words, how to initiate and carry through a successful reform process that is supported by all stakeholders. We identify key factors to overcome gridlock and implement reforms that are long lasting and effective. Among them are leadership by the national government, buy-in by municipal governments, and support from the business sector and civil society.

When urban dwellers take stock of what matters in their daily lives, metropolitan governance is unlikely to appear high on anyone's list. Metropolitan governance is not flashy and it rarely makes for front-page news (and when it does, it is usually for the wrong reasons) but nonetheless it contributes significantly to the success and attractiveness of urban areas.

This chapter argues that metropolitan governance matters for the daily lives of urban dwellers and has measurable effects on their productivity and wellbeing. The chapter then continues to answer the natural follow-up question: If metropolitan governance matters, how can it be introduced? Both parts of the chapter build on a substantial body of work that the Regional Development Policy Division of the OECD has assembled in the past. It builds on Territorial and Metropolitan Reviews that focus on particular regions and cities and on the final reports of a multi-year research project on trends in urban areas and urban governance (OECD, 2015a, 2015b). The reports build on the OECD Metropolitan Governance Survey, a new dataset that quantifies governance arrangements across OECD metropolitan areas, empirical research that links economic outcomes to governance arrangements, and in-depth case studies that allow for greater insight into the experiences and practices of governing cities (Ahrend, Gamper, and Schumann, 2014).

Why Metropolitan Governance Matters

Governance greatly affects how well metropolitan areas function. How do we know? Even if differences in human capital levels, economic structure, and

agglomeration benefits are taken into account, large differences in productivity levels between a country's metro areas remain. Governance arrangements—or the lack thereof—can explain an important part of these differences.

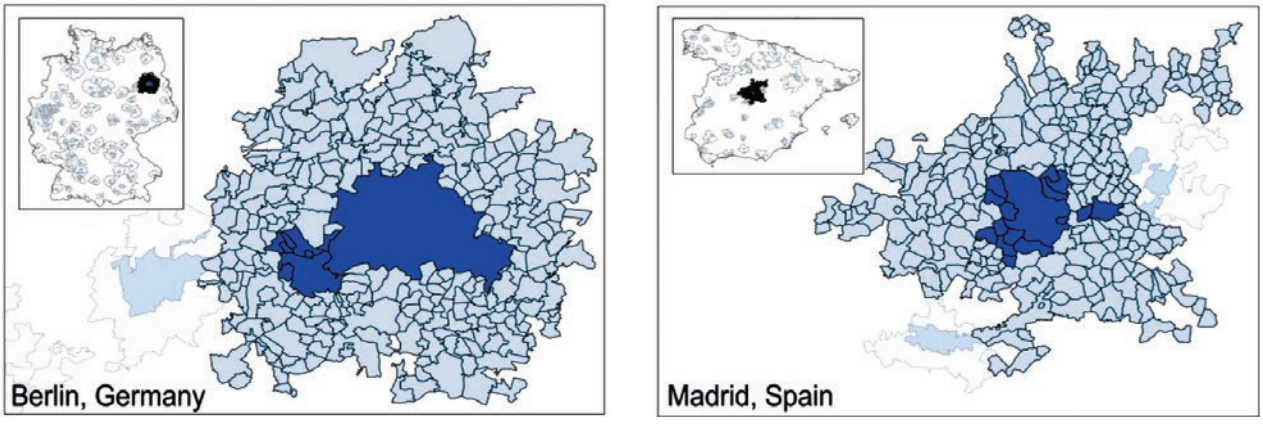
Metropolitan areas are in general more productive than smaller urban agglomerations and rural areas. Partly, this is due to higher human capital levels. The larger a metropolitan area, the higher the average education and talent of its residents, which is in turn reflected in higher productivity levels. Another reason arises from agglomeration benefits, or positive externalities associated with metropolitan size. In line with the literature review by Combes, Duranton, and Gobillon (2011), OECD estimates suggest that agglomeration benefits are responsible for an increase in residents' productivity of between 2 and 5 percent as the population of a city doubles (OECD 2015a).

So why does metropolitan governance matter? Large urban agglomerations are characterized by manifold spatial connections and interdependencies that are often not reflected in the way they are governed. In most OECD countries, municipal borders are based on historical locations of towns and villages. Put differently, these administrative structures cannot fully cope with the challenges connected to economic and social realities in large urban agglomerations.

The OECD Metropolitan Database defines "functional urban areas" across the OECD on the basis of a common method that relies on settlement patterns and commuting flows, rather than administrative borders (OECD, 2012). Not one of the 275 OECD metropolitan areas—functional urban areas with populations in excess of 500,000—is governed by a single local government. The metropolitan area of Paris, which consists of 1,375 municipalities, might be an extreme case: More than 200 metro areas contain more than 10 local governments, over 60 of which incorporate more than 100 municipalities within their boundaries. Figure 1 shows the fragmentation of the metropolitan areas of Berlin and Madrid. The urban core of the metro areas, defined as the contiguously built-up surface area and depicted in dark blue, are surrounded by a large number of administratively independent smaller municipalities that are closely connected to the urban core through commuting.

A large number of municipalities in metropolitan areas can complicate policy coordination among local governments. A potential solution to this coordination problem could be the amalgamation of municipalities within a metropolitan area. Many countries have successfully reduced administrative fragmentation but rarely are these policies focused on creating administrative cohesion in large metro areas.

Figure 1. Municipalities within the Metropolitan Areas of Berlin and Madrid



Source: Authors' elaborations based on OECD (2012).

An alternative to the amalgamation of municipalities is the creation of an organization dedicated to the coordination of policies in metropolitan areas: a metropolitan governance body. Metropolitan governance bodies are defined as organizations that cover the core and surrounding commuting zones of metropolitan areas and are dedicated to coordinating policies that are of direct and predominant relevance to the metropolitan areas. They have local and potentially regional governments as members or have themselves the status of regional government. They can be distinguished from sectoral authorities and special purpose bodies through the breadth of their field of work. In contrast to most sectoral authorities, they work on more than one major policy area.

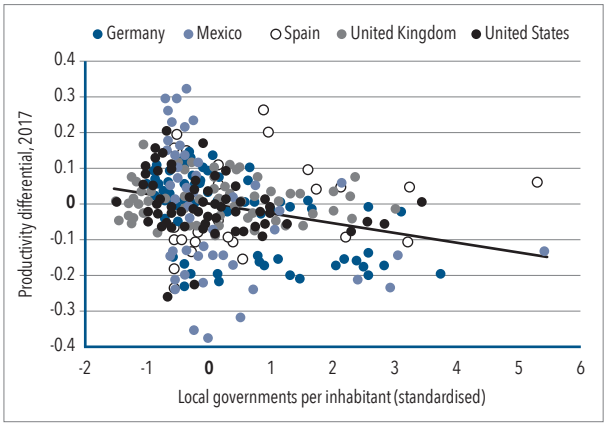
The OECD Metropolitan Governance Survey has collected the first systematic overview of such metropolitan authorities across the OECD. The findings are described by Ahrend, Gamper, and Schumann (2014) and in OECD (2015b).

Metropolitan Governance Reduces Cost of Administrative Fragmentation

Charles Tiebout (1956) famously argues that more administrative fragmentation—a larger number of local governments—is associated with a greater set of choices over public service provisions and their costs. Increased choice and competitive pressure among local governments improves the quality of local public services, which in turn may increase productivity in municipalities and ultimately the metropolitan area. But Tiebout's argument fails in respect of policies that require coherence across the whole metro area and generate externalities across administrative boundaries. For example, the planning of infrastructure provision is more complex if a large number of local governments have the power to veto individual projects. Which of the two forces—the positive impact from competition among local administrations or the need for coordinated policies—prevails in determining a metropolitan area's fortunes is ultimately an empirical question.

Ahrend et al. (2014) estimate the impact of administrative fragmentation and the presence of metropolitan authorities on productivity in five OECD countries. Using observations for more than 2 million individuals from Germany, Mexico, Spain, the United Kingdom, and the United States, they estimate productivity differences across 430 functional urban areas. The estimates use wages as a proxy for individual productivity and account for the direct impact of individual characteristics, such as education, age, gender, occupation, and part-time work. Figure 2 plots the productivity differentials for the 430 functional urban areas against the number of local governments per capita, standardized for each country to have zero mean and unit variance. A clear negative association emerges: Administrative fragmentation is associated with lower productivity. The effect is robust in multivariate regressions that take agglomeration benefits and control for city aggregate skill level, industrial structure, and capital city or port city status into account.

Figure 2. Cost of Administrative Fragmentation



Source: Ahrend, Farchy, Kaplanis, et al. (2014).

In their quantitative analysis, Ahrend et al. (2014) find that the descriptive evidence understates the true penalty of fragmentation. Why? Metropolitan authorities have the potential to alleviate the cost of administrative fragmentation. Focusing on the

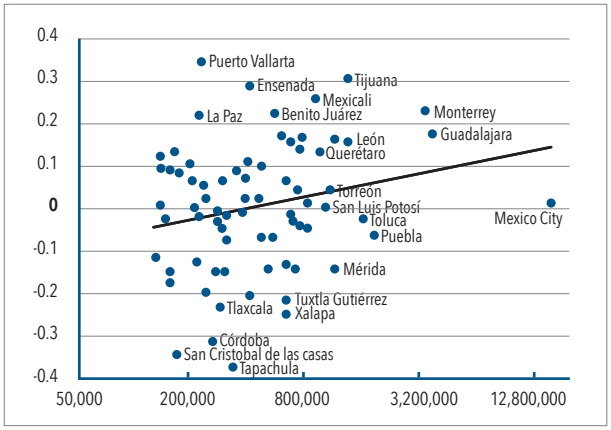
140 metropolitan areas in the aforementioned five countries and using the information collected in the OECD Metropolitan Governance Survey results in two striking findings. First, doubling the number of local governments within a metro area reduces productivity by 6 percent, thus in more extreme cases possibly eradicating the gains from agglomeration benefits. Second, the presence of a metropolitan governance body reduces this penalty, on average, by half. This shows how better policy coordination can have direct effects on productivity and hence GDP.

The existence of metropolitan authorities captures one aspect of good governance in metropolitan areas but misses others, such as stakeholder involvement, nor the effectiveness of governance arrangements. For example, the metropolitan area of the Valle de México has a governance body but the productivity benefits to the city remain below the potential of a metropolitan area of its size (Figure 3). A recent OECD Metropolitan Review finds significant potential to improve governance arrangements (OECD, 2015c): "Challenges with the quality of governance and the lack of a metropolitan vision detract from agglomeration benefits and resident wellbeing." Thus, the total impact of effective governance arrangements on economic performance is likely to be larger than the estimate by Ahrend et al. (2014). The levers that distinguish successful from unsuccessful governance arrangements remain a pressing research question. Given the variety of institutional, formal, and informal framework conditions across metropolitan areas, effective levers are, however, likely to be similarly varied.

The impact of better metropolitan governance is not limited to economic productivity. Metro areas with a metropolitan authority have experienced an increase in population density in built-up districts, whereas those without a metropolitan authority have shown greater urban sprawl (Figure 4).

This result is particularly striking as increased prosperity in cities is typically associated with the sprawling development of a metropolitan area. In a global sample of 120 cities, a study by the Lincoln Institute of Land Policy (Angel, Parent, Civco, et al., 2011) found that, on average, a doubling in a country's per capita GDP lowers density in its cities by 40 percent. In other words, it increases land consumption by a factor of 1.7. Metropolitan governance arrangements therefore seem to pay a double dividend: they increase prosperity, while limiting sprawl, one of the key externalities that is typically associated with greater wealth.

Figure 3. Agglomeration benefits in Mexico



Source: Ahrend, Farchy, Kaplanis, et al. (2014).

Note: This estimate is based on a regression that controls for country fixed-effects. It refers to the 2000–06 period, the only period for which relevant data is available.

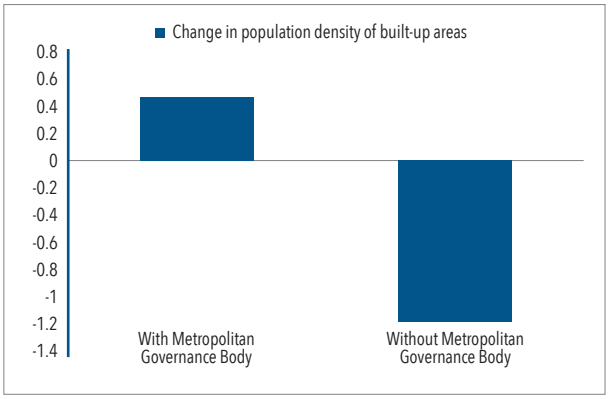
The relationship between urban wealth and sprawl also highlights that governance arrangements in successful metropolitan areas need to adapt to changing commuting zones. For example, more people choose to live and work in the city or increases in residents' incomes lead to demand for larger and less dense housing, leading to suburbanization.

Metropolitan areas without governance bodies also have, on average, higher levels of air pollution as measured by the amount of particulate matters in the air (PM2.5), controlling for population size and country fixed effects. It is probable that this is the result of more efficient transport policies in combination with better land-use planning, both of which are central fields of work for most governance bodies.

The positive impact of good governance is not limited to environmental factors. The OECD Metropolitan Governance Survey found that the share of residents who are satisfied with the public transport system in

their cities is 14 percentage points higher if a transport authority exists. This is likely at least partly due to the better integration of public transport in these cities.

Figure 4. Governance for Compact Development



Source: Ahrend et al. (2014).

In order to integrate the entire public transport system, transport authorities need to be supported by local governments and have responsibility for all modes of public transport in a metropolitan area except for long-distance transport. In particular, they need the power to influence where and how frequently transport lines operate. If they are not operating the actual transport provision itself, they also need the power to regulate subcontractors with respect to fares and other characteristics of transport provision. Transport authorities with these powers exist in many OECD countries but are especially common in Germany, where every large urban agglomeration is covered by one transport authority.

These findings indicate that dedicated metropolitan authorities improve economic outcomes and the quality of life in metropolitan areas. They also correspond to the anecdotal experience of policymakers and the conclusions from a large number of case studies conducted by the OECD. Together with these insights, the new findings from the OECD Metropolitan Governance Survey make a strong case that well-designed metropolitan authorities are important for a country's prospects as they can improve the productivity and the quality of life of its metropolitan areas.

How to Achieve Metropolitan Governance

Given how much metropolitan governance matters, the question is how can an effective governance system be introduced and adapted?

There is a wide diversity of metropolitan governance bodies throughout OECD countries. Approximately two-thirds of the 275 OECD metropolitan areas have some form of metropolitan authority. Metropolitan authorities vary in terms of legal status, composition, power, budget, and staff. Institutionally speaking, four main types of metropolitan governance bodies can be observed across OECD countries, ranging from the "lightest" to the most "stringent" types. Among the OECD metropolitan areas that have set up a metropolitan governance body, more than half are using informal/soft coordination arrangements (52 percent), which emerge from voluntary collaboration among municipalities and have no formal powers. About one-quarter of these areas have established inter-municipal authorities (24 percent), which focus on jointly providing one or more public services. Supra-municipal authorities (16 percent) can also be introduced as a new layer above municipalities. In the rarest case, some cities are upgraded to a special status of "metropolitan cities" (8 percent). A size factor is at play. The larger the population of the metropolitan area, the more stringent its type of metropolitan governance arrangement.

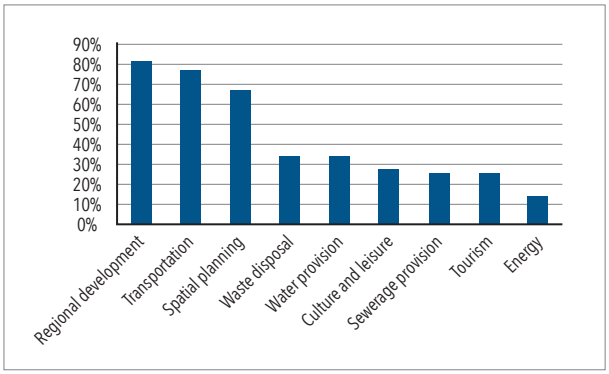
Regarding competencies, three fields of work still emerge as clear priorities for most metropolitan authorities (Figure 5): regional economic development (dealt with by more than 80 percent of metropolitan authorities), transport (over 70 percent), and spatial/land-use planning (over 60 percent). The predominance of these three policy fields is not surprising as they are often mentioned by practitioners as the areas in which municipalities most need coordination.

No specific model of metropolitan governance is necessarily "better" or "more efficient" than another. However, OECD experience suggests that metropolitan governance reforms tend to be more effective when they go beyond purely institutional changes and

aim to build a long-term process of cooperation. The creation of a metropolitan authority does not, in itself, guarantee better policy coordination. And once such a metropolitan authority is established, given that socioeconomic dynamics evolve continuously, even once well-functioning governance structures may eventually need to be adapted over time. Reforms that attempt to replicate a specific type of metropolitan governance arrangement can therefore be risky. Most metropolitan governance arrangements are not entirely transferable as such and need to be tailored to the considerable variety of local contexts.

The process of designing, implementing, and sustaining a metropolitan governance reform matters at least as much as the choice of the model itself. Five key steps can help guide effective metropolitan governance reforms. These steps are summarized in Table 1 and briefly discussed below.

Figure 5. Major Fields of Work for Metropolitan Governance Bodies in OECD Countries



Source: OECD (2015b).

Table 1. Five Key Steps that Guide Effective Metropolitan Governance Reform

Concrete steps	How they can be achieved	Examples in OECD countries
Motivate collaboration by identifying concrete metropolitan projects	Leverage projects of common interest. Such projects may naturally cross administrative borders (e.g., infrastructure investment projects or high-profile joint events).	Opening of a bridge between Copenhagen (Denmark) and Malmö (Sweden) in 2000 triggered growing integration between the two cities across the Danish-Swedish border. Barcelona (Spain) accompanied preparations for the 1992 Olympics with a process of metropolitan strategic planning that was sustained after the Olympics and led to the creation of a metropolitan authority in 2011.
Build metropolitan ownership among key stakeholders	A strong voice that advocates for governance reform is required to initiate and maintain momentum. The voice can come from a local mayor, the private sector, or another part of society.	The leadership of mayors played a major role in fostering metropolitan governance reforms in London (United Kingdom) and Lyon (France). Following a 2002 summit of business and community leaders in Toronto (Canada), a senior partner of the Boston Consulting Group (David Pecaut) created and led a 40-member steering committee that produced the 2003 report "Enough Talk: An Action Plan for the Toronto Region," which raised the government's awareness of the economic and social decline of Toronto and provided a roadmap for issues where there was a clear consensus that action was needed and quick progress could be made.
Tailor reliable sources of metropolitan financing	Revenues can be raised from own sources (taxes and user fees) within the metropolitan area, through transfers from higher tiers of government, or by local capital finance. Diversification of sources can help reduce financing uncertainty.	The directly elected metropolitan authority of Stuttgart (Germany)—Stuttgart VRS—receives its budget from its constituent municipalities, the Federal State (Land) in which it is located, and the federal government. The directly elected metropolitan council in Portland (United States)—Portland Metro—raises the majority of its funds from user fees and property taxes, and only a relatively small percentage through federal and municipal subsidies.

Concrete steps	How they can be achieved	Examples in OECD countries
Design incentives and compensation for metropolitan compromises	Engage those who feel threatened by the reform and offer compensation for their anticipated losses.	The central government of the United Kingdom offered to devolve powers to cities over transport, infrastructure, business development, education, and planning issues through negotiated and tailored City Deals. These deals require cities to put in place strong governance arrangements (e.g., through an elected mayor or a stronger community of existing local authorities).
Implement a long-term process of metropolitan monitoring and evaluation	Seek independent expertise and feedback to evaluate and improve reform options and results.	In Australia, the central government appointed an independent Metropolitan Local Government Review Panel in June 2011 to examine the social, economic, and environmental challenges facing Perth over the next 50 years. Following release of the report and public discussion, the state government announced its proposal for new local government boundaries for metropolitan Perth in July 2013.

Source: Authors' elaborations based on OECD (2015b).

Identifying Concrete Metropolitan Projects

Tangible projects on key public services can help rally forces at the initial stage and progressively lead to setting a bigger picture. Examples of metropolitan projects can typically be found in large-scale infrastructure investment initiatives that exceed the financial and managerial capacity of individual municipalities (such as high-speed rail projects) or major flagship events (including a bid for the Olympic Games). This spark for a new metropolitan dynamic, however, needs to be sustained over time in order for a greater level of metropolitan integration to materialize. For example, both Athens and Barcelona hosted the Olympic Games but they underwent divergent patterns of metropolitan governance.

In Athens, a spatial plan with an explicit metropolitan scale was adopted in 1985 together with the creation of the Organisation for the Planning and Environmental Protection of Athens. The selection of Athens in 1997 as the host city of the 2004 Olympics led to an unprecedented wave of infrastructure and urban investments across the entire metropolitan area. However, the metropolitan spatial plan was soon bypassed to accommodate and accelerate Olympic projects and, 10 years later, the debate on the metropolitan governance of Athens has not led to any substantial results.

In contrast, Barcelona accompanied Olympic preparations with an iterative process of strategic planning, starting from the core city and gradually enlarging it to the metropolitan scale through the involvement of sectoral inter-municipal authorities. The process was sustained after the Olympics and culminated in the creation of a new metropolitan authority in 2011.

Another example is France. The nominations of Lille and Marseille as the European Capital of Culture in 2004 and 2013, respectively, helped foster new forms of cooperation among municipalities and with civil society, which laid the groundwork for broader metropolitan integration.

Build Sense of Metropolitan Ownership among Key Stakeholders

Metropolitan governance reforms need one (or more) strong advocate(s) as the engine of the process. A relevant personality or institution often plays a pivotal role in steering change and creating or maintaining momentum for reform. For example, the strong political will of mayors was a key determinant of successful reform in Barcelona, London, and Lyon. Beyond municipalities, the national government, intermediate levels of government, the private sector, civil society, and universities need to actively engage in the reform process. Central governments can play a decisive role in launching or facilitating metropolitan reforms.

In federal countries, the national government may initiate a broad orientation toward metropolitan approaches and let state governments take over specific metropolitan areas in their own territory. In contrast, a wider diversity of approaches exists among unitary countries. The central government may be keen on maintaining tight control over the largest metropolitan areas, especially in the case of large capital regions. In Korea, before 1995, the mayor of Seoul was appointed by the President of the Republic. In the United Kingdom, prior to the establishment of the Greater London Authority, the government ran a specific Government Office for London to oversee investment programs and financial transfers for the area. However, given the growing awareness of the contribution that large metropolitan areas make to a country's overall growth and wellbeing, the central government can also play a prominent role in the enactment of metropolitan governance arrangements. In Italy, for example, after two decades of institutional gridlock, the government proposed a new law on metropolitan cities in 2014, which was implemented throughout 2015.

Besides central governments, intermediate levels—such as the states in federal countries or the provinces and regions in unitary countries—need to be engaged in the reform process. This is no easy task, as the existing level of government is unlikely to gracefully hand over power to a new metropolitan authority that could become a rival center of power—all the more so if such metropolitan authorities were created by the central government on a top-down basis. The search for greater metropolitan autonomy can, in that case, trigger strong antagonism from upper-tier governments if the latter do not perceive positive-sum gains from the reform. In the Netherlands, the complex relationship between the city-regions and the provinces led to the government's recent decision to abolish city-regions, up-scale municipalities, and strengthen the provinces.

Another part of society that needs to underwrite the reform is the private sector. The business community can play a powerful role in initiating a metropolitan reform dynamic by raising awareness and organizing itself at a metropolitan scale. Examples from OECD countries include strong involvement from large firms in Chicago, Toronto, Marseille, and London.

Last but certainly not least, citizens and civil society organizations need to be brought on board and empowered at the very beginning of the reform process.

Identify and Secure Reliable Sources of Financing

Pressure for metropolitan reforms frequently stems from municipal finance bottlenecks. Metropolitan areas are typically scarred by wide internal disparities in revenue-raising potential, expenditure needs, and investment capacity. Metropolitan reforms cannot be conceived in isolation from an in-depth debate on how the new governance structure can help respond to the financial needs of the metropolitan region and how to match the new governance structure's responsibilities with corresponding financial resources.

Securing an appropriate stream of funding helps avoid unfunded mandates and facilitates effective collaboration. How to share the burden of public services fairly across the metropolitan area (typically between the core city and its periphery in many European metropolitan areas) tends to be a controversial issue. Intra-metropolitan equalization schemes can be implemented to address negative externalities of urban sprawl and compensate for inequalities in tax bases. Such schemes may include redistributive grants and tax base sharing. Besides formal intra-metropolitan equalization schemes, metropolitan finance reforms also need to consider more effective ways to finance growing needs for infrastructure and services, while accounting for spillover effects and responding to pressing new urban challenges (e.g., ageing, migration, social cohesion, and climate change).

Property tax often constitutes a particularly critical source of revenue for metropolitan areas. Metropolitan finance reforms may provide the opportunity to diversify the tax portfolio beyond property taxes. User fees are widely seen as the most appropriate source of revenue for metropolitan areas to finance operating and maintaining infrastructure. User fees can be particularly important in

large metropolitan areas because they can encourage more efficient land use. When marginal cost prices are charged, consumers who are far away from existing services, and hence more costly to serve, will pay more, while those closer will pay less. Another way to finance metropolitan infrastructure while discouraging sprawl is to tap land-based sources of revenues. This can be done through development charges, which should be differentiated by location to reflect the real costs (e.g., higher costs for areas located further away from major existing facilities). Metropolitan areas can also charge for estimated land-value increments and windfall gains for the private sector that arise from new public infrastructure investment under the form of betterment levies, which can then be used to finance sustainable transport infrastructure. Development charges are generally considered less complicated to administer and typically more efficient than other methods of growth controls (e.g., zoning, regulations, and outright growth limitations).

Design Incentives, Compensation to Encourage Metropolitan Compromises

Communicating the long-term gains of reforms and the costs of non-reform is critical. Stakeholders need to be made aware and convinced of the negative effects of maintaining the status quo on their interests in the short and long term. There must be a clear strategy to identify and manage the expectations of different constituencies.

OECD experience suggests that cooperation among municipalities works best on a voluntary basis with incentives from the top, but also when a strategy is elaborated to engage those who feel threatened by the reform and secure their buy-in (in some cases this may mean providing compensation for anticipated losses). Recent examples of such incentives include the City Deals in the United Kingdom, under which the government is granting a range of new powers to cities that commit to strengthening collaborative governance in their area.

Implement Long-Term Process of Monitoring and Evaluation

Solid background research and scrutiny from unbiased experts creates and sustains credibility for reform by strengthening the evidence base. Independent expertise and research capacity are required to demonstrate the need for change and the desirability of the proposed solutions to key stakeholders, and to analyze and weigh different options.

Australia offers rich experience in terms of appointing an independent panel of experts to conduct an extensive review of local and metropolitan government reforms. In Perth, a wide-ranging process of public consultation led to a concrete proposal for new boundaries. In Turin, the experience of the Metropolitan Conference followed by the Metropolitan Table illustrated a strong attempt to propose dialogue at the metropolitan level with the support of the province and the region between 2000 and 2010. Independent expertise was also provided at the regional level.

Strong, reliable instruments to monitor and evaluate reform contribute to continuous improvement. In this context, tools need to be put in place to ensure ongoing feedback. In Canada, Toronto has set up mechanisms to gather feedback on metropolitan issues from citizens and other stakeholders on a regular basis. Since its diagnostic report (2003), the Toronto City Summit Alliance has convened all three levels of government with business, labor, academic, and non-profit sectors for a Greater Toronto Summit every four years to drive collective action on pressing issues such as transport, energy, and socio-economic inclusion.

Finally, building in some degree of flexibility in the timeframe, sequencing, and speed of metropolitan governance reforms helps put in place a steady process of metropolitan learning. Metropolitan governance reforms can sometimes take the form of incremental experimentation with a selection of a few pilot experiences, as opposed to a one-shot uniform model. Ensuring visibility in the short and long term, and the possibility of revisiting the arrangement after a given period, leaves enough room for trial and error as well as midway adjustments to monitor progress.

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1.2 Institutions for Metropolitan Governance: Lessons for Nations and Stakeholders

Eugénie L. Birch (Penn Institute; General Assembly of Partners of the World Urban Campaign)

Abstract

Metropolitan governance is a critically important vehicle to implement global agreements on disaster risk reduction, financing for development, sustainable development, climate change, and urbanization that have recently been approved by United Nations Member States. Within a subsidiarity framework, governance can provide an equitable and efficient means to deliver services essential to leaving no one behind, ensuring inclusive economies, and supporting environmental sustainability. This chapter explores the theories and practices of metropolitan governance, outlining the requirements of successful metropolitan governance structures and their differing forms based on the findings of scholars, experts, and practitioners. It traces its inclusion in the New Urban Agenda, the outcome of the Conference on Housing and Sustainable Development (Habitat III), which argues that well-governed urban areas can be engines of sustainability. This stance is confirmed by evidence-based research which holds that Member States and their multi-party stakeholder partners must tailor such arrangements to local contexts.

In the past two years, United Nations Member States have forged several agreements related to disaster risk, development financing, sustainable development, climate change, and urbanization. They generally agree on major three goals, stated specifically in the New Urban Agenda, which was approved by the General Assembly on December 16, 2016. These goals are to leave no one behind, ensure inclusive economies, and support environmental sustainability. As Member States translate these agreements' aspirations into tangible projects, many observers advise them to focus their efforts on urban areas, arguing that a good portion of the economic, social, and environmental issues in question are rooted in local conditions (Global Task Force, 2016).

Moreover, a stance of employing cities as the common link has strong logic as the first three global agreements (risk, sustainability, and climate) offer goals and targets toward the objectives of the agreements, while the New Urban Agenda, through its detailed implementation plan provides means and opportunities to achieve them. The 2030 Agenda for Sustainable Development, for example, calls for making cities and human settlements inclusive, safe, resilient, and sustainable (Goal 11) as well as delivering results on 16 other goals, including eradicating poverty, hunger, ill health, polluted water and water bodies, ineffective sanitation, inadequate infrastructure, and unemployment. These feats can only be achieved if the physical places are well governed, as called for in the New Urban Agenda. The authoritative Maruxa Cardama (2015) captured this point, writing: "With the inclusion of SDG11 in the 2030 Agenda for Sustainable Development, the international community is recognizing that urban development, with its power to trigger transformative change, can and must be at the forefront of human development. Moreover, since the 17 SDGs constitute an indivisible and integrated framework, the international community is also acknowledging that the achievement of SDG11 can accelerate the pace for achieving the other SDGs—and vice-versa."

This chapter explores such an approach, concentrating on metropolitan governance, a key institutional advance, as an implementation vehicle. First it explores

urban areas as engines of sustainability; second, making urban places productive through multi-tiered, multi-stakeholder governance; third, translating theory into practice; and finally, metropolitan governance and the New Urban Agenda.

Urban Areas as Engines of Sustainability

In support of the assertion that well-governed urban areas (cities and their economically and socially linked peripheries) are critical to achieving the goals of multiple global agreements, observers cite population data (urban areas currently constitute more than half of the world's population and will likely constitute two-thirds or more by 2050), economic strength (urban areas produce 70–80 percent of the world's GDP), and environmental conditions (urban areas produce 70–80 percent of the globe's greenhouse gases). In fact, some go so far as to claim, "Our struggle for sustainability will be won or lost in cities (UN, 2012)" and "In the decades to come, the city, not the state, will decide stability and development (Muggah, 2015)."

McKinsey Global Institute researchers underline these contentions when noting that 600 cities are the source of 60 percent of global GDP, yet they have nothing to say about the remaining cities of this size (more than 3,000) that are not serving as engines of prosperity (Dobbs et al., 2011; Angel, Blei, Parent, et al., 2016). Thus, a compelling question is how to address the critical issue of urban areas growing at breakneck speed in Asia and Africa that are not experiencing the expected increases in productivity (Fay and Opal, 2000; Arouri, Youssef, Cuong, et al., 2014).

Many attribute the phenomenon of urbanization without economic growth to the absence of enabling conditions and governance institutions suited to rapid or hyper-urbanization (Smoke, 2013; OECD, 2015a,b). They cite empirical work demonstrating that well-governed urban areas with sizeable populations connected to their surroundings are more prosperous—"productivity increases 2–5 percent for each doubling of size…productivity increases by 1–2 percent with connectivity"—contending that these factors allow for a place to be productive by taking advantage of the benefits of agglomeration (OECD, 2015b, pp.46–50). Moreover, they point to excess governmental administrative fragmentation as a barrier to achieving prosperity—"for each doubling of the number of municipalities per 100,000 inhabitants within a metropolitan area, labour productivity in the metropolitan area decreases by 5–6 percent" (OECD, 2015b, p.56). Applying the City Prosperity Index to more than 200 cities worldwide has confirmed the importance of large, consolidated (as opposed to small, fragmented) urban places. It provides evidence that city size matters more than any other factor (Moreno, 2017).

Increasingly, these observers are calling for robust urban governance systems based on functional boundaries, not fragmented administrative boundaries. They see metropolitan governance as the most effective approach to achieving the UN goals cited earlier (OECD, 2015b, p.56; World Bank, 2015a). Here, they argue that the spillover effects of urbanization have created new service areas encompassing the core and peripheral cities and settlements. They note that without coordinated service delivery—especially for regional planning, transportation, and ecosystem protection—urban areas simply cannot exhibit their traditional strengths as engines of prosperity (Glaeser and Joshi-Ghani, 2013; World Bank, 2015a). A recent study, "Africa's Cities, Opening Doors to the World," further details this position by calling out three additional barriers to productivity: the misallocation of capital (low expectations and absence of planning), institutional constraints (ineffective and restrictive regulation, corruption), and ineffective property rights systems (lack of legal clarity, absence of registration systems, official maps) (World Bank, 2017, pp.118–28).

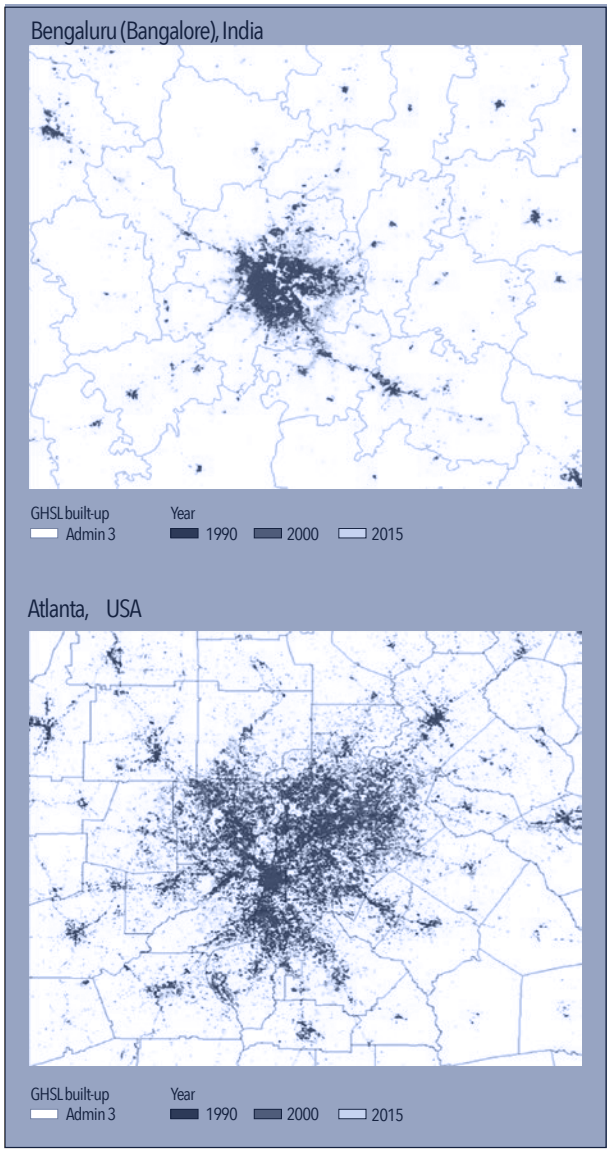
According to multiple observers, making urban places productive—a key feature contributing to sustainability—calls for creating an environment where the three essential characteristics of agglomeration can arise and thrive regardless of the level of economic development: "thick labor (numerous workers of varying skills), thick markets for specialized service providers (numerous geographically proximate intermediate service providers), and knowledge spillovers (skilled workers in close

proximity for face-to-face contact)" (Moretti, 2015, p.117). Growing these features involves developing the capacity to make investments in the key areas of hard and soft infrastructure, as well as quality of life features ranging from safety to public space. In turn, this process calls for effective multi-tiered, multi-stakeholder governance systems guided by subsidiarity (variously called decentralization, devolution, or deconcentration),[1] placing legal, administrative, and financial responsibilities at a level appropriate for the performance of a specified function (Bahl, Linn, and Wetzel, 2015, p.4; OECD, 2015a, p.11).

In application, subsidiarity assumes more than one tier of government, each with legally established rights and obligations. For example, national governments (either federal or unitary) provide the overall enabling environment through standard-setting constitutions and associated laws that in the discussion of urbanization encompass such issues as property rights and contracts, labor market conditions, trade and tax policies, individual rights (e.g., free speech and assembly), and provisions for administrative and financial decentralization. Further, national governments invest in connective infrastructure to strengthen the country as a whole (e.g., ports, highways, and railways) and address issues too large for individual subnational governments to handle (e.g., slums and housing) (World Bank, 2009; Yusuf, 2013; UN-Habitat, 2014; OECD, 2016).

In Figure 1, overlaying GHSL data that illustrates actual settlement patterns with administrative boundaries illustrates several issues related to subnational governance. Urban development in Bangalore, India, and Atlanta, United States, crosses several administrative boundaries.

Figure 1. Urban Development in Bangalore and Atlanta



Source: Chandan Dueskar, World Bank.

Productivity through Multi-Tiered, Multi-Stakeholder Governance

Regional government efforts focus on territorial cohesion (e.g., rural–urban synergies), integration of core and peripheral areas, and management of regional scale systems (e.g., ecosystem services, transport, multi-jurisdictional land planning) (World Bank, 2009; de Mira, 2014). Municipal governments provide property-based services

1 Each term has a specific derivation and meaning. Subsidiarity has its origins in Catholic teachings, which use it as an organizing principle that matters ought to be handled by the smallest, lowest, or least centralized competent authority. Political decisions should be taken at a local level if possible, rather than by a central authority. "Decentralisation is usually referred to as the transfer of powers from central government to lower levels in a political-administrative and territorial hierarchy. This official power transfer can take two main forms. Administrative decentralisation, also known as deconcentration, refers to a transfer to lower-level central government authorities, or to other local authorities who are upwardly accountable to the central government… In contrast, political, or democratic, decentralization refers to the transfer of authority to representative and downwardly accountable actors, such as elected local governments" (Yuliani, 2004).

(e.g., land use, and solid and sanitary waste disposal) and implement social programs (e.g., education and health) (Slack, 2007; Sud and Yimaz, 2013). Neighborhood or sub-municipal organizations and other networks form the basis of non-state or citizen participation to support multi-stakeholder involvement in multi-tiered governance, an activity that flows to varying degrees through all levels of government (WBGU, 2016; Ecological Sequestration Trust, 2016; Sud and Yimaz, 2013; UN-Habitat, 2014). In today's parlance, defining the details of these arrangements to manage urbanization forms what some have labeled "a new global bargain" and "a new social contract" (Ecological Sequestration Trust, 2016, p.10) or a new "normative compass" with a "polycentric responsibility architecture" (WBGU, 2016, pp.21–3).

Over time, ideas for multi-tiered governance systems have evolved around many themes (e.g., water and food security), not just urbanization. This evolution reflects reactions to changing values brought on by a combination of factors, including the spreading effects of globalization and concomitant enhanced communications (OECD, 2015b; Bahl, 2013, p.3); reformist efforts of such global institutions as development banks and philanthropies that insist on structural changes in governmental practices as conditions of their contributions (Woods, 2014); and a general rejection of Neo Liberal/Modernist or Westphalian views promoting expert-driven, top-down, nation-led, free market–based decision-making (Harvey, 2007; Engelke, 2015).[2]

While the various parties agree that national governments have three key purposes (providing security [freedom from violence], growth [promotion of prosperity], and equity [fair treatment of all]), they also recognize that government alone cannot address today's complex affairs and associated problems, especially urban growth dynamics. Instead, they argue, multiple stakeholders arranged in nested or polycentric institutions, must share and develop solutions, a belief likely influenced by scholars such as Elinor Ostrom, whose views on the complexity of governance for common goods eloquently described in her Nobel Prize acceptance speech are applicable more generally (World Bank, 2017; Ostrom, 2009).[3] This thinking is the basis of the evolving support for multi-tiered, multi-stakeholder metropolitan governance.

Adopting such a world view requires a realistic appreciation of the benefits and costs, pros and cons of multi-tiered, multi-stakeholder metropolitan

2 Harvey (2007) defines neo-liberalism as "a theory of political economic practices that proposes that human wellbeing can best be advanced by liberating individual entrepreneurial freedoms and skills within an institutional framework characterized by strong private property rights, free markets, and free trade. The role of the state is to create and preserve an institutional framework appropriate to such practices. The state has to guarantee, for example, the quality and integrity of money. It must also set up those military, defence [sic], police, and legal structures and functions required to secure private property rights and to guarantee, by force if need be, the proper functioning of markets. Furthermore, if markets do not exist (in areas such as land, water, education, health care, social security, or environmental pollution) then they must be created, by state action if necessary. But beyond these tasks the state should not venture. State interventions in markets (once created) must be kept to a bare minimum because, according to the theory, the state cannot possibly possess enough information to second-guess market signals (prices) and because powerful interest groups will inevitably distort and bias state interventions (particularly in democracies) for their own benefit."

3 Ostrom's (2009) discussion of the governance of common pool resources has broader applications to the governance of the public goods and duties (broadly defined) of cities. She correctly observed: "Contemporary research on the outcomes of diverse institutional arrangements for governing common-pool resources (cPrs) and public goods at multiple scales builds on classical economic theory while developing new theory to explain phenomena that do not fit in a dichotomous world of 'the market' and 'the state.' Scholars are slowly shifting from positing simple systems to using more complex frameworks, theories, and models to understand the diversity of puzzles and problems facing humans interacting in contemporary societies. The humans we study have complex motivational structures and establish diverse private-for-profit, governmental, and community institutional arrangements that operate at multiple scales to generate productive and innovative as well as destructive and perverse outcomes" (p. 408). She goes on to reflect on the polycentric characteristics of such governance structures, the existence of rules, boundaries, the necessity of trust and free communications. Ostrom concludes with observations that are useful in thinking about subsidiarity and the respective roles for different actors (governmental and non-governmental) in solving public policy issues. "The most important lesson, for public policy analysis derived from the intellectual journey I have outlined here is that humans have a more complex motivational structure and more capability to solve social dilemmas than posited in earlier rational-choice theory. Designing institutions to force (or nudge) entirely self-interested individuals to achieve better outcomes has been the major goal posited by policy analysts for governments to accomplish for much of the past half century. Extensive empirical research leads me to argue that instead, a core goal of public policy should be to facilitate the development of institutions that bring out the best in humans. We need to ask how diverse polycentric institutions help or hinder the innovativeness, learning, adapting, trustworthiness, levels of cooperation of participants, and the achievement of more effective, equitable, and sustainable outcomes at multiple scales" (Ostrom, 2009, p.435).

governance in promoting sustainable development writ large. Among the benefits are developing buy in, cooperation, and collaboration among the parties who will be subject of and partners in implementing key policy measures, and attracting more resources and capabilities for respective national efforts. Challenges to this approach revolve around the length of time and methods involved in developing a common understanding of the power of collective action. Many stakeholders have self-referential histories, lack experience (and/or perhaps interest) in participation requiring compromise, and may not agree with the priorities or urgency of the work that emerges in collective discussions (Salaman, 2000).

Nonetheless, agreement on the key components of an effective metropolitan governance system is emerging. It encompasses three big ideas:

1. A metropolitan governance system that includes state and non-state participants, their collaboration on designing and implementing policies related to the smooth operation of the geographic area, their alignment with formal and informal rules and practices, and their possession of specified powers and financial capabilities (World Bank, 2017; Smoke, 2013).
2. It addresses four questions:
    a. Who should be involved in the decision-making about the allocation of land, public goods, and service delivery?
    b. What scales should governance operate?
    c. What are the respective roles of public, private, and non-governmental stakeholders (non-market and market) in their allocation?
    d. How should social, economic, and environmental goals be balanced?
3. It has many forms (from collaborative agreements to independent metropolitan structures); no one model is best; and its design is related to the national and local historical, cultural, and political contexts of a given place (Sud and Yilmaz, 2013; Stack, 2007; Bahl, 2013; Smoke, 2013; OECD, 2015a)

Agreement on the essential qualities of a well-functioning metropolitan governance system is usually expressed in a commonly accepted vision or plan, with its leaders having the capacity to translate it into strong implementation programs. Such a plan has the following elements (OECD, 2015b, p.58; Sud and Yilmaz, 2013):

- Its geographical scope encompasses the core or central city and a large part of the surrounding urbanized area.
- It has legally recognized leaders that are either elected or appointed.
- Its mission is to address more than one metropolitan concern (i.e., it is differentiated from what may be labeled a special district created to deliver one service).
- It is fiscally stable with a regular source of revenue and control of its budget.
- Its workings are transparent, open to citizen input, and fully accountable to the public.
- It is flexible and thus able to adjust its practices to changing circumstances.

These characteristics recognize the need to attribute specific governmental responsibilities efficiently, equitably, and transparently on a metropolitan level accompanied with the power to exercise them in a legally recognized way with economic and political authority.

The rationale for supporting metropolitan governance derives from broad principles of efficiency and equity. Much scholarship on the topic comes from the United States where the nation's decentralized government structure, including the devolution of land use, education, and specific taxing privileges at subnational governmental levels (states, counties, and municipalities), has led to extreme fragmentation within census-defined metropolitan areas (e.g., the Chicago metropolitan area has 1,550 local governments). Scholars debate the pros and cons of local government fragmentation versus consolidation through metropolitan governance, querying the optimal size of the government unit related to several factors. They look at political outcomes: local government can allow hands-on democracy with ample opportunities for citizen participation and accountability while consolidation can lead to bureaucratic congestion and unresponsiveness. They contrast economic costs:

fragmentation can lead to expensive duplication and misalignment of public services while consolidation can provide economies of scale for key services like education, transportation, solid waste collection, water, and sanitation. They examine the social impact: fragmentation can lead to economic (as well as racial) segregation as rich citizens can afford to gravitate to exclusionary places with high levels services, leaving their poorer neighbors behind in under-serviced places while consolidation can facilitate the equitable distribution of services and can provide an overall higher quality of life. They consider environmental effects: fragmentation can contribute to sprawl and development of vulnerable land while consolidation can contain growth and/or preserve vulnerable land. Finally, they observe that fragmentation can form barriers among localities that have too much independence or too many conflicting views that prevent them from forging collaborative agreements that might lead to consolidation (any form of metropolitan governance) to address proven economic and social costs (Hendricks and Shi, 2015; Boschken, 2017; Gomez-Reino and Martinez-Vasquez, 2014).

Studies of governmental structures around the globe confirm that the key public policy tradeoff between local fragmentation and metropolitan governance is "between the welfare gains expected from smaller governments (better placed to match expenditure allocation to local preferences) and economies of scale (or associated lower average costs) expected from the delivery of services at larger jurisdictional sizes" (Gomez-Reino and Martinez-Vasquez, 2014, p.5). Beyond these trade-offs relative to political, economic, and social benefits, metropolitan governance can have other effects, as documented worldwide. It can result in reduced externalities (negative spillover effects of local decisions on neighboring jurisdictions) and add more connectedness throughout its area while addressing such area-wide problems as traffic congestion, violence, and pollution. It can contribute to the protection of common pool resources (e.g., ecosystems) while reducing excess land consumption that, in turn, supports the provision of resource-conserving services like public transportation (Stack, 2007; Bahl, 2013). Recently, observers have added another quality: the ability to serve as a stabilization tool after an internal conflict (Edwards and Yilmaz, 2016).

Further, as nations work through their commitments to several global agreements, they will likely conclude, as they have in the New Urban Agenda (paras 89, 90, 95, 96, 114, 117, 115, 117, 118, 138, 159, and 160) that metropolitan governance is desirable but the exact details of its form need to be locally determined. The story is complicated when regarding the variety of forms of governments (e.g., unitary versus federal) and their histories (e.g., colonial heritage, tribal or ethnic traditions) among the world's nearly 200 nations. For example, federal arrangements tend to devolve power to lower levels more easily than unitary ones, however they likely favor states or provinces over municipal or local levels (Smoke, 2013, p.62).

Thus, while enabling the formation of metropolitan governance is filled with possibilities, developing its structure is a balancing act between the desire for efficiency, local autonomy, accountability, and in the end, power among different political parties and/or multi-party stakeholders (Bahl, Linn, and Wetzel, 2013, p.5; Stake, 2007, p.5). Analysts have isolated several common questions, the answers to which will determine the shape (and effectiveness) of any metropolitan governance arrangement:

- Under what rubrics and what functions will central governments permit metropolitan governance? Currently, among the national governments that specify constitutional provisions, they rarely detail the specifics, although some nations develop clarifying legislation related to administrative and financial powers. (Smoke, 2013, p.65)
- What will be the nature of the designated financial practices? Currently, among the nations allowing metropolitan governance, the structures vary widely depending on whether the subnational government has the power to raise own-source revenues (e.g., taxes and fees), whether the higher level government has provisions for tax sharing, and whether the subnational government enjoys a secure stream of intergovernmental transfers and/

or has the capacity for local borrowing from private and public sector sources. (Smoke, 2013, pp.67–73)

- How will national governments organize units within the metropolitan area (horizontal arrangements)? Structures range from a single municipal government that offers a full range of services over a large urban area that may or may not have subunits with specified functions, or voluntary cooperation on topics of mutual agreement among the several subnational parties. (Stack, 2007; Bahl, 2013; Andersson, 2012)
- Do central governments offer differential treatment to metropolitan governments versus all local governments? How do they coordinate service delivery? How do they oversee or regulate metropolitan government actions (vertical arrangements)? (Bahl, Linn, and Wetzel, 2013, p.5–6).

Translating Theory into Practice

To illustrate the variety of metropolitan governance systems currently in existence, a World Bank study cataloged 10 types of arrangements illustrated by 21 examples from around the world, ranging from Cape Town to Abidjan to Nairobi to Shanghai to Sao Paolo and Madrid, Toronto, London, and Marseille (Andersson, 2012). The study outlines their founding dates, missions, functions, and political and financial powers, demonstrating several emerging forms. Sao Paolo's metropolitan regional government, for example, evolved from a regional transportation system consisting of metro/urban transport and regional trains dating from the 1960s. Under the most recent iteration of its functions defined in 2011, it now encompasses 59 municipalities and has jurisdiction over transportation, housing, sanitation, and the environment. The Cape Town municipal metropolitan government dates from 1996, after the fall of apartheid. It too has changed with subsequent amendments such that it now encompasses 61 municipalities, has a single tax base, and faces a huge challenge in providing services in the area's widespread informal settlements while maintaining services in the formal sectors.

Though many new experiments emerging in this fast-moving field were not captured by this report, the study underlines the fact that few full-fledged metropolitan governance systems exist, outlines a research agenda for their evaluation, and enumerates a number of lessons to be explored in the future development of such arrangements. In addition to emphasizing the need to understand context and the realization that political considerations often shape metropolitan governance structures, the study offers three warnings. First, pursue only those activities that provide gains (or make a difference) to the area. Second, engage stakeholders early. And, third, balance efficiency and equity, and ensure voice and accountability, taking into consideration the capacities of participants at all levels (Andersson, 2012, p.14). Others warn that capacity building at all levels is essential in order to forge effective metropolitan governance (Sud and Yimaz, 2013, p.111). Notably, most theorists cite regional planning and land use, transportation, and ecosystem protection as the most salient tasks for metropolitan governance (Yusuf, 2013; OECD, 2015a).

While in the past 20 years, governance specialists have developed theoretical foundations based on empirical studies of the limited number of current metropolitan governance efforts, they have not yet developed a set of principles for metropolitan governance institutions responsive to the pace and trajectory of 21st century urbanization. This gap is especially vexing in light of the many directives in the *New Urban Agenda* calling for metropolitan governance, a topic discussed below. However, other similarly engaged, multi-level governmental and stakeholder communities—especially those dealing with issues related to water—who have translated their practices into theory and applied the theory back to practice, are slightly more advanced and thus may provide a template for managing urbanization.

Water systems and metropolitan areas share many qualities. First, they each deal with material items—water and land/public goods/services—whose allocation is frequently contested politically. Second, they are complex, encompassing more than one inter-related subsystem that calls for attention and coordination. Third, they touch or affect multiple stakeholders in the public, private, and non-governmental sectors across geographic

regions. Fourth, over time, their growth and development have resulted in fragmented institutional arrangements and a misallocation of roles and responsibilities due to gaps in policy guidance attributed to the absence or obsolescence of workable legal frameworks, financial support, and/or long-term planning.

Interest in water security dates from the 1970s with the convening of the first and only UN-wide conference on water (about the same time at the Habitat I conference in 1976). It took off as an international movement such that by the mid-1990s, two major global advocacy groups emerged (the Global Water Partnership and the World Water Council) along with the commencement of the every three year, 30,000-attendee World Water Forum. Soon multilateral groups took up the issue more systematically. By 2003, the United Nations coordinated its water-related programs in UN Water, an inter-agency mechanism that publishes the UN World Water Development Report annually. The OECD began its water governance initiative shortly thereafter. Within this broad and growing arena, stakeholders have worked on a number of policy issues, of which governance has been a longstanding focus. Leading a six-year study and extensive consultations within the World Water Forum and beyond, the OECD issued *Principles on Water Governance* (Box 1).

Box 1. OECD Principles on Water Governance

1. Clearly allocate and distinguish roles and responsibilities for water policymaking, policy implementation, operational management and regulation, and foster coordination across these responsible authorities.
2. Manage water at the appropriate level(s) within integrated basin governance systems to reflect local conditions, and foster co-ordination between the different levels.
3. Encourage policy coherence through effective cross-sectoral co-ordination, especially between policies for water and the environment, health, energy, agriculture, industry, spatial planning, and land use.
4. Ensure responsible authorities have the capacity to meet the complexity of water challenges and have the set of competencies required to carry out their duties.
5. Produce, update, and share timely, consistent, comparable, and policy-relevant water and water-related data and information to guide, assess, and improve water policy.
6. Ensure that governance arrangements help mobilize water finance and allocate financial resources in an efficient, transparent, and timely manner.
7. Ensure that sound water management regulatory frameworks are effectively implemented and enforced in pursuit of the public interest.
8. Promote the adoption and implementation of innovative water governance practices across responsible authorities, levels of government, and relevant stakeholders.
9. Mainstream integrity and transparency practices across water policies, water institutions, and water governance frameworks for greater accountability and trust in decision-making.
10. Promote stakeholder engagement for informed and outcome-oriented contributions to water policy design and implementation.
11. Encourage water governance frameworks that help manage trade-offs across water users, rural and urban areas, and generations.
12. Promote regular monitoring and evaluation of water policy and governance where appropriate, share the results with the public, and make adjustments as needed.

Source: OECD 2015c.

These principles have a familiar ring for metropolitan governance advocates. They recognize that governance is both bottom-up and top-down, tailored to specific contexts—political and economic conditions and level of development—and exercised through networks or nested institutions (national, regional, and local). The principles cover policy

coherence, subsidiarity, knowledge-sharing, finance, and regulatory frameworks (Woodhouse and Muller, 2017, p.237). In the next two years, the OECD will be dispersing these principles among public and private decision-makers (OECD, 2016a). Adapting the principles for metropolitan governance could assist member states in developing strategies to establish metropolitan governance systems cited in the "Quito Implementation Plan" section of the *New Urban Agenda*. Notably, these principles are aspirational rather than operational in that they do not deal directly with the highly detailed issues of managing conflicts, an area where much more work is needed.

Metropolitan Governance and the New Urban Agenda

The *New Urban Agenda* is the product of two streams of inputs: first, the Habitat III Regional and Thematic Conferences, one of which focused on metropolitan areas (see UN-Habitat, 2015), and second, the Habitat III Policy Unit papers, three of which focus on urban governance, national urban policy, and municipal finance (see http://habitat3.org/documents). These inputs reflect the views of civil society (conferences) and experts (policy papers) on these matters. A close examination reveals the origin of their recommendations in the theoretical concepts described above and their consequent presence in the "Quito Implementation Plan" section of the New Urban Agenda.

The Declaration of the Habitat III Thematic Conference on Metropolitan Areas, held in Montreal in October 2015, laid the foundation for recognizing the importance of larger than city geographies (i.e., metropolitan areas), which are "composed of one or more central cities with high population densities and large job pools, encompass a large labour pool within which most of the members of the population live and work," and need a new type of governance that incorporates the full geography (UN General Assembly, 2016).

The recommendations of the Habitat III Policy Unit 4 in *Urban Governance, Capacity and Institutional Development,* published after the thematic conference, assert that today's governmental arrangements are not fit for purpose. The document argues that, in the face of the "expansion of metropolitan areas" that are "reshaping the urban landscape and raising new challenges," governmental frameworks from the national to the municipal level are unequipped to meet the responsibilities of planning and managing sustainable urban development. In particular, current municipal governments lack jurisdictional power over the existing and soon to be enlarged urbanized areas, have limited financial resources, and experience gaps in administrative capacity (UN General Assembly, 2016c, p.2). The solution lies in reforming the frameworks to "go beyond sectoral policies and consider cooperation between different spheres of government and non-state actors, fostering a balanced distribution of powers, capacities, and resources including the revision of legislative, regulatory, and fiscal frameworks" (UN General Assembly, 2016a, p.2). In particular, "strong metropolitan governance is a key component of new urban governance" (UN General Assembly, 2016c, p.2).

In detailing metropolitan governance, Policy Unit 4 experts call for strategic spatial planning that observes functional rather than administrative boundaries. They point to transportation as an example of a service to be delivered at the metropolitan scale. While they note that any arrangements must be tailored to fit the respective context of a place—soft partnerships to collaboration agreements to supra-municipal structures—they insist that adequate power to manage and finance metropolitan issues is the critical requirement and offer a detailed roadmap for achieving it (UN General Assembly, 2016a, pp.15, 26).

Habitat III Policy Unit 5, Municipal Finance and Local Fiscal Systems, reinforces the need for metropolitan governance to deliver transportation, housing, sanitation and water, and environment efficiently and equitably. It cites such examples as the Métropole du Grand Paris and São Paolo Metropolitan Region (UN General Assembly, 2016b, pp.35, 62).

Consequently, the Quito Implementation Plan highlights metropolitan governance in the three subsections: establishing the legal framework, planning and

managing spatial urban development, and the means of implementation. In particular, it has 12 direct references to metropolitan governance (paras 89, 90, 95, 96, 114, 117, 115, 117, 118, 138, 159, and 160).

The subsection on building a legal framework calls for systems based on principles of subsidiarity and decentralization. It emphasizes the use of functional geographic areas as the basis of effective governance. In association with this idea, it underlines the need for the legal delineation of administrative responsibilities and stable financing mechanisms.

The highly descriptive subsection on planning and managing urban spatial development emphasizes specific urban forms largely sustained by metropolitan governance. It envisions connected, compact, dense polycentric settlements that accommodate growth through planned urban extensions designed to eliminate sprawl and protect natural resources. It presses for metropolitan plans and inter-municipal cooperation to deliver integrated transport systems for passengers and trade, affordable housing, and other basic services. In reference to administrative and fiscal powers, it uses the terms horizontal (within regions) and vertical (between the national and subnational governments) to describe desired governance arrangements.

Finally, the means of implementation subsection refers to a range of mechanisms, from data collection to knowledge sharing to capacity building to mobilization of financial resources, and to accountability and corruption prevention to be focused on subnational governments. It also makes several references to a metropolitan government whose role in overseeing functional areas undertakes measures to ensure balanced territorial development and adaptation and mitigation programs for climate change (paras 90 and 144) and to work undertaken by allocating administrative tasks to enhance productivity and the delivery of public services (paras 96 and 156). This section highlights transportation as a specifically relevant service to be provided by metropolitan governance (paras 115–117) (UN General Assembly, 2016).

Clearly, the *New Urban Agenda* is a roadmap designed to guide member states in tailoring their implementation plans as they deploy and possibly reform their efforts. As the governance theoreticians whose work is reviewed here have repeatedly observed, the choice to support multi-tier, multi-stakeholder governance will be political. The emergence of strong non-state platforms during the preparatory process for Habitat III—the Global Task Force of Local and Regional Governments and the General Assembly of Partners composed of 16 partner groups—offers new pathways for advocacy, dialogue, and cooperative inputs into the creation of new arrangements. These groups are currently devising their strategies but are cognizant of key milestones around which to organize, including the World Urban Forum (2018), related implementation meetings (e.g., the High Level Political Forum for Sustainable Development Goals), and the mandated, quadrennial reporting for the *New Urban Agenda*. These institutions will likely contribute to the evolving governance structures over time, helping forge forms of metropolitan governance that blend bottom-up with top-down arrangements.

Conclusion

Promoting inclusion, productivity, and environmental sustainability undergirds the UN global agreements related to resilience, development financing, sustainable development, climate change, and urbanization. Focusing implementation of these pacts on urban areas will likely have an enormous impact due to the size of their populations, GDP production, and presence of greenhouse gasses. This chapter focused on how to translate the recommendations pertaining to governance of the *New Urban Agenda* into policy and programs, especially those related to managing and planning urban spatial development on the ground. A significant implementation challenge is the inability of traditional governance systems for urban areas to meet the demands posed by the pace and trajectory of contemporary urbanization, much less address the larger global initiatives. This inability is based on administrative, rather than functional, boundaries combined with a lack of legal responsibilities and stable revenue sources for subnational governments.

At the root of the problem is fostering urban areas as engines of prosperity, an effort that requires effective, efficient, and equitable public services, especially around infrastructure, housing, and basic services. For many observers, the solution for service delivery lies in forming multi-level, multi-stakeholder governance arrangements based on subsidiarity, transparency, and accountability. They call for strengthening metropolitan governance to the geographic imperatives of service delivery areas. Such arrangements depend heavily on local context for success but include basic components: a clear delineation of the functions to be performed at each level and the power and wherewithal to undertake them.

Translating theories of metropolitan governance into practice would benefit from a widespread agreement of guiding principles and deeper studies of the benefits and costs of current arrangements now in existence in many parts of the world. Theory based on empirical studies of the benefits of metropolitan governance is growing, as is political support. Yet moving to metropolitan governance will take time and considerable political will and leadership that may need to come from non-state advocacy platforms.

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1.3 Metropolitan Governance: The New Normal for Improved Quality of Life

Mats Andersson (Independent Consultant)

Abstract

With continued urbanization around the world and settlements becoming more interdependent, metropolitan areas are becoming The New Normal. This chapter highlights common issues creating a need for cooperation among local governments and what the benefits of joint initiatives in a metropolitan area can be. Approaches are described for how to define an appropriate boundary of a metropolitan area. Metropolitan governance arrangements that are applied around the world are then classified, and their advantages and disadvantages detailed. The chapter concludes by outlining key factors that contribute to effective metropolitan governance.

A significant question is "What is the problem?" Many cities have over time become more interdependent with their surrounding settlements and rural areas, constituting a single economy and labor market, a community with common interests, a metropolitan (metro) area or region. Transport and communications advances tend to extend functional economic areas over time. The economic and other links between the core and the periphery can become so close that one part cannot succeed without the other. Urban growth changes the character of an area, while political boundaries tend to be fairly stable. This mismatch of socioeconomic integration and political fragmentation creates a need for collaboration among local governments to, for example, facilitate commerce, seize opportunities for efficiency, and prevent wasteful competition.

Many people live in one local jurisdiction and work in another, requiring coordinated transit. Clogged storm drains in one area may cause health risks or flooding in another. Large differences may exist in the tax base among the local jurisdictions, creating significant differences in service provision. Therefore, inter-municipal arrangements are necessary to address some developments at the metropolitan level, meaning local governments need to act jointly to most effectively meet some of their local needs. Lack of any formal or informal governance arrangements at the metropolitan level tends to create fragmentation of service delivery (inefficiencies), free ridership by some jurisdictions (due to spillovers), environmental sub-optimization, and underutilization of land that potentially has higher value from a regional perspective. Properly functioning metro areas are important around the world, including in developing countries where urban growth is most rapid and institutional structures are often weaker.

Urban governance is critical in shaping both the physical and social character of a metropolitan area. The planning, finance, and management of a city has an impact on the quantity and quality of local public services and the efficiency with which they are delivered. It determines whether costs are shared throughout the metropolitan area in a fair way or not. Governance also affects the ability of residents to access their local government and engage in its decision-making, and the extent to which local governments are accountable to citizens and responsive to their needs. Good urban governance structures ensure that policymakers have the necessary information, powers, and incentives to make good decisions.

Demarcation of a metropolitan area is usually done by determining:

- a contiguous built-up area;

- an area based on distance from the center (by kilometers or travelling time); or
- an area based on functional relations (a commuting area, a functional economic or business area, or a public services area).

However, it is important to recognize that not all services need to be managed at the metropolitan level. Only services that fulfill the following to be metropolitan:

- benefit from economies of scale (e.g., some utility services);
- address externalities or spillovers (e.g., environmental protection);
- require harmonization among the local jurisdictions (e.g., crime prevention); or
- have area-wide benefits in other ways (e.g., tourism promotion).

Services that mainly provide local benefits should be the responsibility of the respective municipality, such as local roads, street lighting, firefighting, parks, libraries, and local markets.

What Are the Opportunities?

Urban growth and increased population density put stress on public infrastructure and the provision of related services. Solutions depend not only on adequate financial resources but also on the governance structure for such services. A metropolitan arrangement is often needed to coordinate the delivery of such essential services as transportation, water, and waste management across a metro area. For example, when built up areas are located sufficiently close to allow integration of utility networks, some services or functions may benefit from economies of scale. The arrangement also needs to ensure that land use planning is done in conjunction with the infrastructure planning, both to ensure local effectiveness and to address region-wide issues such as significant disparities among municipalities. For example, to build a road that crosses municipal boundaries requires a coordinating mechanism among the municipalities and area wide planning to determine where the road should be built. Transport and land use planning are often the responsibilities of different departments in a municipality and sometimes of different levels of government. These planning functions need to be integrated to ensure that residential areas are not built without basic public services being provided and that a transit system can count on sufficient population density to be efficient. Another example is solid waste collection, which, though it may be most effectively addressed at a local level, disposal of municipal and hazardous waste usually needs coordinated arrangements with one or more joint facilities for cost-effectiveness. Another common issue that requires metropolitan-wide planning and management is flooding. Rivers and catchment areas often cut across municipal boundaries, requiring coordinated storm water management systems.

When more than one entity or level of government is involved in delivering a particular service (not an uncommon situation), it is critical to have a clear and stable assignment of expenditure responsibilities among them, and a mechanism to coordinate service provision and to resolve any conflict.

Local Economic Development on a Metropolitan Scale

Urban service provision needs to be placed into the broader framework of the metropolitan economy and employment generation. Employment generates income and possibilities for households to improve their conditions, for firms to invest, and for government to scale up public service delivery. It is widely recognized that urbanization, and the related process of economic agglomeration, is driving economic growth. Urban employment and productivity are paramount to improve welfare.

"Metropolitan" is an economic concept as much as an institutional one (see Chapter 2.1, Metropolitan Governance and Urban Economy, for more detail). There is a need to broaden and deepen understanding of the productivity of the urban economy and address economic development on a metropolitan scale. Tourism is a good example. Rather than local

governments in a metropolitan area competing for tourists, it tends to be more productive to jointly promote the entire metropolis as a destination, with a variety of attractions. In other words, the goal is not only get the tourists to come, but to get them to stay longer. Further, their spending should benefit all parts of the metropolis independent of where in the area they visit or stay.

A recent study of five Organisation for Economic Co-operation and Development (OECD) countries (Germany, Mexico, Spain, United Kingdom, and the United States) found that cities with a fragmented governance structure (measured by the number of municipalities in the metropolitan area) tend to have lower levels of productivity (Ahrend, Farchy, Kaplanis, et al., 2014). An area with a similar population size but twice the number of municipalities has 6 percent lower productivity. Possible reasons for this are that fragmentation can negatively impact transportation investment and land use planning, increasing congestion and reducing a city's overall attractiveness. Fragmentation can also impede growth because firms may have to face overlapping business and environmental regulations, increasing the cost of doing business. According to the study, the impact of fragmentation on productivity is less (2.5–3 percent) when there is a metropolitan governance body. See Chapter 2.5, Steering Metropolises to Shared Prosperity: The City Prosperity Initiative, for a more detailed discussion of this topic.

Environmental Sustainability and Security

Air and waterway pollution transcend jurisdictional boundaries. If a central city, for example, is particularly congested with high levels of air pollution, the troubled city may need to solve what is a joint or regional problem without a fair contribution from its neighbors who benefit from the positive effects of the agglomeration (the free ridership issue). Cost sharing questions may also emerge if water or air pollution is caused by industry in one area, resulting in health risks across the whole metro area. As for police services, crime does not respect jurisdictional boundaries, so coordination and/or an area-wide service unit is needed. Harmonization of policies on these topics across the metro area is helpful. In terms of financing, a fragmented local government structure in a metropolitan area is often highly dependent on intergovernmental transfers or on spending by higher tier governments, particularly in developing countries with limited local revenue sources. Metropolitan-wide governance arrangements, on the other hand, allow spillovers for many public services to be internalized and related services to be addressed by metro-level agencies. (Bahl, Linn, and Wetzel, 2013)

Other Joint Initiatives

Many other subjects can be addressed for joint benefits among local governments, albeit possibly with less impact compared to those mentioned above. Some examples are joint procurement to save on costs (e.g., anything from light bulbs to fire trucks), joint training programs for staff, establishing a metropolitan research institute, and marketing (branding) the area. Other common topics for cooperation are water resource protection (to safeguard the water supply and water quality across a metro area), larger sports facilities (requiring land and large financing), joint lobbying for the location of a national facility in the area, or attracting a major event (e.g., a conference or sports event).

A permanent coordination unit can be a catalyst for joint initiatives and can address a variety of subjects through studies and other preparatory work, as per the request of an executive committee. Such a committee should ideally have representatives of the local governments, the private sector, and community organizations. Many such light governance structures exist in Latin America, often called a mancomunidad or association. This may evolve into a more comprehensive coordination entity for a metropolitan area, such as in San Salvador, El Salvador.

The *Consejo de Alcaldes del Área Metropolitana de San Salvador* (Council of Mayors of the Metropolitan Area of San Salvador) was established in July 1987 after a strong earthquake in 1986. This was a united approach

by 14 local governments (across two provinces) to tackle reconstruction of a metropolitan area of about 600 square kilometers. The Council initially created an Oficina de Planificacion del Area Metropolitana de San Salvador (Office of Planning of the Metropolitan Area of San Salvador) in 1988, a technical advisory entity charged with analyzing and proposing solutions to develop the area. The Office also functions as the executive secretariat of the Council. With the approval of a law in 1993, the Office was charged with regulating urban land use and approving building permits across the area. In 1994, the Council reformed the statutes of the Office, making it a separate legal entity, an administratively and financially autonomous municipal institution. The Council appoints the Executive Director of the Office, and its administration is overseen by the General Coordinator and Executive Committee of the Council. The Office is fully funded by user charges for services they provide in the area (mainly issuing building permits). The Council is particularly credited for achieving improved land use patterns and service equity in the area. The Council is now an autonomous institution with the objective of facilitating inclusive social, economic, and territorial development of the Metropolitan Area of San Salvador. It has commissions on institutional development, territorial management, local economic development, environment and health, and social cohesion. It has served as the coordination mechanism for various projects in the area, most notably on public safety and solid waste management. In 2015 a Consejo de Desarrollo Metropolitano (Metropolitan Development Council) was established within the Council framework to propose public investment projects for metropolitan development and be the body focused on collaboration with the national government. (World Bank, 2016)

What Is the Definition of a Metropolitan Area?

(Note this section draws on Buijs, 2015.)
Spatially, a metropolitan area may be formed either: (i) through outbound growth of a city over time; or (ii) through the expansion of various separate settlements that at some point from an integrated, interdependent metropolitan area. It is the interaction (functional relations) between people, businesses, and other entities in different locations that is the core of the agglomeration concept. However, it is often difficult to measure functional relations; therefore most demarcation approaches use spatial proxies. It is usually not critical to determine the exact boundaries of what is considered an agglomeration (a coherent economic and social system), but it needs to be a reasonable reflection of the reality to guide policymaking and calculate impacts of policy decisions, particularly if the boundaries will determine significant financial allocations.

The metropolitan boundary should facilitate integrated planning, coordinated service delivery, and general area development. Although the focus may be on delineating the current metropolitan area, a longer term perspective should be applied to guide policymaking and investment decisions. The boundary should include areas of anticipated future urbanization and, in most cases, reflect projected population growth over 20 or 30 years. The boundary can be adjusted every 10 years or so if needed, depending on the rate of change in the region. The following are commonly used demarcation approaches:

- Contiguous built-up area.
- Area based on distance from the center (by kilometers or travelling time).
- Area based on functional relations (e.g., commuting area, functional economic or business area, or public services area).

Contiguous built-up area: Built-up areas may cross administrative boundaries, meaning that a person may not know when they leave one jurisdiction and enter another. Satellite imagery or population density maps can help define a built-up area. Land use may also need to be considered to qualify for inclusion in the built-up area, for example if an industrial complex or an airport should be included or not. This spatial closeness encourages increased economic interaction. It tends to require integrated transport services and facilitates integration of utility network services (for economies

of scale). This demarcation approach is particularly useful when there is a clear boundary between the built-up (urban) area and adjacent rural areas and when non-contiguous settlements are at large distance from the urban–rural boundary. In some cases though (e.g., in intensive agricultural areas), the economic interactions between the urban and rural areas may be very strong and warrant inclusion of a large section of the rural area in the defined metropolitan area (the functional economic area). On the other hand, if the contiguous built-up area is within a central city only, which also has large rural areas within its boundary, there may not be any agglomeration development potential beyond the city itself.

Area based on distance from the center: A pragmatic definition of a metropolitan area is the distance from the center, either in kilometers (usually a radius of 30-40 kilometers, resulting in a simple circle) or in travelling time (e.g., one hour). The latter approach tends to create less of a circle and rather reflect an area driven by the structure of the road or rail network. In cases where more than one center exists within the circle, it may be most effective to first determine the major sub-centers within the circle and then add secondary areas around these (e.g., with a 10 kilometer radius or within a 15-minute travel time). The boundary of the metropolitan area would then be the combined area of the initial and the sub-center circles. A radius approach may not be useful when socioeconomic interactions are between settlements along a corridor.

Area based on functional relations*:* A common proxy for functional relations between areas is to determine the number of daily commuters between them, usually focusing on commuting to/from the center of the metropolitan area. Daily commuting tends to be a better measure of strong functional relations than, for example, weekly or monthly transport, which may be common for students, wholesalers, hospital visits, among others. A common rule of thumb is that if at least 10 percent of the working population in a settlement or rural area commutes daily to the center, the settlement or area is considered part of the metropolitan area. Functional relations tend to decline with distance. It is often much easier to define a commuting area than to measure the degree of business interaction (i.e., business-to-business and business-to consumer interactions) for which a more qualitative assessment is needed, using interviews or questionnaires. This should include questions about, for example, the degree of internet interaction between the areas, and relations between production facilities and headquarters, between agricultural areas and food processing industries. Public services relations may also be a component of the assessment. These can be of great variety, such as attending higher-level education, using health facilities, interacting with government agencies, among others. Thresholds can be set for key service interactions to guide the definition of the metropolitan area boundary.

Coordination May Be Needed at Different Levels

The purpose of metropolitan public policies should drive the spatial scale at which coordination and coherence is aimed. For example, the optimal area for urban transport policies is usually not the same as for solid waste collection and disposal. The most appropriate area for economic development initiatives may be larger than the current commuting area. As indicated above, some approximations may be required to define a metropolitan area. For most purposes, a small boundary variance may not make a difference. If the main purpose is to consolidate the utility network, the contiguous built-up area will likely in any case be the important scale for cost effectiveness. A case where a fairly exact definition is important for residents (if their area on the outskirts of the demarcation is included or not) is when only settlements or areas within the delimitation will be eligible to receive certain funding or other benefits or it would impact the definition of electoral areas.

San Jose, Costa Rica: The concept of a metropolitan area around San Jose can be viewed on three different scales. First, there are four main municipalities in the San Jose area: San Jose, Alajuela, Heredia, and Cartago. Each of them can be considered a local metropolitan area, essentially coinciding with the respective

local government jurisdiction. Most businesses are local, limiting the number of commuters to San Jose. Second, the Metropolitan Area of San Jose is defined as an area of 14 municipalities, within which daily economic interactions occur. It has a population of about 2.4 million, which is more than 50 percent of the population of the country. Last, the *Gran Area Metropolitana*, also called Valle Central, an area of about 2,000 square kilometers, comprises 31 municipalities (total population of about 3 million), many with extensive semi-urban and rural areas. An integrated transport network is critical for this larger economy.

The Netherlands: The Randstad agglomeration or conurbation (an extensive urban area with several cities and towns, each with a separate identity) is an area of about 10,000 square kilometers, with approximately 8 million inhabitants. There are four individual agglomerations: Amsterdam, The Hague, Rotterdam, and Utrecht, with overlapping spheres of interaction. Amsterdam is the most important of the four agglomerations based on size and economic power. It has a population of about 3 million and covers an area of 2,000–4,000 square kilometers (depending on the demarcation method used). Overlaps are particularly large between the agglomerations of Amsterdam and Utrecht and between Rotterdam and The Hague. Therefore, the Randstad conurbation may be considered to consist of two rather than four agglomerations, with different scales used for different purposes in planning and policy discussions.

Deciding on a Metropolitan Governance Arrangement

(For details regarding this section, see Andersson, 2015.)
As described above, metropolitan areas are characterized by strong interdependencies (social, economic, environmental, and administrative) and externalities (spillovers) across local jurisdictions. Many problems transcend municipal boundaries and solutions therefore require coordination among the municipalities or by a higher level entity or government. International experience has shown that there is no one-size-fits-all solution because of local and national differences. Some institutional arrangements are established bottom up (i.e., through initiatives and agreements among the local governments in the area) and some top down (i.e., by a provincial, state, or national government). While the system of local administration has a significant impact on the efficiency and equity of a regional economy, it also affects the residents' access to their governments, the degree of public participation in decision-making, and the accountability and responsiveness of the respective government entity. The optimal design of a government structure depends on which of these criteria are most important. Economies of scale, externalities (spillovers), and equity lend themselves to large governance units over an entire metropolitan area; the criteria of local responsiveness, accessibility, and accountability point toward smaller units. The challenge is to find the right balance between these criteria, which may be different in different metro areas. In addition, if political fragmentation reflects ethnic or cultural diversity, it may need to be maintained and respected to ensure responsive governance. In most cases, political factors determine the choice of governance structure, and the arrangements often evolve from one approach to another over time (Slack, 2007).

Metropolitan governance arrangements applied around the world can be classified as:

- Inter-municipal cooperation arrangement (light structures)
- Metropolitan/regional authority (special purpose district)
- Metropolitan government
- Regional government (as part of a national governance structure)
- Consolidated local government (through amalgamation or land annexation)

These categories are described below with city examples and indication of key advantages and disadvantages. It is important to note, however, that effective governance tends to depend more on how an arrangement is implemented than on the choice of arrangement per se.

Inter-municipal Cooperation Arrangement (Light Structures)

Many cities in Latin America have inter-municipal cooperation arrangements and the framework is very common in the United States. These arrangements may take the form of, for example, committees, working groups, or consultative platforms, or more permanent associations, mancomunidad, consortiums, or metropolitan councils. They can be focused on a specific issue, topic, or investment project, or on more broad-based and ongoing collaboration. A local government would join such an arrangement if it benefits their constituents compared with acting independently.

Brazil has a separate legal framework for consortiums. This framework (enshrined by law in 2005) encourages the formation of consortiums, which in some cases can become entities similar to regional authorities. The Metropolitan Council of Governments (COG) represents a bottom-up, voluntary approach, common in the United States that is usually a council with limited independent decision-making authority so as not to undermine the accountability of each individual member local government. It is so frequently applied that a few national associations of COG exist.[1] While COG policies are set by the local governments through a board of directors, most COG decisions tend to require endorsement by the respective local government councils. The common goals of the member local governments are usually reflected in the name of the committees that are established. Targets and indicators are set to measure progress and to judge the region as a whole rather than assess individual jurisdictions.

Advantages: A flexible approach where limited inter-dependencies exist among local jurisdictions or stronger arrangements are constrained by politics.

Disadvantages: Sometimes limited in scope and commitment for longer term needs. Often with an advisory role only and rarely with much own-source revenue.

1 For example, the National Association of Regional Councils and the Association of Metropolitan Planning Organizations. See www.abag.ca.gov/abag/other_gov/rcg.html, which includes links to all COGs in the United States.

Metropolitan/Regional Authority (Special Purpose District)

Examples of a metropolitan or regional authority include Vancouver, São Paulo, Buenos Aires, and Manila. This structure is also common in France and the United States. A regional authority is an independent legal entity; conceptually a voluntary organization established by the member local governments for planning and/or service delivery to make better use of their public resources. Two or more local governments may associate in this way to achieve economies of scale. For example, for a transport network or to jointly operate a waste disposal facility. Such city-to-city arrangements are called special purpose associations or districts in the United States. France has various legal provisions and incentives encouraging inter-municipal cooperation. Separate legal frameworks for such arrangements exist in other countries as well (e.g., Poland and Italy). The approach serves as an administrative integration, with member governments represented on a governing board or council. Metropolitan authorities, sometimes established as utility companies, can usually levy user charges for the services provided or are funded by the member local governments. Some regional authorities have been given more extensive taxing powers (e.g., the multi-sector authority in Vancouver). The Metropolitan Manila Development Authority is under the supervision of the president of the country, who appoints its chairman. Metropolitan authorities can be distinguished in terms why they were created:

- For planning purposes only or for planning as well as service delivery
- For a single sector (e.g., public transport or water supply) or for multiple sectors
- With advisory authority only or with full decision-making powers for the sector(s) (or making decisions that need to be ratified by each local government council)
- With a council being appointed or indirectly elected by the member local governments or directly elected by the residents of the area.

Advantages: Permanent focal point for metropolitan level planning and/or service delivery. Specialized,

metropolitan-level resources. Can provide flexibility if members can join and exit easily. If corporatized (as a utility company), it may facilitate a transition to a public–private partnership arrangement, if appropriate.

Disadvantages: Requires significant institutional capacity and resources to be effective. Risk of limited impact if its role is advisory only. Accountability may be weakened if responsibilities are unclear to residents. The effectiveness of service delivery tends to depend on its authority to levy user charges (tariffs), collect contributions from local governments, apply precept powers, or have earmarked transfers or taxing power.

Metropolitan Government

Examples of a metropolitan government include directly elected metropolitan governments (e.g. London, Quito, Seoul, and Stuttgart) and those appointed by a higher-tier authority (e.g., Minneapolis–St. Paul). The responsibilities for regional coordination and some service delivery functions may be vested with a separate local (metropolitan) government. Such a local government would not necessarily be hierarchically above the other local governments in the area in terms of reporting relationships, but of equal rank and legal status. The level of authority ranges:

- No authority over other local governments (e.g., Dar es Salaam)
- Limited authority (e.g., Seoul and London)
- Substantial authority (e.g., second-tier municipal governments in China), in which case they are often funded by transfers from a national or regional governments

Advantages: A permanent government structure for certain metro functions. Specialized metropolitan-level resources. Effectiveness tends to depend on whether it has mainly planning functions or also some service delivery functions, and the degree of authority it has over the other local governments in the metro area.

Disadvantages: Risk of limited connection with, and engagement by, the local governments in the area (requires strong representation or advisory arrangements). Second-level metropolitan governments—and regional authorities—carry a risk that access by residents will be negatively affected and thereby accountability weakened due to the more diverse and complex institutional structure. Therefore, in these cases, it is particularly important to make it clear to the residents who is responsible for what. Authority should coincide with representation and finance should follow function (expenditure responsibilities). Any entity established to coordinate or provide services to a metro area should ideally be represented by, and accountable to, the corresponding entire jurisdiction and receive corresponding resources.

Metropolitan governance reforms have rarely emerged from local government efforts only. A national or provincial government has usually initiated a change by either imposing or encouraging it (OECD, 2006). Although a metropolitan arrangement can be established by a higher-tier government, experience shows that such institutions will often be weak unless they are supported by the local governments in the area (Slack, 2007).

Regional Government (as Part of a National Governance Structure)

Examples of regional governments include Madrid, and the states in Mexico, India, and Australia. If no adequate local arrangement exists for coordination and critical area-wide service delivery, an existing (or new) regional government has sometimes been charged with these functions. In a Unitary State, as an extension (de-concentration) of the national government; in a Federal State, as the regional (state) level of government. For example, in Australia and India, many functions that are usually considered local (municipal) functions are carried out by the regional governments. In Australia, the state governments are responsible for public transport. The state governments in Mexico tend to address metropolitan coordination due to weak municipal capacity and the socioeconomic significance of the larger cities in the respective state. Some metropolitan arrangements

have first been created with mainly local representation, but later replaced or adjusted to a regional government under direct control of the national government (e.g., Abidjan, Cote d'Ivoire).

Advantages: A permanent structure for certain metropolitan functions. May have specialized metropolitan-level resources. Usually resources are secured from the higher-tier government.

Disadvantages: Metropolitan coordination may not be a high priority among all its functions. Risk of limited connection with, and engagement by, the local governments in the area. Accountability may be weakened if responsibilities are unclear to residents.

Consolidated Local Government (Amalgamation or Annexation of Land)

Examples of a consolidated local government include large municipalities in South Africa and China, as well as partly Istanbul, Toronto, and Auckland. Annexation of land or amalgamation of local governments can sometimes be effective in achieving efficiency and equity in public service delivery, and reducing institutional fragmentation. Yet it tends to be politically controversial, usually requiring the active involvement of a national or regional government. Few amalgamations have achieved coverage of an entire metropolitan area, usually because of the local political dynamics. The exceptions are eight municipalities in South Africa defined as metropolitan municipalities, where their boundaries essentially cover the area where people live and work. Most municipalities in China (e.g., Beijing and Shanghai) also cover their metropolitan areas. However, they are second-tier local governments (as discussed above). In 2014, Istanbul's jurisdiction was almost tripled by including areas previously governed by the central government. Amalgamations have sometimes been part of national reforms. For example, in 2007, Denmark reduced the number of its municipalities from 271 to 98. In 2014, Turkey reduced the number of municipalities from 3,225 to 1,395. In The Netherlands, reorganizations during the past 60 years have halved the number of municipalities.

Advantages: Facilitates metropolitan-level coordination and addresses equalization and harmonization of services within the area (one tax base). Local administrative offices and sectoral arrangements (e.g., authorities or utility companies) may still be needed.

Disadvantages: With a larger jurisdiction, residents' access to their local government may be affected and thereby local accountability weakened. While cost savings usually occur through economies of scale, harmonization of services and salary levels across a new, larger local government may be standardized based on the local government with the highest level, and thereby result in higher costs (Slack, 2007; the case of Toronto). One-time transition costs also need to be taken into account.

Urban–Rural Coordination May Be Needed Beyond Metro Area

Many metropolitan areas include significant rural areas (e.g., surrounding a core urban area or areas between urban nodes) with strong functional linkages. For example, a central urban area may be the main market for local agricultural products or tourism attractions that are located in the rural areas, with all amenities in terms of hotels, restaurants, in a central city. In such case, some revenue sharing scheme may be appropriate among the local jurisdictions involved. Strong urban–rural dependencies may even go beyond the metropolitan area as defined above. They may be based more on natural resource and environmental management than economic agglomeration. Changing agriculture or water use practices may be essential to protect critical water sources for the drinking water supply in the urban areas. If so, cities need to provide sufficient incentives for farmers, possibly even payments for changed practices and water-related services, or provide non-financial compensation such as water transfers or conservation schemes that are mutually beneficial for both parties. Two examples follow.

In the province of **Forli-Cesena in Italy**, water resources are managed through a partnership of urban

and rural municipalities and the chambers of commerce in three provinces. Municipalities where the water sources are located share in the revenue from providing water in the area. In addition, investments in natural and cultural heritage preservation are made in the rural areas to promote tourism. The urban municipalities benefit from the availability of clean water and being a gateway to the high-value landscape that attracts tourists.

The watershed management program of New York City in the United States is another example of a successful rural–urban partnership. Almost all water for the city comes from the watershed north of the city, mostly rural areas with small towns and vacation homes. A memorandum of understanding was signed in 1997 by New York City, communities in the watershed, the U.S. Environmental Protection Agency, the New York State government, and environmental organizations, with the dual goals of "protecting water quality for the generations to come and preserving the economic vitality of watershed communities." The program provides landowners with annual payments in exchange for maintaining the land in a natural state. It recognizes the interest of New York residents in conserving its water quality long term, and at the same time the ability of the farmers in the area to be able to maintain and improve their livelihood while implementing an adequate environmental program.

Enabling Effective Metropolitan Governance

A basic provision in national legislation to facilitate cooperation between local governments is that local governments may carry out joint projects or initiatives. Most countries have such provisions, albeit phrased differently. For example, a local government council can agree with one or more other councils to appoint a committee for any project or initiative that they are jointly interested in and can delegate to such committee any functions of the council related to the project or initiative for which the committee is appointed. As long as local governments are allowed, on a voluntary basis, to carry out joint projects or initiatives and organize themselves accordingly, in many cases no further legal provisions are required. It is not uncommon though, that "lack of legal or regulatory provisions" is claimed as reason for not actively pursuing inter-jurisdictional cooperation. This is often more used as an excuse for inaction than reflecting the reality. For more comprehensive arrangements (e.g., a metropolitan authority or a separate metropolitan-level government), further, more specific legal provisions are required. In Mexico, the constitution prohibits the establishment of a level of government between the state and local government levels.

Who Is Responsible for What

An entity being considered or established to coordinate policies, activities, or service delivery functions for an area should be represented by, and be accountable to, the residents of that area and receive corresponding resources and authority. It is important to communicate to stakeholders through transparent and clear information who is responsible for what and how funding is allocated and spent. In cases of appointing members of an entity, establishing a channel for complaints and ensuring free press are particularly important for accountability. A governance structure may include multiple entities, such the local government, one or more inter-municipal or metropolitan-level coordination bodies, a regional government, and national government units. Division of functions, authority, and expenditure responsibilities need to be unambiguous (easy to understand) and not overlap, particularly if any new committee, authority, or level of government is introduced. This is not only important for the entities directly involved, but also for the public at large to know who to hold accountable for what. Introducing a second-level metropolitan government, or one or more regional authorities, carries a risk that residents' access will be negatively affected, and thereby accountability weakened or unclear because of the more diverse and complex institutional structure.

Foster "Win-Win" Partnerships and Teamwork

A common challenge to inter-jurisdictional coordination is achieving consensus among the local governments, which are often of different sizes and capacities, characterized by different degrees of parochialism, and may have divergent interests and agendas. Political inhibitors tend to be either:

- the reluctance of local officials to give up direct power/control/influence over matters related to their constituency (their voters); or
- views, priorities, or tactics driven by a political party.

To be effective, any metropolitan governance arrangement needs to have the support and commitment of all (or at least most) local governments involved. They and their constituencies are the ones most directly affected. Successful partnerships have similarities with effective teamwork, particularly when a bottom up approach is applied, which requires:

- a common objective (a clear understanding of the benefits of cooperation);
- mutual trust (which has to be earned over time); and
- that different views and opinions are considered a strength rather than a weakness to arrive at the most effective solutions acceptable to all.

A strong advocate (champion) often plays a pivotal role in steering change and creating or maintaining momentum for active cooperation.

A case needs to be made for collaboration and joint efforts in each particular case. Depending on the situation, the following approaches can be applied:

- Clear financial/economic case: A rationale for a joint initiative shown in unambiguous financial or economic terms is hard to argue against.
- A matter of fairness (or negotiation): When one jurisdiction is a victim of the actions by another jurisdiction (e.g., due to water or air pollution), reason and fairness need to apply for mitigation or compensation. In such case, a bi-lateral negotiation may be sufficient rather than a broader collaborative arrangement.
- Local pressure: Facilitating engagement by civil society and the local private sector on developmental matters may trigger demands for actions at the metropolitan level (e.g., through their associations or the local media).

At an early stage of a metropolitan reform process, emphasis can be on identifying a few initial metropolitan initiatives with high probability of success to build trust and momentum. Low-risk examples to start with could be joint procurement to save on cost, joint training programs for staff, establishing a metropolitan research institute, or marketing (branding) the area.

Ensure Support of Higher Level Government(s)

Cooperation among municipalities works best on a voluntary basis. However, in many cases the national or a regional government has been instrumental in promoting (or even forcing) collaboration on certain priority subjects for a metropolitan area, through pressure, persuasion, or incentives. Higher level governments may exert political influence over local governments and/or create incentives for local collaboration by stipulating conditions for access to certain funding. For example:

- that a metropolitan body exist or be established, with representation of the local governments (for broad coordination or for a particular sector);
- that a metropolitan-level plan exist or be developed (broad or sector specific);
- that harmonization of certain local policies or rules be achieved among the local governments to obtain matching grants for a public service function; or
- that all local governments in the region contribute funds for an infrastructure project (e.g., according to a formula) to obtain a grant or loan from the higher level government.

In the United States, for many years, to obtain grant funding from the federal government for

transport and wastewater infrastructure, local governments had to create a metropolitan planning organization and funding requests had to be supported by a regional plan for the respective sector. In the European Union, many regional planning councils were created following the availability of EU regional economic development grants (OECD, 2006). Other incentives for regional coordination have been created through intergovernmental systems such as the J. Nehru National Urban Renewal Mission program in India, or simply through political influence/pressure (e.g., in the Netherlands for the Randstad concept). Although cooperation among local governments may be encouraged by such incentives—or even demanded—international experience shows that no governance arrangements become effective or sustained unless the local governments involved are actively supporting the arrangements. In addition, incentives may or may not create true and lasting metropolitan governance. When the incentives stall, the metropolitan arrangements risk fading away.

Facilitate Engagement by Civil Society and the Private Sector

Beyond municipalities, and the national and regional governments, the private sector, civil society, and universities need to be actively engaged in a metropolitan reform process. Public debates, roundtables, town hall meetings, media coverage, etc. can help highlight specific needs for inter-municipal cooperation and create common goals and constituencies. A metropolitan identity and participatory processes are key for ensuring adequate civic engagement in decision-making and monitoring their implementation. Jen Nelles (2012) argues that civic engagement and leadership at the regional scale can be important catalysts to metropolitan cooperation. "The extent to which the actors hold a shared image of the metropolis and engage at that scale strongly influences the degree to which local authorities will be willing and able to coordinate policies for the collective development of the region."

Brazil provides many examples of active incorporation of civil society and the private sector. For example, the current arrangement in Belo Horizonte is based on:

- a Metropolitan Convention;
- a Metropolitan Development Deliberative Council; and
- a Metropolitan Regional Development Agency.

A Metropolitan Conference is held every two years as a forum for participation of the organized civil society. The Metropolitan Convention is the decision-making body for planning guidelines (with a qualified quorum it can veto decisions by the Deliberative Council). The Agency is the technical and executive arm of the system (Metropolis, 2014).

The São Paulo ABC Region (Agência de Desenvolvimento Econômico do Grande ABC) is an inter-municipal consortium with the active engagement of business and civil society. It is a flexible, pragmatic approach for regional problem solving and economic development, but it is not a government structure. Seven municipalities created the consortium in 1990 to focus primarily on topics that had spillover effects across municipal boundaries. The purpose was to promote the economic development of the region through consensus and to implement innovative public policies. This forged a regional identity and helped local leaders and politicians address economic decline through a number of initiatives. Although the engagement of concerned mayors weakened in the mid-1990s, the local community undertook several initiatives, including creating a Forum for Issues of Citizenship, an umbrella non-governmental organization with more than 100 members focusing on regional issues. A Chamber of the Greater ABC Region was created in 1997 as a forum for strategic planning, with the participation of civil society, the public sector, and local businesses and labor unions. A Regional Development Agency was created in 1998 with a board of directors composed of private sector members (controlling 51 percent) and the inter-municipal Consortium (49 percent).

Conclusion

With continued urbanization around the world and settlements becoming more interdependent, metropolitan areas are becoming the New Normal. Many such areas do not have well-established governance arrangements for coordinating actions at this scale. While cooperation among local governments may be encouraged by financial incentives from a regional or national government, international experience shows that no governance arrangement becomes effective unless it has active support from the local governments involved (Slack, 2013).

The overriding objective of a metropolitan approach for local governments is to cooperate on certain topics, initiatives, or services for mutual benefit (while competing on other services and activities in terms of quality and cost-effectiveness). In defining a governance structure, the potential for efficiencies through economies of scale and the need to address spillovers and disparities need to be weighed against the impact on residents' access to their government and its responsiveness and accountability. Any mechanism for joint action needs to have sufficient, reliable revenue sources to fulfill its assigned functions on a sustainable basis.

There is no one structure that is appropriate for all metropolitan areas. The most appropriate governance structure depends on the national and local context (including the legal framework, local government responsibilities, particular issues and opportunities for the area, and institutional capacity and tradition). Metropolitan arrangements normally result from both top-down and bottom-up initiatives. Both horizontal and vertical coordination (multilevel governance) is needed. Institutional and financial arrangements may need to evolve over time as requirements and circumstances change.

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1.4 Dilemmas: Multilevel Government, Network Governance, and Policy Co-production

Joan Subirats (Autonomous University of Barcelona)

Abstract

Major transformations are currently affecting expanding metropolitan areas, from social and technological changes to reformulations of government systems. As Peter Hall has argued, economic, cultural, and informational globalization seemingly "flattens" the world. Yet, at the same time, we are seeing the emergence of particular configurations, such as large cities and metropolitan areas, that are concentrating resources and creating opportunities while also giving rise to new problems. This chapter seeks to respond to the challenges these transformations pose in terms of governance structures, emphasizing a horizontal framework of shared and distributed knowledge, and network governance linking different actors by common interests and relationships in contemporary metropolises, leading to schemes of co-production and development of public policy.

The metropolitan debate surrounding Habitat III—the United Nations Conference on Housing and Sustainable Urban Development—should consider the profound transformation that affects all vital spheres of citizens worldwide. In this changing scenario, the bigger cities are assuming a new prominent role. There are discussions around the urban revolution (Katz-Bradley, 2013) or the need for mayors to intervene more directly in global governance (Barber, 2013). The significance of metropolises is growing, both as nodes of innovation and as coordination centers for different capacities and resources.

As stated in the *Issue Papers on Urban Governance* (UN-Habitat, 2015), which served as a guideline for the October 2016 debate in Quito, we are witnessing the combination of rapid urbanization and a rise in the significance of cities, while at the same time, representation and decision-making mechanisms used in large cities are becoming obsolete. On one hand, it is assumed that we need to better articulate the will of different actors (public, private, and third sector) in order to achieve greater governance capacity and decision-making efficiency and to address coordination challenges and shortfalls, as well as management fragmentation problems that metropolises encounter in this time of change (Slack, 2007). On the other hand, a large number of city inhabitants do not have access to allegedly established participation channels in their respective political systems. In several studies, strong connections have been found between low-income levels and deficiencies in education or in life expectancy (Wilkinson and Pickett, 2010; Marmott, 2005). In addition, those same sectors tend to have significantly lower voter abstention rates (Wood, 2002). Furthermore, recently it has been demonstrated that internet use and coverage are also lower in these neighborhoods or urban enclaves (Mobile World Capital Barcelona, 2016).

There is a growing contradiction between spaces that concentrate the greatest capacity for innovation, creativity, and value generation, and the remarkable inequality that exists both in the territory and in the opportunities to participate in decision-making and democratic representation systems. The aforementioned issue paper (UN-Habitat, 2015) argues that "governing without the citizens has become nearly impossible" (p. 19), something that would be demanded by an urban agenda capable of facing the challenges of this disruptive time of change. For political decisions, we need new participation and citizen engagement

channels and, to create them, we must pay attention to the renewed debate on these issues, incorporating new practices of bottom-up and outside-in political participation, the purpose of which is to find common interests to solve collective problems.

Instead, informal sectors are growing, tax evasion and tax avoidance are increasing, and cases of corruption related to urbanization and real estate issues is proliferating in cities. The conclusion is that urban governments and politics are, at the moment, part of the problem rather than part of the solution. If we do not change urban government and governance systems, we will not be able to effectively and efficiently improve the collective living conditions of the majority of the world's population now living in cities. In this chapter, we outline the need to build networks and trust, while at the same time recognizing that conflicts are both inevitable and capable of generating innovation, if they do not become entrenched.

In this context, we want to contribute reflections and proposals to enrich the general New Urban Agenda debate and the more specific discussion around metropolitan governance at Habitat III. We would like to take advantage of the great potential for change and transformation that cities and metropolises have today. The significance of metropolises in people's lives is currently not well connected with their decision-making and governance capabilities. We must overcome the traditional approach to government issues we are used to—the debate around competencies and hierarchies between government levels—in order to experiment with and develop new approaches regarding network governance and co-production of urban policies for the (now inescapable) metropolitan areas.

Conceptual Aspects: The Competencies Debate

What should be the competencies of cities? How do we manage urban areas and institutional arrangements when the boundaries of management and politics do not (always) match? In recent research on Spanish urban realities, Iglesias, Martí, Subirats, et al. (2012) observed the limits that lie behind a conception of urban policies that is strictly urban, exclusively institutional, and narrowly local.

It is known that local public policies have been shaped around economic development, land management, and service provision to people, and that only later the transversal dimension of environmental sustainability was added. In all these areas, the transformations have been and continue to be both intense and rapid. The problem for this clearly expanding policy agenda is its dependence on the local government, a sphere characterized by the scarcity of resources and the peripheral position in the multilevel government scheme. Therefore, it is necessary to reinforce and rethink urban and metropolitan policies as a framework for comprehensive actions. These actions have to be planned and implemented at the local level, integrating multiple mechanisms of multilevel intervention, looking for complex sustainability dynamics, in line with what is now called urban resilience (Coaffee, 2010; Batty and Cole, 2010). All of this is further enhanced by the evident impacts that the ongoing technological transformation generates in the daily lives of people and organizations, and by the perspective of their application in urban management (Fernández, 2014; Goodspeed, 2015; Caragliou, Del Bo, and Nijkamp, 2009).

Cities are not outside the great digital revolution. On the contrary, they are often key nodes in a process that has been described as the turn of an era (Baumann, 2012; Subirats, 2011). It is not surprising that, given the impossibility of continuing with politics as usual in the local and metropolitan scenario, debates on new issues arise. Topics of debate include urban resilience (Ahern, 2011), spatial justice (Sotan, 2010), cooperatives and the social economy (Cattani, Coraggio, and Laville, 2009), potentialities of smart cities (Hollands, 2015; Kitchin, 2014; Nam and Pardo, 2011), the concept of the commons (Gidwani and Baviskar, 2011; Foster and Iaione, 2016) or, more generally, the need for innovation and new democratic participation and decision-making mechanisms. Thus, urban agendas have become more plural and complex, and in turn urban policies have assumed a much greater scope and have become interwoven in

recent years. Urbanism is no longer enough to tackle urban problems. Without a strategy of urban policies and a clear public direction, and without social engagement, local and metropolitan governments may see their dynamics subjected by internal or external agents that end up dictating projects and establishing their own pace. There is a clear imbalance between the significant role of metropolises and their governments in shaping the living conditions of their citizens, and on the other side, the limited capacity of these governments to significantly influence decisions that affect citizens. Those decisions are taken in spheres of government in which neither the local governments nor the citizens are present.

Metropolises need to increase their capabilities and therefore their sphere of decision-making and power. Logically, this must be accompanied by regional mechanisms that address issues of coordination, redistribution, and control, which have always been present in decentralization debates. Indeed, the tension between "social citizenship" and federal or decentralized forms of power is not new (Marshall, 1950). The promise of citizenship that ensures equal status for all members of a community, and access to social services and benefits on equal terms throughout the territory (whether living in a metropolis or not) may conflict with the capacity of self-government implied in a real process of political decentralization (Banting, 2006). In the end, the problem is how to balance equity and diversity (Watts, 1999), which is an issue both in the nation-metropolis relationship and between the metropolis and decentralized units. This chapter addresses how to face these issues, starting from the undoubted advantages of decentralization in current environments, characterized by great complexity, hierarchical government crisis, and the need to rely on the energy and resources from all actors involved.

There are no formulas to get from good intentions and innovative discourses to specific administrative practices with the same level of innovation. There seems to be an agreement on moving from hierarchical, segmented, and technocratic schemes to reticular and relational structures. This is important if we want to facilitate the interaction of different actors across common projects. We have also made progress in agreeing on the need to reinforce the advantages of decentralization with strategies for control and redistribution. Later in this chapter, how all this affects metropolitan governance schemes is explained.

From Hierarchical to Relational and Contractual Schemes

Institutions and public administrations have been built considering the logic of competence and hierarchical government structures. The governance of metropolises, on the other hand, has mainly been created based on the need to address issues unresolved by the aggregative configuration of cities. Metropolitan governance often resulted in a lack of clear competence delimitation and a certain authority deficit. In our opinion, the deficits of metropolitan governance will not (only) be solved with more formalization and more hierarchical structures.

Organizational hierarchies and clear competence boundaries are effective and efficient when faced with stable and clearly established problems. However, they tend to be dysfunctional when faced with complex, changing, multidisciplinary, transversal issues. In fact, the evolution of economic, social, and technological environments has been moving toward network structures as an elaborate response to complexity. Instead of the functional specialization of each element, what is required is the coordination between different governmental levels, different administrative departments, and different public and private actors. In order to avoid stagnation due to the excessive complexity, it is essential to have the positive effect of incorporating the political actors themselves into the processes. From this point of view, citizens' participation is not (just) something to be claimed as ethically or morally desirable, but rather as an essential element for an effective and efficient system (see the literature on "wicked problems," including Weber and Khademian, 2008; Head, 2008; Brugué, Canal, and Paya, 2015). In spite of the plurality of interests that they all manifest, the presence in decision-making dynamics of those

directly interested in the outcome can anchor the continuation of objectives between organizations and government agencies, and ensure reliable implementation processes. Otherwise, those different organizations and government agencies tend to not share logics and objectives.

Although it may seem contradictory to the culture that has permeated public organizations for years, technocratic ideas of processes must be diminished and instead their politicization accepted and enhanced. Politicization means integrating diverse and plural views from different actors as well as the inevitable conflicts of interest and discussing the distribution of costs and benefits implied in each decision. Therefore, it is not a matter of trying to re-rationalize organizations with complex operations, but rather to accept the need for new concepts and parameters to be incorporated in public policy development and implementation. It is about accepting complexity as a framework, rather than as a problem.

It will be important to promote trust as a new management factor. When working with interdependence of actors and network organizations, any decision-making scenario and management of (metropolitan) public issues needs to maintain the interconnection between its different components. In this context, the traditional logic of authority and hierarchy will be insufficient. Trust is key and trust does not spontaneously emerge among actors with different interests and points of view. It must be built and nourished.

The same occurs with the capacity to govern these network structures. It is necessary to mediate, articulate, and maintain the tension generated by common shared projects (in this case, the good governance of the metropolis). Rational management, as understood by the top-down logic, is not capable of being effective in a reticular environment, such as the complex interactions of a metropolis. Yet it is not enough to claim that other forms of management are necessary. Organizational spaces to facilitate mediation should be created, promoting more open roles and management strategies that are more likely to generate negotiation and joint decision-making scenarios.

When talking about the modernization of administrative structures, efficiency and competence tend to be emphasized. If we agree that metropolitan governments need to begin by accepting the complexity paradigm, it is therefore necessary to devise a strategy to govern such complexity. This means combining the will of efficiency with the needs posed by complexity; in other words, generating trust, cooperation, shared knowledge, and exchange between public and private actors in the metropolitan scenario. It has become increasingly clear that, without the incorporation of equity and redistribution as efficiency components of organizations, global urban outcomes may end up being worse (Warner and Heffetz, 2002; Pastor, 2000).

Simultaneous Centralization and Decentralization

There seems to be no doubt regarding the need to decentralize in situations of increasing complexity to better address problems. Network organization and management can be seen as an intense process of decentralization. It is helpful to consider, as suggested before, some complementary and simultaneous dynamics of centralization. We should not lose control and internal consistency when implementing decisions, two imperative aspects in public policy development. The construction of shared objectives is elemental, consistency depends on it, and this requires control and evaluation. That is the best way to create decentralization schemes that allow for flexible adaptation to changing conditions. On the other hand, decentralizing implies granting differentiated growth and development conditions to realities that are heterogeneous to begin with. In this scenario, it is of utmost importance to keep centralized schemes that allow for redistribution initiatives in order to compensate those heterogeneous starting points.

The recent Latin American experience on decentralization is contradictory. Municipal decentralization, privatization, and targeted social policies occurred in the region together with liberal economic reforms and reductions in government spending for years. While

several measures have been significantly opposed, we understand that decentralization generated a less negative debate. Decentralization was driven more by the desire to improve policy efficiency than by the will to incorporate citizen participation and engagement. The results of decentralization have been conditioned by the complete dependence of local governments on national support and funding (Clemente, 2003).

It is important to understand that no matter how much we decentralize policies, the main concern of citizens does not change: the existence of an economic model that, if it remains uncontrolled, leads to precarious work, unemployment, and the loss of sovereignty. On the other hand, Latin America presents diverse cases of centralization and fragmentation in metropolitan governments. Examples go from low fragmentation in Quito to high fragmentation in Buenos Aires' institutional arrangements (32 municipalities, the provincial government, and the autonomous city of Buenos Aires), as well as the less polarized case of Santiago de Chile (34 municipalities and three provinces).

Here we propose some ideas that seek to balance decentralization and centralization. Centralization should not involve unnecessary rigidities, but rather focus on strategic management and on mechanisms for control and evaluation. This kind of centralization can promote and strengthen decentralization. Whenever more autonomy exists on the periphery of an organization, more innovation can be expected after stimulating creativity and adapting to changing phenomena. If this is well directed by central government schemes, the benefits for all become clear.

The contractual dynamic seems to be the one that better adapts to the management relationship of strategic centralization—decentralized autonomy. The contractual framework assumes a balance between the parts involved: it presents an agreement between the parts that are not subject to hierarchy and thus allows the objectives and monitoring mechanisms to be outlined and established strategically, while guaranteeing the autonomy of the parts involved. As the option of not accepting the contract is unlikely to be granted, we are talking about building trust and common goals, willingly or not. Therefore, it becomes even more important to improve agreement dynamics and to honor commitments.

Some experiences in France and Spain (Gaudin, 1999; Brugué and Gallego, 2003) demonstrate that contractual dynamics can work. The contract programs, if accompanied by significant economic incentives and sufficient (but not suffocating) monitoring systems, can be useful for complex environments such as metropolitan areas. They allow for both strategy and autonomy simultaneously. In other words, contractual dynamics are instruments to implement the challenge of centralizing and decentralizing at the same time.

Horizontal and Vertical Cooperation

Governance of complex environments such as metropolitan areas involves generating horizontal and vertical cooperation among actors. It is not so much about creating a city, but rather about co-creating with the city. This concept requires rethinking already urbanized spaces, dignifying public spaces, and involving citizens and other actors already present in the territory, co-producing the city and co-generating urban and metropolitan policies. The macro perspective no longer makes sense. It is necessary to reconnect spaces, avoid segregation, build trust, and share goals. These are operations that require simultaneity, a plurality of actors, and different ways of acting, all capable of cooperating and communicating with each other to achieve a collectively defined objective (see the experience of the ABC Region of São Paulo in Klink, 2002, p.19). Networks and trust need to be built where previously there was indifference and competition, without hindering the recognition of conflicts that are both inevitable and capable of generating innovation—if they don't become entrenched.

It is necessary to discuss territorial cooperation; that is, cooperation among municipalities, leaving aside fragmentation and Balkanization (or hostility). Hierarchically forcing cooperation is not recommended, as it poses a threat to notions of identity and sense of belonging. Instead, cooperation should be incentivized with contract programs and financial aid. This

is particularly important in metropolitan areas, where institutional fragmentation often prevents adequately addressing common problems.

Vertical cooperation between different levels of government is also very important. The principle of subsidiarity (ambiguously used in Europe) indicates that it is better to approach problems from proximity —from the local level—but sufficient resources must be available to make this possible. The contractual dynamic is also useful here, always bearing in mind the characteristics previously outlined.

Finally, horizontal cooperation needs to be considered; that is, the necessary coordination between sectoral policies at a local level. The typically functional representation of reality clashes with the need to act in an integral way in the case of metropolitan social problems, as complex and multi-factoral issues do not easily allow for policy fragmentation. This is the most complex form of cooperation. Previously we referred to cooperation within the same policy (territorial policies or from a vertical or multilevel perspective). In this case, we seek a type of cooperation that collides with many years of administrative and professional specialization. Experience tells us that the best way to move forward is not using a hierarchical or normative approach, but through good practices and projects that have been developed from the territory, in proximity. For this reason, it is useful to create inter-sectoral steering committees and project teams that are able to combine perspectives and knowledge fields.

Metropolitan Government or Metropolitan Administration?

What should be the role of institutionalized metropolitan governance? Latin America lacks a tradition of metropolitan governments, with few exceptions (e.g., Quito). There are no unique formulas, nor is it helpful to theoretically speak about metropolitan power or metropolitan government without first addressing the needs that such an initiative would try to solve. If the goal is to avoid problems of competence between institutions, it would seem that a metropolitan administration is the most convenient. However, the size and strength of a metropolitan authority would be seen as a threat by regional, state, or federal powers. If the goal is to develop highly technical programs, the administrative logic seems to be the most appropriate, which may help making it a viable option, not a threat. Another alternative—one that is less contested by other powers—is to place the emphasis on external objectives, created from a consortium of interests, with the participation of non-institutional agents, rather than on the construction of power.

If the objective is to balance the strategic functions of metropolitan policies, then what is needed are metropolitan institutions with political capacity and strength. In that case, the best option is a metropolitan government that makes decisions, chooses paths to follow, harmonizes elements…governs. Such a metropolitan government does not have to be a conventional government. To provide services and fulfill other necessary functions for the entire metropolis, what is needed are the capacities, spaces, and dynamics of metropolitan governance.

Here, conventional government refers to some key elements: representativeness, hierarchy, and bureaucracy. Representativeness means a form of government based on a liberal-representative democracy. Hierarchy means the state is the only public decision-maker that makes and executes decisions with a hierarchical logic that is reproduced both at an organizational level (internally, the state is organized with vertical dynamics) and at a relational level (the state interacts vertically with all actors, particularly with economic and social elites). A bureaucracy is public administration organized through a hierarchical structure, characterized by a series of explicit and regularized procedures, a division of responsibilities, and a specialization of work. In this framework, both the administration and public policies are structured on the basis of stagnant and disconnected departments, without transversal administration capabilities and without the capacity to diagnose complex problems and propose integral answers.

Note that we are at the beginning of the 21st century, facing a new society that is more heterogeneous, diverse, and individualized, with more complex

problems. Universal and homogeneous policies, designed and implemented only by the state, cannot provide answers for this new reality. During recent decades, global social and economic changes have shaped a new society that requires new policies and new forms of government. Traditional forms of government, therefore, have a serious problem with functionality in the face of this new and changing scenario. In addition to the inability of governments to respond effectively to new problems, there is also a legitimacy crisis.

In this context, public administrations increasingly promoted citizen participation during the years prior to the current economic and financial crisis. However, the quantitative increase in participation was accompanied by critiques: the quality of these experiences and their capacity to improve legitimacy and reinforce administrative action efficiency have been questioned (Parés, 2009). New forms of governance have not replaced traditional forms of governance. Bureaucracy has persisted to this day, as have universalist policies. The paradigm of governance has been shaping administrations at different levels and of different political orientation. At the same time, governance has taken a variety of forms, including within a single administration. Thus, depending on the administration, the time, and the policy in question, governments have acted with traditional practices or practices of governance and, in the latter case, the participatory nature of the governance networks implemented have also been extremely varied. We therefore conclude that different participatory governance forms have complemented pre-existing forms of traditional government, but in unequal ways.

As outlined in the introduction to this chapter, we are witnessing a major renewal of the debate on the importance of citizen participation. Bottom-up and outside-in political participation practices seek to find common interests to respond to collective problems. Sometimes these practices try to influence conventional processes of public policymaking. Other times, practices of implementing democracy have taken a self-management or self-government approach to problem solving.

Political participation experiences are based on collaboration between actors and/or citizens who share common interests and are based on values such as cooperation and access as opposed to the liberal principles of competition and ownership. To define these participatory practices, several authors are using the concept of social innovation (Moulaert, 2013; Subirats, 2014), which the European Commission defines as "new ideas (products, services, and models) that simultaneously meet social needs (more effectively than alternatives) and create new social relationships or collaborations (Social Innovation Exchange, 2010, p. 18)." In general terms, social innovation refers to citizen-based cooperative processes and practices with a strong public service character that improve on previous solutions to social problems.

The following characteristics identify these new dynamics of bottom-up political participation:

- Democratic radicalism: Inspired by a model of democracy based on respect for diversity and managing the common based on the aggregation of collective interests, without being captured by the views of dominant sectors—the state and the market.
- Collaboration: New forms of political participation that avoid hierarchies and have a horizontal and shared character. However, the most characteristic factor is that they are structured around the collaboration between citizens who share concerns, visions, and objectives. Thus, we no longer speak of actors with particular interests that establish among themselves more hierarchical or horizontal relations, but of actors and citizens who interact and collaborate with each other because they have a common goal.
- Connectivity: The reduction (or elimination) of intermediary structures is an essential characteristic of new forms of bottom-up participation. Traditional forms of organization have become expendable. Instead it is the citizen body that, despite its differences, may have common interests in a specific moment. Consequently, the key factor is the capacity of those citizens to connect, even if it is circumstantial or episodic.

The internet is the platform that makes it possible, considering the character of immediacy or eventuality in the organization. In fact, instead of organizations, we should talk about clusters of internet users, informally articulated around certain nodes or people that serve as reference.

- Political pressure and implementation: The new forms of bottom-up political participation are based on a certain vision of the world—shared concerns and objectives—and, consequently, look to have an impact on the public sphere. That is why many of these practices of political participation seek to put political pressure on the state and influence the political agenda and public policies. At the same time, however, some of these experiences have a clear implementation goal, looking to contribute or generate their own solutions to collective problems (on which governments have difficulty acting). Therefore, they open spaces or create opportunities for co-production.
- Glocalization: Many of the experiences of bottom-up social innovation combine the local scale with the global scale. Thus, we find local initiatives whose purpose is to manage the consequences of global problems, initiatives that seek to change the scope and influence higher realms, and/or initiatives created in different territories that come together or that are recreated without considering the spatial organization of public administrations.

The emergence of these new forms of political participation occurs at a time when public policies are characterized by a strong privatization tendency (reducing the role of the state) and by logic of austerity. The approach is based on reducing public spending and affecting the social character of public policies, which are losing their redistributive capacity. It seems clear that, in parallel to the multiplication and diversification of the ways of doing politics, the relations between public administrations and the citizenship are changing. Other forms of citizen engagement in public affairs, of political participation, and of collective action emerge. Some of these forms of political participation are well known, others are innovative and respond to the characteristics of a more diverse and fragmented society that is experimenting with new forms of social organization.

Another Perspective in the Digital Age

How can metropolises take advantage of social and technological change to deal with their governance and urban policy problems? How can technologically mediated democratic systems be used to conceive public policies differently (Edwards, 2006; Subirats, 2012; Dente and Subirats 2014)? How can we take advantage of new distributed and shared production dynamics in the intervention of public power (Long, 2002)? Can open government and new ways of using the potential of open data be discussed (Ramírez-Alujas, 2011, 2012; Janssen, Charalabidis, and Zuiderwijk, 2012)? There are a number of elements necessary to at least partially answer these questions. First, we need to understand that digital change allows for the creation of meaningful spaces, different from the logic of the market and the organization of states and other government spheres. The digital transformation has given new dimensions to the space of the common, understood as the collective capacity to face common problems, with or without institutions involved. This is no novelty. The work of Ostrom (2000) academically and theoretically voices a set of practices that have allowed communities, over the centuries, to maintain their common goods in a sustainable and organized way. Ostrom has collected a multiplicity of practices to govern the common and has systematized and ordered their institutional rules.

In the field of public policy, incorporating these ideas in the design, decision-making, and implementation of policies is leading to the concept of co-production of policies and public services. Moreover, it is leading to collaborative innovation, going beyond the logic often focused on the technocratic and efficient e-government, which sees citizens as customers to serve, not people with the capacity to design, decide, and implement jointly (Koer and Fuller, 2011; Linders, 2012; Sørensen and Torfing, 2012).

The concept of digital era governance (Margetts and Dunleavy, 2013) departs from the idea in the New

Public Management approach that it is better and more efficient to generate competition (thus, looking to incorporate market logic into the functioning of the public sector). The tendency to disaggregate administrative structures, generate partnerships, or seek quasi-market formulas responded to this criterion, as well as the notion of generating incentives to improve in an environment in which the formulas to increase productivity were not present. The digital era governance approach argues that, in the new digital scene, it is often better to share or collaborate than to compete. In addition, it argues that value creation means more than strictly monetary value. Some evidence demonstrates the limits of the New Public Management approach, after enough years of experimentation (Dunleavy and Margetts, 2013). This leads to the opportunity or need for approaches that generate reintegration of services, more holistic visions of public service, and a more substantive and less instrumental use of digitalization.

Metropolises are especially propitious areas to experiment in this new frame. What in the traditional conception were problems (the lack of coordination, dispersion, the lack of clear responsibility in the decisions and management processes), in the digital world are constitutive elements of its horizontal framework, constantly connected and with unpredictable outcomes. If we are entering an era in which innovation capacity resides on the best possible combination of social initiative and low-cost technological availability, how can we take advantage of this combination to rethink public policies and the provision of services? In general, both policies and services have been thought of in a hierarchical way, from a segmented, competence mindset, and considering citizens as objects of attention rather than as subjects of decision. Every change dynamic that characterizes the digital era is based on recognizing that it is more effective and useful to rely on the capacity of collective innovation than on the concentration of decisions based on diagnostics, alternatives, and solutions from a group of technicians and experts, no matter how well qualified they may be. It is from this conviction that the idea of co-production of public policies and services has been shaped (Baser, 2012; Scherer, Wimmer, and Strykowski, 2015). One of the key elements in this change of perspective is considering citizens co-participants in a framework of reciprocity and interdependence, not hierarchy.

This idea of co-production of services was already present in Elinor Ostrom's work (1996). She stated that new strategies could be established in a "relationship that could exist between the 'regular producer' (such as street-level police officers, social workers, or health workers) and their clients, who wanted to be transformed by the service into safer, better-educated or healthier persons" (quoted in Brandsen and Pestoff, 2006, p. 496). From this perspective, the position of citizens is markedly different from the position of clients. Therefore, the consideration is the relationship between citizens and their needs, how it will evolve, and to what extent citizens can find satisfying answers to their problems. Or, whether citizens will continue to demand services from the public sectors, even at the cost of maintaining a position of subordination, passivity, and non-intervening capacity. Logically, this greater capacity for innovation, intervention, and co-production of services by citizens and their own organizations should be accompanied by a structural change of power and formats—representative institutions and social dynamics (Moulaert, 2013).

Conclusion

Metropolitan areas are presented to us as territorial enclaves in which very different social and economic networks coexist. The larger the area, the more people it concentrates, and the fewer the strong bonds between them. Yet it also provides greater amounts of different lifestyles and projects. There are fewer (shared) identities, but more opportunities. The construction of what is metropolitan cannot be formed without considering the lack of sense of belonging that its scale poses.

In this sense, a metropolis is a large conglomerate of people and groups that interact with and depend on each other to a greater or lesser extent. Increasingly, there is an agreement that good quality of life and satisfactory civic coexistence does not depend on a strong and sovereign authority, but rather

on everyone feeling responsible for what happens in the community. Each member acts based on his or her own resources and availabilities, without diffusing their own specific responsibilities. Interdependence, continuity, and a lack of a sovereign authority able to decide for everyone at all times, are the characteristics that usually define a network. A network of actors in a metropolitan area might end up being responsible, in one way or another, by action or omission, for the dynamics that are occurring.

Cities, and even more, metropolises, make us feel more complex. In cities, you learn to live with strangers, with people different from you. Dense metropolises make relationships and exchanges possible without great costs in terms of mobility or resources. This density also has certain disadvantages, such as the greater use of collective spaces or its disappearance, the problems generated by a mobility still based on private cars, greater pollution, and the potential erosion of (pacific) coexistence. That is why it is important to maintain a healthy tension or balance between density and civic-collective responsibility of public spaces, as well as to invest in public transportation.

Relations between local communities and their representative institutions should be based on the principles of collective co-responsibility and citizen participation, with less talk of government and more of governance capacity. The government of metropolises cannot be considered a public institutions' problem only. It has to be seen as a collective concern, in which hierarchical rules are no longer useful, and in which coordination and co-responsibility mechanisms must be established with the social actors present in the community. Only in this way can the complexity of future challenges be collectively assumed.

A new way of governing metropolises and a new way of understanding collective governance capacities involve different understandings of local democracy. Though representative mechanisms continue to be central to local authorities' legitimacy, it is becoming increasingly clear that we need to develop new forms of citizen participation and engagement. Those new forms should strive for meaningful decisions for the community, bringing people closer to the complexity of public decisions.

The leadership capacity of metropolitan governments will derive from their role in projecting and extending a model of community to other actors, agents, and people present in the same area. Our hypothesis is that there will be less room for projects that do not express a certain political vision. That is to say, that it will be necessary to debate about values and about the degree of social inclusion that one wants to achieve or to reach compromises on serious issues within the local community and in relation to the position of a certain metropolis in the world. The metropolises that do not have the capacity to debate and determine their future and the great themes of collective coexistence will see how the market and other agents decide for them. And then, the public space will be seen as something residual and collective interests as a reality subjected to the pressures of the strongest.

Political and local leadership are important, but so is the capacity of citizens to assume collective responsibilities. And it is also significant to strengthen the technical and administrative capacities at the local or territorial levels to make them capable of dealing with the complexity of pending tasks. Technological change, which implies reinforcing the possibilities of shared knowledge and new forms of mobilization and social action, should also be a major concern for metropolitan governance dynamics.

The challenge is how to combine competitiveness, governability, and social inclusion at the same time. It seems that, so far, the emphasis has been placed on the competitiveness of a metropolis, and that the other aspects have been conditioned to it. The result has been an increase in social gaps and inequality. If the emphasis were placed on the metropolis governability, political stability would be prioritized, followed by competitiveness and economic adjustment. If we approach the problem from the perspective of human development in metropolitan areas (from inclusion), we also then determine the type of competitiveness to be achieved and the form of governance appropriate to that objective. We understand there will be no human development without democratic deepening or without the consolidation of development capacities that articulate economic and environmental sustainability with inclusion.

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1.5 Political Economy in the Global North and South: Connecting, Financing, and Ruling

Pedro B. Ortiz (World Bank) and **Marco Kamiya** (UN-Habitat)

Abstract

The metropolis is an unprecedented phenomenon of global transformation, yet we still have no discipline of practice to deal with it. Areas of knowledge such as metropolitan finance, supply chains, transport integration, land management, and infrastructure provision are still exploratory fields. National governments must focus and adapt the new political economy that the metropolis demands. This paper defines and analyzes the complexity of metropolitan structures, describing the differences between metropolises in developed and developing countries, and the connectivity and production links that integrate them. It looks at metropolitan political management and governance as a framework for economics, planning, and financing, both in formal and informal contexts, and discusses this new approach in relation to states and cities at the international and national levels.

Metropolises today are the predominant connection between cities and the global economy. Supply chains, economic hubs, and production platforms are linked globally through cities. Metropolises are also the major axes that connect cities, countries, and rural areas. They influence major national decisions concerning infrastructure deployment and economic development and play a fundamental political and economic role in the governance of cities and nations. The world's roughly 20 metropolises are also a base for multinational corporations and providers of finance, business environments, and the infrastructure that connects them.

As early as 1995, Kenichi Ohmae (1995), a McKinsey & Corp. partner, predicted the end of nation states and the emergence of mega-economies or regions. More recently, Parag Khana (2016) described a world in which connectivity led by supply chains was the rule rather than the exception, configuring an almost stateless world.

The realities and politics of the so-called metro-optimists, however, are more complex. Saskia Sassen (1995) defined the emergence of the metropolis, focusing on three global cities in her classic study. *The Global City* (Sassen, 1995) analyzed Tokyo, New York, and London as the ultimate metropolises where finance and production hubs integrated. Later, Pedro Ortiz (2013) described the need to plan for the metropolis and its limits within nation-states marked by the tension between productivity and equity. Today, academic output on metropolises and megacities is deeper and more analytical in a moment in which metropolises are the norm rather than the exception.

The world is clearly moving toward metropolitan economies (see Table 1), but nation-states are still in control and will be the predominant force for the next few decades in a world that requires trade, urban–rural policies, social mandates, and nationwide planning. This chapter focuses on the major axes that define the political economy of the metropolis—connections, finance, and economics—and the new rules that govern them.

A well-known quote from Bismarck says, "Politics is the art of the possible." Political economy tries to address the dichotomy between economic and social objectives to make them as compatible as possible and avoid the breaking down of the system. Disruptions could result from the failure to coordinate efficiency and equity. Metropolitan management must therefore steer between unacceptable social inequity and

unsustainable economic inefficiency. Economics aims to be a science, but political economics is not.

Economics is the science that analyzes the components of a productive process. In metropolitan terms, economic policies attempt to maximize the output given a limited amount of resources. When applied to metropolises, economic policies develop a set of technical mechanisms to (i) calculate the return on a combination of resources and (ii) improve productivity.

Political economy, instead, is the art of achieving the most desirable objective through an analytical approach situated within a specific sociopolitical context that could allow, or endanger, the efficiency of the result. Political economy tries to make the output as efficient as possible given a set of social (political) circumstances. The objective of political economy is efficacy rather than efficiency.

Economies of scale apply directly to metropolises, which is why metropolises are more efficient than simple cities and why they are becoming increasingly powerful. Metropolises are now reaching competitive capacities beyond those of many nation-states. We could define the current era, starting in the late 20th century, as the Age of the Metropolis.

In achieving efficiency, numerous techniques are used to quantify the output of a specific set of productive inputs. Techniques are used to time and scale the inputs to maximize the output. On the social side, many indicators allow equitable access to social facilities to be calculated and shared, and such indicators help us reach a progressive distribution of consumption. However, there are no techniques or indicators available to locate equilibrium between efficiency and equity, despite the many efforts to develop taxation formulas to frame this dichotomy.

Above all, it is important to understand that there can be no equity without growth, and no growth without equity. The political programs that prioritize growth as the forerunner of equity generally do not understand that if sharing is postponed for a long time, the whole system breaks and growth is disrupted, if not halted altogether.

Table 1. Ranking of Nations and Metropolises by GDP, 2014

Rank	Country or Metro Area	GDP (PPP, US$B)	Total Population	GDP per Capita (PPP, US$)
1	China	$18,017.1	1,364,270,000	$13,206.4
2	United States	$17,419.0	318,857,056	$54,629.5
3	India	$7,384.1	1,295,291,543	$5,700.7
4	Japan	$4,655.5	127,131,800	$36,619.4
5	Germany	$3,757.1	80,970,732	$46,400.6
6	Russian Federation	$3,358.6	143,819,569	$23,352.6
7	Brazil	$3,275.2	206,077,898	$15,893.2
8	Indonesia	$2,676.1	254,454,778	$10,517.0
9	France	$2,604.2	66,217,509	$39,327.9
10	United Kingdom	$2,597.4	64,559,135	$40,233.2
11	Mexico	$2,171.0	125,385,833	$17,314.7
12	Italy	$2,155.8	60,789,140	$35,462.8
13	Korea, Rep.	$1,683.9	50,423,955	$33,394.8
14	Tokyo (Japan)	$1,616.8	37,027,800	$43,664.3
15	Saudi Arabia	$1,606.4	30,886,545	$52,010.2
16	Canada	$1,601.8	35,543,658	$45,065.7
17	Spain	$1,562.9	46,476,032	$33,628.9
18	Turkey	$1,502.5	75,932,348	$19,787.7
19	New York (USA)	$1,403.5	20,073,930	$69,914.7
20	Iran, Islamic Rep.	$1,352.1	78,143,644	$17,302.6

Rank	Country or Metro Area	GDP (PPP, US$B)	Total Population	GDP per Capita (PPP, US$)
21	Australia	$1,077.9	23,470,118	$45,925.5
22	Thailand	$1,065.7	67,725,979	$15,735.1
23	Nigeria	$1,049.1	177,475,986	$5,911.2
24	Poland	$960.2	38,011,735	$25,261.6
25	Egypt, Arab Rep.	$943.5	89,579,670	$10,532.9
26	Pakistan	$890.3	185,044,286	$4,811.4
27	Los Angeles (USA)	$860.5	13,220,970	$65,082.4
28	Seoul-Incheon (South Korea)	$845.9	24,622,600	$34,354.9
29	London (UK)	$835.7	14,620,400	$57,157.0
30	Netherlands	$813.8	16,865,008	$48,253.3
31	Malaysia	$766.6	29,901,997	$25,638.6
32	Paris (France)	$715.1	12,492,500	$57,240.7
33	South Africa	$704.7	54,001,953	$13,049.3
34	Philippines	$690.9	99,138,690	$6,969.0
35	Osaka-Kobe (Japan)	$671.3	18,697,800	$35,902.4
36	Colombia	$638.4	47,791,393	$13,357.1
37	United Arab Emirates	$614.9	9,086,139	$67,674.1
38	Shanghai (China)	$594.0	24,683,400	$24,065.0
39	Chicago (USA)	$563.2	9,568,133	$58,860.8
40	Moscow (Russia)	$553.3	12,080,400	$45,803.0
41	Algeria	$552.6	38,934,334	$14,193.4
42	Iraq	$524.2	34,812,326	$15,057.1
43	Vietnam	$510.7	90,728,900	$5,629.0
44	Beijing (China)	$506.1	21,639,100	$23,389.9
45	Bangladesh	$496.8	159,077,513	$3,122.7
46	Belgium	$487.8	11,231,213	$43,434.7
47	Switzerland	$487.5	8,188,102	$59,539.8
48	Köln- Düsseldorf (Germany)	$485.2	11,618,400	$41,762.9
49	Houston (USA)	$483.2	6,448,841	$74,925.7
50	Washington (USA)	$442.2	6,056,296	$73,016.9

Source: Prepared with data from Brookings Institution (Cities) and the World Bank (GDP). Retrieved from http://www.brookings.edu/research/reports2/2015/01/22-global-metro-monitor, http://data.worldbank.org/data-catalog/world-development-indicators

Note: Many cities are located among the 100 largest economies of the world. Because of this, cities such as Tokyo, New York, and Seoul are considered nation-states.

Physical Strata Helps

A key component is at play in this dichotomy between growth and equity: the physical substrata, a substantial component when dealing with territorial structures, as with metropolises. The physical substrata includes both the natural environment and the urban construct and layout (UN-Habitat, 2015).

Well managed, the physical realm can mitigate socioeconomic frictions. One example is breaking the center-periphery antagonism, which fosters the marginalization of peripheral social groups. Adopting a polycentric approach to metropolises allows demand to control the land market and provides a plurality of locations for social access to public facilities.

The metropolis is an aggregate of cities and neighborhoods. The territorial build-up of a metropolis therefore depends on an efficient layout of the connections among them. This point was described by Jacobs in her classic, *The Death and Life of Great American Cities* (1961), in which she described the conditions for vibrant and productive cities as available public space, mixed communities, a number of intersections, and so on. Recently, De Nadai (2016) quantified these conditions in Italy using cell phone data, while UN-Habitat, the Lincoln Institute, and New York University (2016) have been working on a global sample of 200 cities to create a dataset using quantitative and qualitative aspects of urban expansion from 1990 to 2015.

Zooming out, the efficiency of the metropolis is based on two components: relative location and infrastructure investments. Relative location concerns territorial components, since the functions and uses of land must be efficiently located to minimize costs and provide fluid mobility and accessibility throughout the metropolis. Infrastructure investments must be of an appropriate level and adequacy. Urban and metropolitan space is created by the infrastructure that provides potential for its use. As noted by Lefebvre (1974), "Space does not exist; it is created."

A good location is the one that is related to this infrastructure. It is reflected in the value of the land and the added value generated by the impact of the infrastructure on the potential uses of that land. Added value is mostly a condensation of the positive externalities of the public (or private) investment in infrastructure on the potential (economic) use of that land. The infrastructure provides the location's effectiveness. Time is also relevant. If the availability of the infrastructure is not timed well (typically due to financial concerns), a good location is useless. Politics therefore enters the timing game.

The metropolitan physical structure, location, and infrastructure—in other words, land use and transport—are the base. This is what a metropolitan government must provide. The interests of land and inherited inefficient locations, historically based in shortsighted land policy approaches, often make the pursuit of this objective very difficult, if not impossible. Political economy balances those conflicting private interests and tries to come out with a feasible proposal for land allocation decisions and provision of infrastructure.

The economy of the metropolis is an essential component. The forces that shape the efficiency of a metropolitan economy (e.g., labor, capital, entrepreneurship, and productivity) are now global, not local. They must be dealt with in a way quite similar to a national economic policy rather than a localized urban economic policy.

Metropolitan Governance

The economic power and the social complexity of metropolises align themselves rather more with the management of nation-states than of cities. Metropolises follow this rule even if they do not have an established government.

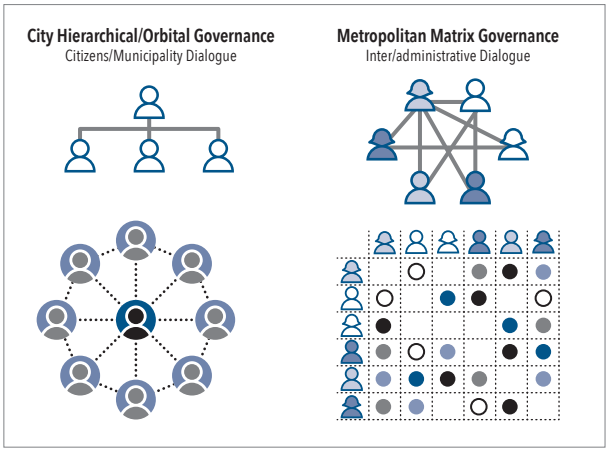
In all cultures, city government is a (formal or informal) unitary system. This has been true in Europe since Roman times. In complex hierarchical systems such as the Roman Empire or the indigenous Germanic and Anglo-Saxon tribal systems, the basic unit of territorial coexistence was the village, the town, and the city. A single institution deals with the issues that require joint or cooperative management.

A metropolitan governance system is much more complex. It involves many municipalities, tiers, ministries, and departments of the national government (e.g., transport, housing, finance, public administration, health, and education). It also typically involves multiple utility agencies, either public, private, both, or mixed. Each of these organizations has their own framework of purposes and competences provided by the law, and none of those involved in metropolitan management can impose on any other beyond the limits established by the law.

The management of a metropolis is not based on orders provided from the upper tier of a unitary system, it is based on a peer dialogue among all the institutions and organizations within the limits established. The law outlines the distribution of responsibilities

and competences among them. A metropolitan management structure is neither based on a unitary hierarchical pyramid (the top-down Aristotelian *potestas*) nor on a centripetal (center versus periphery) model of imposed decisions. Metropolitan management structure is based on a matrix of dialogues (Figure 1) among the actors and stakeholders involved.

Figure 1. Metropolitan Governance: A Matrix of Dialogues



Source: Author's elaboration, retrieved from www.pedrobortiz.com.

National Governments Taxonomy

National governments, in contrast to single municipalities, have developed from more diverse alternatives. Models range from the centralized unitary system of a military conquest to the cooperative coordination of city leagues, such as the Greek Delian, Achaean, or Hellenic leagues, to the Germanic Hanseatic league. With time, the complexity of organization has evolved into such solutions as federations.

Unitary: In a unitary system, power before decentralization is instituted in a single central power. Sovereignty stands at the center. Most countries work this way. France is a good example. In France, the head of a department is the prefect, who is appointed by the national president and is accountable to him or her.

Confederate: In a confederate system, sovereignty stands at the level of member states or cities. The German Hanse and the Greek Hellenic systems are illustrative. The Confederate States of America (the government of the South during the U.S. Civil War) and the European Union are closer examples.

Federation: In a federal system, sovereignty is at the center but management is not just decentralized, it is also devolved. The various tiers of government have their own independent designation systems and are accountable to their population, not to the central unitary power that has appointed them. Germany and the United States are current examples.

Metropolises have developed as complex supra-urban systems composed of multiple cities or urban units. They have the management complexity of modern nation-states. They have the productive capacity and the socioeconomic complexity of nation-states. Their management requirements have less to do with simple urban structures than with the typical concerns of nation-states. As an example of metropolitan efficiency, the ones that are in fact nation-states, such as Singapore, perform so well that they are often benchmarked as examples of the way to go forward.

The need for a new urban dimension, the metropolitan one, has been felt since the second half of the 20th century. There have been many attempts to build some metropolitan coordination among cities involved in various forms of metropolitan phenomena.

Within the confederate approach there is an incremental process that can be simplified into four stages:

1. **Round Table:** The first stage of coordination involves meeting and revealing to the group what each member is doing. Sharing information permits learning from each other, facilitating good results by benchmarking and, most importantly, detecting where conflicts or inconsistencies might appear. This could lead to alternative methods to address the conflicts or inconsistencies by either negotiation or confrontation.
2. **Parallel Projects:** Out of those round tables and their attendant cross-insemination of ideas and experiences, some of the administrations involved may eventually replicate each other and develop similar projects. Such parallel projects are not integrated into the single management.

3. **Common Projects:** Once confidence has been developed over many years of stages 1 and 2, some of the administrations may decide to undertake common projects. Planning is done together but implementation is still run independently. Some economy-of-scale benefits could be achieved by such common initiatives.
4. **Management Agency:** When the complexity of a project requires strong technical skills and continuous maintenance management, a common project might be provided with a management agency. Cross-boundary transport projects, such as in Washington, D.C., are an example of this stage.

These stages of confederation building take time: five to ten years each at least. Some arrangements never go beyond a certain stage when the confidence has not been built to allow for further development. Most important, it must be understood that the process of confederation has a limit: where none of the administrations involved, or the politicians in charge of these administrations, is willing to transfer sovereignty from their administration to the agency.

Confederations do not readily develop into federations or unitary systems. The Hanseatic League imploded when confronted from the outside. The Hellenic League was taken over by the Athenian Empire and the Confederate States of America terminated with the end of the U.S. Civil War. Europe, as it is, is a confederation. A unitary monetary system requires a federal fiscal and economic policy. The absence of such has created many of the troubles Europe is experiencing. A constitutional attempt was made a few years ago, but it failed. Europe in 2016 is struggling with centrifugal forces such as England and Greece.

A National Unitary System, Decentralization, and Devolution

At the other extreme of governmental mechanisms, we have the unitary system. With the exception of Singapore and some other cities (e.g., Monaco and the Vatican) often presented as metropolitan successes, the unitary system is mainly used at the national level.

There are many ways to achieve national unity. Usually violence is involved, with the unitary system at some moment in history being imposed by either war or revolution. It is therefore to some extent an imposed system. Even when legitimized by a democratic constitution, it nevertheless has a top-down approach and is sometimes contested when it fails to respond to bottom-up community concerns.

National unitary systems can be deaf to metropolitan needs. They tend to focus on national issues and take a limited interest in metropolitan ones. These issues are difficult, conflictive, and expensive to solve (e.g., Bogotá transport). This is so even when the capital metropolis produces more than 60 percent of the national GDP (e.g., Manila, Cairo, and Buenos Aires) and the whole country is at stake if the capital metropolis does not work.

On some occasions, metropolises benefit from a decentralization framework. A local agency is instituted and a CEO appointed by the central government, such as in Madrid during the 1970s. Decentralization is as democratic as the central government. Even a legitimately democratic government does not necessarily represent the specific inhabitants of the metropolis. It represents the inhabitants of the unitary state (e.g., the role of Minister for Kampala, Uganda). Eventually, the metropolitan population will require accountability of these appointees. They will be summoned to be accountable to the metropolitan population, not to the national president. Devolution would then be the next step in establishing real metropolitan governance.

Decentralization must not be mistaken with devolution. In a metropolitan devolution process, the accountability of the metropolitan appointees is transferred from the central government to the citizens of the metropolis. The head of the metropolitan agency is accountable to the electorate. Once their offices have devolved, metropolitan executives become elected governmental officials. The central government cannot remove them

without the convergence of exceptional and specific circumstances, to be established by law at the constitutional level.

A process of metropolitan devolution can be established in unitary states. There are, however, two difficulties. First, no politician wants to lose areas of power and control. National governments do not like to lose part of their capacity to manage the metropolis, which represents a large portion of national population and possibly even a greater share of national GDP. Politicians by nature accumulate power, they do not let it erode. Second, if the president of the metropolitan government represents an opposition party, presiding over more than 50 percent of the national GDP might encourage him or her to imagine the national presidency as the next rung to climb. This person would become the political enemy of the national president, as occurred in Buenos Aires. No politician wants to breed enemies out of power resignation.

All this is unfortunate enough. On one hand, it is impossible to build a metropolitan government level out of a confederate approach. Such adverse circumstances are a pity, as it would be possible to build that level from unitary decentralization and devolution. Some would argue that metropolitan governments are not necessary, and that a confederation or decentralization framework would be quite enough. Political economy, however, would point otherwise, arguing that many challenges and problems of metropolises are neither municipal nor national. If they are specifically metropolitan problems, they must be addressed at the metropolitan level, and for such they need the instrument of a metropolitan institution to address them, achieved through either decentralization or devolution.

In a globalized world, in a competitive environment where metropolises are more competitive and economically productive than nations, and where the wealth of nations depends on the efficiency of their metropolises, there is little room for suboptimal solutions. Metropolises must be provided with the most effective system of governance to be able to maximize their economy. If not, the nation is doomed. It will not be able to compete in a globalized world.

Metropolises also must be able to provide adequate frameworks to develop the political economy necessary for governance's equity objective. That is why the governmental system is an essential piece of the metropolitan political economy.

Metropolitan Economics and Political Economy

The productive system of a metropolis is a system where all parts are interrelated, even though some of its components may be discontinuous in spatial terms. Many metropolises do not see the need to act on the system in a consistent and comprehensive way. Economies of metropolises are often dealt with in a disjointed way, assuming they are dealt with at all. Metropolitan economies are often as important and powerful as national economies and they must be dealt with at a similar level of concern and with similar policy management capacities.

The projects approached for common development by cities in metropolises are mainly green or gray infrastructure projects. This is because, among the five components of metropolitan structures (environment, transport, housing, productive activities, and social facilities), environment and transport are continuous systems; the other three are discontinuous.

There is a tendency to think that continuous systems require more coordination than discontinuous ones. That is why municipalities feel a greater need to have a consistent metropolitan policy when dealing with green and gray infrastructure, unlike when dealing with housing, productive, or social policies. The need for coordination is more difficult to perceive for the discontinuous components and comes about only in more complex stages of metropolitan evolution, most frequently in decentralized or devolved systems.

Beyond technical capacity, the major problem for coordination is isolation between professionals who deal with the economic policies of metropolises and those

who deal with physical policies. If there is no metropolitan institution to foster collaboration, coordination, and dialogue, isolation becomes chronic and coordination takes place only, if ever, at the academic level.

Physical planners approach location in terms of a separation of conflictive functions (e.g. polluting industry and residential areas) and as driven by traffic patterns of accessibility or congestion. Very little attention is typically given to economic needs because planners lack such skills and information, and the system, either academic or administrative, rarely provides for it. Urban economists will, on the other hand, bypass physical management and address their arguments to top politicians and decision-makers. They will encourage policies and projects unrelated to a physical context that is difficult to grasp and appreciate. Governance specialists, focus on institutional settings. They rarely understand the physical needs of the metropolis and so produce proposals based on benchmarking approaches that replicate well-functioning institutions. This approach, providing a tool unrelated to the task, might leave you with the institutional dilemma of a screw in one hand and a hammer in the other.

Unfortunately, institutions from places that have problems in socioeconomic contexts unrelated to the metropolis in question are hardly going to perform as they did in the native city. If officials from Kampala are urged to adopt a governance mechanism during a field trip to see the transport system of Stockholm, that mechanism must be contextualized or else this becomes an exercise of science fiction. Governance is the tool to implement a proposal or a project. If the project was not selected and developed by the city leader, the tool chosen will probably be inefficient or redundant for the purpose.

Political Economy: Strategic and Structural Planning

Integrating economic, social, and physical approaches into the metropolis can be done through strategic planning. The physical environment is the backdrop against which economic and social planning take place. Strategic planning is the instrument that establishes the socioeconomic priorities for the future of a specific metropolis. It does so based on the metropolis's problems, risks, weaknesses, and potential. The transversal approach to metropolitan strategic planning could result in identifying priority projects. Transversal projects that require a physical dimension and promote a strategic vision for the metropolis beyond the tactical.

The socioeconomic strategic plan then feeds a physical structural plan. Note that a structural plan that addresses the overall general physical strategies of the metropolis should not be confused with a detailed municipal regulatory plan. The structural plan must be designed at the metropolitan level, which requires instruments different from those used at the municipal level. Such a misunderstanding is the most common mistake made by professionals who deal with metropolitan planning, most of whom come from an urban planning background. They create so-called metropolitan plans that are impossible to implement because they misunderstand the biology of the metropolis. Such plans eventually become decorative elements in administrative offices.

A structural plan deals with the main projects that have a transversal metropolitan implication. Such projects are meant to affect the overall structure of the metropolis to increase both the efficiency and equity of the metropolitan system. Sustainability is obviously the substrata of the physical policies that must integrate the five previously mentioned metropolitan components: green and gray infrastructure (i.e., environment and transport), housing, productive activities, and social facilities.

Metropolitan Urban Economy

Urban economy emphasizes city layout to improve productivity. Components are rooted into supply chains, activities, and procedures that facilitate integration of production with time and efficiency. Several factors contribute to this, including fixed capital and spatial layout.

Fixed capital is essential because metropolises must accumulate fixed capital as a multiplier of labor

productivity. There are three components of metropolitan fixed capital:

1. **Location:** It must be integrated into a territorial model that allows resilience, sustainability, and flexibility.
2. **Typology:** It must respond to the potential needs of the metropolitan economy's strategic development.
3. **Timing:** It must be prioritized and timed because no one wants to finance infrastructure that is not yet necessary.

Fixed capital is not enough, and yet it could also be too much. Some metropolises have already achieved their actual limits of capital accumulation and therefore need to tame the complexity of their accumulated capital. Only a few metropolises have reached this level: Paris, London, New York, and Tokyo are the clearest examples.

Some of the effects of fixed capital can be achieved less expensively by running capital and management. We see traffic management as an alternative to building expensive and environmentally degrading infrastructure. The analysis of intermodal and overall efficiency can be approached with multiple econometric techniques.

This capacity for management governance is what we call intangible fixed capital. Investment is necessary in human and social resources, and resources related to entrepreneurial capacity. Metropolises with more social and human capital can recuperate quicker and better after disasters than those with less. One could compare the aftermath of the 2010 earthquakes in Haiti and Chile as an example. Not that they need to be tested by disaster to analyze results, these metropolises perform better in any circumstance.

We should distinguish between the social and productive facilities of tangible fixed capital. No labor force can be improved without health or education facilities. Even cultural and leisure facilities are essential to keep a labor force balanced and competitive. The share and prioritization, however, is impossible to approach by standardized quantitative means. No comparative standard analysis is available among well-performing metropolises. Each metropolis has its own underlying structure. Cultural and spatial contrasts require different optimal equilibriums. Transfer of internationally trendy templates should be restrained. The share should be established by the priorities and appreciation of local consumers and the electorate.

Congestion is the nightmare monster of the metropolis. Congestion can bring a metropolis to gridlock. Often size is seen as the cause, but more important are the attributes of urban expansion layouts. In this framework, the subsequent argument is that metropolitan growth should be contained. This is a moral approach, not technical, as an ethic of small is beautiful can be discerned. Technically, however, a congestion threshold is reached when the marginal return on the accumulation curve becomes negative. In traffic terms, that would be when the cost of one additional car on the road reducing the general speed (a negative externality) becomes greater than the benefit of accessibility provided for by that additional car. Congestion, and not only in terms of vehicular traffic, can diminish a metropolis's competitiveness. Non-congested competitors then take advantage of this weakness in global markets.

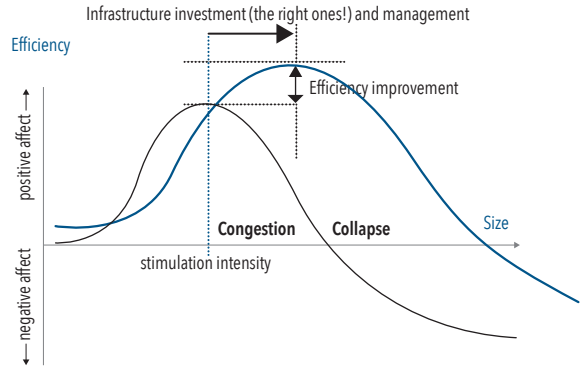
Nevertheless, economies of scale show that the larger you are, the more efficient you are likely to be. Better mobility should increase productivity. According to Prud'homme and Lee (1999), the elasticity of commuting speeds and labor productivity is around +0.30, which means that increasing speed by 10 percent increases productivity by 3 percent. The larger the metropolis, however, the more specialized the labor force typically becomes. Such specialization requires adequate education and immigration appeal. Larger metropolises typically enjoy larger marginal returns on fixed capital. The congestion limit must not be reached, meaning there needs to be a way to push back the congestion threshold. As Alain Bertaud (2016) said, "Mobility explains the link between city size and productivity."

Size and congestion are related—they are part of the same equation—which is why, instead size

being the factor to limit, congestion should be targeted. The limit on a metropolis's size is the capacity of its collective intelligence to manage congestion. The components of collective intelligence are not only the capacity of the governance system to respond (i.e., social capital and accumulated social and human resources integrated into institutional frameworks), it is also the economic capacity to enable and facilitate the necessary investments (see Figure 2).

On the other side, and as mentioned before, the attributes of the layout of urban expansions are a significant determinant of congestion in cities. UN-Habitat, New York University, and the Lincoln Institute (2016) found that, especially in less developed countries, the cause of congestion is unplanned and disorderly growth taking place in defiance of municipal plans or regulations. Congestion is strictly correlated with the share of land that is allocated to streets, main streets, and arterial roads. If not enough land is allocated for this purpose, a serious number of bottlenecks is created, and the economies of scale cannot be achieved as desired, and described before. An optimum value for street allocation should be 30 percent, but in Dhaka, Bangladesh, for example, the share of built-up area allocated to streets is just 12 percent.

Figure 2. Metropolitan Psychology, Infrastructure, and Management



The Wundt Curve: Inverted U relationship between stimulation and affect

Note: Presented at the International Urban Development Association (INTA) 33rd Congress, 2009.

The essential economic question is: Would the investment (fixed capital or management) necessary to raise the congestion threshold compensate for the benefits of increased capacity? If not, the investment should not be undertaken. This is as simple and as complex as a cost–benefit analysis. If the project is intelligent enough and has understood the metropolis's DNA, the outcome will be positive. The issue will then be how to accommodate the discrepancy between those who pay for the investment and those who benefit from it. Should the investment be public, private, both, or neither?

Metropolitan Finance: A Key Condition

Metropolitan financing in the context of devolution and fiscal arrangements often involves various levels of government and comprises two classes: (i) revenues, expenditures, and services, and (ii) infrastructure.

Concerning revenues, expenditures, and services, the funding responsibilities and the inter-governmental fiscal arrangements should be coordinated, clear, and efficient. Three levels are generally involved. The state/province level typically provides major health and education facilities, inter-urban trains, and roads. The cross-local level (e.g., boards and authorities) typically provides large health and education facilities, metro public transport, water supply and waste water, solid waste disposal, and metro ring roads and freeways. The local level typically provides local health and education facilities, solid waste collection, and local roads. Table 2 shows a general metropolitan finance arrangement among different layers of government.

Providing infrastructure also involves layers of government with different objectives and interests. In general, national and regional highways, water supply, major networks, drainage, and energy are provided by the central government, whereas a local government may have an urgent need for rural roads to provide access to local wholesale markets in addition to major highways.

Table 2. General Metropolitan Finance Arrangements

Gov't Level	Sectors	Revenue Sources for		Collection Yield*	Systems**	Systems to Maximize Net Revenue***
		Capex	Opex			
State/ province/ regions	Health, inter-urban trains, bulk electricity generation, water management, etc.	General taxes (e.g., income and VAT, bonds, project loans)	User fees, taxes	Rarely fully cost recoverable, but relatively easy to police payment	Health cards, smart grid, water auctions	Transparent bidding for concessions, suppliers, and use rights
Metro-level cross lg (city regions, boards, etc.)	Education, metro rail, water supply and sanitation, etc.	Shares of general taxes, property tax levies, bonds, project loans	User charges, CSO transfer revenue	With the exception of water supply, rarely cost recoverable, but more difficult to police access	Integrated ticketing, smart metering	GIS-based property tax monitoring, automated billing, and other IT systems to maximize yield. Crowd sourcing of service issues and responses.
Development area or corridor authorities	Area or corridor transport and urban renewal	Property taxes, project loans	User charges, CSO transfer revenue	Commercial basis: corporation should be in surplus	Eminent domain, area-based tax surcharges	Land banking and performance-based bids
Local	Solid waste local roads, parks, etc.	Property taxes, project loans, limited bonds, transfers	User charges, CSO transfer revenue	Rarely cost recoverable, but more difficult to police access	Cost recovery pricing	GIS-based property tax monitoring, automated billing, and other IT systems to maximize yield. Crowd sourcing of service issues and responses. Land banking and performance-based bids.

Source: Linfield, Kamiya, and Eguino (in press).

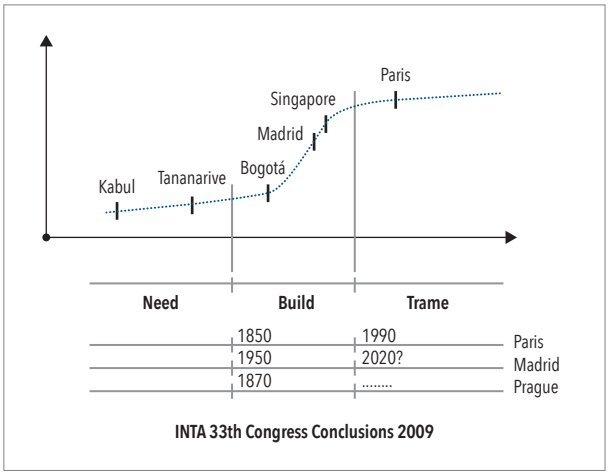
Notes: *Collection yield refers to how much of the tax/fee due do they actually collect. **Systems refers to best practice and technology supports available to maximize efficiency of use and yield. ***System upgrades to minimize leakage in collection and maximize transparency and accountability.

The point is that investment serves everybody and becomes a public good, contributing to the general population and economy, not just the individuals who are directly affected. Benefits are thus indivisible. The public sector pays, but there are three tiers to the metropolis:

1. The local (confederate) that does not have the resources to pay.
2. The national (unitary) that lacks the political will and resists as much as possible until metropolitan congestion becomes a national issue with negative political impacts.
3. The metropolitan (federal) that either does not exist or lacks the financial capacity (not devolved yet) to address these needs.

As a result, the necessary investments are not implemented and the metropolis reaches a point of inefficiency as saturation and congestion limit its output. Diseconomies of scale occur as a result of management inefficiency. If the benefits of the investment are divisible (e.g., a toll bridge), the private sector can take care of it. The requirement is that demand must be able to respond to the supply cost. If an equilibrium point between supply and demand can be reached, there is no problem for private involvement. This assumes that the public sector has the skills and the will to set up the main lines for the projects (complex terms of reference) and the concessionary rights in the correct way. This is not, however, always the case. Spurious interests in the political economy may be playing in the shadows.

Figure 3. Infrastructure Growth Model: The Steel/ Concrete Age



Note: Presented at the International Urban Development Association (INTA) 33rd Congress, 2009.

In terms of investment, and in the theoretical framework of a liberal free-market environment, if an investment produces benefits, it does not need to be undertaken by the public sector. The public sector should concentrate on investments that have a general interest (social or economic) and that must be made at a loss—an indivisible loss. The way to finance an indivisible good that must be financed by the public sector is through taxation.

There is a major difference between the metropolises of developed and developing countries. Developed metropolises do all right. They reside in 99 percent formal economies that developed mostly in the 19th century. They have reached a level of infrastructure provision and finance capacity where the challenge is taming the system rather than furthering hardware development.

Developing metropolises have a different problem. In emerging metropolises, most of the economy is informal (as much as 80 percent), and these shadow economies affect urban development (uncontrolled and slums), social provision (informal networks and families), and even governance (mafias).

The four uncontrolled elements are economic, urban, social, and governance. These metropolises cannot grow to their full potential as they cannot make good use of all their assets, controlled or uncontrolled, and harness them to use in the development struggle.

The problem with taxation is that you cannot tax uncontrolled activities. The controlled sector in many of these developing metropolises is as little as 20 percent. It is difficult to pay for infrastructure by taxing just that 20 percent of all those who would benefit from it. The informal sector must be taxed to produce full-fledged development. This can be implemented only through indirect taxation, but that would jeopardize fiscal equity policies. The equilibrium must be balanced with expenditure policies, targeting insolvent demand, and social collective consumption—social alternatives to unleash market mechanisms.

Informal metropolitan economies must develop indirect taxation systems on public goods to accumulate their required fixed capital, but such taxation does not necessarily relate to the direct usage of the required good. In such cases, the private sector could undertake the investment. In other cases, the taxation should involve divisible private goods and provide for the financing of indivisible public goods (e.g. taxing petrol to build and service a public transport line).

Another source of financing is land value capture, which has the effect of public investments on the value of land. Value capture allows for further public investments and starts a spin-off effect, providing additional revenue for further investment. There are two possible approaches to land value capture: ex-post and ex-ante. Either the added value is recuperated after (post) it has been produced or before (ante) it is produced. Ex-post retrieval works through taxation, direct or indirect. Such is the case in consolidated urban areas (e.g., a new underground station). The owners already have development rights, with only the increased value of development rights available to be taxed, and only after the development occurs. It could be 30 years until the owner decides to redevelop; therefore, ex-post is long and has limited potential. Ex-ante retrieval requires the capacity to negotiation and alternative projects and can be monetized as soon as an agreement is reached.

In developed metropolises, land value capture is easier because of existing registration and cadastral systems, legal frameworks (adequate planning and land management laws), and management instruments (land management agencies). With this approach, up to 80 percent of the generated value can be retrieved. The public foundation Arpegio in Madrid is one example. In developing metropolises, registered and unregistered areas coexist. Inefficient or inexistent land management systems and unclear property rights, landowners, and assets make land value capture more difficult.

In the political economy of metropolises, if there is not a finalist approach to special taxation, income will be diverted by politicians to more intentionally political interests. Income will not be used for the general interest, but for all those legitimate and illegitimate interests that conform to political decisions, prioritizing electoral, clientelist, lobbyist, party, and personal interests. Infrastructure allocation and services are also subject to such interests. This is the shadow side of political economy. It is difficult to deal with, but must be tackled to strengthen the collective intelligence of the metropolis.

Planning and Navigating the Political Economy

The planning tools and management mechanisms of emerging metropolises must be completely different from the ones of developed metropolises. They must be designed to respond to local circumstances, which is where the mechanisms of 99 percent of the formal developed metropolises were devised. In developing metropolises with large informal sectors, master plans are drafted and approved as in formal metropolises, but they are never implemented. Once failed, they are revised, redrafted, and re-approved, and fail again. These master plans need to be contextualized, which requires understanding the governance capacity of the public sector, involving multiple stakeholders to incorporate the actors, and integrating infrastructure—the core of master plans—with regional and local development. All of this must represent sound population projections, realistic financial capacity, and adequate business plans.

One potential instrument to guide master plans and integrate the different tiers of metropolitan government is a national urban policy. Such a policy must be rooted in clear aims and synergies among national, regional, metropolitan, and local infrastructure. A national urban policy also must consider its effects on productivity, and therefore understand the existing value chains (productive sectors) in terms of the constraints on those value chains by supply chains (the logistics needed to produce). Both value chains and supply chains are essential to integrate urban planning into urban economy. Note that in terms of productivity and urbanization, Southeast Asian countries have been very successful despite often lacking a formal national urban policy. This indicates that it is not a legalistic process, but rather the practical application of planning and economic principles (UN-Habitat, 2014).

In terms of policy, in a context of weak governance and broad informality, the capacity for economic management is severely limited. This is not yet an appropriate context for a federalized metropolis. It seems that even cultural agreement on this necessity has not yet been reached.

Discussions still wander around the different forms of confederation and alternatives with a combination of multiple components. If there are five sectors, five administrative tiers, five stakeholder groups, five management systems, and five financing alternatives, there are already a million alternative governance possibilities. To choose among a million possibilities is not the way to approach constructing a metropolitan governance system. The decision-making process must be pared down to essential decisions. There will always be time afterwards to calibrate.

Metropolitan managers have two types of tools: carrots and sticks.

The stick is limited to a context of inadequate governance. To develop the stick, much more is

required than just legislative paperwork. A legal framework, approving laws and regulations, is relatively cheap and easy; the hard part is implementation. The stick requires civil servants in numbers and with skills sufficient to meet the challenge. Then it requires *autoritas* to implement; *potestas* is not enough. Credibility and spotless behavior grants the legitimacy for implementation. This set of requirements is not easy to achieve, and administrators can be overrun by circumstances and overruled by judiciary decisions.

The carrot has two types of incentives: exemptions and subsidies. Administrative exemptions and direct subsidies, when managed in an informal framework and inefficient administration, can become an inducement to inconsistent implementation, favoritism, and corruption. Indirect subsidies are the remaining solution. There are many ways to influence the economy through complementary targeted services, facilities, and infrastructure (e.g., free infrastructure provision, accessibility and public transport, provision of serviced land, productive facilities as logistic centers, outsourced services and advisory services, export facilities, and commercial support). The options are unlimited, but they require money.

To produce any kind of indirect subsidy, finance is required for fixed capital investment and running costs alike. Finance comes via indirect taxation or national transfers. Land value capture can play an important role. Ex-ante catchment value initiatives can be developed to grow capital. Up to 67 percent of added value generated can be recuperated. Ex-post options can reach only 40 percent at most. Returns can be reinvested in social and economic projects. Since this is using metropolitan wealth and endogenous sources of revenue, land value capture can create a virtuous circle for the political economy.

To spur finance, more governance instruments are required. These include an adequate legal framework to enforce planning decisions, a legal economic framework for a private–public collaboration setting, skills to implement it all, accountability to avoid opaque deviations, and the ethics. When this capacity is in place in developing economies, the size of the metropolis can drive the development of more complex financial instruments, such as bonds and loans from commercial banks and international markets. Development banks are also working on lending and financial instruments for metropolises and subnational governments in developing contexts.

National urban policies and regional and national plans must be integrated to increase their efficiency. When national urban policies achieve sufficient sophistication, in which urban form and layout is shown with direct effects on productivity and economic growth, then central governments and development banks will pay more attention.

The Next Years

Metropolitan economies will expand and multiply. Global connectivity will progressively link mega-cities to the global economy. This process requires appropriate governance and sufficient technical capacity of governments and citizens. Metropolitan leaders will face stronger demand in a world where more is required from metropolitan and global cities. But as the world marches toward the *New Urban Agenda* with global sustainable development goals (Goal 9 is related to infrastructure and Goal 11 to urbanization), the entry points for finance, planning, governance are open.

Metropolises are at square one. Governance, social and human resources, and collective intelligence are imperatives. Most of all, what is unavoidable is the strategic capacity to generate the metropolitan project with enough leadership to achieve the convergence of all these forces, which are dispersed in the actual scenario of the metropolitan political economy. Two models are possible, the federalist nation-state oriented as a financial and productive hub, and the national champions supported by the central states, in which relative autonomy is traded for more investment.

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1.6 The Rise of a New Discipline to Manage Metropolitan Urban Systems

Gabriel Lanfranchi (CIPPEC) and **Antonella Contin** (University of Politecnico di Milano)

Abstract

Today's cities are facing a moment of both maximum growth and maximum vulnerability at the same time as increasing inequality and climate change. At this pace, many cities will become metropolises by the end of the century. Governance mechanisms need to be created that ensure integral solutions for the quality of life of future generations. However, decision-makers are organized in a sectoral way and territories are subdivided into multiple jurisdictions and levels of government. In order to migrate toward good metropolitan governance, it is necessary to train a new generation of leaders in understanding metropolitan issues and create a sense of belonging for people in a metropolis. A new metropolitan discipline able to synthesize the knowledge required to operate in this environment is imperative.

Most people know that the world has recently become urban, but few of us are aware that in the next 15 years we will build as much urbanized area as in the entire history of humanity. Cities have become the most prolific centers of innovation and wealth creation, but also highly productive in terms of greenhouse gas emissions and very vulnerable due to climate change. The great challenges for the cities of this century will be inequality and climate resilience. In large cities, it is difficult to solve these problems at the local level without improving metropolitan governance, as neither flood nor migration respects jurisdictional boundaries between municipalities.

The Crisis of Previous Metropolitan Approaches

In large urban agglomerations the "system city" is fragmented and the metropolitan area is built by many actors. Sectoral visions prevail instead of integral development approaches. Water and sanitation management, transport, waste management, and housing policies are just examples of institutional fragmentation in urban development. Besides, the metropolitan territory is fragmented and in many jurisdictions is linked to different levels of government. Metropolitan governance has several makers and in most cases cities suffer a deficit in appropriate institutions or instruments, which causes unbalanced growth, with consequences for efficiency, equality, and environmental sustainability. The metropolitan dimension poses significant challenges in terms of strategic visions, governance, and management.

Planning at the metropolitan level requires dealing with some of the values at the local level and being able to work with different contexts like the compact city, agricultural areas, infrastructure, watersheds, and open spaces. It also requires that actors acknowledge and use an innovative, design-oriented perspective and a wide array of urban tools. The metropolitan scale also challenges traditional urban governance, as it questions not only the right scale for dealing with increasingly complex metropolitan issues (e.g., the environment, mobility, mass housing, and food chains), but also the sense and appropriateness of any given spatial domain, rethinking and making flexible institutional arrangements. Metropolitan actions, governance, and management should implicate different stakeholders,

according to the issue in question, and also go beyond existing administrative boundaries.

We are facing the emergence of massive growth and an expansion of cities as never seen before, which poses environmental and socioeconomic challenges that planners should be able to address through innovative methodologies. The complexity of metropolitan cities needs to be addressed through new ways of sharing knowledge and experience between the many actors involved, in particular, academics, policymakers, and non-governmental organizations.

For these reasons it is necessary to create a disciplined approach for a high quality of life in today's metropolises. It should be a priority to educate city leaders to better understand the complexity of cities and identify meaningful practices to manage the large urban scale. Practical experience will affect analyses, taking into consideration the environment, community, wealth, governance, and culture. It is important that stakeholders seek to understand the metropolitan question from a holistic stand point, in opposition to more traditional methods with a vision that derives from the sectoral perspective in which local governments are organized: economic development, social development, urban planning, and government.

There are several reasons that have prevented an integral view from prevailing over a sectoral one. The organization of public administration into silos, with budgets that are limited to specific functions, and with ministers and secretaries belonging to the same government politically competing for a position in the future, have hindered, in many cases, collaboration between peers. From a professional stand point, approaches coming from diverse disciplines also limit integration, as experts are not always capable of looking outside the box or willing to leave their comfort zone.

A Scale Issue

What questions do metropolitan experts have to consider? First, they need to ask how to define a discipline that can handle the metropolitan phenomenon and is based on an integrated vision of the various disciplines on a territorial scale. Second, they need to ask how they can present tools that can shape and re-shape the metropolis. The answers are a discipline that could generate applied knowledge to improve awareness of metropolitan challenges by bridging the gap between theory and practice.

The specificity of the metropolitan discipline could be its field of action, where the starting point is at a higher scale than the local problems. This is a political approach where we believe all possible impacts should be analyzed. It begins with the effects corresponding to the local scale, related to the citizen; followed by those that belong at the regional scale, focusing on the great infrastructures and competitiveness; and those related to the national scale, where the performance of the metropolitan areas directly affects gross domestic product. The transnational scale should also be considered, where the great metropolises have economic, political, and climatic impacts many times higher than those of entire nations.

To reach the desired political consensus that will transform metropolises into system-cities that are more efficient and equal, it is necessary to increase the level of awareness of the political leaders and civil servants of the extreme fragility of the territory. This should be done urgently, there is no time to waste, but it should be planned. To attain this ambitious objective it is indispensable for a new metropolitan discipline to take shape; a discipline that can deal with the problem of bigness.

Reasons for a New Discipline

This work does not aim to discuss whether the current structure of the departments of urban studies at the universities need to be reorganized under new categories or research areas. Nor does it intend to discuss if the path to developing a new discipline is through postgraduate or graduate courses, or even the order in which they should be taken. These kinds of arguments, of administrative order, distract from the real objective and should be addressed at a time when the debate is more mature. We wish to focus instead

on the pressing need to create a new disciplinary corpus, organizing a body of knowledge that would allow the development of a specific practice that is increasingly necessary.

There is growing demand for professionals capable of understanding the complexity of metropolitan dynamics. But it is still unclear what kind of knowledge is needed or where and how these professionals should be trained. Metropolitan management requires a body of knowledge that might be considered generalist, because it includes aspects of other disciplines, but at the same time is specific because action is focused on the best possible management of metropolitan urban systems.

An analogy that can help us understand the reason for the search of a discipline in metropolitan governance is what happened in architecture or urbanism in European countries. Architecture was a branch of fine arts that included knowledge of engineering. The rising demand for large-scale architectural services coming from the industrial middle class shaped it into an academic discipline that included knowledge of humanities and exact sciences. The university validated its professional competence for construction and, in some cases, for urban planning.

Urban planning was also the result of a social demand during the industrial revolution. Mass migration from the country to the cities caused the collapse of the system with regards to hygiene and health, and generated a movement that understood the need to modernize water and sanitation systems. This systemic viewpoint on urban matters coincided with the increasing interest in urban management and the emergence of urban instruments capable of governing the growth process. Later on, through interchange in international workshops and seminars, a new kind of specialist appeared—a generalist in management and city planning: the urban planner.

A similar process is taking place with the need to manage great metropolitan areas. But there is a difference between the knowledge of an urban planner or those of a regional planner from those required of an expert in metropolitan management. Some basic differences are worth mentioning. What appears at first sight is the matter of scale. As Pedro Ortiz (2014) clearly shows, the architect develops his capabilities in a scale of 1:50, dealing with the human scale. The urban designer works at a scale of 1:500, defining the spaces of man in relation to his neighborhood, the scale of the public space. While the urban planner works at a scale of 1:5,000, the municipality, where master plans are defined, those that have the capability of being approved by a municipal council and carried out by the executive power. In the metropolis, the natural scale is 1:50,000, where huge infrastructures and flows define the systems, where power is fragmented in multiple public and private actors, and the municipal boundaries lose sense, but there is still a powerful bond with the territory, its shape, and its culture. The regional planner, with a bias toward the economic sciences, has a better understanding of the economic flows than an urban planner, but does not necessarily consider the spatial and cultural features of the territory.

Metropolitan management implies governance of the territory on a greater scale than the local one, but mostly it demands the capacity to understand the metropolitan complexity related to the need for scale integration, the management of many variables, and/or actors, as well as the integration of sectors. Lack of integration between the administrative boundaries of municipalities must be assumed, since most of them were conceived before the 20th century and later overgrown by the urban system during the mid-1950s and 1960s with the proliferation of urban freeways. The fragmentation of public power in multiple municipalities and in diverse levels of administration, in addition to the lobbying capacity of the large private sector companies and the activism of the social organizations that lack proper juridical administrative tools, demand development strategies for governance of the metropolitan territory. It is in this field where knowledge interconnects: ecology, geography, architecture, urbanism, engineering, economic development, sociology, anthropology,

and political science, among others, come together. This gathering of knowledge is the fertile soil that gives rise to metropolitanism, which means know-how capable of giving a comprehensive (not sectoral) response to the problems related to managing large metropolitan areas.

Metropolitan governance is the key to economic and social development of future generations. A recent study by the Organisation for Economic Co-operation and Development, OECD, (2015) showed a direct correlation between metropolitan fragmentation and economic performance that may lead to losses of around 6 percent of the GDP of a metropolis. If coordination mechanisms are in place, this loss can be reduced up to 50 percent. In countries where a high portion of the GDP is produced in their metropolis(es), the effect of good metropolitan governance would have an impact on the national economy. This is the case of Buenos Aires, which represents 50 percent of the national GDP, where savings for 2016 would represent around US$9 billion per year, or a quarter of the federal reserves.

Neither inequality, especially in terms of access to public services or housing, nor the effects of climate change, such as drought or flood, take into consideration municipal boundaries. Therefore, effective responses to address them cannot come from local governments on their own. There must be an articulation between national, state, and local governments, together with a high commitment from academia, civil society, and the private sector in order to face these challenges on a metropolitan scale.

Many countries have started to become aware of these issues and have formed different types of metropolitan management entities. According to a recent study by CIPPEC (2016), in Latin America and the Caribbean, 50 percent of metropolitan areas with more than 1 million inhabitants have developed some type of metropolitan organization. These entities require professionals who are able to understand metropolitan complexity in all of its dimensions. However, when civil servants are recruited for these entities, the great majority lack adequate training to face the challenges that metropolitan management implies. All of them, or the vast majority, had to learn by doing. This lack of preparation brings learning costs that impact management performance. This knowledge gap can be filled by academia, which must prepare itself to train leaders who can promote and develop metropolitan management for the metropolitan century.

Modeling the Metropolitan Discipline of Practice

Once the importance of this role was established, and the concrete and increasing demand for this kind of professional profile had increased, it was crucial to understand what capacities a metropolitanist would be expected to have in order to understand which disciplines could contribute to forming a specific academic corpus. For that purpose, in 2015, at the Metro Lab initiative at the Massachusetts Institute of Technology, we started working with peer-learning methods that allowed for a practical and conceptual exchange between academics, practitioners, and students. As a result of the collaborative work in these workshops and seminars, we achieved a number of results that are worth sharing.

We should start by admitting that both metropolitan knowledge and its object of study are fragmented. Many disciplines are required to define an analytic framework. Precisely this lack of a specific discipline prevents us from obtaining the necessary tools. But the presence of diverse knowledge in an orderly way, together with the practical experience of experts in metropolitan management, allows us to co-create the method that could define, in the words of Pedro Ortiz (2015), the "metropolitan genome." For these reasons, peer learning is the appropriate path to sharing knowledge and moving toward the new discipline. The Metro Lab initiative might be defined as action learning for human resource development.

During the initial phase, we performed a gap analysis. This method was applied to enhance the process in the private sector with the aim of identifying which elements of a chain can be

improved. In an iterative way, the three levels of the matrix—dimensions, components, and metro gaps—were defined with the participants. Dimensions were initially organized in a sectoral way (economy, society, physical, and institutional) and, with debate, they evolved toward another type of classification that allowed for interaction between social, economic, morphological, and organizational issues and all of their components. The main components of each dimension led us to the metro gaps, where a flaw or knowledge gap became apparent when an intervention was made on the metropolitan scale.

We examined the object-metropolis by analyzing its dimensions. The metropolitan environment includes not only the morphology of the territory or its natural systems, or the green infrastructure system (parks, rivers, wetlands) and the gray infrastructure system (freeways, trains, ports, centralist) that define the urban artifact, or the urban metabolism that analyzes the resource flows, but also the interpretation the metropolitan inhabitant makes of the environment: the metroscape, which is the mental construction of the territory. In this way, disciplines such as geography, ecology, engineering, landscape architecture, and anthropology, among others, come together at the same level of analysis, changing the traditional silos-oriented approach.

Community life that takes place within the metropolis should be studied at the level of social cohesion with reference to respect for diversity and tolerance. The generated social capital, measured in terms of empowerment and agency capacity, which the metropolitan community has been able to develop, is key. The matter of metropolitan citizenship is another significant issue to be taken in consideration as, with some exceptions, the metropolis is a territory that lacks representatives chosen by its inhabitants in terms of a system city.

The third analytical dimension considers the capacity of the metropolitan object to create wealth. Understood as a system, issues related to efficiency and competitiveness become evident. Nevertheless, other matters such as access to urban land, the strength of its firms, or the skills and education of the workforce are also knowledge gaps that arise at the metropolitan level.

The approaches that take into consideration the institutional dimension commonly used to analyze the municipality are insufficient to understand the metropolis. It is the concept of metropolitan governance and not government that should be used in this case. There are legitimacy gaps in many cases as the metropolitan matter is not always accounted for in national constitutions. The legal framework, the institutional framework, and metropolitan management systems, such as planning and tax revenue, do not have the level of transparency or innovation required to give the answers that would allow the sustainable development of the territory.

Finally, the cultural aspect shows the lack of an appropriate theory that would allow for an adequate explanation of the phenomenon. At the academic-operative level there is also a lack of a discipline to summarize the required knowledge to improve the management of the metropolis. From the standpoint of the practice, we found gaps in the methods that are usually borrowed from other disciplines, as well as in the experience of professionals dedicated to metropolitan management. The history and tradition of a metropolis were also identified as gaps and, as it is a relatively new phenomenon, there are few who identify as inhabitants of a metropolis, the historic-emotional tie with the neighborhood or the reference city.

The five dimensions of the matrix (Table 1) allow us to outline the type of knowledge required, linked to environmental management, community strengthening, wealth generation, governance of complex systems, and the cultural dimension, which includes as a gap the same discipline that we are proposing. These dimensions are trans-disciplinary and contribute to the comprehensive analysis of the territory. The 15 components promote the understanding of the focus and type of discipline that can serve as a knowledge source. The list of metro gaps helps us grasp what kind of know-how a metropolitanist requires in managing the metropolis. There is no need to train an expert in all subjects, but they must be a

generalist with enough of an understanding to allow them to maintain a fluid dialogue with technicians, negotiate with stakeholders, and advocate before the decision-makers for comprehensive metropolitan management.

Table 1. Metro Gaps Matrix, 2017

Dimension	Component	Metro Gap
Environment	Natural ecosystems	Social responsibility
		Urban metabolism accountability
	Metropolitan infrastructure	Structure
		Equality
	Metroscape	Metro place-making system
		Mental map
Community	Social cohesion	Respect
		Tolerance
	Social capital	Empowerment
		Agency
	Citizenship	Incentives
		Trust
Wealth	Assets	Access to land
		Efficiency
	Wealth creators	Workforce market
		Job distribution
	Human capital	Education
		Wealth distribution
Governance	Legal framework	Legitimacy
		Appropriateness
	Institutional framework	Coordination
		Integration
	Management and systems	Innovation
		Transparency
Culture	Academia	Theory
		Discipline
	Professional praxis	Methodology
		Expertise
	Identity	History
		Tradition

Source: Created by the participants of MIT Metro Lab initiative courses 2016–17.

There are two types of skills that a metropolitanist must develop. Hard skills related to the knowledge of methods of environmental impact assessment, urban metabolism, complex systems management, transportation and mobility modelling techniques, urban and territorial planning,

economic development, human development, law, metropolitan architecture, and data science. Deep understanding of these skills will remain the field of specialists, yet the metropolitan expert should be able to grasp the basics in order to enable constructive interactions with a wide range of specialists in each of these matters and guide them toward an integral approach. In a field where government is not imposed, but governance is needed, soft skills such as negotiation, leadership, participation techniques, capacity to build alliances, capacity for innovation and communication, and conflict resolution mechanisms are essential for a metropolitanist.

The paths that will lead to constructing the discipline are still uncertain, although we are convinced that the gap is evident and it will only be a matter of time and maturation for it to take the corresponding form. It is clear, however, that the theory needs to be developed, which in the words of MIT Professor Lawrence Susskind is a theory of practice, a theory that comes from looking at practice and learning from it. As is the case of the discipline of negotiation, metropolitan management must learn from the trade, casuistry, and gaps that must be overcome in everyday management. Co-creation is surely the way to address this challenge, and peer learning methods would be the best channels for academics and practitioners to collaboratively develop this new chapter of knowledge on natural resource and human settlement management. In order to perform a different function from sectoral approaches, metropolitan planners must learn to provide evidence of the benefits of new approaches. Scenario planning is key. The sum of sectoral solutions would not equal the impact of holistic interventions on the metropolitan scale. Governance models as we know them today need to evolve in order to produce an impact. The task of training and increasing awareness of decision-makers is challenging but not unattainable if the appropriate methods and evidence are brought into play. All the above-mentioned tasks should be constructed under the framework on the new discipline.

Theories and Models

Every discipline should create its own history of theory as well as its models. Not so much to self-legitimize but because the history of a discipline is where answers to its deepest questions can be found, it is where original hypotheses emerge giving sense to the theory. Expanding on this concept, the origin of the metropolitan discipline could be found during the beginning of the industrial city. Nowadays, new matters related to the speed and the impact of changes should be considered. Migration and climate change have made traditional planning tools obsolete. If the worldwide urban territory is to double in 15 years, we cannot manage growth in the same way as we did before. We are facing great challenges related to food production, the logistics of natural resources regarding urban consumption, air pollution, and waterways that, because of their magnitude, are nothing like those of the Industrial Revolution.

New tools must be created, tools that can promote a new understanding of the territory, allowing for integration that could contribute to the creation of mind maps to define the problem and find an appropriate solution. The Metro-Matrix (Ortiz, 2014) or the Urban DNA (Lanfranchi, 2016) are just two examples of using interpretative maps as tools to read metropolises, that are able to analyze the impact of metropolitan projects on the territory. The interpretative maps of impact scenarios are a cultural project. They are interpretative maps of scenarios that work on all scales (Pollak, 2006) and they reveal the meaning and role of each element of the territory in relation to any scale. These maps identify the structural quality of the metropolitan field of action (its settlement principles) that will also structure its images (which the same maps represent).

This is why the role of a trained metropolitan expert as a crosscutting coordinator is crucial. The new figure in the field would have access to more than a single disciplinary competence. Their role would be to generate consensus that today is linked to sustainability issues. The metropolitan expert would obtain a better understanding of the complexity of metropolitan cities and their main task would be to

transfer, communicate, and guide metropolitan leaders toward decisions that ensure the future of humanity.

This model calls for peer-learning methods to ensure the synthesis of the complexity. Likewise it requires transnational visions able to contribute complementary points of view from a cultural perspective. The object metropolis may vary according to its location on the map, but there are always a series of features that appear in whichever country they are in. In these coincidences the genome comes up again, leading us toward questions similar to those that fed our hypothesis.

There is no need to exclude the specific approach of sectoralists to reach a more integral approach to the territory. The viewpoints are complementary and need each other. We should recognize that a new generation of urban specialists on metropolitan issues is appearing on the six continents. Though it is true that the debate has been going for some time without the integral view prevailing over the sectoral one, the current context has changed. New technologies and immense social and environmental risks are compelling the cities to overcome this context and work in an integral way. The imperative of today's conjuncture forces local heads of government to put aside political interests and work with their peers in a new way of organizing and distributing public resources in the territory.

The Role on Communications Technology in the Metropolitan Arena

Academia needs to learn to communicate the way in which the local scale, the metropolitan scale, and the global scale meet. The current transformations are being accompanied by new technologies that have given the inhabitants of the metropolis a new sense of belonging, one that transcends municipal borders and that makes them reflexive individuals with desires and expectations that the city could not meet before. Usually, the metropolitan scale is handled by the legal, economic, and social disciplines studying the governance of relations between the jurisdictions that integrate the metropolitan dimension. These dimensions were too abstract for the average inhabitant. New tools for citizen participation at the metropolitan level need to be created, and these should be adapted to the revolution already changing their way of understanding and living in the city.

A large metropolis is not a simple place in which to live and it can be difficult to discover its hidden assets. To detect, learn, and show the importance of informality as a source of resilience and adaptability, new information technologies are changing the way we plan and design on the architectural, urban, and metropolitan scales by giving access to information through interactive digital environments. The whole new media environment creates a communication mood through different display codes: new virtual design tools and new meanings derived from figures and image integration and narrative texts (Contin, 2014).

As support to the metropolitan discipline—as far as tools are concerned—a hub platform could allow a metropolitan knowledge web-based community to be created. In fact, all the activities developed during peer-to-peer training programs could be supported by an IT platform able to manage and publish spatial data as interactive, interpretative maps. A dynamic platform like this (a hub) could deploy a spatial, scalable data infrastructure that would allow users to process or edit spatial data. It would present the geospatial outcomes of metropolitan projects as interactive maps. The use of technology solutions is in line with the 2011 agenda for the modernization of Europe's higher education systems and is a key policy issue for multilateral agencies (e.g., World Bank, UN-Habitat). The new problems the world is facing, in particular the metropolitan issue, call for urgent actions. We believe that information and communication technologies play a very important role, having become crucial in educating future policy and decision-makers as well as in the projects they carry out.

Research Innovation and Education: A Cultural Change

Research, innovation, and education are synergetic pillars to practice the metropolitan discipline. According to Alfonso Fuggetta (2012), research is

the process through which we advance knowledge, shed light on unknown phenomena, imagine new worlds, invent new technologies, and discover new laws or principles. Innovation is the process through which we apply our knowledge to improve the quality of life, enhance the competitiveness of companies and economic institutions, and create new opportunities for citizens promoting and enriching their social experiences. According to Fuggetta's arguments, research and innovation are intrinsically distinct processes and therefore require different methods, skills, and funding mechanisms. Innovation needs the knowledge, breakthroughs, and ideas developed by research. At the same time, innovation produces experiences, feedback, and challenges that enrich the research process.

Higher education should be at the center of the debate when we discuss metropolitan training programs. A new form of transnational education driven by academia is needed to promote a new teaching method based on learning by sharing. Academia has a very important role to play, having become vital in educating future policy- and decision-makers.

In all disciplines, the relationship between parameters and variables blends and is urged by a series of operations: synthesis, understanding, and mediation. Nowadays, a researcher-professor is much more than a facilitator or a mediator in the learning process. They are more of an academic figure that connects their ideas and beliefs with those of the other participants in a hermeneutical way. The problem of un-translatetability between disciplines will continue to exist and shows the limits within which we are used to moving because of our belonging to other hermetic disciplines. Metropolitan narrative tends to synthesize the experience of diverse disciplines because they meet in the metropolitan object of study contributing to the creation of a shared vision. The design of methods and tools come together with the construction of an art of giving shape and at the same time of reforming the metropolis.

Our field of action, therefore, is the metropolitan scale of the city. Large metropolises are growing. Sometimes the old heart of the city is disregarded and transformed into a symbolical mediator—a physical object able to bridge between different times and cultures, dealing with the symbolical level and cultural values. New settlements have become grand in scale and filled with neglected spaces where the informal sector is growing, and we should produce a new interpretative educational project for the development of a metropolitan architecture. The fast urban growth that occurs mainly in developing countries with high levels of informality and growing demands for an improved quality of life from its inhabitants make the fields of urban design, metropolitan architecture, and metropolitan management a place of huge potential for job prospects. The need for professionals in this sector will be growing in both the public and private sectors. Although specific degrees, such as architecture, infrastructure, energy, economy, sociology, and law, among others, provide specializations in their own field of knowledge, it is insufficient training for an integrated, interdisciplinary approach that new dimension of the city requires.

The proposed interdisciplinary approach aims to establish:

- a technique;
- an interdisciplinary project;
- an international culture; and
- a shared ethics.

This is an intensive interdisciplinary project made possible through collaborative environments, aimed toward university teachers in partnership with public administrations, and open to the public. It is both a cultural and a practical interdisciplinary training process about development issues of the metropolitan city that takes advantage of new technologies and is reinforced by the inter-scale, shared relationship between economic, social, ecological, and institutional issues. History will tell if it is only a matter of time, though we already know there is no time to lose.

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1.7 Collaborative Governance: Improving Sustainability of Development in Metropolises

Brian Roberts (University of Canberra) and **John Abbott** (John Abbott Planning)

Abstract

Governance is a significant factor impeding or facilitating the sustainable development of metropolitan regions. This chapter explores collaborative, or network, governance as a way to overcome institutional, operational, and political obstacles to integrated planning, development, and financing of metropolitan regions. It puts forward 10 principles of collaborative governance, argues the need to change from hierarchical, competitive governance models to more collaborative decision-making, and explains the advantages of this change. It supports the need to build collaborative capital in metropolitan regions by broadening inclusiveness and transparency in the planning and operations about decision-making. The chapter outlines a framework and strategy to introduce collaborative governance arrangements as a way of transforming urban governance functions and practices in metropolitan regions in support of sustainable development outcomes.

The development of metropolitan regions is an evolutionary process starting with the spillover of population growth from a historic central city into adjacent local government areas and beyond. As a result, the dominant, global metropolitan development pattern and administration process are one of mass and disjointed urban sprawl, with metropolitan governance arrangements sometimes comprising dozens of separately administered but loosely federated systems of cities and municipalities. Local governments often have different political orientations and policies, as each competes fiercely for investment, jobs, political influence, and economic dominance. There is little regional cohesion in terms of urban governance, and cooperation between them occurs on an as-needed basis.

Globally, there are over 500 urban regions with populations of more than 1 million people (Demographia 2016). Some of these are very large. Tokyo/Yokohama is the world's largest metropolitan region, with a population of 37.75 million, while New York is the largest in area at 11,642 square kilometers. The median density of the New York metropolis is 1,800 people per square kilometer. Dhaka has the highest population density at 44,100 people per square kilometer (Demographia 2016). By 2025, the number of metropolitan regions is projected to reach more than 570 (United Nations, 2014); approximately 450 of which will have populations between 1 million and 5 million.

The population growth rates and proportion of people living in urban regions are growing rapidly. In 2015, around 1.6 billion people, almost 38 percent of the world's urban population, lived in metropolitan regions (UCLG, 2016). By 2025, this is expected to rise to 2.2 billion, or 48 percent of the global urban population. The population of metropolitan regions between 1 million and 5 million is projected to grow almost 3 percent annually between 2015 and 2025, with the fastest growth rates occurring in Asian metropolitan regions. This expansion will continue to put enormous pressure on the development of metropolitan regions, especially on local governments in their efforts to provide basic infrastructure, shelter, and community services.

The challenges facing the development and management of metropolitan regions, globally, are significant but they also offer opportunities for

social and political transformation through improved governance (Xu and Yeh, 2011). These issues vary enormously between countries and within regions. Many are well documented in extensive studies of land use, infrastructure, transport, and social services. However, central to these problems in the quest for sustainable development of metropolitan regions is the issue of governance. "Governance is the action or manner of governing a state, organization and refers to all of the processes of governing, whether undertaken by a government, market or network, whether over a family, tribe, formal or informal organization or territory and whether through the laws, norms, power or language" (Bevir, 2013, p.13).

Very few metropolitan regions in the world can be said to have well-managed urban development and governance systems. The labyrinth of urban development and administration frameworks that make up metropolitan regions results in a form of urbanization that is neither sustainable nor attractive. The patterns of metropolitan development are leading to rising levels of congestion, increasing commuting times, and rising transaction costs for business and government (Brown and Potoski, 2003). There is also a widening gap in accessibility to social and community services.

The model of metropolitan governance used for almost a century was founded on a hierarchy of decision-making structures and processes. Recent trends toward greater devolution, decentralization, and delegation to local governments are changing these processes and having a significant impact on the decision-making, institutional cultures and operations, civic engagement, information sharing, and trust in governance. However, there are new cross-cutting issues, such as climate change, equity and accessibility to services, education, employment, and housing at a metropolitan level that are best dealt with in a holistic and systematic way. Key stakeholders, at varying levels of responsibility, need to come together to plan and manage the use of resources so that both regional and local interests are met. This calls for new hybrid institutional arrangements and forums that cut across the boundaries of sectors, government departments, and geographic units. These clustered and networked models of governance cut across traditional dichotomies of sector line and hierarchical governance, which have tended to separate government from markets and civil society.

Governing and managing metropolitan regions has become a major hurdle to sustainable urban development. Social change, including the evolution of the information age and the network society (Castells and Cardoso, 1995), provides a new context for planning and development (Albrechts and Mandelbaum, 2005) and raises new challenges and opportunities to govern metropolitan regions. This chapter argues the need for a new model of metropolitan governance based on collaborative approaches. Collaborative governance encompasses greater engagement and networking arrangements between government institutions, business, and civil society to achieve more open and improved decision-making (Levi-Faur, 2012).

Collaborative governance is a further step in the evolution of inclusiveness in public decision-making and the development of the sharing economy (Economist, 2013). It can help to reduce costs and time delays to business and government, encourage more sustainable use of capital and resources, and foster collaborative competition within and between cities. Collaborative governance involves more than institutional arrangements and can cover such things as planning, financial arrangements, infrastructure provision, information and data, and shared service delivery arrangements between levels of government, corporations, businesses, and community groups.

This chapter explores why governments and other organizations collaborate. It introduces the model of collaborative governance and explains briefly why and how such an approach could improve the sustainability of development in metropolitan regions. Some examples of successful collaborative metropolitan governance initiatives are discussed. Ten principles of collaborative governance for metropolitan regions are outlined, followed by a discussion on how to introduce more collaborative approaches into planning and managing metropolitan

regions. The principles include establishing and resourcing forums for collaboration to address complex problems and opportunities; developing collaborative capital and a culture of collaboration across sectors and at all levels within a metropolitan region; and cities engaging in city-to-city partnerships and alliances to improve their management, competitiveness, and sustainable development.

What Is Collaborative Governance?

Government is the formal system of administration and laws by which a country or urban community is managed. Governance is a broader concept that has emerged in recent decades. It incorporates the roles played by governments but also includes the roles played by the private/business sector and the community in initiating and managing change in society (Pierre and Peters, 2000; Rhodes, 1996).

Governance involves formal and informal institutions and groups in society and networks of actors rather than hierarchies. However, it may not be well coordinated, and government structures and decision-making may still play a major role in ratifying the outputs of governance processes.

The word collaboration first came into use in the 1800s following industrialization and as more complex organizations emerged in society (Wanna, 2008). In the 1900s, some governments collaborated in service delivery or infrastructure projects, but many jurisdictions were reluctant to collaborate with each other or with the community, believing that they had been elected to govern and being unwilling to share information, plans, or power with others. By the turn of the 2000s, in developed countries like Australia, governments were becoming more active collaborators and had redefined themselves as facilitators who relied on a host of other actors to deliver effective outcomes (Wanna, 2008).

There are many reasons why governments and other organizations collaborate with each other and with the community.

Social complexity and uncertainty: The network society is characterized by complexity and uncertainty and has been described as a complex adaptive system (Innes and Booher, 1999). Governments and other organizations are challenged by increasingly complex tasks and problems that involve unfamiliar organizations and actors that they cannot control and whose behavior they can't predict (Koppenjan and Klijn, 2004). This creates uncertainty for governments, organizations, and actors and has to be addressed.

Interdependence of roles: We live in a world in which governments and other organizations share power and have overlapping roles and responsibilities to act on public challenges (Bryson, Crosby, and Stone, 2006). This interdependence requires organizations to collaborate.

Efficiency and effectiveness: When governments have acted unilaterally to try to solve complex problems, they have often been inefficient and ineffective. In modern societies like the United States, there has been long-standing criticism of the effectiveness of government when it acts on its own that has been based on facts and ideologies about the need for small government (Bryson, et al., 2006).

Responsiveness to community views: Governments are often accused of being unaware of or unresponsive to local community needs and views, which leads to calls for more community consultation and engagement, particularly in urban planning. Wanna (2008) argues that governments have a political obligation to be responsive to community needs. Many governments, particularly local governments, are becoming more proactive and are trying to develop shared goals and understanding of problems across the community and to build coalitions of support for particular actions (Wanna, 2008).

Globalization: Globalization reflects the increasing networks and connections between countries, organizations, and individuals around the globe arising from trade and economic links, travel, information technology, and environmental issues and problems. This has required governments to engage in international dialogue and action to manage these issues (Wanna, 2008).

Bryson, et al. (2006) summed up all of these drivers of collaboration between governments and other groups as follows: "People who want to tackle tough social problems and achieve beneficial community outcomes are beginning to understand that multiple sectors of a democratic society—business, non-profits and philanthropies, the media, the community, and government—must collaborate to deal effectively and humanely with the challenges" (p.44).

Sharing economy: The sharing economy is an umbrella term with a range of meanings (PWC, 2015). It is related to economic and social activity involving open information systems, much of it online transactions, that help to reduce transactional costs to government, business, societies, and individuals. The massive growth of ABNB, Uber, and the like have challenged the traditional operations of markets, the use of resources, and information. Social media is fundamentally changing governance arrangements and policy development, making public institutions more open, accountable, and transparent in the way they do business.

What Is Collaborative Governance?

New forms of collaboration between governments, the private sector, and the community have been evolving over the past few decades. Practical approaches to collaboration have developed in a number of social contexts, including public administration, catchment groups and watershed councils, community health partnerships, environmental management, and community and urban planning (Ansell and Gash, 2008; Margerum, 2011).

Collaborative approaches are not always easy or successful. Some of the weaknesses and disadvantages that arise include: failure to achieve political or government buy-in to problems and proposed solutions; unclear or blurred responsibility for implementation of actions; and long timeframes to reach agreement and consensus about solutions, policies, and actions (Wanna, 2008).

Research on collaborative governance approaches has focused on two main areas (Emerson, Nabatchi, and Balogh, 2012): the meaning of the term collaborative governance and identifying the key factors or variables within collaborative governance approaches and processes that facilitate reaching agreement and achieving creative and effective outputs and social outcomes.

Ansell and Gash (2008) reviewed the existing literature and over 130 examples of practice to define collaborative governance and identify the critical variables for successful collaboration. They say collaborative governance is

> *A governing arrangement where one or more public agencies directly engage non-state stakeholders in a collective decision-making process that is formal, consensus-oriented, and deliberative and that aims to make or implement public policy or manage public programs or assets* (p.544).

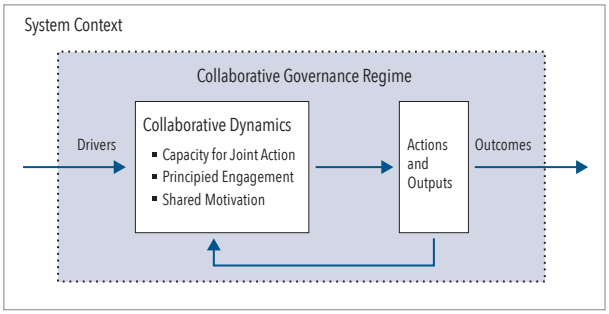
Ansell and Gash (2008) further identified four broad variables that affect successful collaborative governance outcomes: (i) starting conditions, (ii) facilitative leadership, (iii) institutional design, and (iv) the collaborative process. The latter process includes the sub-variables commitment to process, face-to-face dialogue, and trust-building.

Emerson, Nabatchi, and Balogh (2012) used a similar approach and reviewed an even broader range of conceptual frameworks, research findings, and practice-based knowledge to develop an integrative framework for collaborative governance. They define collaborative governance as follows:

> *The processes and structures of public policy decision making and management that engage people constructively across the boundaries of public agencies, levels of government, and/or the public, private and civic spheres to carry out a public purpose that could not otherwise be accomplished* (pp. 1-2).

The framework developed by Emerson, et al. (2012) is dynamic and consists of nested sets of components (Figure 1) and a longer list of key variables and factors (Table 1). This definition and framework is used in this chapter and allows for interactions and feedback through time as the "Collaborative Dynamic" produces "Actions and Outputs" and the "Outcomes" of these change the "System Context" (see Figure 1).

Figure 1. An Integrative Framework for Collaborative Governance



Source: Based on Emerson et al., 2012.

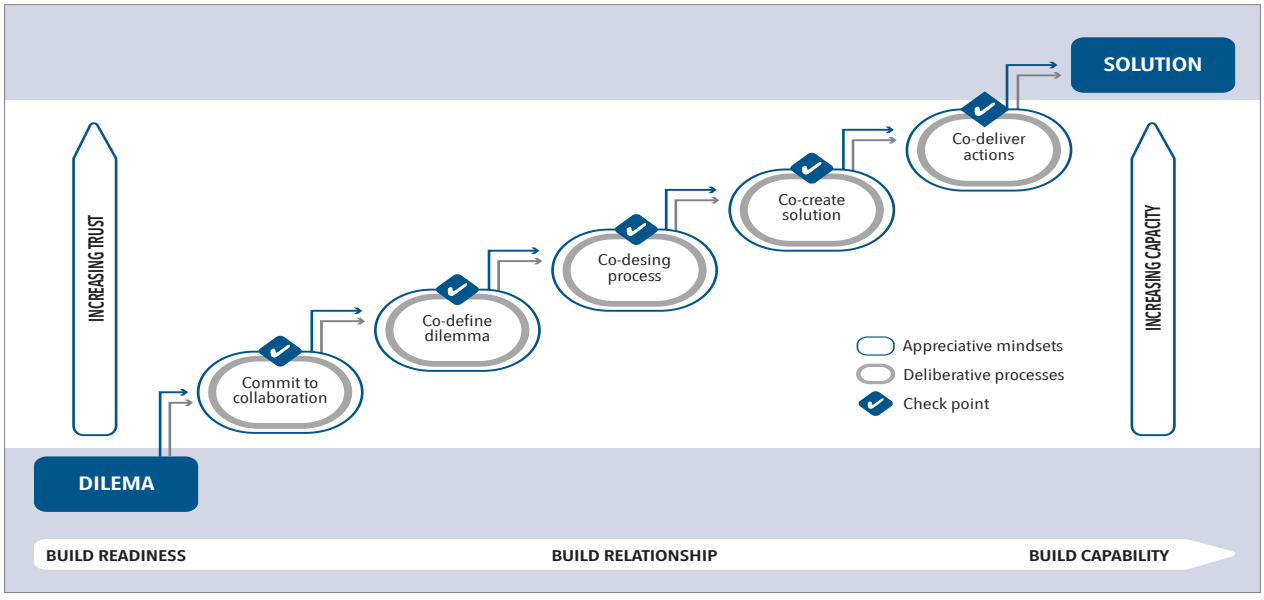
Governance and communications consultants Twyfords see collaborative governance as "a way of working with diverse stakeholders to create enduring solutions to our most complex issues, problems, and dilemmas" (Twyford, Waters, Hardy, et al., 2012, p.27). They view it as a problem-solving process with a series of stages, each involving forms of collaboration (Figure 2). This collaborative process aims to build relationships and trust among stakeholders and to build institutional capacity for actions and implementation leading to enduring solutions.

Table 1. Key Variables and Factors in Collaborative Governance

Context and Drivers		Collaborative Governance Regime (CGR)				Outcomes
System Context	Drivers	Collaborative Dynamics			Joint Outputs and Actions	Impacts and Adaptation
Resource conditions Policy and legal frameworks Prior failures Power relations Networks Levels of trust Socio-economic context	Leadership Incentives to collaborate Interdependence Uncertainty	Principled Engagement Quality interactions Discovery Definition Deliberation Determination	Shared Motivation Trust Understanding Legitimacy Shared commitment	Capacity for Joint Action Institutional arrangements and procedures Leadership Knowledge Resources	Endorsements Enacting policy and law Obtaining resources Building works Management practice Enforcing compliance	Changes to the collaborative dynamics Changes to the CGR Changes to the System Context

Source: Based on Emerson et al., 2012.

Figure 2. Twyfords' Collaborative Governance Model



Source: Twyford, 2012, p. 29.

Collaborative governance is differentiated from governance generally because it engages governments and other stakeholders and sectors of society in structured and principled ways, leading to enduring outcomes and transformational change.

Collaborative Governance Initiatives and Outcomes

Collaborative governance approaches have been successfully used in a range of sectoral problem and policy areas, at different territorial scales of governance, as well as in different countries and globally to address complex problems, reach agreements, and produce effective outputs and outcomes. Some examples of collaborative governance approaches are discussed to distinguish from general governance.

Lower Rogue Watershed Council: A local example is the Lower Rogue Watershed Council in Oregon, US. Since 1994, the Council has undertaken data collection, catchment management, tree planting, and fish passage improvement actions. In 2015, it produced the Rogue River Estuary Strategic Plan (LRWC, 2016), which incorporates farmers, residents, fishing and environmental groups, water districts, and local and county governments. University and state government departments act as technical advisers (LRWC, 2016). The group is voluntary and collaborative and meets "around a table [where] members conduct their business in an open and relaxed style—making decisions by consensus" (Margerum, 2011, p.26).

Urban Transportation Planning in the United States: Transportation planning for large urban regions in the United States is done by Metropolitan Planning Organizations (MPOs) that are federally mandated and funded to prepare 20-year, long-range transportation plans (LRTPs). These plans guide the allocation of federal money for local transport projects. The MPOs and associated advisory committees comprise a range of stakeholders, including local governments, state transportation and environmental agencies, service providers such as road and transit agencies, and non-voting members such as business and community groups (Deyle and Wiedenman, 2014). Deyle and Wiedenman (2014) recently studied 88 MPOs and argue that developing draft LRTPs conforms well with consensus-based collaborative planning, where many stakeholders with different needs have shared interests in common resources or challenges and where no actor can meet their own interests without the cooperation of many others.

Forest Stewardship Council, International: On the global scale, the Forest Stewardship Council, International (FSC) is a not-for-profit organization dedicated to promoting sustainable forest management worldwide. The FSC has developed an international certification system that indicates the use of sustainable forest and timber production practices and informs market choices by consumers. Governments have played a major role in promoting forest certification in Latin America in collaboration with the FSC (Bell and Hindmoor, 2012). The FSC has a General Assembly of voting members and works collaboratively to ensure no one viewpoint dominates. Membership has three chambers—environmental, social, and economic—with equal rights in decision-making (FSC, 2016). Membership is diverse and includes international environmental groups such as the World Wildlife Fund, the timber industry, forestry organizations, indigenous people's groups, retailers such as IKEA, and forest owners. The FSC constitutes "an innovative governance system which emerged to fill the vacuum left by the failure of governmental and intergovernmental efforts to effectively address sustainable forestry" (Bell and Hindmoor, 2012, p.145).

A New Theoretical Framework

Collaborative governance does not replace governments but is a way for governments to work with other sectors and to use their knowledge, resources, and ideas and to help solve complex social and urban problems.

Collaborative governance offers a new theoretical framework and model for successful governance and for governments to work with each other and with the private sector and community. As will be discussed in the next sections, collaborative governance has been successfully applied at the regional and metropolitan level, and many further opportunities exist to apply these approaches in transforming governance and managing metropolitan regions for sustainable development.

Collaborative Governance for Metropolitan Regions

Metropolitan regions are diverse and complex and commonly lack government and governance structures and institutions at the metropolitan level. This creates challenges and opportunities in applying collaborative governance approaches. However, such approaches have been used successfully in a range of problem and policy areas in different metropolitan regions and countries, as discussed in the following examples.

Economic Development in São Paulo

The South Eastern part of São Paulo, Brazil, metropolitan agglomeration comprises the ABC Region of seven municipalities and about 2.5 million people (Andersson, 2015). In the early 1990s, the ABC Region lost industries as a result of globalization and technological change, and unemployment and poverty grew. In 1996, regional leaders joined to address these issues and created the Chamber of the Greater ABC Region, a forum to discuss and act on regional economic development that would involve local governments, private enterprises, trade unions, and civil society groups (Rojas, Cuadrado-Roura, and Güell, 2008). The work of the Chamber and its collaborative processes has led to the signing of more than 20 agreements on actions to promote the economic, social, and territorial development of the region. One of the most important results was the establishment of the Regional Development Agency (RDA) in 1998 (Andersson, 2015). Rojas, et al. (2008) argued that the ABC Region represents "an incipient metropolitan governance model involving public and private agents, characterized by flexibility, pragmatism, and solid problem-solving orientation" (p.53).

Planning for Liveability in Metro Vancouver

The Greater Vancouver area in Canada has a long history of regional planning and governance going back to the 1940s. Local municipalities began working together as a region to address widespread flooding and rapid urban growth in the Fraser River delta. As regional planning evolved, its focus changed to understanding and promoting the liveability of the metropolitan region (Abbott and DeMarco, 2017). The Greater Vancouver Regional District is the legal entity responsible for regional planning and governance and, since 2007, it has been known as Metro Vancouver. It includes as members 21 municipalities, one electoral area, and one treaty First Nation. Abbott and DeMarco (2017) noted that the "consensus-based, federation of municipalities governance model of Greater Vancouver…provides an ongoing collaborative framework for municipalities to have conversations about regional growth management and liveability and to agree on visions and legally enforceable regional actions" (p.272).

Climate Change Adaptation Planning in Santiago de Chile

Climate change will impact on many physical, social, economic, and environmental aspects of metropolitan regions and requires an integrated response. The current and future impacts of climate change have been addressed in the Metropolitan Region of Santiago de Chile (MRS) by preparing a Regional Climate Change Adaptation Plan. Barton, Krellenberg, and Harris (2015) reviewed the collaborative and participatory processes used from 2010 to 2012 as one aspect of

generating the plan. The participatory process, which involved climate and social scientists who prepared detailed estimates of climate change impacts on MRS, included a wide range of actors, from the regional government, national ministries, community groups, and civil society, to the private sector and other institutions. The process consisted of a series of 10 Round Table meetings with representatives of all these organizations. Barton, et al. (2015) noted that for Santiago this was "an innovative and far-reaching policy process within the existing planning and governance scheme, like Chile in general, and Santiago in particular, are typically characterized by non-inclusive, sectoral, and piecemeal governance" (p.177).

The goal of the collaborative process was achieved: to generate a Climate Change Adaptation Plan for the MRS that could be incorporated into the budgets of regional and national governments. The 10 Round Table meetings over a 2.5-year period created the opportunity for an ongoing, horizontal dialogue across sectors and between individual actors. Barton, et al. (2015) observed that the experience in Santiago shows "sufficient rapport can be developed to facilitate decision-making and consensus building for the final collaborative selection of adaptation measures" (p.181).

Integrated Metropolitan Planning in South East Queensland

South East Queensland (SEQ), Australia, is a fast growing, polycentric metropolitan-city region, with a population of around 3.3 million in 2014, centered around the Queensland state capital, Brisbane. The region currently includes 12 local governments. The impacts of rapid population growth provided the impetus for a new regional planning and governance approach in SEQ in the early 1990s. At a community conference called SEQ 2001, commonwealth, state, and local governments, along with community, business, and professional groups agreed to collaborate to produce a non-statutory regional plan. A high-level forum called the Regional Planning Advisory Group (RPAG), consisting of state ministers, city mayors, and community and private sector representatives, was established to oversee the process. By 1995, the RPAG had become an ongoing SEQ Regional Coordination Committee (RCC), and a regional plan—the SEQ Regional Framework for Growth Management 1995 (RCC, 1995)—had been endorsed by all three levels of government. The 1995 Framework was an integrated plan covering land use, environmental, social, and infrastructure policies and actions. Many groups and sectors who had not previously worked together had to "learn to work face to face, to find areas of agreement, and to develop trust" (Abbott, 2001, pp.114–16).

By 2004, all sectors agreed that a statutory regional plan was needed and the *SEQ Regional Plan 2005–2026* (OUM, 2005) was endorsed in June 2005. The SEQ Regional Plan provides a good example of integrated, metropolitan planning for sustainable development because it endorsed land use, environmental, social, and infrastructure policies and actions. It also provided the strategic policy context and impetus for integrated, regional sectoral strategies for transport, water quality, and natural resource management, as well as local government statutory plans. Collaborative governance approaches have provided the framework for institutional change and successful metropolitan planning in SEQ for over 25 years and offer many lessons for other metropolitan regions (Abbott, 2012).

Challenges of Collaborative Governance for Metropolitan Regions

Governing metropolitan regions presents many challenges. Collaborative governance of metropolitan regions shares many of these challenges but also presents other obstacles, as discussed below.

Trying to cover an entire metropolitan region: It is difficult to motivate and involve the many stakeholders of a metropolitan region in collaborative governance processes. Economic development and global promotion of cities is one policy area where this has been done successfully (McCarthy, 2011).

Trying to tackle too many complex urban problems: Trying to solve the complex, interdependent problems of cities separately can be counterproductive and futile. However, trying to tackle too many complex problems at once can overwhelm a collaborative process with too many issues, too many stakeholders, and too few resources.

Accountability, legitimacy, and transparency: Bryson, et al. (2006) argued that accountability is a particularly complex issue for collaborations because accountability may not be clear. There are also issues of democratic legitimacy when the private sector and community groups, with their interests, become involved in public policy processes (Benz and Papadopoulos, 2006). One way to address this issue is to ensure the transparency of public governance processes (Margerum, 2011).

One dominant local government: Where there is one powerful local government or core city in a metropolitan region, the challenge for collaborative governance may be to get them actively involved and "to find elements and initiatives for cooperation that would benefit the dominant local government" (Andersson, 2015, p. 53).

Getting the outputs of collaborative processes accepted by governments and implemented: Having governments engaged in collaborative processes—particularly at the political level—is important in order to achieve acceptance and implementation of the process outputs by independent governments. Having clear lines of political accountability from the process to government is also important.

Sustaining a collaborative process over an extended period: Margerum (2011) noted the challenge sustaining collaborative political networks over the long term. It may be better to define the collaborative process as a project with a beginning and an end.

Involving the community in the collaborative process: Individuals and community groups, generally, are more concerned with local issues, making it difficult to engage them in affairs at the metropolitan level. Involvement of community interest groups directly in policy committees as in Santiago de Chile and SEQ may be a good approach.

Quality data collection, analysis, and technical support: Obtaining good metropolitan data, analysis, and technical support is a challenge but is essential in collaborative processes to facilitate good collaborative dynamics and engagement, and to achieve effective outcomes (Figure 1).

Resourcing the collaborative process: Collaborative processes require resources, both financial and time, for participants to interact and build trust. Having a collaborative process resourced and mandated by a higher level of government, as in urban transportation planning in the United States, greatly facilitates the involvement of stakeholders and agreement on outputs.

Collaborative Governance and Sustainable Development

Sustainable development is a multi-faceted concept involving economic, social, environmental, physical, and governance aspects of the present and fu-ture of society. Consideration of all of these multiple dimensions is required when planning for the sustainable development of urban areas and metropolitan regions (UN-Habitat, 2009). Wheeler (2000) argued that improved governance is particularly important in "planning for metropolitan sustainability" and planners should "include…voluntary and non-profit organizations and private firms as participants in metropolitan problem-solving processes" (p.144).

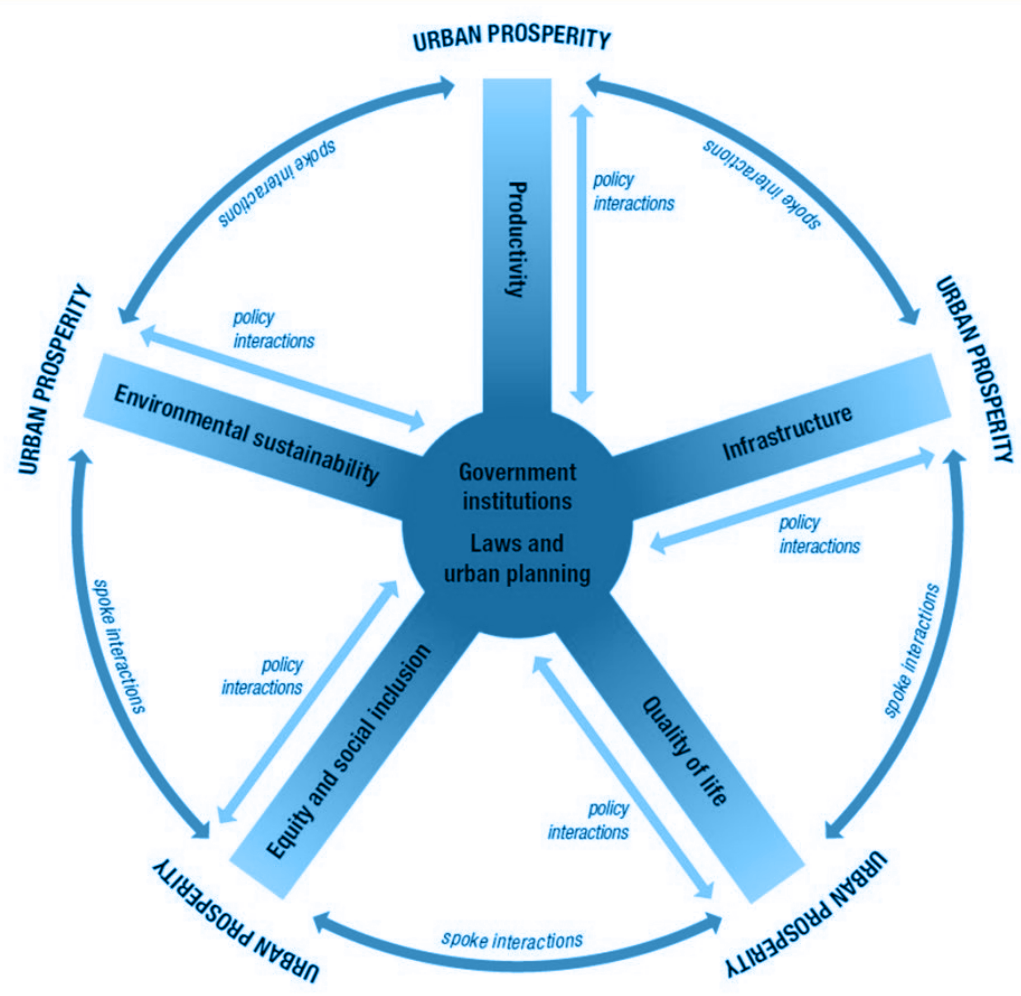
The development and prosperity of countries and urban regions have often been defined narrowly in economic growth and gross domestic product or gross regional product terms. However, UN-Habitat, in the *State of the World's Cities 2012/2013: Prosperity of Cities* report (2012), developed a broader concept of prosperity and sustainable development in large urban and metropolitan regions that includes economic, social, environmental, physical, and governance aspects. The report identifies five key dimensions of urban areas that underpin their prosperity: (i) *economic productivity,*

(ii) urban infrastructure, (iii) quality of life, (iv) equity and social inclusion, and (v) environmental sustainability.

These five dimensions and their interrelationships constitute a conceptual framework called the Wheel of Urban Prosperity" (Figure 3), which symbolizes well-balanced urban development through strength in each of the five dimensions of prosperity. The hub at the centrer of the wheel represents urban government and governance arrangements and reflects government institutions, laws, and urban planning. The implication is clear: good government and governance are central to achieving urban prosperity and sustainable development. Conversely, the report notes that "poor governance and weak institutions act as major impediments to urban prosperity" (UN-Habitat, 2012, p. 117).

Based on the Wheel of Urban Prosperity, the UN-Habitat report introduces a new research and policy instrument to assess the prosperity and sustainable development of urban areas and metropolitan regions, called the City Prosperity Index, or CPI (UN-Habitat, 2013, p.16). The CPI is being used to analyze and measure the prosperity of individual cities, to understand their strengths and weaknesses regarding the five dimensions of prosperity, and thus to identify complex problem areas for government, governance, and planning intervention.

Figure 3. The Wheel of Urban Prosperity



Source: UN-Habitat, 2013, p. 12.

Collaborative Governance and Strengthening the Wheel of Urban Prosperity

Metropolitan regions throughout the world face many development challenges and opportunities that vary between continents and between advanced and developing countries. The UN-Habitat *State of the World's Cities 2012/2013* report highlights that in advanced countries, "urban population growth is next to stagnant," whereas in the developing countries it is growing at an "average 1.2 million people per week" (2012, pp.26–9). Challenges, complex problems, and opportunities in particular metropolitan regions can be identified using the CPI and other political and social processes. Collaborative governance approaches can be used to strengthen all five dimensions of the Wheel of Urban Prosperity and the hub of government institutions, laws, and urban planning.

Economic productivity: The economic productivity of metropolitan regions can be improved by focusing on developing urban infrastructure, strengthening financial markets, identifying economic futures and preparing strategies to achieve these, encouraging research and development by the private sector and universities, and generally by facilitating the business and social environment to encourage innovation and the exchange of ideas (UN-Habitat, 2013). Collaborative metropolitan forums, with a high level of private sector and research group involvement, such as those in the ABC Region of São Paulo, can help facilitate this environment of innovation.

Urban infrastructure: Infrastructure is the bedrock of prosperity and sustainable development (UN-Habitat, 2012). To improve urban infrastructure, metropolitan regions need to provide safe water supply and sanitation, a reliable power supply, a network of roads and efficient public transport, and communications systems. Governments provide urban infrastructure but UN-Habitat (2012) noted that "beneficiary communities must be fully involved in the design, provision, and maintenance of infrastructure" (p.69). Collaborative processes with a high level of local community involvement can assist in ensuring that infrastructure is appropriate to the needs of local people. Co-funding arrangements between governments, or levels of government such as for urban transportation in the developed economies, are also relevant (Charbit, 2011).

Quality of life: Quality of life is a broad concept that reflects peoples' access to housing, employment, a safe environment, recreation, and opportunities to enjoy life. To improve the quality of life of residents, metropolitan regions need to facilitate access to all of these amenities. Efficient and affordable public transport is critical in giving people access to employment, open space, and social opportunities. Collaborative processes with a high level of involvement of civil society organizations and a degree of autonomy can assist in understanding what quality of life means for a community and advocating, upholding, and fighting for everyone's rights (UN-Habitat, 2013).

Equity and social inclusion: Equity and social inclusion are challenging issues. "A prosperous city has the reduction of inequality as its fundamental objective" (UN-Habitat, 2013, p.83). To improve equity and social inclusion, metropolitan regions need to improve access to employment and housing, public facilities and services such as public transport and open space, and civil society. Social inclusion means an urban environment "where individuals and social groups feel they belong to the larger whole… moreover, are free fully to engage in collective affairs" (UN-Habitat, 2013, p.89). When inequality and social exclusion exist, it is difficult for individuals and community groups to participate in collaborative processes or to affect change through them. It requires regional leadership to create opportunities for inclusion, such as the chamber or forum in the ABC region of São Paulo.

Environmental sustainability: Collaborative governance approaches were pioneered in addressing issues of environmental sustainability, such as sustainable forest management and administering water catchment areas. To improve environmental sustainability in metropolitan regions, governments

need to strike a healthy balance between economic growth and environmental preservation (UN-Habitat, 2013). Collaborative forums involving environmental groups, the business sector, and research groups with governments, such as the Round Tables on climate change adaptation in Santiago, could help facilitate the necessary balance of innovative solutions, renewable energy technologies, and preservation of environmental assets.

Government institutions, laws, and urban planning: Institutions, laws, and urban planning constitute the hub and governance framework in a metropolitan region. Strengthening any of the dimensions of prosperity, as just discussed, will also reinforce the hub. However, collaborative governance approaches and planning processes that are multi-dimensional and integrate several policy sectors, such as Metro Vancouver and the regional planning in SEQ, can strengthen the hub directly.

Ten Principles of Collaborative Governance for Metropolitan Region

The models of successful collaborative governance discussed above, particularly the integrative framework in Figure 1 and Table 1 (Emerson, et al., 2012), have been used by the authors to develop 10 principles of collaborative governance for metropolitan regions.

Metropolitan urban regions have been described as complex adaptive systems and this system context provides many complex problems and drivers as well as opportunities for collaboration (Innes and Booher 1999). Political leadership can be critical in initiating collaborative processes (Fahmi et al., 2016).

Principle 1: Complex urban problems with uncertain outcomes and involving organizations with interdependent roles need to be identified and provide opportunities and imperatives for collaborative approaches.

Principle 2: Political or organizational leadership and incentives for stakeholders to collaborate on problems, such as expected positive outcomes or financial benefits, will be required to initiate collaborative approaches.

Collaboration requires institutional arrangements and procedures. These may already exist, or will need to be established, to allow governments and other sectors to interact regularly and discuss identified urban problems. Koppenjan and Klijn (2004) called these arenas and actor networks, while Abbott (2012) characterized them as metropolitan forums for collaboration. Forums need to be accountable to governments and be properly resourced.

Principle 3: Metropolitan forums or arenas for collaboration need to be identified or established, involving relevant governments and stakeholders from other sectors, to allow identified problems to be discussed and solutions sought.

Principle 4: Metropolitan forums need clear lines of accountability from and to governments and to ensure transparency in their meetings and processes.

Principle 5: Metropolitan forums need to be properly resourced with relevant metropolitan information and data, analytical capacity, and administrative and technical support. The member-ship and dynamics of collaboration among members of metropolitan forums are important to foster an understanding of different views, develop trust, and build the support and commitment of members and their governments or organizations to identified solutions (Emerson, et al., 2012).

Principle 6: The members of metropolitan forums should be high-level representatives of their organizations or sectors and able to speak on their behalf. Governments should be represented by politicians. Membership should be continuous and stable.

Principle 7: The meeting processes of metropolitan forums should promote principled engagement and quality interactions among members. This requires facilitative leadership, high-quality information, trust building, and consensus-based deliberations leading to agreed solutions and actions.

The outputs of collaborative processes, namely agreed solutions, policies, and actions, need to be presented back to accountable metropolitan

and higher-level governments, and other involved organizations, for their consideration, endorsement, and implementation. Collaborative processes can be viewed as projects with beginnings and ends but may result in ongoing changes to collaborative governance arrangements and legislation.

Principle 8: The metropolitan solutions and actions endorsed by collaborative processes should be considered by accountable governments and other stakeholders and, if possible, endorsed and implemented.

Principle 9: Metropolitan collaborative processes should be managed as projects with beginnings and ends. However, they may result in new ongoing collaborative governance arrangements to address the initial problem, such as committees, authorities, and statutory plans and policies.

The outputs and actions of collaborative processes will likely produce longer-term outcomes and changes to the metropolitan system context. This metropolitan context will likely also change because of internal social, economic, and environmental factors and because of external national and global forces.

Principle 10: As the metropolitan system context changes, new complex urban problems will arise along with new imperatives and opportunities for governments and other sectors to collaborate to address these. Collaborative governance for metropolitan regions is an ongoing process of social learning and adaptation.

A Collaborative Governance Framework for Sustainable Development

Moving toward a collaborative governance model for sustainable development of metropolitan regions begins with the premise that it must be based on a process of trust building through collaboration to enable a wider range of entities to become engaged in decision-making. Beyerlein, Beyerlin, and Kennedy (2005) used the term collaborative capital in relation to organizations, meaning the assets of an organization that enable people to work together well. This concept of collaborative capital can be applied to metropolitan regions to reflect the culture of collaboration that exists and the leadership and capacity to adopt and successfully implement collaborative approaches. Developing higher levels of collaborative capital means that the region can apply collaborative approaches to broader and more complex problems covering more dimensions of sustainability.

Framework for Collaborative Governance to Create Collaborative Capital

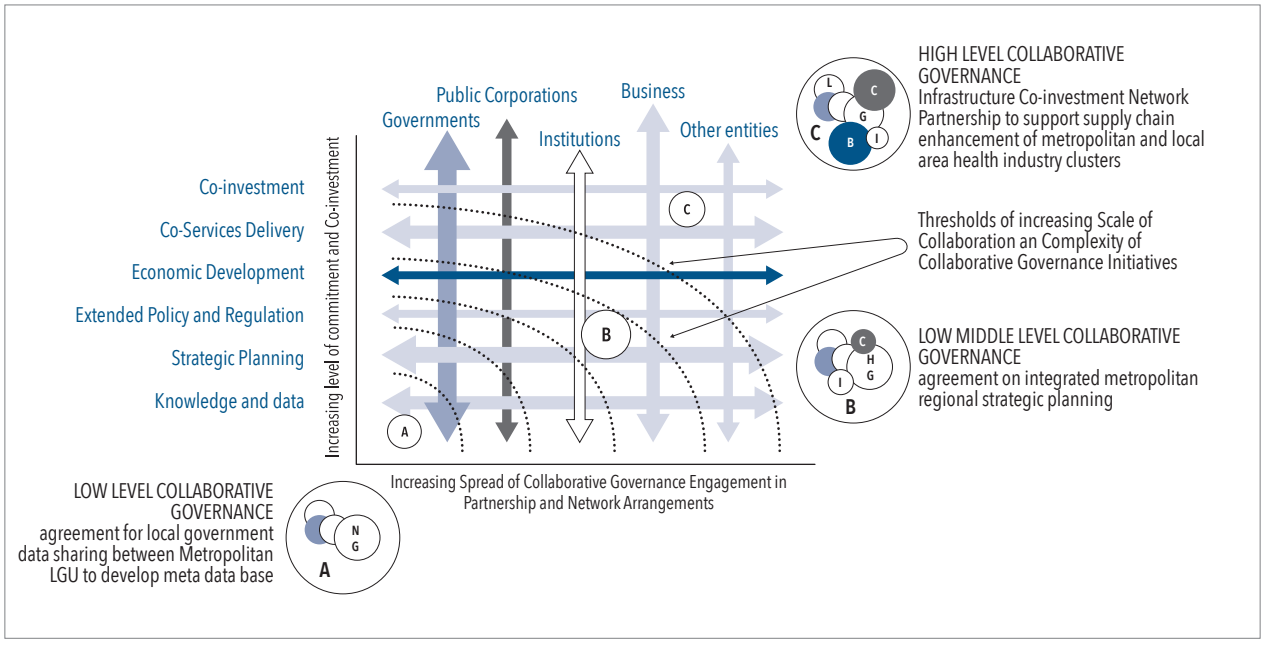
A framework for developing collaborative capital at a metropolitan level using collaborative governance is shown in Figure 4. This framework may be useful when two or more local governments agree to collaborate on standardizing, sharing, and integrating data and information on infrastructure services, planning, land use, and building approvals along common administrative boundaries using compatible management information and GIS systems. Much of this occurs by agreement at a technical level with safeguards on access to information. The next step is to expand this to sharing the same data with other local governments, central and state governments, and public corporations. The idea is to develop a metadata set of information at local and metropolitan levels (Figure 4, Initiative A). The data may all be held by a publicly owned entity, with the shareholders being the different levels of government and public corporations. If desirable, city-wide metadata involving co-ownership could be expanded to institutions and other entities.

The next step in the process could be the integration of planning functions by agreement between planning agencies. The intent would be to develop common standards, policies, and practices to streamline planning and development control, and to share resources and expertise using

a cost-sharing arrangement. This could advance to the integration of other policy, regulation, and administration functions. For example, it could result in multiple cities engaging in the preparation of a region-wide strategic plan (Figure 4, Initiative B) or a policy on levels and standards of service delivery, and standardization of infrastructure, to enable local utility agencies and governments to co-purchase equipment and services at reduced cost.

The framework allows for the progressive evolution of the types and levels of engagement in collaborative initiatives, involving joint marketing and development of economic strengths of local and regional clusters of industry activities and common-user services. At a more advanced stage, government, corporations, institutions, business, and other entities can collaborate on service delivery and ultimately co-investment and co-development of essential strategic infrastructure designed to improve access to opportunities for competitive business development. The long-term objective of the collaborative governance model for metropolitan planning and development is to encourage the development of innovative and linked clusters of economic activity and to give different parts of metropolitan regions an identity known by local competitiveness, urban design, cultures, and geographic identity. With high levels of collaborative capital, it becomes possible to move toward economic co-investment strategies for metropolitan regions that affect all five dimensions of prosperity. These strategies would cover economic development, financial co-investment between local governments and business corporations, and institutions in crucial strategic infrastructure. Co-investment is needed to enhance community access and efficiency in services at the metropolitan level and to realize local area creativity, innovation, and development potential, as well as to create capacity in supply chains to establish a strong network and system of integrated micro industry clusters and regional clusters such as health (Figure 4, Initiative C).

Figure 4. Progressive Levels of Collaborative Governance



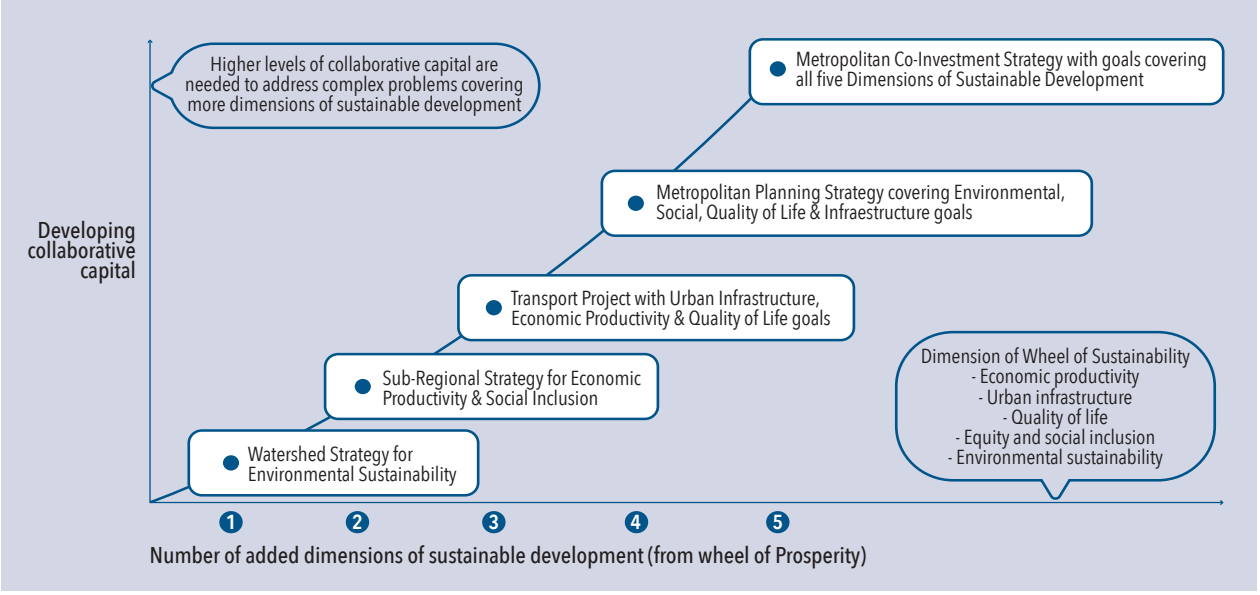
Source: Authors.

Strategy for Building Collaborative Capital in Metropolitan Regions

The framework in Figure 4 supports a progressive development, spread, and application of collaborative governance initiatives covering the five dimen-sions of prosperity and sustainable development shown in the Wheel of Prosperity (Figure 3). A strategy for building and applying higher levels of collaborative capital is illustrated in Figure 5. It begins with low-level areas of collaboration involving only one dimension of sustainable development. A catchment management forum that involves interest groups and governments who agree to share knowledge, data, and information might be the first step in the process. The forum could be expanded to include corporations, business, and educational institutions in building publicly available metadata sets. Successful collaborations build collaborative capital in a region and allow more complex problems, involving more dimensions of sustainability, as shown in Figure 5.

As the examples discussed earlier show, metropolitan collaboration can be initiated bottom-up by a local authority or the community, or top-down from a higher level of government, and can address a range of complex urban problems and dimensions of sustainable development. In all cases, collaboration will require political leadership and development of collaborative capital in the metropolitan region, allowing for broader problems and opportunities to be addressed, and resulting in higher levels of engagement or commitment, investment, and risk sharing.

Figure 5. Strategy for Developing Collaborative Capital



Source: Authors.

Many metropolitan regions have already engaged in some of the lower order collaborative governance arrangements outlined in the model. However, there is need to go forward, as the higher order levels of collaborative capital have the potential to create a pathway to more sustainable approaches to planning, managing, and developing metropolitan regions in both developed and developing economies. The key to the success of applying collaborative governance to metropolitan planning and development is to start to build trust and ensure a willingness to change.

Conclusion

The current institutional and governance arrange-ments to manage the development of metropolitan regions have changed little in more than a century. Trust between all levels of metropolitan government globally is continuing to fall (Snyder, Hernandez, Maxwell, et al., 2016) and the competitive model of metropolitan governance is not delivering the jobs, investment, or sustainable development desired. New approaches to planning and managing development in metropolitan regions are required. Collaborative governance offers one such approach.

The competitive historical model of urban governance—where local governments act in self-interest to gain political influence or the next big project and cooperate only where it is expedient to do so—must be replaced.

The problems of climate change, water and food security, contaminated land, social dislocation, and inequitable access to knowledge, jobs, and investment will not be solved by cities in metropolitan regions competing against each other on a winner takes all basis. If metropolitan regions are to become more sustainable, prosperous, better managed, and more liveable places, changes in current governance arrangements and practices are necessary.

Collaborative governance represents a new model and approach, and calls for significant changes in thinking and practices by public representatives, officials, and communities in the way they plan, develop, and manage metropolitan regions.

In an age where metropolitan regions face incre-asing challenges, a more collegial or collaborative approach to planning, management, and economic development is required. Collaborative governance calls for local governments to work collegially on pooling and to use scarce regional resources wisely to reduce externality and other transaction costs and risks. But collaboration should also be used to create economies of scale to make metropolitan regions more competitive to enter larger markets and to extend the benefits of development to all local governments. Collaborative governance is a new governance model that could contribute significantly to the sustainable planning and development of metropolitan regions.

Aristotle said the whole is greater than the sum of its parts. In other words, when individual governance entities for metropolitan regions are connected, and collaborative capital grows, they are more powerful and more competitive in the world of increasingly competitive metropolitan regions. Collaborative governance, as a metropolitan planning and management model, has significant promise in the pursuit of sustainable development, regardless of country or region. Public officials who represent the interests of regional planning and development will need to understand its benefits and initiate the changes required before it can become a more widely accepted model for sustainable development. While the change will be challenging, it is crucial to making sustainable development a reality in metropolitan regions, regardless of a country's development status.

In seeking to establish a New Urban Agenda and to implement Sustainable Development Goals, collaborative governance must be promoted as a better way to manage the development of metropolitan regions. The internationalization of cities and the greater levels of interconnectedness between them, as well as the trend toward the sharing economy, calls for the development of new collaborative governance arrangements between cities within metropolitan regions and with other metropolitan regions.

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1.8 Mega-City Region Governance and Urban Planning

Jiang Xu (University of Hong Kong) and **Anthony Yeh** (University of Hong Kong)

Abstract

As a result of the large-scale urbanization and urban agglomeration over the past few decades, mega-city regions have come to represent distinctive regional spatial formations undergoing major transformation led by globalization. Mega-city regions in various parts of the world exhibit differences in terms of rationale, development patterns, fiscal capacities, managerial abilities, and experiences in regional governance and planning. This chapter examines mega-city regions in different circumstances, treating them not only as functional and competitive nodes of global capitalism, but also as products of diverse processes and contextually reconstituted state spaces. With cases from a variety of theoretical and political perspectives, the chapter analyzes the experience of mega-city governance across a range of geographical locations in Europe, North America, Australia, and China to enhance our understanding of mega-city regions and consider how different approaches in governance and planning are reshaping mega-city regions in divergent contexts.

Cities are increasingly at the center of global production and consumption as well as social and political transformation. Their role as important nodes of global networks of commercial, social, and cultural transactions has expanded, creating new types of sprawling, often multi-centered urban agglomeration over the past decades. Various labels have been employed to describe this phenomenon of large-scale urbanization, such as the metropolis, the conurbation, megalopolis, and global city region. This chapter is focused on one type of large urban agglomeration—the mega-city region. Hall and Pain (2006) defined a mega-city region as a cluster of contiguous cities or metropolitan areas that are administratively separate but intensively networked, and clustered around one or more larger central cities. These places exist both as separate jurisdictional entities, in which most residents work locally, and as part of a wider functional urban region connected by dense flows of people and information.

Mega-city regions represent distinctive regional spatial formations under dramatic transformation (Xu and Yeh, 2011a). Globally, there are more than 450 (mega) city regions with over 1 million residents, at least 20 of which have populations of more than 10 million (Scott, 2001; UN, 2004). Although housing a growing population, these regions are located in a relatively small land area. Their development poses a direct impact on environmental change, land use patterns, and spatial transformation, as well as on the lives of existing and new city dwellers alike.

Mega-city regions in various parts of the world, while all undergoing rapid transformation in an era of globalization, have many differences in terms of rationales, development patterns, fiscal capacities, managerial abilities, and experiences in regional governance and planning (Vogel, 2010). In addition, they are evolving in diverse political contexts and economic landscapes. The roles of their public and private sectors in regional formation vary in form and sophistication. Although much work on mega-city regions now exists (e.g., Simmonds and Hack, 2000; Hall, 2001; Scott, 2001; Herrschel and Newman 2002; Salet, Thornley, and Kreukels, 2003; Laquian, 2005; Hall and Pain, 2006; Kidokoro, et al., 2008), none are devoted to exploring experiences and broad

questions related to governance and planning in mega-city regions from an international comparative perspective. Moreover, despite the fact that super-agglomeration, or city-regions, in the global south have attracted substantial attention (e.g., Scott, 2001; Stren, 2001; Douglass, 2001, 2002; Laquian, 2005; Wu and Zhang, 2007; Xu, 2008), we still know far less about how regions have evolved in developing countries compared to the regions of advanced capitalist states even though the largest and fastest-growing urbanized locations are situated in this part of the world.

This chapter examines different mega-city regions in different circumstances by not only treating them as functional and competitive nodes of global capitalism, but also as products of diverse processes and contextually reconstituted state spaces. With cases from a variety of theoretical and political perspectives, this chapter explores the experience of mega-city region governance in a range of geographical locations in Europe, North America, Australia, and China. Such a comparative approach has at least two benefits to enhance our understanding of mega-city regions. First, it provides a series of situated accounts to inform specificity and varieties of the reconstituted state spaces, politics, and functionality around and across regions. Second, it can unravel generative conditions and circumstances through which new approaches to governance and planning are reshaping mega-city regions in divergent contexts. In this sense, the findings will offer an informed understanding of any common concerns and emerging trends underpinning these purported regional renaissances.

The remainder of the chapter is organized as follows. The next section begins with the background of mega-city regions' governance and planning, describing the regional renaissances, as well as the debates of regional institutions in recent years. The main purpose is to answer why mega-city regions matter. We then discuss various problems of mega-city regions in different countries and regions, and how different regions deal with these problems. Next, we concludes how those cases in various contexts can yield beneficial lessons and implications for mega-city regional governance in the future. By exploring the development of mega-city regions around the world, we observe that both top-down state-led projects and bottom-up initiatives are important shaping forces of mega-city regional (re)structuring. While bottom-up initiatives play key roles, even in the freest market economies, there are calls for and different degrees of strategic intervention at the mega-city regional level.

Regional Renaissances: Region as Scale

In the capitalist state, the region was first proposed as a platform to tackle the spatial mismatch between fragmented administrative boundaries and functional economic territory in metropolitan areas. During the Fordist-Keynesian period, the main concern was to create a form of regional regulation to achieve administrative equalization and the efficient delivery of public services. However, the new notion of the region as a scale for capital accumulation is in part a consequence of the collapse of Fordist-Keynesian capitalism and the rise of post-Fordism regimes in many Western countries. Jessop (2002) examined the reconstitution of the national territorial space where the capitalist state is transformed from a Keynesian welfare state to a post-Fordist accumulation regime. The new regulatory system supports supply-side policies to develop the capacity of structural competitiveness and facilitate labor market flexibility and mobility. This defines a reworking of national territorial space, in which state functions are re-articulated upwards, downwards, and outwards so that place- and territory-specific strategies of economic development can be mobilized and achieved. To map this restructuring of modern capitalism, Scott (1998) demonstrated how such profound reshufflings gave rise to a spatial hierarchy spanning four levels: the global scale, multinational blocs, sovereign states, and regions. The single, hegemonic national space has been reworked into deeply heterogeneous and contested spaces at the supranational and subnational levels (Swyngedouw, 2000). In contrast to the Fordist era, we have witnessed that no privileged level

assumes a preeminent role in the meta-governance of socioeconomic affairs (Jessop, 1999; MacLeod, 2001).

This transformation of capitalism is closely intertwined with the successive rise of new territorial spaces. Various authors have sought to capture this moment. Tömmel (1997) highlighted the rise of multilevel governance in Europe, while Swyngedouw (1997) examined the notion of glocalization and how the global, local, and other relevant geographical scales are the result and product of a heterogeneous, conflictual, and contested process. One important consequence of the restructuring of state space is that the region became a focal point for economic growth and state regulation.

Running parallel to this fundamental reconstitution of state territoriality is the rise of neoliberalism and the worldwide spread of neoliberal economic and political policies in response to the crisis of the Fordist-Keynesian accumulation regime (Ma and Wu, 2005). Market exchange has become dominant in both thought and practice throughout much of the world since the early 1970s (e.g., Reaganism in the United States). This powerful force of market revolution has resulted in multi-scalar deregulation, the removal of institutional constraints, expansion of market power, privatization, greater exploitation of labor, and the liberalization of finance (Ma and Wu, 2005). One important consequence is the emerging new localism of the 1980s to promote zero-sum politics of territorial competition (Peck and Tickell, 1994) and a growing trend toward greater urban entrepreneurialism (Harvey, 1989).

Out of this innovative restructuring of political economic flows, new institutional spaces and new state spaces are being re-forged with urban and regional scales coming to represent particularly significant strategic sites in the performance of accumulation, regulation, and political compromise (MacLeod, 2001). It is in this sense that governance and planning of mega-city regions plays a potent function in delivering the variety of regulatory spaces and facilities needed to lubricate capital flows. It also helps develop a context-specific synergy of collective actions to manage radical uncertainty in a fast growing, fragmented political and economic space.

Compared to the experiences of Western nations, the origin and growth of regions in other contexts may take different paths. One prominent example is countries with a socialist history. Under state socialism, horizontal relationships among jurisdictions were not considered important, with hierarchical linkages instead dominating spatial formation. This resulted in the regions being dependent on the center. The transition toward a more market-oriented economy has generated new conditions for regional development, with the divergent reasons for introducing new territorial institutions reflecting their specific governance problems.

Central and Eastern Europe opted for neo-liberal "shock therapy" marketization. This was believed to be a quick way to close the wealth gap with the West and facilitate the process of returning to Europe. The creation of new regionalism has been widespread during the post-socialist period. In contrast to the West, regionalism in Central and Eastern Europe does not stem from a fear of fragmentation or dysfunction of government services, but instead the objective is to realize the post-communist political imagination of decentralization, quick recovery of historical-cultural regional and local specificities, and Europeanisation (Bialasiewicz, 2002; Herd and Aldis, 2003).

However, China has taken a different path to regional growth. The objective of China's transition was not to propose the retreat of the state, which is different from the shock therapy of Central and Eastern Europe. Indeed, the success of China's gradual reform is often attributed to preserving state institutions while injecting market incentives. Many regions have been created as state projects to induce the creative restructuring of state spaces—a phenomena similar to that of advanced capitalism (e.g., Kelly, 1997; Cartier, 2005; Laquian, 2005; Wu and Zhang, 2007; Xu, 2008; Xu and Yeh, 2016).

China's central government is confronting a series of immense challenges to its authoritative power and institutional capabilities because of decentralization and market reform. First, decentralization permits

local states a wide range of economic responsibilities. Many socioeconomic risks originally internalized and meditated at the national level are now being externalized to local governments. Second, market revolution has had a tremendous effect on Chinese society. David Harvey (2005) argued that China's neoliberalism is growing rapidly, even as it festers and stagnates in capitalist economies. It is in this context that we witness a systematic reworking of state spaces and function, and the rise of regions as an important scale of regulation and economic development. One goal in China is to reassert the functional importance of state guidance and control in the growing complexity of the powerful neoliberal wave and the intensified economic competition.

Regional Institution for Economic Governance

Along with regional renaissances goes the debate on how to establish regional institutions. Broadly speaking, three main typologies of regional institutions underscore divergent philosophies and objectives.

The first is the so-called reform-consolidation approach. Under the influence of Keynesian capitalism, this approach centered on creating a territorial form of regulation to achieve administrative equalization and efficient delivery of public services. The main strategy in this tradition favored political consolidation and strong institutionalization as the most effective means of achieving good governance (Bollens and Schmandt, 1982; Lowery, 2000). State intervention was actively pursued in order to establish a consolidated regulatory framework to guide outward urban expansion, to achieve planned decentralization and regional balance, and to reach efficiency in infrastructural provision through the commanding actions of planning to control spatial organization and the location of development at the national level (Healey, Khakee, Motte, et al., 1997). A range of region-wide institutions were set up under a central auspice. Spatial development was organized primarily around the national territorial scale, while the local and regional states were understood as merely instruments of central state policies (Brenner, 1997). The reform-consolidation approach is, however, under ideological attack for lacking political legitimacy and operating in an authoritarian manner.

The second is the market-oriented approach in the public choice tradition. It looks at the individuality and multiplicity of fragmented regions as the most desirable way to better regulation (Tiebout, 1956; Boyne, 1996). One important consequence of this tradition is the emerging neoliberal localism of the 1980s to promote zero-sum politics of territorial competition (Peck and Tickell, 1994) and a growing trend toward greater urban entrepreneurialism in the post-Fordist regime (Harvey, 1989). Many region-wide institutions were dismantled in Western Europe and North America. This heralded a retreat of state intervention from spatial formation, instead substituting a more deregulated approach to encourage the unfettered operation of the market. Spatial planning was thus in limbo and perceived to exert negative impact on wealth creation (Thornley, 1993). As a result, an ad hoc, project-based planning approach was widely practiced to support private sector development. However, the market public choice approach is also subject to criticism, as it is deeply rooted in a neoliberal political environment and can produce external diseconomies (Briffault, 2000).

The debate between the reform-consolidation and market public choice approaches resulted in the evolution of a reactive interest in a third form of regional governance. Some advocate this new regionalism approach as a shift of institutional focus from government to governance to address an interactive process through public–private partnerships, joint ventures, and cross-sectoral alliances (Jones, 2001; Macleod, 2001). The fascination with regional governance has led to experimentation in territorial formations, such as inter-government organizations, informal government partnerships, and functional consolidation (Rusk, 1995). This political construction of institutional thickness prompts a systematic reworking of hierarchical and functional planning toward more horizontal and

network-based structures (Williams, 1999). Planning from this perspective means that cooperative thinking in bargaining arrangements and alliance building is valued (Healey, et al., 1997). This has been attributed to the revival of strategic planning that accentuates a more interactive process in a multi-level governance environment.

It can be concluded that creating regional institutions has become one challenge for post-Fordist economic governance. The region is regarded as a significant and effective arena for situating such institutions to urge innovation in regional policies.

Mega-city Region Governance and Planning in Various Contexts

Diverse economic development and political systems have led to great variations in the evolution of mega-city regions. While mega-city regions in different parts of the world share a commonality—rapid transformation in an era of globalization—they also have different rationales, development patterns, fiscal capacities, managerial abilities, and experiences in regional governance and planning (Vogel, 2010). In addition, they are evolving in diverse political contexts and economic landscapes. The roles of the public and private sectors in regional formation vary in form and sophistication. Thus, we have done comparative study with cases from Europe, the United States, Australia, and China to unravel generative conditions and circumstances based on divergent contexts.

Mega-city Regions in Europe

For European countries, the call for creative regional institutions is widespread in post-Fordist economic governance. This is well illustrated by a number of studies that focus on European mega-city regions to explore how regions serve as a significant and effective arena for such institutions.

Hall (2011) examined the emergence, dynamics, and planning of polycentric mega-city regions in contemporary Europe. He argued that at the scale of the mega-city region, actions need to be taken to resolve the lack of governance (including the policy instruments) as the city-region system, which grows out of a functionally networked but morphologically polycentric space, demands an appropriate framework for the governance of flows and functional thinking in spatial planning. This can be done by involving the business community to gain a better understanding of market drivers and conditions, inter-firm and inter-sectoral relationships, and economic and spatial relationships. It is also necessary to promote cooperative relations in order to reflect the network connections between cities across policy and sectoral fields at all geographical levels, as well as to counter inter-regional competition for inward investment and its converse in prosperous regions.

Salet (2011) raised analogous themes. He noted that it is these very inter-scalar and relational webs of multi-actor and multi-level governance that inspire planning innovation in local and regional public agencies. Based on an interpretation of the shift in spatial form and governance structure in the urban network of Randstad, he showed how regional governance had responded to the rescaling of social and economic parameters that generated an ongoing process of decentralization, increasing polycentrism, and specialization of urban spaces. One example is that the dynamic private sector developed its own action spaces in the expansive urban system for both economic development and residential areas. Such spatial dynamics of urban transformation are rooted in the private sector, but the planning strategies are created by the public sector. Thus, Salet claimed that novel regional planning strategies should be arranged through a completely new network of social interaction and practice to rectify the functional mismatch between the public sector-led planning and the private sector network. The case of Randstad illuminates important directions to reform state planning and institutions in what are increasingly multi-scalar and multi-centric political geographies.

By rethinking strategic planning and regional governance in Europe, Albrechts (2011) concluded

that planning in Europe is moving toward a more desirable scenario with the mobilization of a plurality of actors with different and even competing interests, goals, and strategies. By critiquing the stereotypical planning approach, Albrechts (2011) proposed a new spatial planning strategy, which is conceived of as a democratic, open, selective, and dynamic process of coproduction. It produces a vision that leads to a framework within which problems and challenges can be understood, and provides justification for short-term actions within a revised democratic tradition. This account further illustrates the construction of regional governance ensembles by mobilizing a social support base to resolve conflicts between particular interests.

The above-mentioned studies sketch an institu-tional approach that could prove instructive in comprehending the wider politically and socially constructed arena around which regions are confi-gured, governed, and planned.

Mega-city Regions in Federalist Countries

Similar to European countries, the United States and Australia, two federalist countries, have experienced a dramatic regional renaissance (Brenner, 2002; Eversole and Martin, 2005). However, even though numerous parallels exist between the European pattern and those in the United States and Australia, the context of the latter is distinguished by a legacy of extreme jurisdictional fragmentation within its major city regions (Brenner, 2002).

A federal structure, by nature, has the seeds of public policy fragmentation built in. Blatter (2003) called it the multi-polity system. In the American context, particularly following the imposition of Reagan's New Federalism, the policy domain is fragmented vertically into state and local governments, and horizontally to special purpose agencies and private capital (Brenner, 2003). Current planning capacity in the United States is found to over privilege state and local governments, as well as private investment, and thereby neglect the strategic priorities of the federal level to guide another generation of growth that can be shared by every community and region across the country (Yaro, 2011). Moreover, America has a tradition of local control. In large metropolitan areas, the sheer number of local governments, each making decisions in their own self-interests, makes developing regional solutions or regional institutions very difficult (Orfield and Juce, 2009). This results in inadequate regional planning capacity. For a long time, regional planning in the United States has primarily looked at the functional relationship between core cities and their surrounding small jurisdictions in a metropolitan context. There are no strategic interventions at the level of mega-city regions, barring a few historical exceptions such as the Tennessee Valley Authority in the 1930s (Dewar and Epstein, 2006).

Harvey and Cheers (2011) examined the problems affecting regions. First, administrative centers have often been geographically distant, and therefore out of touch with the needs of diverse local regions. This poses the difficulty of regulation at the regional level and leads to demand for localized decision-making. Second, many regions have struggled to qualitatively configure new political and economic spaces to prevent their erosion in national and global economies.

The inadequacy of regional planning capacity has resulted in many obstacles that impede cooperation in smaller metropolitan regions. For instance, appointed economic development officials must justify their existence by competing on behalf of their own jurisdiction, rather than pursing tangible benefits from metropolitan cooperation; the short time frame of elected officials encourages a preference for visible accomplishments such as groundbreaking and ribbon-cutting in their own jurisdiction (McCarthy, 2011). Moreover, cooperation to achieve endogenous development (e.g., infrastructure) is more evident, while attracting cooperation for exogenous development (e.g., a new company's investment) is more difficult as the costs and benefits are not easy to establish for each jurisdiction (McCarthy, 2011).

In short, the context of the United States is distinguished by a legacy of jurisdictional fragmentation within major city regions (Brenner, 2002). The history of federalism resulted in extreme local control over economic development and a bottom-up approach

in developing social and political institutions. There is little sign of practical movement by the state and federal agencies to coordinate their regional policies in a meaningful way due to the deficiency of inter-scalar flow. It is in this context that mega-city regions can become particularly significant strategic sites in the performance of accumulation, regulation, and political compromise.

Yaro (2011) argued that the federal government should provide leadership in mega-city regions' development in the United States and underscored the ways in which traditional federal countries see the promise of major policies and development initiatives finally moving ahead to herald a more strategic intervention at national and regional levels. At the national level, the federal government could play a constructive role in establishing a vision and a set of priorities for the nation's infrastructure needs, in setting standards for efficiency and safety, in promoting federal objectives with conditionality, in convening multi-state partnerships, as well as in measuring performance and collecting data. For the subnational level, individual states could continue to play the role of planning, developing, and maintaining much of the nation's infrastructure investments within the context of a national vision, clear federal priorities, and performance standards. At the regional level, metropolitan regions could play a significant role in transportation policy and in coordinating transportation and land use investments to promote greater energy efficiency, sustainability, and quality of life. Lastly, at the local level, cities have important roles to play in concentrating jobs, housing, and activities in central places where transportation options are plentiful. In addition to the above-mentioned levels, Yaro suggested that a new urban level for responding to large-scale challenges, namely mega-regions, be taken into consideration. Such a level might benefit the development of intercity and high-speed rail corridors linked to America's global facilities and other multi-state transportation networks, as well as the protection, restoration, and management of large environmental systems and resources, and the development of economic revitalization strategies for underperforming regions.

McCarthy (2011) underscored that any new mega-city regional governance requires more than lip service support to move cooperation between mega-city jurisdictions from paper to practice. McCarthy pointed out that, unless metropolitan regional competitive advantage is promoted by enhancing conditions for business, and economic specialization occurs between metropolitan areas, competing as a metropolitan region for inward investment eliminates competition only between the jurisdictions within particular metropolitan areas, while competition would continue between metropolitan areas.

Harvey and Cheers (2011) investigated how a multi-centric city region in the Upper Spencer Gulf in southern Australia collectively resolved to reverse its decline, the experience of which is readily transferable to regions. The authors identified 18 principles for effective intra-regional cooperation (Table 1). The implications of the Upper Spencer Gulf model for intra-regional development cooperation are not restricted to the principles mentioned in the table. For instance, providing a strong and clear regional vision for economic development and cooperation, and including regional monitoring mechanisms for cooperation at both process and outcome levels, may serve as further evidence of best practice. These principles indicate that regional development coalitions need to have an independent existence rather than simply carrying out central government policy and that two or more local governments should be engaged as key players.

Similarly, the fragmented and unstable nature of regional institutions in Australia makes it impossible to develop a strategically coherent framework for regions (Eversole and Martin, 2005). While the practice of regional planning faces dynamic conditions of complexity and uncertainty due to inadequate inter-scalar linkages (Abbott, 2011), strategic vision and planning capacity have to be built up by an organized connectivity between key stakeholders in order to provide relevant technical, political, organizational, and economic information to deal with the complexity and uncertainties (Salet and Thornley, 2007). In this process, the state governments need to be more open, innovative, and flexible in involving other stakeholders.

This implies that the linkages to the private sector and to Commonwealth Government need to be improved, and that the linkages to the private sector and to the community on a regional basis (rather than a project or local basis) also need to be enhanced.

Table 1. Eighteen Principles for Effective Intra-regional Cooperation

1	Recognize the complexity and interrelatedness of regional economic and social development issues.
2	Focus on issues of investment and production, as well as the social networks and relations in which these are embedded.
3	Involve stakeholders across sectors within the region.
4	Involve all tiers of government.
5	Engage intra-regional, extra-regional, and government stakeholders with each other.
6	Promote communication and interchange between diverse sectors to create links between the development of ideas and initiatives originating from stakeholders.
7	Relate top-down leadership to bottom-up participation.
8	Develop a broad and stable political base to offset domination by particular interest groups.
9	Develop cooperation between local authorities as members of dedicated coalitions, rather than as the prime movers of regional development.
10	Emphasize regionally based development.
11	Differentiate and rationalize interaction between regional and community layers in development.
12	Ensure that central governments act as partners, not as a dominating presence.
13	Ensure that adequate and predictable funding is provided, independent of electoral cycles, which provides for stability and effective planning.
14	Provide multi-track dialogue and feedback between the cooperative regional development organization and industry, community partners, and government.
15	Insulate cooperative regional development organizations from excessive bureaucracy.
16	Employ realistic appraisals of regional capabilities, technology cycles, and competition.
17	Provide access to expert advisors and best practice knowledge.
18	Help local communities to identify and secure investment and funding for promising projects.

Source: Harvey and Cheers, 2011 (pp.200–1).

Similarly, the fragmented and unstable nature of regional institutions in Australia makes it impossible to develop a strategically coherent framework for regions (Eversole and Martin, 2005). While the practice of regional planning faces dynamic conditions of complexity and uncertainty due to inadequate inter-scalar linkages (Abbott, 2011), strategic vision and planning capacity have to be built up by an organized connectivity between key stakeholders in order to provide relevant technical, political, organizational, and economic information to deal with the complexity and uncertainties (Salet and Thornley, 2007). In this process, the state governments need to be more open, innovative, and flexible in involving other stakeholders. This implies that the linkages to the private sector and to Commonwealth Government need to be improved, and that the linkages to the private sector and to the community on a regional basis (rather than a project or local basis) also need to be enhanced.

These studies raise a number of fundamental questions about emerging forms of spatial organization in federalist countries where traditionally there has been little scope for strategic planning intervention. Taken together, they suggest that while bottom-up initiatives continue to play a role in regional structuring, state strategies and state-led projects must be formed to bring strategic coherence to the regional path to prosperity. The net outcome of this political structure will reinforce the regional scale as an important site for accumulation and regulation.

Mega-city Regions in China as a Transitioning Society

Regional restructuring is a historically embedded process. China is no exception as a transitional society that carries strong legacies of its socialist history. Under state socialism, horizontal relationships among jurisdictions were not considered important, with hierarchical linkage dominating spatial formation (Xu, 2008). This resulted in regions depending on the center. This dependency reduced regional policy to sectoral policy (Gorzelak 1996) and within this

context, socialist states often used frequent and arbitrary changes of territorial-administrative structure to serve the two primary purposes of clearing up the remnants of old regimes and enforcing central control (Solinger, 1977).

Previously, socialist regimes in China were characterized by extensive expansion of the means of production, constrained consumption, and forced organized labor processes to achieve industrialization. Beginning with the economic reforms of the late 1970s, the last three decades have witnessed extraordinary urban growth in China. Promoting urbanization has become a central policy to sustain economic prosperity. While various projections anticipate an "urban billion" era for China, other dynamics, such as globalization and the development of vast mega-city regions, will reinforce the role of cities as centers of production and consumption as well as of social and political transformation.

The scale and speed of urbanization have overwhelmed Chinese governments at all levels, leading to a range of urban problems such as social exclusion, urban sprawl, misuse of land in all cities, but especially in those that are under the threat of rapid (and often uncontrolled) growth, inadequate and poorly maintained infrastructure, rapid industrialization and escalating vehicle ownership. Equally paramount are problems of spatial regulation at both urban and regional scales. While individual cities are eager to implement entrepreneurial strategies to enhance their competitiveness, they pay little heed to intercity networking, thus failing to address the many urgent social and environmental issues on a regional scale.

Regional strategic plans are normally made by superior governments (individual provinces, groups of provinces, the State Council) to guide regional transformation. In some mega-city regions such as the Pearl River Delta (PRD), many formerly rural areas have developed into active economic centers. This has resulted in a polycentric spatial form with profound impacts on the environment. Moreover, political fragmentation has weakened cities' governing capacity, thus creating an urgent need to regulate and constrain ongoing urbanization processes. In response to this challenge, regional strategic planning has evolved as a key political strategy to reposition provinces in both the national and global economic sphere and to impose better regulation.

In recent years, central agents at the national level have been using strategic planning to influence local economic governance for better top-down regulation. One example is the invention of the Primary Functional Zones, which is a kind of large-scale zoning system officially initiated by the National Development and Reform Commission in the 12th Five-Year-Plan (2011–15). China's territory is classified into four Primary Functional Zones that are placed under four types of spatial regulation. For example, the development-prohibited zones are critical ecological areas that must be placed under the protection of enforceable laws. To ensure implementation of this zoning system, provinces and cities are required to categorize these four zones in their respective territories, and thus impose a restrictive framework for urban and regional development.

Therefore, Xu and Yeh (2011b) argued that regions can be best conceptualized as the always-contested spatial condensation for reconstructing state regulatory power. Using the PRD's strategic planning as a case study, Xu and Yeh developed a state-theoretical interpretation of what is behind the increasing interest in this level of planning. For the PRD, the growing mismatch between the fragmented administrative boundaries and the functional-economic territory over the past three decades of development requires a strategic vision to plan the region in its entirety. It is in this context that regional strategic planning is now increasingly being mobilized as a mechanism of economic development policy and a political device through which the state is attempting to enhance place-specific socioeconomic assets and to regain control in a growing sophistication of territorial development.

They also contemplate that current regional planning practice can be understood as an important political and strategic tool of capital accumulation to attract investors. Therefore, rather than shifting territorial development trajectories and coordinating regional growth patterns, regional strategic planning

may appear to be little more than a cosmetic makeover that hides the intensifying inter-scalar competition within mega-city regions in China. This is further illustrated by Xu (2016), who used the planning process of the intercity railway system in the PRD as a case study on intensive inter-scalar competition. She discovered how agents at different geographical scale are engaged in long-lasting bargaining over the design and delivery of intercity railroads, and how established hierarchies and bureaucracies use the region as a discourse to reassert their functional importance and avoid takeover by others.

Gu et al. (2011) raised closely related issues by focu-sing on the spatial planning for urban agglomerations in the Yangtze River Delta (YRD), one important dimension of which is the further depiction of the central state as a powerful regional player in shaping territorial growth through large infrastructure projects and top-down state spatial regulation. For instance, clarifying the spatial structure and urban functions of YRD as well as its various sub-regions solved the structural difficulties in forging coordinated growth in the region.

The above-mentioned studies provide an initial set of conceptual tools through which to reinterpret the geographies of state space under transition. They denaturalize established assumptions associated with the decentralization of statehood and downward scalar shift of the state's function in capital accumulation and regulation. They explore the emergent character of state reconsolidation through state-led planning and its hidden and strategic agenda. This opens entirely new ways of looking at spatial planning as a tool to overturn established inter-scalar orders, in addition to its claimed rhetoric of sustainability and competitiveness.

Conclusion

This chapter has addressed the theme of governance and planning of mega-city regions in different contexts, with special reference to Europe, the United States, Australia, and China. The picture of the mega-city region in all these contexts is unstable, fragmented, context-specific, contested, and politically charged. It does not easily lend itself to conceptualization or interpretation. In all contexts, the enormous challenges have not yet been resolved through the construction of a new governance pattern and planning capacity. In Western Europe, there is a still a general lack of adequate policy instruments to manage functional flow within mega-city regions. Within existing administrative structures, some policymakers think they have power, when in fact they are lacking it, while some have power but do not realize it, and thus there are both direct and indirect influences that can have unintentional consequences (Hall, 2011). Current European spatial policies may not be able to address these issues. This is deeply problematic and hinders the development of capacity in strategic planning.

For the federalist systems, mega-city regions are featured by a high degree of fragmentation and local control. Previously, few believed that federal states needed regional strategies to promote territorial growth and infrastructure investment. There are no longer doubters. However, the problem is that neither the United States nor Australia have developed adequate institutions for governance and planning to address either the explosive growth or dramatic decline of their mega regions in the global capital circuit. There is also much to be debated about how the mega-city region approach mediates between regional connectivity and political fragmentation, interdependence and autonomy, and system-wide thinking and confinement to particular jurisdictions (Ross, 2009).

In contrast to Europe, the United States, and Australia, China has witnessed the rise of regional strategic planning as a powerful tool for spatial regulation. This is understandable in that China has a strong state tradition and an enduring hierarchical state system. Nonetheless, the institutional capacity for strategic intervention is problematic because the function of regional planning is highly fragmented among different ministries and departments. Matters are further complicated by the top-down nature of strategic planning, which undoubtedly bred tension, particularly with the hyper-competitive political environment tending to predominate, with local interests being undermined to various degrees, and with

cities being accorded different bargaining power and political representation. Though scholars both inside and outside China advocate the governance approach and learning from the West to underpin the importance of an interactive and inter-scalar process in planning, the difficulty in its actual implementation is related to the question of fundamental government reform and even political transformation in China, where traditionally, there has been a lack of an ordered and organized civil society.

It does appear, then, that in many countries we are witnessing the creation of heterogeneous regions in social, cultural, economic, and political terms. More interesting, perhaps, is the extent to which all contexts view the rise of regions as:

- emergent engines of economic growth that are closely tied to the global capital circuit;
- a venue for social and political transformations, such as dramatic demographic shift, massive infrastructure investment, climate change, and environmental degradation; and
- a new scale governing uncertainty and planning for prosperity, where we see the continued, if radically redefined, role of states in regulating inter-scalar relations and interceding with sociopolitical forces currently unfolding alongside globalization.

Overall, there is the hope that mega-city regions are not simply a scale for capital accumulation and state regulation, but also a platform used to address the social and economic disparities, and other negative externalities such as regional environmental issues.

Implications and Future Directions

Cross-Sectoral Governance as Novel Regional Planning Strategies

Novel regional political-regulatory institutions are needed to manage radical economic, social, and environmental uncertainty. The focus of these institutions should shift from the hierarchical government to horizontal and cross-sectoral governance. They should address an interactive approach through public–private partnerships and cross-sectoral alliances, with the mobilization of a plurality of actors with different interests, goals, and strategies.

The experiences of mega-city region planning in Europe provide examples of the shift of such institutional focus, where the dynamic private sector developed various spaces for urban and regional development. However, the current planning strategies in all contexts are not yet completely responsive to the socioeconomic change required in order to develop a completely new network of social interaction and practice. Therefore, there is a need to involve a range of actors, including as the business community, to gain a better understanding of market drivers and conditions, inter-firm and inter-sectoral relationships, and economic and spatial relationships (Hall, 2011).

Jurisdictional Cooperation with Cross-Scalar Governance

Regional planning is frequently confronted with the challenges of jurisdictional separation, especially for countries under federalism. The inadequacy of effective cross-scalar interaction leads to obstacles that impede cooperation, such as competing on behalf of one's own jurisdiction, rather than pursing the tangible benefits of metropolitan cooperation. In this light, intervention at the national and the regional levels might be necessary to establish strategic visions, develop regional priorities, establish standards, and convene sub-regional partnerships for regional growth, such as using central funding as an incentive for different jurisdictions to cooperate.

Rethinking Regional Planning in a Transitioning Society

Mega-city regions have become important sites for economic growth and regulation. Accompanying this, regional strategic planning is mobilized as a growth mechanism and a political device through which the state

is attempting to regain control under powerful forces of globalization, neoliberal decentralization, and market reform. Nonetheless, the institutional capacity for such strategic intervention is still quite problematic. Matters are further complicated by the top-down nature of strategic planning, which undoubtedly bred tension, particularly with the hyper-competitive political environment tending to predominate, and local interests being undermined to various degrees, as well as cities being accorded different bargaining power and political representation.

As a transitional society, China does not lack experience in cross-scalar interaction within the state system itself. Intensive cross-scalar negotiations and bargaining are frequently observed when capital allocation and large infrastructure projects are decided. However, there is a lack of mechanisms to build up capacity for cross-sectoral interaction and public engagement. The difficulty in doing this is related to the question of fundamental government reform and even political transformation in China, where traditionally there has been a lack of an ordered and organized civil society

Though mega-city regions have been regarded by many as an emerging scale of economic growth and spatial regulation, there are still some further questions that demand more systematic inquiry. Some selected questions are as follows:

- In what sense are mega-city regions meaningful? Paul Krugman's skepticism is perhaps useful to frame new research on the usefulness of a mega-city region. He wrote, "It's not at all clear to me that world competition is between mega-regions" (Krugman, 2008). Much theoretical and practical work is still needed to explain what the mega-city regions can and cannot accomplish, why it is such a different scale, and whether this scale can solve problems that cannot be achieved on other scales.
- In what way can the state deploy planning on the mega-city regional scale as spatial tactics to regulate, produce, and reproduce the configuration of regional space for capital accumulation; to address economic, social, and political disparities; and to help build sustainable society and resilient communities? Some commentators underscore the resurgence of regional planning in part as a state project. However, there remains a need to explore how the state power is forged into the regional matrix within which state intervention is to occur.

Future Direction

Following the 2008 financial crisis, we see the promise of major policy and development initiatives, long advocated by regional scientists and planners, finally moving ahead in many countries. Good governance and strategic planning are unlikely to wane, even though powerful neoliberalism's market revolution has persisted for decades in many contexts. Further exploring the direction of governance and planning, both in theory and practice, is one of the most urgent intellectual and political tasks.

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Section 2

Sectoral approaches to metropolitan governance

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2.1 Metropolitan Governance and the Urban Economy

Michael A. Cohen (Milano School of International Affairs, Management, and Urban Policy)

Abstract

The study of metropolitan governance has normally focused on the challenges of managing multiple jurisdictions within a broader urban institutional framework that can address issues such as spillover and cross-jurisdictional problems. Much of this literature and the policy debates on metropolitan government have ignored the need for effective management of the urban economy on the metropolitan and regional scale. This is surprising because the revenue base of municipalities depends on the buoyancy of municipal revenue. Too often, urban economic management has focused on firms and sectors through the lens of competitiveness rather than from a broader understanding of urban productivity. A more comprehensive understanding of productivity would necessarily involve assessments of the interactions of the metropolitan economy with urban form, the urban environment, and sustainable development.

This chapter considers the metropolitan question from an economic perspective and examines the economic under-achievement of metropolitan areas. It argues for much more focus on the needs of the urban economy on the metropolitan scale and suggests that the metropolitan imperative brings with it the requirement to broaden and deepen the understanding of the productivity of the urban economy. Indeed, the meaning of productivity itself must be redefined when the range of externalities of urban economic activity is fully taken into account.

The study of metropolitan governance in developing countries over the past 20 years grew out of the awareness that the spatial and demographic growth of cities had exceeded the original municipal boundaries of many large urban areas. Metropolitan studies tended to focus on what were known as spillover effects, when the economic, financial, and physical dimensions of cities extended beyond their jurisdictions and created challenges for policy, service delivery, and urban finance. Areas such as transportation management, security, public health, and waste management could rarely be kept within municipal areas.

This process was more evident as the urbanization of developing countries grew far beyond the historical and/or colonial boundaries of urban areas. What became known as the dispersion of the urban population and the generation of new centralities were the results of urban sprawl (Rojas, Cuadro-Roura, and Fernandez Guell, 2008). These processes, now confirmed as well through the lens of the de-densification of cities (Angel, 2011), appeared to call for new forms of metropolitan management. The 1990s marked the appearance of a metropolitan imperative, or the argument that the increasing scale of urban areas and the possible benefits from agglomeration economies inevitably led to the consideration and/or adoption of metropolitan frameworks (Cohen, 1998). This imperative seemed to appear regardless of the income level of countries or their colonial heritages. The United States adopted the Standard Metropolitan Statistical Area, as the unit for metropolitan data collection for its hundreds of metropolitan areas. The former French colonies quickly followed, in adopting, and only sometimes adapting, the metropolitan institutions found in France to cities such as Abidjan or Dakar.

The creation of metropolitan governance frameworks reflected the widespread belief that a metropolitan area was the jurisdictional unit best suited to manage infrastructure, the urban environment, and urban finance, particularly public investment. It was big enough to capture spillovers yet small enough not to be a province or state within federal or unitary countries. Yet the metropolitan area, despite its scale and political and institutional authority, has largely underperformed when considered in terms of strategies to promote the urban economy. This is paradoxical because the urban economy represents both the nervous system and the blood vessels of a metropolitan area. Indeed, without the urban economy, the metropolitan area would not exist and, without question, would not grow. The questions to be asked are why do metropolitan areas not generate higher gross domestic product (GDP) than they already do? What are their constraints? Are we underestimating their economic potential?

The contributions of metropolitan areas to GDP have been reflected in national statistics for almost a generation. At the end of the 1990s, Mumbai generated about one-sixth of India's GDP, while the GDP of Seoul, Korea, was equal to the GDP of Argentina. Mexico City's GDP was equal to all of Thailand, and Sao Paulo and Rio de Janeiro together equaled the GDP of all of the Andean countries (Cohen, 1998). In the United States over the past two decades, metropolitan areas have proven to be the critical arenas in which agglomeration, investment, and productivity have occurred.

However, as Enrico Moretti (2012) pointed out in The New Geography of Jobs, metropolitan patterns are not static. They change according to global and national economic trends, with both winners and losers. In some cases, metropolitan authorities have not had the foresight to benefit from their own comparative advantages vis-à-vis other metropolitan areas. This is a more realistic view than the overly optimistic perspective of Bruce Katz and Jennifer Bradley (2013) in their book The Metropolitan Revolution in which they argue that metropolitan areas are both fixing the broken political system of the United States and repairing its fragile economy.

Productivity and Employment in the Urban Economy

(This section draws on Cohen, 2015.)

During 2015–16, it became apparent that the preparatory process for the October 2016 Habitat III-Quito conference, along with the adoption of new Sustainable Development Goals, offered a potential, if missed, opportunity to grant the urban economy a central place in the success of both political and substantive agendas. There is growing, if reluctant, official acknowledgement that cities are the engines of growth in most economies in both industrialized and developing countries. They generate over 80 percent of global GDP and over 60 percent of GDP in most countries, with the share in industrialized countries reaching 80–90 percent (World Bank, 2015). The economic activities found in cities are slowly being recognized as drivers of change and transformers of cities and nation states. The growing share of GDP attributed to services as income, coupled with the declining share of agriculture, demonstrates the transformation of economies through the process of economic growth. In simple terms, urbanization is driving economic growth. Higher per capita incomes and higher productivity are outcomes of urbanization and the process of economic agglomeration. The urban economy, therefore, should be a subject of national and macroeconomic importance. The two issues of employment and productivity are paramount for national economic growth.

Yet the urban economy has largely been ignored by the G20 governments over the past decade, as periodic meetings have failed to notice how much global GDP comes from cities. A study by the McKinsey Global Institute (2011) asserted that 60 percent of global GDP comes from 600 cities. The case of New York is instructive. We know that the productivity of larger cities is greater than smaller cities, despite the negative externalities associated with congestion, crime, and pollution. In 2002, New York accounted for about 4.5 percent of U.S. economic output, or approximately US$365 billion, a small part of the more than $10 trillion U.S. economy (Cohen, 2012). By 2015, the New York economy had

been transformed, with almost 20,000 start-up firms, 60 percent of which have fewer than five employees, many of whom work in the technology and service sectors. The metropolitan area has reinvented itself.

Yet even among urban specialists, housing and infrastructure continue to dominate most urban discussions, including in the preparations for Habitat III. But without employment there are no incomes and no possibility for households or firms to invest and improve their conditions. If employment is at a low level of productivity, it does not matter how much human energy is devoted to work, the results will not be sufficient to meet the needs of growing urban populations. Increasing both employment and productivity are thus essential foundational challenges for urban policy and macroeconomic development.

At the same time, it is also evident that neither employment nor productivity can grow by itself. Employment requires the demand for goods and services from the population, infrastructure, investment capital, labor markets, and rules governing work and compensation. Productivity requires that these inputs—capital, labor, land, and technology—are available in appropriate quantities, qualities, and forms, as well as markets for goods and services and prices for these outputs. In addition, policy and institutional support for small and medium start-up enterprises, and the process of innovation, are necessary enabling conditions to allow sufficient profits to promote the sustainability of firms. While the availability and expansion of capital and labor are important to increase production and create employment, the type and nature of technology and the way in which capital and labor are combined in the production process determines the level of productivity. When key inputs are not available, productivity of capital and labor suffer, with firms unable to generate profits and thus unable to create more jobs (Anas and Lee, 1989).

These macroeconomic processes drive productivity at the national level, generating both GDP per capita and value-added specific goods and services. Their location and interaction with urban areas is a major contributor to the profits and growth of enterprises and thus to the generation of public revenue at the local level.

Public Finance and Public Goods

The generation of productive employment, therefore, also depends on the existence of public goods such as infrastructure, a clean environment, public space, and an institutional framework to regulate economic and social activities. These public goods are essential for both employment and productivity. All of the above depend on a third foundational element in the urban economy: the capacity to generate public revenue. Public goods require financial resources for investment and maintenance. The lack of reliable sources of public revenue and a financial system to permit long-term finance are major constraints to investment in needed assets, whether for public infrastructure, private firms, or housing for urban families. Local taxes account for only 2.3 percent of GDP in developing countries compared to 6.4 percent in industrialized countries (Bird and Bahl, 2008).

This situation, however, is made further complicated by the fact that there are also tradeoffs between employment and productivity. Street cleaning vehicles are more productive than people cleaning the streets, for example, but the latter provides more employment. Labor saving technologies are heralded as being more productive, as in agriculture where much higher levels of productivity have been achieved through mechanization, but employment is reduced.

A New Definition of Productivity at the Metropolitan Level

When considered at the metropolitan level, concerns about increasing productivity imply that the definition of productivity itself must change, going beyond the narrow definitions of productivity and competitiveness of the firm and the city toward a broader evaluation of the impacts of firms and sectors on the urban area in which they operate. This is the intersection of the urban economy and metropolitan thinking.

This call for a wider metropolitan definition of productivity also needs to include the positive and negative externalities that firms and sectors generate at the city

and metropolitan levels, whether industrial pollution or positive contributions to community health by funding a community clinic. Externalities need to be identified and quantified to the extent possible in order to assess the total productivity of firms and sectors that include their effects on the city in which they operate. These broader implications of productivity are not usually included in conventional economic notions of total factor productivity.

It would be important, therefore, to try to assess all of the effects of the behavior of firms and sectors on a city and a metropolitan area, indeed even on a country's system of cities, as carried out by Hseih and Moretti (2015). Such an assessment suggests that the definition of productivity needs to include its effects at different scales. In addition, the productivity of firms can have both private and public components: the private relates to a firm's internal costs and benefits of production and sales and can be measured by profits. But the public component, at city and metropolitan levels, may include a wide range of externalities. The impact of these externalities affect urban public goods, such as air quality and water pollution, as well as traffic levels. From this perspective, productivity may be considered in part as an urban public good. This is similar to the argument that urban density is a proxy for a set of necessary urban services and interactions that make cities attractive places to live and work and, accordingly, urban density is also a public good (Buckley, Kallergis, and Wainer, 2015). A key metropolitan policy priority, therefore, must be to find the optimal density to maximize productivity and employment while minimizing or mitigating negative externalities.

Public Finance and Metropolitan Productivity

The role of urban finance in this wider understanding of productivity of cities and metropolitan areas consists of both playing its traditional role of raising public revenue and managing public spending in the public interest and actively contributing to a virtuous cycle of local taxation, investment, and economic growth. If economic activity, specifically the productivity of firms, has both positive and negative externalities, urban finance should also play a regulating function in encouraging behaviors by firms to seek positive externalities and multipliers while avoiding negative externalities. Simply put, the challenge is to promote activities that support sustainability while discouraging those that do not.

The Urban Economy and Development Strategy

This understanding of the linkages and tradeoffs between employment, productivity, and the role of urban finance is not new. At the macroeconomic level, the centrality of employment and total factor productivity has been studied for many years and incorporated into macroeconomic policies and strategies for specific developing countries. The role of the domestic economy within development strategies and particularly the link between industrialization and development itself has also been a subject of considerable controversy for over 50 years. Historically, the rise in the share of manufacturing in output and employment increases as GDP per capita rises. At the same time there has been a decline in the agricultural share of GDP. This has been widely identified as part of the urbanization process in developing economies (Montgomery, Stren, and Cohen, 2003).

But this process also should be understood within a wider development context. Hollis Chenery, the former Vice President for Development Policy and Research at the World Bank, posed the question, "how does this transformation of the structure of production affect the rate of growth and the distribution of benefits?" (Chenery, Robinson, and Syrquin, 1986). He also asked: "How essential is industrialization for development? What is the importance of changes in demand in comparison with changes in such supply-side factors as capital accumulation and comparative advantage?" He raised the issue of the relationship between growth and structural change, and questioned the contribution of specific policies to this structural change. For example, the much-debated

issue of import substitution from the 1950s has been shown to have specific effects on patterns of urbanization, helping to spatially concentrate economic activities and populations in the pursuit of agglomeration and economies of scale. Macroeconomic policies therefore have direct effects on the formation and level of income and productivity of metropolitan areas.

These issues should be central to our understanding of urbanization as a form of structural change in metropolitan demographic distribution and concentration, and as the differentiation of economic opportunities within specific metropolitan areas. This wider perspective is also essential to the argument that metropolitanization is part of these structural changes, both in terms of production and distribution. As noted by Cimoli, Dosi, and Stiglitz (2009), the structure of industries is reflected in the distribution of income through remuneration policies. The production of goods and services and the distribution of salaries and benefits are closely related and interdependent. The industrial structure of a metropolitan area produces a specific level and distribution of salaries that is in turn reflected in the pattern of social stratification. The question for metropolitan areas in developing countries is whether this industrial structure is dynamic enough to evolve and grow fast. Another question is whether the required quality of labor is available to integrate increasing urban populations or whether these population increments can only find jobs in the informal sector.

Conclusion

While these issues have long been debated in development policy circles, they are relatively new in the world of international urban policy where there has been greater focus on housing and infrastructure, and a reluctance to regard urban areas as sites of value creation and employment generation. Value creation includes goods, services, and investments, as well as less tangible forms such as culture and information, which now account for a growing share of urban economies (Center for an Urban Future, 2011). While lip service is given in fiscal policy debates to increasing local public revenue, this issue has not received the priority it deserves even though more than a quarter of public revenue is typically generated at the local level in industrialized countries (Bahl and Linn, 1992). Urbanization should be acknowledged as a driver of development. At the moment, urban is largely missing from the global development policy debate and national development discourse, while the economy is missing from urban discussions and this also needs to change.

An essential step in this recognition process is integrating the metropolitan economy into global, national, and local systems of diagnostics, assessments, and monitoring. In general, neither the metropolitan level nor the metropolitan economy has received much attention in the diagnostic tools used by governments and multilateral institutions. More recent analytic efforts by multilateral institutions at the metropolitan level are very welcome, but data sets are only partial and often unreliable. In some cases they ignore the full range of factors, whether exogenous or endogenous. And most importantly, there does not appear to be much attention paid to their outcomes for individuals, households, and communities at the urban level.

It should be understood that 12 of the 17 Sustainable Development Goals adopted by the United Nations in September 2015 are to be implemented in urban areas. This calls for a much higher level of integrated conceptual and operational thinking: across space, institutional jurisdictions, disciplines, and sectors. Indeed, we should consider what effective metropolitan practice is. While policy is important, in the end, practices on the ground are a far more determining factor of development outcomes. This is even more evident considering the metropolitan economy. All of the above suggests that while we certainly need to address the question of what to do at the metropolitan level, it will be more important to focus attention on the how: how building metropolitan frameworks can contribute to material improvements in the lives of urban dwellers.

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2.2 Metropolitan Governance for Land Use: Current Practices and Alternative Approaches

Cynthia Goytia (Torcuato Di Tella University)

Abstract

The centrality of land use to many decisions that affect metropolitan urban development is often underestimated. Yet there are limits to economic, social, and environmental sustainability that can be prolonged by poor governance of land use. Rapid urbanization is often accompanied by short-term, uncoordinated sprawling land development, leading to inefficient and inequitable socioeconomic outcomes and affecting the spatial distribution of public urban infrastructure and services. A prime role for land use norms and regulations is to facilitate synergies from different land uses while preventing negative externalities. Yet, there are unintended effects. This chapter analyzes the effects of uncoordinated land use on economic, social, and environmental sustainability. It specifies urban policy tools used to improve the governance of land use in metropolises, discusses alternative policies and their implementation, and presents some institutional framework options to support a changing approach. Particularly, it highlights the role of national governments in promoting such structures—in the form of incentives or regulations—to try to boost the sustainability of urbanization in metropolises.

By 2050, will metropolises be sustainable and equitable? Considering the extent of metropolitan growth in recent decades, the centrality of land use planning and regulation to many decisions that affect economic, social, and environmental sustainability of metropolises is often underestimated. Indeed, there are severe limits to sustainable development that are prolonged by uncoordinated land use planning. One key fact is that, for a given population size, a metropolitan area with twice the number of municipalities is associated with around 6 percent lower productivity. Indeed, this effect is mitigated by almost half by the existence of a governance body at the metropolitan level (Ahrend, Gamper, and Schumann, 2014). Not surprisingly, the fragmentation of metropolitan land use planning can minimize the chances of achieving the very agglomeration benefits of firm co-location and economies of scale that give metropolises their strength. It can inadvertently encourage unnecessary urban sprawl, insufficient or irrational allocation of infrastructure and public services, traffic congestion and poor accessibility, pollution, and segregation, undermining the benefits of agglomeration and increasing urbanization costs.

As a result of the sustainability challenges related to metropolises in transition, this chapter aims to answer two central questions: What are the effects of uncoordinated land use planning and regulation on metropolitan economic, environmental, and social sustainability? And, how can public policies help achieve balanced sustainable metropolitan growth? In answering these questions, the chapter explores three main barriers to metropolitan sustainability associated with uncoordinated land use planning and regulation.

First, the author explains that uncoordinated land use management affects the economic sustainability of metropolises by minimizing the chances of achieving the very agglomeration economies that give metropolises their strength while heightening congestion costs and productivity losses associated with insufficient articulation between places of residence and places of income generation (Rosenthal and Strange, 2004; Puga, 2010; Combes, Duranton, and Gobillon, 2011).

Second, she highlights that harmonized urban growth and transportation planning requires infrastructure investments that cross municipal boundaries with very real needs for land use coordination for their approval and construction. But even more important is that uncoordinated land use regulation across a metropolis can lead to urban sprawl or excessive densities with the attendant increase in per capita costs in providing basic services and infrastructure (Libertun and Guerrero Compean, 2016). In addition, coordinated land use regulation across the municipalities of a metropolis present investors with a predictable investment framework conducive to spatially rational outcomes guarding the efficiency of the spatial form that emerges or the negative externalities associated with mis-specified regulation.

The third major effect of uncoordinated land use planning and regulation is the environmental sustainability of metropolises. To understand why we expect uncoordinated land use planning and regulation to matter, returning to the fragmentation of the extensive urban footprint is useful. Environmental issues such as watershed and flood management cannot be adequately addressed at the municipal level only because the land use footprint of watersheds and water courses do not respect municipal boundaries.

Discussing the effects of uncoordinated land use and regulation is incomplete if their strong effects on the social sustainability of the metropolises are ignored. This is the third key sustainability dimension. Land use planning and regulation can be mis-specified or deliberately formulated to exclude specific socioeconomic groups from certain parts of the metropolis, severely affecting their quality of life, including their access to economic opportunity, quality services, and public spaces. The result can exacerbate inequality and socioeconomic segregation with some of the attendant social ills, such as urban crime.

Being able to answer these questions related to the sustainability challenges involving metropolitan land use management is important for at least two reasons. First, land use regulation and its coordination defines the way the urban spatial structure of metropolises is framed. It determines the location of residential zones, both multi-family and single-family housing, commercial uses and firms (including manufacturing and services), public space, transport and public infrastructure, and all other goods and services. From a household's perspective, the metropolitan spatial structure critically affects accessibility, not only to potential jobs and labor market opportunities, but also to other services that are essential for their welfare, such as education and health, recreational activities and green spaces, cultural activities, and consumer markets. At the same time, this metropolitan spatial structure affects firms' access to employees, consumers, and inputs that impact the economic sustainability of metropolises.

Second, land use management is economically important as large investments in new housing and infrastructure must be made to accommodate the demographic growth of metropolises. For instance, various levels of the U.S. government spend more than $200 billion every year to maintain and expand road infrastructure (Duranton, 2013). Given that most of these investments are extremely durable, it is important to plan them properly and, for this, land use regulation is a key policy area that needs coordinated efforts. Yet, rapid urbanization tends to prioritize short-term uncoordinated metropolitan land development over a long-term spatial vision, leading to suboptimal and often inequitable outcomes. Moreover, local land use's disconnection to other sectoral areas—such as transportation, housing, or urban finance—has restricted the practice of urban planning to a narrow performance without the integrated approach that is required to achieve far-reaching effects on metropolitan sustainability.

The three engines of sustainability—economic, social, and environmental—that are explored here are not exclusive: other potential drivers of unsustainable development, such as the quality of institutions, may also matter. Whether new encompassing forms of metropolitan land use planning and regulation are needed to support economic, social, and environmental sustainability raises the question of what institutions are required and how they need to be framed. Even though the effort to build metropolitan governments largely failed in some countries, there are successful

experiments that illustrate new modalities for building metropolitan land use governance. In contrast to the limited impact of formal institutional reform, during the past 25 years there has been considerable experimentation and innovation surrounding new efforts to promote metropolitan land use governance by different types of coordination agreements (Lefèvre and Weir, 2012). Indeed, some evidence suggests that building enduring metropolitan institutions requires strong political leadership to carry the process forward. One key debate is whether the national government should essentially be promoting such structures in the form of incentives or regulations to try to boost the sustainability of urbanization in metropolises.

Finally, given recent trends in metropolitan area extension, this chapter presents some innovative land use tools that foster coordinated urban expansion and promote infrastructure investments. These tools induce a better land use spatial structure that promotes accessibility for all, while allowing funding to be allocated to urban infrastructure. In this way, synchronizing extension and infrastructure enhances accessibility, increasing productivity and liveability, and reducing urban costs. Based on these measures, land readjustment tools that support mixed uses in inner city areas or historic centers and planned urban extensions widen the spectrum of land use policies in metropolises. The author concludes that there is a menu of metropolitan governance institutions that can improve metropolitan governance of land use planning to foster the economic, social, and environmental sustainability of metropolises.

Economic Sustainability

The greatest productive advantage of modern-day metropolises is that they form large and integrated labor markets that boost productivity. The increase in metropolitan size expands the availability of specialized inputs, which in turn raises the productivity of final goods production. One policy implication of this fact is that the more integrated metropolitan labor markets are, the more productive they are, which requires coordinated land use decision-making. Indeed, uncoordinated regulation within a metropolitan area can minimize the chances of achieving the very agglomeration benefits of firm co-location and economies of scale that give metropolises their strength.

Yet, in many metropolitan areas, regulations are implemented at the sub-metropolitan level by local planners who seek to maximize local welfare. If, for instance, congestion is mostly municipal while agglomeration effects are more diffuse, municipal planners—who do not fully internalize positive metropolitan agglomeration effects—will unduly restrict development. On the contrary, if congestion is a metropolitan-wide phenomenon and agglomeration economies are taking place within municipalities, local planners will induce too much development (Duranton, 2007). In all the cases in which the externalities that land use planning tackles are not restricted by municipal boundaries, the uncoordinated maximization of local planners will in general be inefficient and can promote too much or too little development, hindering agglomeration economies or significantly increasing urban costs. All these circumstances open space for public policies of which those related to coordinated land use regulation play an important role.

Mitigating Urban Costs: Gains from Improved Accessibility

The benefits of agglomeration are just one side of the coin. The other side, the costs of urbanization, are an essential barrier to realizing the urban agglomeration economies that support urban productivity. One unintended consequence of administrative fragmentation and uncoordinated land use governance is unnecessary sprawl and an inefficient spatial allocation pattern of activities. The shift toward multi-centric, uncoordinated urban structures could in turn exacerbate the scattered nature of new residential developments, thus constraining overall accessibility. Furthermore, it can heighten congestion costs and productivity losses associated with insufficient articulation between places of residence and places of income generation. Consequently, coordinated land use planning should

be used to strategically ensure systematic direction and efficiencies in urban expansion since those should extremely affect accessibility and urban costs.

The second basic fact is that metropolitan productivity also relies on a broad range of infrastructure investments—from roads to international airports—that are needed to cover the appropriate accessibility and mobility of people, goods, services, ideas, and technologies. Indeed, when road infrastructure is inadequate, the accessibility structure, and even congestion externalities within jurisdictions, are disturbed. Consequently, developing an efficient metropolitan urban structure driven by planned land use, transportation, and infrastructure systems confronts policy with coordination demands. Nonetheless, it is important to keep in mind that major transportation and infrastructure networks are extremely costly investments that cross municipal boundaries and require land use coordination for approval and construction. Adequate coordination facilitates timely and more cost-effective infrastructure investment and planning for large-scale metropolitan urban development (Altshuler, Morrill, Wolman, et al., 1999).

Unfortunately, not all metropolises in transition are dealing effectively with their huge transportation infrastructure requirements. Evidence from the past 25 years of urban extension in a global sample of metropolises shows a significant gap in the amount of land allocated to arterial roads within the newly built expansion areas of most metropolitan areas. Using data from satellite observations, the Atlas of Urban Expansion (2016) suggests that the fast growing areas of many metropolises display a notable failure to lay out new areas for development, which results in inadequate streets and roads for the accessibility structure needed to boost agglomeration economies and reduce congestion costs. These issues are worse in metropolises of developing countries. There, the failure to finance infrastructure in areas of urban extension increases overall housing and urban costs and enhances the prevalence of informality. If not addressed by coordinated land management, this condition can lead to serious harms on traffic congestion and accessibility, both very hard to rectify after development has occurred.

Infrastructure and Urban Sprawl

Metropolitan areas are now growing at a rate faster than their populations. A sprawling development pattern is a common spatial outcome of uncoordinated land use planning, forged when different administrative jurisdictions within the region approve subdivisions on greenfield areas. In such cases, each jurisdiction is forced to provide new infrastructure investments (e.g., schools, roads, sewers, and police and fire protection). As many of these are smaller, previously rural jurisdictions, they are often unprepared to provide the required financial or structural suburban services. As explained in the previous section, some of these services would be better supplied at the metropolitan level than at the local level without economies of scale.

Some aggregate figures on urban extension will help illustrate these issues. Urban extension in cities of less developed countries increased on average by a factor of 3.5 between 1990 and 2015, while their populations doubled. In parallel, in more developed countries, urban territory increased by a factor of 1.8 while the population increased by a factor of 1.2. Average urban densities in cities in less developed countries were 3.3 times higher than densities in more developed countries in 1990. Between 1990 and 2015, urban densities in less developed countries declined at an average annual rate of 2 percent compared to 1.5 percent in more developed countries (Angel, Lamson-Hall, Madrid, et al., 2016). During that period, urban land consumption per capita in these regions increased at identical rates, the inverse of density. Greater ratios of land consumption to population growth increase the amount of undeveloped land converted to urban areas that require increases in per capita costs to provide basic services and infrastructure.

In part because economic development results in more consumption in general and more land consumption per capita, the expansion of cities and megacities is essentially propelled by several factors besides urban population growth. Factors include increases in income allowing residents to consume more land (Margo, 1992), technological improvements in transportation that allow residents to travel to work over longer distances

(Baum-Snow, 2007), but also resistance to the densification of built-up neighborhoods and even climate and topography (Burchfield, Overman, Puga, et al., 2006). Moreover, metropolises with more fragmented land use planning governance are more likely to have less dense suburban development in addition to favoring decentralized, dispersed development and sprawl (Burchfield et al., 2006). Low-density development makes it difficult and costly to provide bus, light rail, or metro services. The increased private car use required by dispersed urban extension leads to greater resource demands for transportation.

In sum, local decisions on land use regulation related to urban extension reinforce unsustainable spatial patterns. Further, local governments are likely unable to coordinate and commit the funds needed to support the new infrastructure. Effective governance at the metropolitan level can reduce unnecessary urban sprawl, protect open space, and lower per capita infrastructure costs, all essential for the economic sustainability of metropolises in transition.

Predictable Business Investment Environment

Coordinated land use regulation across the municipalities that make up a metropolis present investors with a predictable investment framework that is easy to navigate in terms of transaction costs and conducive to spatially rational outcomes. The author already explained that uncoordinated land use planning means that different local governments make independent land use decisions without much regard for how they affect or interact with adjacent jurisdictions or what the externalities might be for the metropolitan system. In the United States, as most city governments are overwhelmingly dependent on local property taxes, there is incentive for local governments to enact policies—particularly favorable business incentives and infrastructure policies—to attract business.

One common practice in uncoordinated metropolitan regions is inter-jurisdictional competition to attract investment from mobile firms. The major implication is that metropolitan land use coordination guards against perverse incentives associated with a race to the bottom where neighboring municipalities in the same metropolis compete for the same investments with little regard for spatial efficiency or the negative externalities associated with mis-specified regulation. Additionally, it is necessary to ensure coordination where land use planning and regulation policy from different local and upper levels of government are consistent with each other. Businesses and developers respond to incentives and constraints, but they find uncertainty from an unpredictable regulatory framework and delays very destructive, which increases transaction costs and the likelihood of irrational spatial outcomes. Both issues seem to be a fundamental argument for coordinated metropolitan-level land use planning and greater consistency in the vertical and horizontal metropolitan business environment.

Environmental Sustainability

Uncoordinated land use planning and regulation affects the environmental sustainability of metropolises in different ways. First, many environmental issues, such as watershed and flood management, cannot adequately be addressed at the municipal level because the land use footprint of watersheds and water courses do not respect municipal boundaries.

Second, the fragmentation that inadvertently encourages urban sprawl is associated with the severe environmental implications of an extensive, unplanned urban footprint. When the amount of land converted from open space to residential use increases in disperse urbanization it can have negative environmental implications. Such extended suburban areas can also cause negative externalities for individual communities and an entire region as a result of the significant increase in land resource consumption, associated air pollution, and greenhouse gas emissions, leading to increased urban environmental costs that have long-term health effects.

Third, many issues that involve climate change have metropolitan-wide consequences and require regional coordinated responses. Further, local institutions do not have adequate scope or capacity to

effectively address such problems. In preparing for climate change, some priority areas for coordination include taking a strategic approach to land use planning; providing the required infrastructure, such as dams or flood prevention sites to cope with changing rainfall patterns and rising sea levels; managing natural resources sustainably; and effective planning for emergencies. In all of these areas, coordinated planning can reduce costs and damages and take advantage of timely adaptation action for environmental sustainability.

Social Sustainability

This section argues that public policy should focus more on the distributional consequences of uncoordinated metropolitan land use planning and regulation. There are three central issues that support this view.

First, a stable and positive relationship between administratively fragmented metropolitan areas and spatial segregation by income benefits patterns of urban development (Boulant, Brezzi, and Veneri, 2016). Because the power to regulate land use is wielded by city and county or municipal governments in many metropolises, administrative fragmentation and differences in service quality and local amenities (which are often provided by different levels of local regulation and taxation) tend to exacerbate the tendency of people to sort into different jurisdictions. While this sorting is sometimes desirable to enable local governments to specialize in the services that are more appropriated for each group, it can also generate inefficient patterns of urban development, which may cause sprawled, fragmented, and dispersed urban extension and segregation.

The evidence suggests that jurisdictional fragmentation promotes racial segregation (Altshuler et al., 1999; Powell, 2002) or leaves some jurisdictions with a disproportionate share of needy populations, causing segregation by income (Pagano, 1999). Local zoning causes income segregation by municipality (Fischel, 2001; Lens and Monkkonen, 2016) in that suburban land use regulations lock certain minority groups out of the suburbs because these regulations (minimum lot size requirements) increase the cost of housing beyond what those groups can afford. Some groups have voiced concerns about the suburban exclusion of immigrant and non-traditional families. Consequently, all these facts raise questions about how equitable metropolitan spatial development patterns are at a time when these social sustainability issues are not internalized in policymaking for land use planning.

The second fundamental feature connecting uncoordinated land use regulations to segregation is that can it be motivated by considerations other than the need to resolve "market failures" or correct for negative externalities that increase urban costs. Several alternative explanations to the motivations behind adopting stringent local land use regulations came to be called the homevoter hypothesis. To respond to voter preferences, municipalities restrict the supply of housing to maintain a community's high prices for single-family homes (Fischel, 2001). Local jurisdictions have a strong incentive to adopt zoning and development policies that exclude potential residents with incomes below the median for their jurisdiction or who require more costly services, leading to metropolitan segregation by income. Thus, the tendency to segregate by income is exacerbated by the local nature of land use planning and regulation and the greater pressure from multiple local interest groups on residential development.

Even in the metropolitan regions of OECD countries, the emergence of residential segregation between the wealthy and disadvantaged populations is far from being solved. Some figures can help to illustrate this. In metropolitan areas of the United States, households in the 90th income percentile are more than twice as segregated as those in the 10th percentile (Reardon, Firebaugh, O'Sullivan, et al., 2006) while segregation levels are quite similar for the 30th to the 70th percentiles (Lens and Monkkonen, 2016). In Hong Kong (Monkonnen and Zang, 2014) and the Buenos Aires Metropolitan Region (Goytia and Pasquini, 2013), segregation levels are lowest for the 20th percentile and increase rapidly as incomes grow. Spatial concentrations of poverty and wealth lead to unequal access to jobs, schools, and safe neighborhoods, and exacerbate negative life outcomes for low-income households, which can adversely affect the social sustainability of metropolitan regions.

Moreover, the segregation of the affluent—which is growing rapidly in metropolitan areas—results in the hoarding of resources and amenities, and disproportionate political power. There are worries that this exclusionary zoning may instead maintain land development at inefficiently low levels. If this is right, overly restrictive regulations in developed areas of metropolitan regions would be a powerful force explaining excessive urban sprawl in undeveloped areas.

A third key issue is that, given that cities and jurisdictions in metropolitan areas operate within a system, there is potential for strategic interaction that would exacerbate the role of regulations in price determination. As noted by Helsley and Strange (1995), restricting growth in one community also negatively affects neighboring jurisdictions by pushing growth into those areas, although not all regulatory interventions will have equal effects in this regard. For example, the regulatory environment of the central city plays an important role in metropolitan segregation patterns (Lens and Monkkonen, 2016). On the other hand, increased competition for (limited) supply causes land and housing prices to increase, making housing costlier in the entire metropolitan area (Glaeser and Ward, 2009). As such, regulations that lead to excessive stratification of the population by income may not be welfare improvements for the society or engines of social sustainability. At the same time, when more coordinated action—or regional governments—have power over land use decision-making processes at the metropolitan level, income segregation is significantly lower. Taken together, this suggests strong arguments to push for greater metropolitan land use coordination (Lens and Monkkonen, 2016).

The resilience of informality is emblematic of metropolitan areas in developing countries. Characterized by a duality between land with appropriate property titles and leases and squatted land, it is fuelled by the incapacity of local jurisdictions to finance the necessary infrastructure, forcing them to enact inadequate local land use norms and regulations to protect areas from further development. In fact, strict local regulations intended to provide optimal conditions for land use and occupation have had a completely opposite effect of lower rates of compliance with the norms (Monkkonen and Ronconi, 2013) and higher levels of informality (Goytia and Pasquini, 2013).

Current urban planning systems, shaped by fragmented and unreasonable urban norms and land use regulations, have failed to respond adequately to population growth adjustments in metropolises, especially strong demand for infrastructure and affordable housing for lower income households. Making matters worse, the underlying failure to tackle the problem at the municipal level increases the potential for strategic interaction between local jurisdictions, which aggravates the role of uncoordinated regulations in determining informality.

Again, variation in the stringency of land use regulation and the level of infrastructure within jurisdictions creates externalities, making segregation and informality even greater. For example, such variation can engender a pervasive tolerance toward informal development in some jurisdictions while enacting even more exclusive land use regulation in others. At the same time, without coordinated land use planning and regulation, if some metropolitan jurisdictions offer improved access to land compared to their peers, these jurisdictions are likely to disproportionately attract (poor) migrants. If the induced population growth is higher than any adjustment to the formal housing supply, informality is likely to grow in that jurisdiction.

The same type of inter-jurisdictional effects must be considered in the case of slum upgrading programs that improve availability and access to local public services and amenities in situ. Pro-poor land interventions in single jurisdictions, rather than coordinated at the metropolitan level, may attract the poor and increase slums in that jurisdiction. Thus, the lack of metropolitan coordination might undermine the benefits as a result of improvements to informal settlements.

Land Use Governance and Institutions

The growth of metropolises raises questions about whether new encompassing forms of land use planning and regulation coordination are needed to promote economic, environmental, and social

sustainability. Larger and well-coordinated metropolitan areas that achieve economies of scale are the most effective in providing services and infrastructure. Also, there is conclusive evidence that coordination fosters spatial equity and balanced social inclusion.

There are two essential debates related to metropolitan governance. The first is related to the type of institutions and the second is whether the national government should be promoting land use planning coordination structures to try to boost the economic, social, and environmental sustainability of urbanization in metropolitan areas.

Regarding types of institutions, on one hand there is government consolidation, calling for a single metropolitan government to promote efficient and equitable development. On the other hand, there are more flexible modalities (e.g., proposals for a polycentric approach to metropolitan governance, as envisioned by Ostrom, Tiebout, and Warren, 1961) in which local governments cooperate with each other depending on the nature of the issue. The latter offer considerable variation in scale, through agreements or institutions for ad hoc coordination, particularly the interplay between public and private sectors and the interaction between different levels of government (Pierre, 1999).

Among these approaches, one used in many major city-regions is coordination of spatial policy by formulating land use and strategic spatial perspectives. This coordination task for the whole metropolitan area is successfully addressed by special institutional structures that respond to the challenge of coordinating metropolitan spatial policies in a complicated multi-actor and multi-level environment.

Regarding whether national governments should promote such land use planning structures, there are at least three main considerations related to this role. First, in practice, the function of the national government is not envisioned as imposing directives from above but as encouraging and prodding metropolitan land use and planning governance. Thus the national government can be a key actor by providing incentives or implementing regulations to promote coordinated planning actions at the metropolitan level that are aligned with achieving national goals, such as promoting agglomeration economies and productivity, reducing urban costs and increasing overall accessibility, improving equity or reducing carbon footprint, and managing watersheds and basins. Conceived as a combination of requirements or incentives to induce behavior, national policies constitute a substantial force to encourage metropolitan coordination, whether in the form of incentives or regulations.

The main justification lies in several facts related to decentralization and bottom-up efforts. In many federal countries, control over land use is decentralized to localities and states, which enjoy formal authority over land use and have long placed only loose requirements on metropolitan coordination (Lefèvre and Weir, 2012). For instance, the U.S. bias in favor of local control has made it an outlier in failing to create formal metropolitan institutions. Political economy complexities in the context of institutional fragmentation—and the resultant diversity of power coalitions—also constitute a challenge for land use and spatial policy coordination. In Europe, central governments have succeeded in enacting top-down reforms intended to generate metropolitan governing capabilities, but in most cases the new institutions have not taken hold. In The Netherlands, metropolitan governance is currently organized through Plusregios, bodies typically headed by the mayor of the central city of the metropolitan area. In Plusregios, municipalities are obliged to cooperate closely on land use planning, infrastructure, and housing, as well as on transport and regional economic development.

In other cases, metropolitan area governance bodies are started by state law. For example, Montreal and Quebec City are the two metropolitan areas in the Province of Quebec in Canada. The Communauté Métropolitaine de Québec is an institutionalized body that has powers mainly over land use planning and strategic transport planning, while the Communauté Métropolitaine de Montréal is active on a much wider range, including waste management, social housing, and environmental issues. Their powers vary greatly and there are large differences in their actual influence on policies (Ahrend and Schumann, 2014).

Instead, in both Europe and America, bottom-up efforts at collaboration and strategic planning characterize the contemporary process of (incrementally) building metropolitan and regional institutions. In OECD countries, spatial planning and land use is a common field of cooperation after regional economics and transportation: almost 70 percent of governance bodies work in this area, and more than half of all government bodies (91 out of 178) work on in three fields (Ahrend and Schumann, 2014). Some governance bodies exert centralized control over the entire planning process in a metropolitan area. Others merely serve to inform local governments of each other's plans. In between those extremes, there is a continuum of governance bodies with varying degrees of influence over the planning process. All are active in the field although most have few formal competencies.

However, a strong vertical dimension in metropolitan governance is characteristic of many Asian countries, imposing interactions between governments and non-state actors (Pierre, 1999). For example, in Japan and Singapore, urban development policies are heavily administered by the state (Vogel, 2010). In centralized countries like China, where they follow a state-led, dirigiste approach, policies are enacted by the national government to support inter-city coordinated development. States respond to economic and political pressure by adopting aggressive metropolitan development strategies in pursuit of their goals (Ye, 2014).

Functional and ad hoc models of metropolitan coordination around certain issues belong to the type of pragmatic solutions that can be supported by federal requirements or incentives. If effective these models may mature into more integrated and enduring systems of coordination (Lefèvre and Weir, 2012). One key issue is that, in metropolises where organizations responsible for metropolitan governance exist, their areas tend to be larger but they record lower levels of urban sprawl (Ahrend and Schumann, 2014).

Land-Based Tools

Metropolitan land management strategies for sustainability in the context of rapid urban transformation need to deal with at least three main objectives: assembling land for (re)development, providing the public infrastructure that urban growth requires, and creating greater social inclusion.

One tool regularly used to guide new urban development is land readjustment. This scheme requires contributions of land by local owners to a coordinating entity that then uses these inputs to facilitate the introduction or expansion of public space, including roads and truck infrastructure. In some versions, contributed land that is surplus to the public space needs is sold to help finance the cost of infrastructure and services. The instrument has been successfully applied in Korea, Japan, The Netherlands, India, Germany, and Colombia, among other countries. In these schemes, increases in land values from urbanization typically more than compensate for the reduction in individual land holdings. At the same time, the model requires managing land price expectations in the areas of urban expansion.

Another major challenge is coordinating and financing large metropolitan investments in new infrastructure to adjust to urban growth, including transit systems to improve accessibility and new public spaces, which cannot be borne by any local government alone. Coordinated planning can help not only in widening accessibility to a range of opportunities by major public transport infrastructure investments but also in encouraging mixed social and economic use in urban corridors. Changes in land uses and development intensity or new infrastructure that raises property values can provide potential revenue sources to meet the public investments required.

Finally, measures aimed at helping reverse segregation and fostering the social sustainability of metropolises involve inclusionary zoning for mixed-income development. The mandatory inclusion of affordable housing can be enforced by planning obligations or inclusionary housing zoning that prescribe the nature of the development. Limiting the spatial concentrations of poverty and wealth that lead to unequal access to jobs, schools, and safe neighborhoods, and exacerbate negative life outcomes for low-income households can positively affect the long-term economic and social sustainably of metropolitan regions.

Conclusion

In this chapter, the author reviewed key land use dimensions that interact in a complex manner and affect metropolitan sustainability. Where does this leave us in terms of implications for urban policy? The first message should be that traditional local institutional structures of land use planning and regulation often do not correspond to the geographical extent of the distinct sustainability challenges associated with the ways in which land is planned. Individually, each municipality or the corresponding lowest level of local government is too small to provide solutions to metropolitan area problems. The agglomeration benefits that are considered the main advantage of metropolises, and the driver of economic sustainability in such regions, might be significantly diminished by fragmented governance.

Metropolitan land use planning can allow for greater coordination and equity in planning processes and outcomes and can help align and finance infrastructure projects. As metropolitan coordination in land use and planning is implemented more fully, it can also play a critical role in using coordinated data to help jurisdictions plan to accommodate growth and density in appropriate transportation corridors. These goals are significant given that highly fragmented governance systems contribute to increasing unnecessary sprawl and congestion, and deepen disparities in the quality of local services, which both reduce productivity while increasing segregation.

As a result of this complexity, the author identified several coordination problems along with a range of solutions to the challenge of metropolitan governance. One key issue is that the diversity of drivers of metropolitan coordination suggests that there is no one solution, but instead diverse governance structures that are attempts to reverse fragmented decision-making and uncoordinated actions that affect sustainability. The main message is that there are many land use regulation instruments that can improve metropolitan governance to foster economic, social, and environmental sustainability. These tools serve to optimize and reorient urban development, adjusting the required infrastructure to metropolitan growth, thereby helping to reduce urbanization costs and promote socially fair inclusion and accessibility for all.

Even more relevant, the author suggests that there is space for national governments to play a central role in encouraging metropolitan coordinated planning action aligned with achieving national goals, such as promoting agglomeration economies and productivity, reducing urban costs, increasing overall accessibility, improving equity, reducing the carbon footprint, and managing watersheds and basins. Conceived as a combination of requirements or incentives to induce behavior, national policies constitute a substantial force encouraging metropolitan coordination, whether in the form of incentives or regulations. Especially when the frameworks for metropolitan planning agencies can be complicated to put in place, incentives from higher levels of government can help to encourage their creation.

Lastly, it is worth considering whether the 11th Sustainable Development Goal (United Nations, 2015) and the *New Urban Agenda* (UN-Habitat, 2016) could be two valuable steps toward committing to these challenges. Calling for the adoption of socially sustainable land management models broadens the scope from traditional conceptions of planning to highlight the effects of uncoordinated land use management on key urban economic, social, and environmental costs, such as lack of accessibility, segregation, or environmental risks. Enhancing socially inclusive urbanization indicates a radical move away from exclusively focusing on efficiency and toward promoting inclusion and reducing wealth disparities through coordinated land use management related to access to urban opportunities for all, such as dense labor markets, public goods and services, and affordable housing.

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2.3 Developing Metropolitan Finance in the Broader Fiscal and Institutional Context

Paul Smoke (NYU Wagner Graduate School of Public Service)

Abstract

Urban finance has received considerable attention over the years and is reemerging in 2016 as a focal area within the Sustainable Development Goals, the Financing for Development initiative, and the dialogue around the Habitat III Conference. Although there is a well-developed framework for designing intergovernmental and local finance systems, performance of these systems has often failed to meet expectations. The mainstream framework focuses heavily on technical policy considerations derived from public finance and fiscal federalism, as well as public management principles. Underwhelming performance is often framed as a product of poor design and management, limited capacity, and inadequate political will. The premise of this paper is that the conventional approach does not sufficiently consider the larger institutional framework in which urban finance must operate, the political economy factors underlying this framework, or the forces that shape the implementation of even normatively well-designed reforms. Taking these considerations into account can help policymakers and practitioners understand the openings for and constraints on pursuing more effective and sustainable urban finance reform.

The global community is dedicating substantial energy to the task of financing sustainable development post-2015 through public and private as well as domestic and international sources. The role of local, particularly urban and metropolitan, governments in this process has been given prominence as the Sustainable Development Goals are adopted, the Financing for Development initiative is advanced, a strong Urban Agenda surrounding the Habitat III Conference arises, and the urgency surrounding the need to mitigate the effects of climate change increases. This emerging emphasis reflects an increasingly broad consensus on the need to unlock the developmental potential of metropolitan areas and the bodies that govern them. Finance is obviously a critical element.

Fiscal decentralization has been a ubiquitous component of public sector and urban reform in developing countries. Despite advances, anticipated benefits have been unevenly realized and often disappointing (Connerley, Eaton, and Smoke, 2010; UCLG, 2010; Martinez-Vazquez and Vaillancourt, 2011; Local Development International, 2013; Ojendal and Dellnas, 2013; Faguet and Poschi, 2015). Performance challenges can reflect improper application of the dominant intergovernmental fiscal framework, such as decentralizing less fiscal power than conditions warrant. But the framework itself also suffers from deficiencies. Most critically, it is normative and narrowly focused on technical concerns, failing to consider key elements of country context, including political economy dynamics that shape system design and the behavior of the actors involved. The main argument is that technical elements of the system are important and could be better designed and applied. However, reformers—at the national and metropolitan level—need to think beyond conventional analytics to pursue effective and sustainable metropolitan fiscal reform.

The next section provides a short background on the key principles of fiscal decentralization and metropolitan finance, including a very general assessment of how these systems look in practice. The third section highlights neglected factors underlying the shape fiscal

systems take, with an emphasis on political economy and the lack of strategic implementation. Finally, a summary and some suggestions are provided regarding how to think about metropolitan finance reforms more productively and pragmatically.

The Fiscal Framework and Related Public Sector Reforms

Basic fiscal decentralization principles focus on assigning functions and revenues to subnational governments. These are well documented elsewhere and will not be detailed here (Ahmad and Brosio, 2014). For current purposes, it is sufficient to note the strong priority placed on assigning clear functions to all levels of government and ensuring, in accordance with the core finance follows function principle, that each has sufficient resources to meet their responsibilities. These can be in the form of tax and other revenues they generate, transfers they receive from higher levels of government, or funds they secure from the private sector or other sources.

Subnational governments are often legally assigned functions seen as conceptually suitable for local provision, but there is wide variation in practice. A lack of clarity in local government powers resulting from the legal framework or the behavior of government actors is often a factor. Ambiguity can result in gaps and redundancies in service delivery, complicate mobilization and allocation of resources, and muddle areas of local government accountability to higher levels of government and citizens. Metropolitan governments are sometimes more empowered than other local governments, either legally in formal fiscal frameworks, or in practice, and by virtue of their larger economies they generally have stronger revenue bases. At the same time, how overall government systems and processes are organized and managed can create restrictions for cities and give rise to special challenges of their own.

Mainstream literature frames fiscal decentralization as the national assignment of specific roles and resources to subnational governments. A more robust view advocates empowering them as autonomous entities with a general mandate to provide for the overall welfare of their constituents. In contrast to the sectoral approach in orthodox thinking, it emphasizes more holistic public service provision in specific territories. This framing allows discretion to tailor plans and budgets to local conditions (Commonwealth Local Government Forum, 2013; Romeo, 2013). Proponents see this as necessary for sustainable development, particularly for metropolitan governments.

Financing Routine Operations

Central governments have intrinsic advantages in revenue generation due to the nature of productive revenue bases and administrative considerations, while subnational governments have an edge in providing a range of public services due to differences in needs and preferences across jurisdictions. This situation means that intergovernmental transfers are inevitably important, including for many metropolitan areas.

Own-source revenues

Although dependence on transfers is typical, there is a strong case for local—especially metropolitan—governments raising a significant share of their own funds. Stronger local resource mobilization alleviates demands on national budgets, links benefits and costs of local services, generates funds to repay infrastructure investment loans, and allows more national resources to be targeted to poorer local governments, among others. A range of subnational revenue instruments is available (Bird and Slack, 2013; Martinez-Vazquez, 2015), including property taxation, fees and charges, licenses, and economic activity taxes. At intermediate and sometimes metropolitan levels, options include motor vehicle and natural resource revenues and some form of business or sales taxes. Other metropolitan sources, such as land value capture, are also emerging as promising (see below). Local add-ons to selected higher level taxes are often advised and sometimes practiced, but mostly in federal or large countries, and typically by regional governments.

These recommended revenue sources are not very controversial, although details of how they are structured and managed may be.

Overall, many central governments are conservative and decentralize fewer revenue sources than warranted by fiscal principles and local needs, although experience is diverse (United Cities and Local Governments, 2010). Full local autonomy over any tax is rare, even in metropolitan areas, but there is often some local control over rates. Pricing of major services may be subject to regulation, with some degree of local discretion in setting user charges.

The often high functional demands and limits on own-source revenue result in large vertical fiscal imbalances. In many countries, subnational governments collect 10 percent or less of their total revenue. If national policy adequately empowers metropolitan governments, their superior economic bases and capacity could allow them more fiscal independence than other subnational entities. In federal systems, the revenue authority of metropolitan governments can be heavily affected by state government control over sub-state revenue policies and practices.

Intergovernmental transfers

Transfers can improve resource access, strengthen metropolitan government autonomy, and help meet priority developmental and redistributional objectives (Bird and Smart, 2002; Shah, 2013). Transfers in developing countries, however, have commonly been structured problematically, with wide variations in annual funding levels, multiple programs controlled by different ministries, and subjective allocation of available funds. Competing programs can confuse local officials and undermine incentives for them to perform, while subjective allocation weakens transparency and complicates accountability.

Many countries base the annual transfer pool on a share of fixed revenue to ensure predictability and stability. This is considered preferable to determining the pool through annual budget decisions, which makes transfers more vulnerable to politics. If the transfer pool fluctuates significantly, as it may due to economic fluctuations or political dynamics, metropolitan fiscal performance may be affected. In some countries, transfers largely target intermediate tiers, making lower levels, including metropolitan governments, subject to ad hoc state or provincial decisions about how to share national resources.

The use of objective criteria, such as service needs or fiscal capacity, to allocate transfers among subnational governments is increasingly common. Politicization can be reduced by making it evident why each local government receives a specific amount. It is, however, important to avoid problematic incentives created by criteria, such as subnational governments relying too heavily on transfers and limiting own-source revenue generation.

Transfers can be unconditional or conditional. The mixture reflects national goals and has implications for metropolitan governments. Unconditional transfers can enhance autonomy and redistribution, while conditional grants better stimulate spending on national priorities. Redistributional transfers may not favor metropolitan areas if they raise significant shares of their funding through local sources. Conditional transfers can assist metropolitan governments in providing key urban services.

Financing development

Subnational governments account for nearly two-thirds of public infrastructure investment globally, about a third of which is financed with grants (Martinez-Vazquez and Timofeev, 2012). In poorer countries, grants dominate. In some cases, a single large transfer program covers both recurrent and capital spending, while other countries use development-specific transfers, sometimes unconditional, but often sectoral. These may be allocated in ad hoc (often project specific) ways or by formula, and local matching contributions may be required.

There is little documentation of major transfers dedicated to metropolitan areas, but a number target urban infrastructure more generally. Examples include the Jawaharlal Nehru Urban Renewal Mission in India (being replaced by a Smart Cities program) and the Municipal Development Fund in the Philippines. In the past there seems to have been a lack of

prioritization in this area and perhaps a presumption that major urban areas can take care of themselves. In the Habitat III/SDG era, this situation may change.

Subnational government access to capital markets has been important in wealthier countries but limited in developing countries. Opening local borrowing channels and promoting creditworthiness more broadly are considered priorities (Peterson, 2000; Friere and Petersen, 2004; Platz, 2009). Two mechanisms have dominated past efforts: public or quasi-public municipal development banks or funds, and private sector borrowing. The former have often been plagued by poor performance due to weak management or capacity and politicization, while the latter was long constrained by risk.

Recent initiatives to improve subnational access to development finance have included issuing borrowing or fiscal responsibility frameworks, reinventing (on more market-oriented principles) quasi-public lending bodies, and opening direct capital market access (Ingram, Liu, and Brandt, 2013; Smoke, 2013). Leaders in fiscal responsibility frameworks have included Argentina, Brazil, and South Africa. Experience with borrowing is varied. For example, in India, several municipal corporations have raised sizable resources through taxable and tax-free municipal bonds (some guaranteed). A few state entities, such as the Tamil Nadu Urban Development Fund and the Greater Bengaluru Water Supply and Sewerage Project, use pooled financing to improve municipal access to capital markets. Mexico has also used pooled finance, as well as future flow securitization and other innovative mechanisms, to facilitate municipal borrowing.

Much borrowing in the Philippines flows through public agencies: the Municipal Development Fund, which mixes grant and loan finance, and the Local Government Unit Guarantee Corporation, a private entity promoted by the Development Bank of the Philippines. In South Africa, most subnational borrowing is from the Development Bank of Southern Africa or the Infrastructure Finance Corporation, a private entity that funds municipal lending through bond issues. A few large metropolitan municipalities, including Cape Town and Johannesburg, have issued municipal bonds. Other approaches in multiple countries include co-financing initiatives, secondary market support, and bond banks (Giugale, Korobow, and Webb, 2000; Kehew, Matsukawa, and Petersen, 2005; Petersen, 2006; Matsukawa and Habeck, 2007; UCLG, 2015).

Although not covered in this chapter, public–private partnerships can also support metropolitan governments to secure the expertise and resources they need to meet their obligations (Marin, 2009; Brinkerhoff and Brinkerhoff, 2011; Ingram, Liu, and Brandt, 2013). In some cases, these partnerships may involve using funds that would have been difficult to obtain without engaging a private sector partner.

Commonly recognized challenges in designing the fiscal framework

Central governments in many countries tend to respect core fiscal decentralization principles in defining intergovernmental fiscal policy, but there are challenges. First, even the technical aspects of design are not easy to manage. Various tradeoffs in the principles (such as efficiency–equity) can make their application difficult and contentious, and there is often inadequate information. In addition, weak capacity is recognized as a major constraint on effective local fiscal performance. Much attention has been directed toward capacity building, but concerns remain that conventional approaches are inadequate.

Perhaps the main challenge is that, although political obstacles to productive intergovernmental relations are recognized, they are often framed in an ad hoc way or in terms of the nebulous claim of weak political will for local empowerment. There is growing awareness that a more nuanced approach to political dynamics is needed. So-called second generation fiscal federalism focuses on important issues beyond technical concerns of first generation theory, but not in an integrated way (Weingast, 2014).

Beyond basic fiscal principles for sharing powers, there is broad recognition that metropolitan finance depends on other conditions (Connerley, Eaton, and Smoke 2010; Manor, 2013; Ojendal and Dellnas, 2013; Faguet, 2014; Smoke, 2015). Structures and processes

of local administration and governance must be set up or modified. Metropolitan governments require adequate staffing, planning, budgeting, financial management, audit systems, and partnership frameworks. Appropriate accountability is essential for both operational and political purposes: upward, to monitor and maintain basic processes and standards and to foster national priority goals at higher levels; horizontal, between elected subnational officials and staff; and downward, to constituents.

These requirements alone are quite onerous, but there are even more elements of the broader national legal framework not specific to decentralization that can influence whether metropolitan governments will be able to perform as mainstream theory envisions. Prominent examples include basic rule of law, property rights, right to civic association, right to information, freedom of expression, and open media.

Underlying Forces that Shape Intergovernmental Systems

Having outlined the key principles of fiscal decentralization relevant for metropolitan governments and the larger landscape in which they are applied, this section turns to several neglected analytical and practical considerations, including historical trajectories and national political economy, central government bureaucratic dynamics, subnational context and political economy dynamics, and implementation strategy.

Recognizing Historical Trajectories and National Political Economy Factors

The organization of an intergovernmental system and the role of the multiple actors involved needs to be interpreted in terms of historical trajectories and national politics (Eaton, Kaiser, and Smoke, 2011; Smoke, 2014). Existing levels and roles of subnational governments are derived from a mix of tradition, external and colonial influences, and demographic divisions. In contemplating reform, these factors should be considered, as well as basic motivations for reform and their compatibility with mainstream principles and developmental goals (Connerley, Eaton, and Smoke, 2010; UCLG, 2010; Brinkerhoff, 2011; Bahl, Linn, and Wetzel, 2013).

The diversity of existing intergovernmental systems suggests the need to map distinctive country landscapes that help explain the role of metropolitan governments. Many countries have multiple levels of government with differences in authority and fiscal importance. There may a mix of elected and administrative levels that may be relatively independent or hierarchical. In federal countries, state governments may have more control over local governments—even larger metropolitan governments—than the center. The starting point for thinking about reform is to document and understand which levels exist, how they are currently empowered, and how they relate to each other.

If divisions of power are incompatible with fiscal principles, are normatively desired reforms attainable? The framework suggests that a centralized service should be provided locally, but this may not be feasible. Metropolitan governments may be kept weak by regional government pressure or because they are dominated by opposition parties. If underlying forces preclude the faithful application of basic principles, prospective reformers must consider how to craft feasible alternatives under prevailing conditions.

After a decision to rebalance intergovernmental relations is made, national politics influence the degree of empowerment and autonomy of each level as well as the processes that enable subnational entities to assume new roles. Weak authority may just reflect a central aversion to sharing power, but pro forma or incongruous reforms can also result from clashes between the national legislature and executive or among interest groups. A regime may also strategically decentralize to consolidate power. In some cases, subnational governments may be able to take advantage of a crisis to demand greater empowerment.

The point is that intergovernmental political dynamics play a key role in shaping the system. They may be difficult to influence and/or unstable. After a crisis

or in competitive political environments, the situation can change suddenly. Powers and funds can be de- or re-centralized if an opposition party gains power or a crisis emerges. Policy analysts and policymakers need to be mindful of pertinent political dynamics and what they imply for the fiscal empowerment of metropolitan governments.

Recognizing Central Government Bureaucratic Dynamics

Although political and historical factors often determine the broad characteristics of intergovernmental systems, detailed planning and execution of policies is primarily done by national agencies that operate in complex and divided bureaucratic settings (Eaton, Kaiser, and Smoke, 2011). A variety of national agencies are often mandated to develop and/or oversee specific aspects of intergovernmental systems. These actors include ministries in charge of broad subnational government policy and oversight (local government, home affairs, or interior), agencies in charge of public administrative functions (planning, finance, and civil service), and sectoral agencies with lead responsibility for specific services (e.g., education, health, and water).

Even with broad national consensus, individual agencies may have divergent perspectives on the intergovernmental system and their role in designing and managing it. If inherently related policies are conceived separately by different agencies and/or are inconsistent with national policy provisions—whether due to inattention or strategic behavior—the ensuing policy incoherence may weaken the development and performance of the subnational and metropolitan government system. Examples abound: conflicting policies of local government and finance ministries; unjustified control of metropolitan employment and expenditure policies by civil service or sectoral bodies; disparities between metropolitan functions and revenues; fiscal transfers that distort metropolitan spending priorities or create disincentives to revenue generation.

Finally, international agencies can influence intergovernmental policy, especially in aid-dependent countries (Donor Partner Working Group on Decentralization and Local Governance, 2011; Dickovich, 2014). Agencies have enabled good intergovernmental and metropolitan reforms, but nontrivial issues persist. Despite global agreements, many donors continue to use unsustainable institutional arrangements and to compete with each other, reinforcing policy inconsistencies generated by competing or uncoordinated government agencies.

Recognizing Subnational Political Dynamics

Even countries that follow normative fiscal principles and enjoy official national commitment may face major performance challenges. How metropolitan governments use powers depends on the local political landscape and the incentives it generates for local officials (Boex and Yilmaz, 2010; Brinkerhoff and Azfar, 2010; Yilmaz, Beris, and Serrano-Berthet, 2010; Grindle, 2013; Faguet, 2014). The relative influence of economic elites, political parties, ethnic groups, labor unions, civil society groups, and others shape the local environment. If reforms increase accountability and civic trust in metropolitan governments, performance can improve, but if there is capture by influential actors, corruption and poor outcomes can be generated.

Elections are the foundation of local governance, but their impact depends on the interaction of local context with the national framework (Bland, 2010). In addition, the most robust elections are a broad means of downward accountability. Other accountability mechanisms that provide more frequent input into metropolitan government decisions or feedback on performance, such as participatory planning and budgeting, town meetings, oversight boards, complaint bureaus, citizen report cards, and social auditing, have been adopted to help shape metropolitan fiscal behavior. Such mechanisms can improve citizen awareness, stimulate civic engagement, and exert pressure for improved performance, but their effects

are uneven in practice (Boulding and Wampler 2010; Brinkerhoff and Azfar, 2010; Blair, 2013). Even if designed and used well, their impact depends on who is involved, how they are implemented, and if the results influence decisions.

Horizontal accountability (between elected officials and staff) is an overlooked element of the subnational landscape. Particularly in historically centralized countries, local staff may retain strong upward linkages to central agencies, which can be problematic, especially if there is dependence on transfers. This may limit the ability of metropolitan governments to pursue integrated territorial development and to be responsive to their constituents.

Other concerns arise if there are multiple accountability channels. Subnational governments often co-exist with local offices of well-funded national agencies, and functional boundaries between them may be unclear. Some countries establish dedicated entities to finance and manage specific services, potentially complicating metropolitan government operations. If these actors were coordinated, they could collectively maximize their skills and resources for territorial development. Too often, however, roles are unclear or not respected, and robust cooperation mechanisms are lacking. Such a situation could confuse citizens, encourage service deficiencies and redundancies, and generate inequities.

A final issue is how to manage large metropolitan areas (Slack, 2015). In some cases, such as Cape Town, a unified metropolitan government replaced multiple jurisdictions and works fairly well, including through innovative public–private partnerships. This stands in stark contrast to Manila, where the central government created the Metropolitan Manila Development Authority (MMDA) to coordinate planning and service delivery among multiple jurisdictions located in the greater metro region. The MMDA is not considered very effective because each city tends to focus on its own needs, and most cooperation is based on limited funding from the center. The situation is even more complex in greater Cairo, which has five governorates (intermediate tier of administration) and eight new cities with more autonomy. Coordination has been elusive. Each of these arrangements reflects political dynamics and embedded incentives that shape how they operate and perform. Where other types of accountability and funding channels noted above exist, the challenges for metropolitan governance and finance are amplified.

Recognizing Implementation Challenges

Even with strong commitment and careful design of fiscal systems, implementation often receives inadequate attention at both national and subnational levels. Required reforms are often extensive and involve major operational and behavioral changes. There is growing recognition of the need to consider how new systems can be adopted and sequenced strategically so as to improve the quality and sustainability of outcomes (Smoke, 2010; Eaton, Kaiser, and Smoke, 2011; Bahl and Martinez-Vazquez, 2013).

If reforms are major, central government attention to sequencing and coordination of national actors is essential to reduce disjointed implementation. At one extreme, reform could involve immediate adoption of new policy, assuming that affected actors can and will comply. At the other extreme, reform may be phased in gradually, based entirely on central choices. There is a range of options in between. A developmental approach could involve systematic (criteria-based), asymmetric empowerment of entities with different capacities as they meet specific conditions and move at varied paces toward assuming new roles.

If there is fairly strong metropolitan government capacity, the framework approach provides an opening for them, while a highly managed centralized process may constrain them. An asymmetric developmental approach could also benefit metropolitan governments as many will have stronger capacity and be eligible for greater powers and resources early on. If such an approach was poorly defined, however, and/or became politicized, metropolitan governments could find it difficult to assume new powers.

Metropolitan governments also face local challenges. Even capable governments need to strategically roll out reforms that require adopting new processes and developing new skills. For example, taxpayers may resist if a government tries to assume new revenue powers too rapidly. It may be more productive to raise assessments gradually, perhaps attaching them to service enhancements. Broadly speaking, metropolitan governments pursuing reform could better connect to constituents. Civic education and participatory mechanisms can enhance awareness, generate valuable input, and improve acceptance.

The Future of Metropolitan Finance

If metropolitan governments are to meet demands to be more significant players in sustainable development, they will often need stronger powers to act more vigorously and autonomously. This must occur, however, within an appropriate framework of institutional structures, processes, and mechanisms for coordination and collaboration across different levels of government, within metropolitan areas, and with non-governmental partners.

Central government reluctance to devolve adequate revenue powers to metropolitan governments commonly hinders their ability to perform. National policy reforms and support measures are thus typically essential, but metropolitan governments can take some steps on their own. Specific actions are often required for financing, be it own-source revenues, intergovernmental transfers, or borrowing.

Own-Source Revenues

There is often room to improve the structure and administration of major metropolitan revenues, such as property taxes and user fees. There may also be legal options to piggyback on revenues collected at higher levels or to adopt new sources. A potentially productive but underutilized base is the growth in land value generated by local infrastructure (Peterson, 2009; Ingram and Hong, 2012; Walters, 2012; World Economic Forum, 2014; Suzuki, Murakami, Hong, et al., 2015). Options include betterment levies and special assessments (lump-sum levies on developers or property owners to finance improvements that raise property values); tax increment financing (surtaxes on properties redeveloped and financed from bonds issued against anticipated property tax increases); and land readjustment (pooling land with a share sold to partially finance new infrastructure).

Increasing existing revenue and adopting new revenue-raising mechanisms is challenging for both political and logistical reasons, though these can be reduced by strategic incrementalism and flexibility. When increasing property valuations, for example, a metropolitan government could begin with a low assessment ratio and gradually raise it. Similarly, new or enhanced user charges could build progressively toward cost recovery to soften equity effects, adverse changes in service use, and political resistance that may arise from sudden large increases. Flexibility and enhanced convenience in payment schemes could also improve compliance, especially where significant lump-sum payments are demanded, such as betterment assessments or connection charges for new infrastructure.

There is potential benefit in tying revenue increases more closely to improved services. Public education and consultation schemes can be helpful in this regard. Since perceived fairness is important, metropolitan governments also need to be concerned about revenue rules and how they are applied and understood. Efforts to publicize new procedures, to adopt mechanisms for citizen appeals and complaints, and to improve enforcement consistency could be constructive.

Intergovernmental Transfers

Central governments can often take the steps needed to improve intergovernmental transfers. Some common reforms were noted above, such as use of

objective allocation formulas that help to meet specific national goals and do not undermine local tax efforts. It is also critical to ensure that development transfers do not undermine incentives for metropolitan governments to borrow, especially for self-financing infrastructure projects. As the Sustainable Development Goals become more prominent, there may be a role for dedicated intergovernmental transfer programs that help metropolitan governments finance key targets.

A more recent innovation in revenue sharing is performance-based transfers (Steffensen, 2010). By rewarding good and penalizing poor performance, such transfers can push metropolitan governments to increase fiscal responsibility, to meet key development goals, to collaborate with adjoining jurisdictions, and to be more responsive to their constituents. It may be productive to include an element of negotiation in setting performance objectives for any given year. If metropolitan governments have a say in defining what is to be achieved, the system can move away from a paternalistic the center knows best approach and place more onus on metropolitan governments to meet agreed targets.

Subnational Borrowing

There has been a growing movement to improve subnational access to development finance, which is particularly relevant for metropolitan governments. There are several elements: developing more robust fiscal responsibility guidelines and standards; reforming public lending mechanisms to operate on more market-based principles than previous entities of this nature; facilitating broader and deeper access to capital markets; and seeking robust ways to mitigate risk, among others (Kahkonen and Guptu, 2015). A national borrowing framework needs to be in place for metropolitan governments to take advantage of borrowing for development.

For many subnational, including metropolitan, governments, creditworthiness remains a challenge. Fiscal reforms noted above can help, but dedicated initiatives to cultivate creditworthiness are also needed. An intergovernmental fiscal system should include a range of investment finance options, from grants and subsidized loans for less creditworthy governments and non-self-financing projects, to loan mechanisms for more fiscally robust governments and self-financing projects. Metropolitan governments will often be in the best position to take advantage of capital market access and some of the other innovations and risk mitigation strategies noted above. At the same time, pro-active support from national governments and international actors is required, and dedicated funding streams could create some momentum for advancing development.

Conclusion

There are many needs and opportunities to improve metropolitan finance. Understanding key constraints and how to overcome them, however, is no simple matter. Institutional frameworks and the way metropolitan governments are organized and empowered vary widely across and even within countries, as do the nature and quality of accountability mechanisms considered essential for fiscal performance. Some variations are rooted in historical and contextual realities that may be difficult or impossible to change. Given such diversity, generalization beyond a few basic points is elusive. The core challenge is how to approach fiscal and related reforms in a particular context. Moreover, even well-conceived reforms based on applying principles in context are unlikely to succeed without sufficient effort to develop credible implementation strategies.

An overarching concern is that metropolitan finance has to be interpreted in the terms of broader institutional, territorial, and political structures; relative degrees of empowerment; vertical and horizontal relationships across government actors (independent or hierarchical); and means for coordination, among others. The significance of these factors, how countries have dealt with them to date, and the forces underlying what they have done will inform the prospects for improving the status quo.

Another key consideration is the relationship between different elements of the fiscal system. Even with credible functional assignments, funding may be insufficient, erratic, or distorted by conditions or controls, incompatible institutional structures, or political maneuvering. Problematic mixes of transfers and poorly conceived allocation rules can weaken linkages between development and recurrent budgets or create disincentives for metropolitan revenue generation. Metropolitan borrowing for development can be discouraged or complicated by unduly generous development grants or poor access to own revenues needed to service debt. Such fiscal policy inconsistencies—and the factors that allow them—must be understood if effective remedies are to be developed.

There are different avenues to improving metropolitan finances. National policy reforms can alleviate system weaknesses, such as unclear or unsuitable functional assignments, unfunded mandates, inadequate revenue options, and sectoral or jurisdictional fragmentation. Motivated metropolitan governments, even if facing deficient national frameworks, can independently adopt some measures to improve fiscal performance. This might include steps to increase revenue generation in conjunction with enhanced transparency, citizen outreach, and civic engagement mechanisms, as well as devising intergovernmental cooperation mechanisms to deliver services, generate resources, and access development finance. Committed citizens and businesses can also pressure metropolitan governments to change how they work and what they do, even without strong official channels for civic engagement.

Although the various actors can move forward, they will be subject to political realities discussed in this chapter. They will typically need to work within some powerful constraints, reinforcing the need for carefully devised strategies. In addition, these actors must work together for sustainable reform. With growing demands for metropolitan governments to play a stronger role in development, seeking pragmatic ways to improve their finances merits priority attention from everyone concerned.

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2.4 Measuring and Monitoring Metropolitan Governance

Patricia McCarney (University of Toronto)

Abstract

With rapid urban growth, there is unprecedented pressure on local governments to provide services and infrastructure in a context of high visibility and rising demands for accountability and transparency. These complex challenges are driving demand for more comprehensive knowledge of city performance to inform decision-making and lead to new and innovative processes. Standardized, globally comparable data is a prerequisite to effectively measure and monitor results and can make a key contribution to municipal governance. Measuring and monitoring municipal governance is often hampered by data that tends to be scarce and uneven, using different methodologies and definitions, which prevents meaningful comparisons. The international standard ISO 37120 represents a critical paradigm shift when it comes to city data, creating indicators that address the frequent limitations of municipal data. With standardized indicators, cities and citizens can assess municipal performance, measure progress over time, and draw comparative lessons from other cities, both locally and globally. Data on government services can give residents a better understanding of city management and performance, enabling citizen participation in governance that can be instrumental in orienting policymaking toward community needs. Standardized indicators can therefore contribute to more effective governance and delivery of services, and help guide policy, planning, and management across multiple sectors and stakeholders.

The populations of many cities throughout the world are spreading well beyond their old city limits, rendering traditional municipal boundaries, and by extension traditional governing structures and institutions, outdated. In addition to this physical expansion, the functional area of cities has also extended beyond often dated jurisdictional boundaries. This raises a central challenge for cities worldwide: how to govern and promote economic development across these expanding metropolitan regions and establish a new form of metropolitan Ggvernance. An associated challenge relates to the need for sound measures to assess city services, quality of life, and economic development progress as these metropolises pursue sustainable and prosperous futures.

Urban areas around the world continue to expand in terms of population settlement and spatial sprawl but, perhaps more importantly, they are expanding in their social and economic spheres of influence (McGee and Robinson, 1995; Myers and Dietz, 2002; National Research Council, 2003; Rojas, Cuadrado-Roura, and Güell, 2005; Laquian, 2005; Angel, Sheppard, and Civco, 2005). Cities have extensive labor, real estate, financial and business, and service markets that spread over the jurisdictional territories of several municipalities and, in some cases, over more than one state or provincial boundary. In a number of cases, cities have spread across international boundaries. Increasingly, these functions demand more integrated planning, service delivery, and policy decisions than these multiple but individually bounded administrative entities can provide. Governing cities has therefore become much more complex, since a decision made in one municipality affects the broader urban system. This phenomenon introduces new challenges of governance and, in particular, metropolitan governance.

Why is it important to recognize the challenges of metropolitan governance? Initially it is important to understand the main objectives of metropolitan governance.

First, effective metropolitan governance can be a key contributor to economic growth given cities' critical importance as sites for economic production, agglomeration, and proximity, and as an essential staging ground for connecting society and the economy to external networks and the global economy (McCarney, 2005). Metropolitan areas worldwide frequently have more than one central district, as well as very diffuse limits defined more by global reach than local geography, extended commercial areas of influence (often for the country as a whole), and highly diversified economies. This economic clout demands sound governance arrangements to guide investment.

Second, metropolitan governance can address growing concerns related to an increasingly divided urban society, through balanced urban development policies embedded in metropolitan planning and governance frameworks. Cooperation among cities, working together instead of in competition within the same metropolitan territory, can help overcome disharmonies associated with crime, poverty, social inequalities, under-serviced transport systems, and inadequate infrastructure. Effective metropolitan governance offers potential for safer and more inclusive urban development. Metropolitan government arrangements can be instruments to address social cohesion by promoting economic opportunity, infrastructure investment, access to transportation services—specifically affordable public transit facilities—, and investments in social housing across large urban metropolitan areas, thus crossing not just political divides but also socioeconomic ones.

Third, metropolitan governance can improve the efficiency of investments in sustainable infrastructure, including transportation, by requiring integration and comprehensive planning across urban regions. Sustainable infrastructure investment supports economic growth, improves environmental conditions, advances resilience, and supports a better quality of life for urban inhabitants. Targeted investment of infrastructure spending, underpinned by high-quality, comparable, and standardized data, needs to be supported by a well-coordinated metropolitan planning and governance framework with a monitoring and evaluation system that can measure the suitability of an infrastructure's outcomes. Moreover, through quality urban data, this framework can provide transparency on sustainable infrastructure investment decisions and global performance benchmarks.

Fourth, environmental sustainability and climate action at the urban level require effective metropolitan governance. Managing metropolitan environmental resources such as natural watersheds that spread throughout the jurisdictional territories of several local governments also focuses attention on the need for coordination to overcome the problems of fragmentation in political institutions locally. Planning for the environment and the sustainable future of cities depends on metropolitan governance institutions that effectively span multiple jurisdictions. Moving forward, it is critical to create metropolitan institutions that effectively protect, manage, and plan for more sustainable and resilient cities spanning multiple jurisdictions and broad metropolitan territories. Building metropolitan governance models worldwide is a core challenge for planners, the urban policy community, and other key city stakeholders.

Data to Effectively Measure and Monitor

City leaders are being tasked with a wider and deeper set of challenges, from crime prevention, to more efficient mobility, to creating healthier environments, to emergency preparedness, to building economic development opportunity, to climate resilient city building. Now more than ever, with large infrastructure deficits and climate-related challenges, sustainable urban growth depends on effective data-driven management and evidence-based policymaking. As noted in the introduction to this chapter, effective metropolitan governance can be critical to achieving the objectives of economic growth, inclusive urban

development, efficient investments, and environmental sustainability. Effective metropolitan governance in turn requires reliable, comparable data at the city level. High-caliber city-level data helps build effective governance by fostering informed decision-making. Only once data is standardized at the municipal level is it possible to generate valuable metrics for an entire metropolitan region.

Cities need indicators to measure their performance in delivering services and improving quality of life. The need for globally comparable city-level data has never been greater in order to address global challenges and opportunities for sustainability and prosperity. The ability to compare data across cities globally, using an internationally standardized set of indicators, is essential for comparative learning and progress in city development. Moreover, city metrics guide more effective governance for cities and metropolitan regions.

The first challenge in measuring and monitoring metropolitan performance is inconsistency in the definition of the spatial boundaries that define the city or metropolis. Urban data suffers from limitations in terms of reliability and comparability due to challenges related to definitions and methodologies as well as inconsistencies in terms of jurisdictional boundaries. For example, urban areas (and by extension metropolitan areas made up of more than one urban area) are defined by each country, with no consistent definition of urban or municipality. And, because metropolitan areas are rarely legally defined entities, there may be a number of different possible boundaries for a commonly understood extended urban area, such as New York City and the New York Metropolitan Area, or the City of Toronto and the Greater Toronto Area. According to Statistics Canada's definition, for example, a census metropolitan area (CMA) comprises one or more adjacent municipalities around a population center or core with a total population of at least 100,000 of which 50,000 or more must live in the core. Adjacent municipalities included in the CMA must have a high degree of integration with the core, as measured by commuting flows. Different designations will mean different political arenas for policy and planning, as well as different area measurements, service areas, and populations. Not only do inconsistent definitions pose challenges for governance, planning, and research, but also for sound measurement, accurate baselines, benchmarking, and performance targets.

A second set of challenges for data and improved research on cities is associated with establishing a globally comparative, standardized set of measurements based on common methodologies. While country-level data is gathered by international agencies and national-level government bodies, there is a lack of comparable data on cities and their larger metropolitan areas or city-regions. As urban regions become more responsible for their country's economic performance, knowledge and understanding of these areas is essential. The weakness in data inhibits globally competitive positioning and sound investment decisions on infrastructure systems, as well as environmental and sustainable land use planning across urban regions.

City leaders worldwide want to know how their cities are doing relative to their peers. Standardized indicators allow city leaders to measure their performance and compare it to other cities. Comparable city-level data can help build collaboration and understanding by fostering information exchange and sharing of best practices across cities. Comparative analysis, benchmarking, and knowledge sharing is vital in the face of rapid urbanization and the associated demand for larger-scale infrastructure investment and city services, as well as the emergent global challenges of climate change and the associated demand for sustainability planning, resilience, and emergency preparedness.

Illustratively, climate change is often monitored at global and national levels according to an adopted set of measures agreed on by states. However, similar statistics are rarely collected at the city level, and devising indicators on climate change in cities is proving difficult. Furthermore, when individual cities collect and monitor data on climate change, the information is often compiled using methodologies different from other cities and is analyzed and reported on in different ways. The lack of a standardized methodology to devise indicators on key issues such as climate change at the city level not only affects the quality of research,

planning, and management, but also ultimately the efficacy of efforts to bring the problem under control. Cities are major contributors to climate change, accounting for 78 percent of the world's energy consumption and more than 70 percent of global energy-related carbon dioxide emissions (Greenhouse Gas Protocol, 2012).

Recognizing the policy influence of local and metropolitan governments over greenhouse gas emissions and given a majority of these emissions are linked to urban transportation and energy consumption (McCarney, 2009), the international community has begun to move toward standardizing measuring and monitoring. According to the Greenhouse Gas Protocol, the first step for cities is to identify and measure where their emissions originate. The Global Protocol for Community-Scale Greenhouse Gas Emission Inventories, or GPC, was developed to provide cities and local governments with a framework to measure and report on city-level greenhouse gas emissions (Greenhouse Gas Protocol, 2012). This protocol has been adopted by various programs, including the ISO 37120 certification for cities.

International Standards for Cities Designed by Cities: WCCD and ISO 37120

The evolving world of international standards has only very recently begun to address the need for standardization at the city level. International standards bodies, such as the International Organization for Standardization (ISO), the International Electrotechnical Commission (IEC), and the International Telecommunication Union (ITU) have started to address the pressing agenda for cities with new work, ranging from smart grids, to smart city infrastructure, to international telecommunications and management systems, to city data. ISO has been leading this new focus on cities. The first international standard for cities, published May 15, 2014, was ISO 37120, Sustainable Development of Communities: Indicators for City Services and Quality of Life (ISO, 2014).

This first ISO international standard on city indicators was developed using the Global City Indicators Facility (GCIF) framework developed at the University of Toronto, work which began in 2008. This work in Canada directly led to the creation of the ISO Technical Committee on Sustainable Development of Communities (ISO/TC 268) and the publication of the first ISO standard on city indicators, ISO 37120. The Technical Committee was created within the ISO in 2012 as a result of growing demand for standardized indicators for cities (coming from GCIF and Canada in this case) and for smart technical infrastructure standards (coming from Japan), as well as for management systems standards for sustainable communities (coming from France). Numerous benchmarks on sustainable development planning had emerged in the previous decade, including frameworks outlined by the United Nations, the World Bank, and the Organisation for Economic Co-operation and Development (OECD), as well as private certifications like the Building Research Establishment Environmental Assessment Method (BREEAM) and Leadership in Energy and Environmental Design (LEED). The proliferation of these benchmarks and certification programs provided further impetus to create the Technical Committee and develop a more coordinated family of standards and other deliverables (Lair and Bougeard, 2013).

ISO 37120, compared to other international standards, followed a unique development path. Most international standards are generated within ISO before being tested and marketed for public consumption. The creation of ISO 37120 was the opposite. At least 75 percent of indicators were tested and reported on by member cities of the University of Toronto's GCIF before they were established as an international standard within ISO, making the more than 200 cities from over 80 countries within the GCIF worldwide network the original developers of this standard. This involvement by cities in developing ISO 37120 is important as they are now the adopters of this ISO standard.

Following a series of ISO international ballots and commentary on drafts, ISO 37120 was successfully passed and published in 2014.

This new international standard includes a comprehensive set of 100 indicators that measure a city's social, economic, and environmental performance. The 100 indicators (definitions and methodologies) in ISO 37120 were divided into 17 themes representing key performance management fields in city services and quality of life (Table 1). ISO 37120 is now part of a series of international standards for cities being developed for a holistic and integrated approach, with two new standards being developed to complement ISO 37120. The ISO Standard on Indicators for Resilient Cities (ISO 37123) will serve as a tool for resilience planning, providing a list of indicators along with standardized definitions and methodologies that can be used to assess resilience and help cities and communities prepare for and cope with potential and real risks, hazards, and events. The ISO Standard on Indicators for Smart Cities (ISO 37122) will establish definitions and methodologies to help cities increase the pace at which they improve their social, economic, and environmental sustainability outcomes. This standard aims to measure how cities perform their core mandates of service delivery and ensuring quality of life for citizens through open government at the local level, and to provide enhanced basic tools for city performance in using data and modern technologies.

In response to the successful passage and publication of ISO 37120, the World Council on City Data (WCCD) was launched in Toronto, Canada in 2014. The WCCD was created to facilitate the adoption and implementation of ISO 37120 for cities worldwide. The WCCD hosts the Global Cities Registry for ISO 37120 and has developed a new system to support cities to report data for certification under this new international standard. The WCCD is the platform for third-party verified and open data from ISO 31720. It creates a common framework for urban metrics that will foster city-to-city learning, allowing for optimal performance management of cities with the goal of improving overall quality of life for citizens.

International standard ISO 37120 on city metrics and the WCCD now support decision-makers, scholars, and citizens to access more accurate and reliable data on cities as well as globally comparable data on cities.

Table 1. Schematic Themes for ISO 37120

• Economy • Education • Energy • Environment • Finance • Fire and Emergency Response • Governance • Health • Recreation	• Safety • Shelter • Solid Waste • Telecommunication and Innovation • Transportation • Urban Planning • Wastewater • Water and Sanitation

Source: Author

The WCCD hosts ISO standardized city indicators on an online open data platform. Data on city service delivery can help improve transparency, reduce corruption, and enhance public services through more effective oversight (Janssen, Charalabidis, and Zuiderwijk, 2012). In addition, open data has been shown to lower borrowing costs and lead to higher credit and bond ratings, which helps cities attract business and investment (Xu, 2012). In her study of international certification in developing countries, Fikru (2013) argued that companies that adopt international standards become competitive and attract investment. She cited examples from companies in Cameroon, Ghana, Nigeria, and Kenya that adopted environmental management systems to compete internationally and meet standards within the export markets they wanted to target. Similarly with cities, certification under ISO 37120 can allow cities to compete internationally and attract investment.

During the first year of the ISO 37120 standard, the WCCD worked with 20 cities around the world to pilot its implementation.

Figure 1. WCCD Foundation Cities

Source: Retrieved from http://www.dataforcities.org/wccd/.

Globally Standardized Indicators for Cities and Metropolitan Regions

In addressing the lack of global information and comparative data on metropolitan areas, one solution is to aggregate standardized indicators from the municipalities that make up a metropolitan area. This aggregated information creates a composite of the performance and quality of life indicators for that metropolitan area. For global comparability across regions, the starting point is standardized data at the municipal administrative boundary level that can be aggregated up to the regional level. This ensures city-regions globally are compared according to standardized measures. Individual municipalities within a metropolitan area stand to benefit from aggregating their data because they will be able to place themselves within a larger context of their metropolitan region and position themselves in a global market of competitiveness where other large city agglomerations are pursuing similar strategies.

The WCCD conducted data aggregation pilot projects that created a much needed understanding of, and measured response to, the growth of metropolitan areas worldwide. Aggregated data from a municipal to a regional level builds knowledge on regions and metropolitan areas, helping policymakers and local and regional governments position themselves in global markets and make informed decisions about regional planning with regards to infrastructure, economic development, transportation, and the environment. City-level data that is standardized, consistent, and comparable over time and across cities provides a framework for global comparative study of urban regions and metropolitan areas. Sound decision-making by city leaders across these vital metropolitan areas is critical, especially at a time when cities and metropolitan regions have become the new sites for global population concentration and when city services and quality of life are at the core of economic prosperity, both locally and globally.

Cities and Metropolitan Regions Using ISO 37120

An initial 20 cities and metropolitan regions underwent ISO 37120 certification as a pilot test of the indicators and process. These cities started to use the standard's indicators and their comparable data in various ways. Results have been incorporated into cities' planning frameworks, have been used to inform policies, have served as a tool to learn from other cities, have facilitated collaboration between different levels of government and different departments, and have helped identify key knowledge gaps.

The Guadalajara Metropolitan Region coordinated the aggregation of the ISO 37120 data with nine municipalities in the region. The Metropolitan Planning Institute of the Metropolitan Area of Guadalajara (IMEPLAN) is a decentralized public organism that promotes effective metropolitan management through evaluation. ISO 37120 provided the standardized metrics needed to benchmark and monitor performance for the metropolitan region as a whole as well as separately for the nine different municipalities. The process of gathering data for all nine municipalities required successful coordination between the individual municipal governments and fostered increased collaboration between the municipalities.

Since IMEPLAN was conceived in June 2014, the creation of a Metropolitan Development Program has been at the core of its agenda. ISO 37120 data is being incorporated into Guadalajara's Metropolitan Development Program, providing a standardized source of certified indicators and contributing to a quantitative and qualitative analysis of the city's development patterns in order to achieve a sustainable, progressive, and permanent evolution toward higher standards of living. The 17 themes that comprise ISO 37120, as well as its indicator definitions and methodologies used to steer and measure the performance of city services and quality of life, will be included in the Metropolitan Development Program.

Several other cities have integrated ISO 37120 indicators into their planning strategies. Dubai has included the indicators in the city's systems to benchmark, monitor, and evaluate implementation of the Dubai Plan 2021. In addition, the standard has proven to be a useful platform for Dubai to learn from other global cities and to share its own experience with the rest of the world.

Indicators are one of the key elements of Johannesburg's 2040 strategy plan as the measures through which the city plans to assess progress against its desired outcomes. A number of ISO 37120 indicators have been selected and reorganized into the 2040 strategy's four pillars (economic growth, human and social development, sustainable services, and governance). ISO 37120 indicators will therefore be instrumental in reviewing the strategy and tracking its progress.

Buenos Aires emphasizes using data and indicators to inform policy for six areas of urban development. ISO 37120 indicators have been incorporated into the indicators established in the city's planning system and have been used to inform policy decisions. For example, they influenced the selection of a site for the Youth Olympics. They are also used to construct indices, such as the Index on Social Inclusion, in order to benchmark and set targets for neighborhood-level policies and investment.

Rotterdam's Smart City Planner combines ISO 37120 indicators with local data to drive improved performance in the city. It links city data and ISO indicators to specific smart city projects and activities, using the Geographic Information System (GIS) to provide a fast and flexible approach to deal with new challenges. GIS is used to compute, analyze, and visualize this data, allowing the city to present the data at different levels of aggregation. Rotterdam is using this data to map energy poverty across the city. The interface uses available data for the city, from the social index, precipitation, and energy, to traffic and air quality. It consists of a baseline study of the 100 indicators across 17 themes (taken from ISO 37120) for a selected area. Traffic light colors on a digital mapping interface are used to see how the themes and indicators score in a specific location compared to the city average or a chosen threshold. The selected areas can be scaled from block to block or can include several neighborhoods, quarters, or the entire city.

For the city of Minna, Nigeria, ISO 37120 has provided a platform for key city data-generating organizations to work together to interpret available information for effective decision-making. Minna's involvement in the WCCD has allowed for comparisons of the city's data with other cities around the world and the ISO 37120 indicators are now incorporated into the state's Bureau of Statistics data collection template. Participation in the WCCD has shown the absence of important city data necessary for effective planning, which is in itself important information to address the various challenges confronting this growing city. Identifying these gaps will better enable Minna to plan toward achieving the targets of Goal 11 of the newly launched Sustainable Development Goals (make cities and human developments inclusive, safe, resilient, and sustainable).

Boston, in the United States, has been developing its first citywide plan in 50 years: Imagine Boston 2030. WCCD participation will help build city data capacity to implement and evaluate the plan's goals and objectives, which are to guide Boston's growth toward an inclusive city by improving quality of life in its neighborhoods, driving inclusive economic growth, investing in infrastructure, open space, and culture, and promoting a healthy environment and climate change adaptation.

Conclusion

This chapter poses a core question: How do we govern and promote economic development across expanding metropolitan regions and establish a new form of metropolitan governance? The author has raised the challenge of how to develop sound measures to assess city services, quality of life, and governance of economic development in existing and emerging metropolises. The first ISO standard for cities is tracked as a new tool to build smarter and more sustainable cities. She argues that high-caliber, standardized data are essential for cities to effectively monitor their progress and learn from each other in their pursuit of a sustainable and prosperous future.

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2.5 Steering the Metropolises to Shared Prosperity: The City Prosperity Initiative

Eduardo López-Moreno (UN-Habitat) and **Regina Orvañanos Murguía** (UN-Habitat)

Abstract

Cities underpin profound social, political, and economic transformations. UN-Habitat's World Cities Report 2016 emphasizes that large and small cities are expanding and merging to create urban settlements in the form of city-regions, urban corridors, and mega-regions that are more economically efficient. However, very often these large agglomerations are not clearly coordinated in their management and governance mechanisms or in their regional and metropolitan structures. Global trends such as urban sprawl, the drastic reduction of residential densities, and unplanned urban growth are further threatening the economic performance of metropolises. In this scenario, UN-Habitat's City Prosperity Initiative (CPI) provides indices and measurements that enable city authorities, as well as local and national stakeholders, to identify opportunities and potential areas of intervention for their cities to become more prosperous. The CPI can put metropolitan areas in a strong position to devise a systematic, data-driven local approach to current urbanization issues. Cities and metropolitan areas benefit differently from the economies of agglomeration. Working with a large number of urban agglomerations, the CPI can provide a wealth of information needed to understand the dynamics of metropolitan prosperity and address the major impediments to metropolises improving economic outcomes and quality of life for their inhabitants. The policy factors underlying the prosperity of cities are multifaceted and there is a need for appropriate metropolitan planning and management strategies that can enhance economies of agglomeration and reduce their negative externalities. The findings show that metropolitan prosperity, measured by the CPI, not only results from the addition of the municipal CPIs that compose the urban agglomeration, but also stems from a form of multiplication that takes place, enhancing the prosperity of the overall agglomeration.

Urbanization has taken central stage in the international development arena. An increased number of publications, growing attention in the media, a higher level of politicization and inclusion in partisan debates, and the recognition of cities and human settlements as agents of positive change and global development are evidence of this shift. The adoption of a standalone goal for cities in the 2030 Sustainable Development Agenda (Sustainable Development Goal 11: make cities and human settlements inclusive, safe, resilient, and sustainable) is perhaps a turning point.

Cities underpin profound social, political, and economic transformations. They are engines of economic growth, accounting for 80 percent of global GDP (World Bank, 2016) and around 85 percent of all jobs. Between 2006 and 2012, the 750 largest cities in the world created 87.7 million private sector jobs, or 58 percent of all new private sector jobs in their respective 129 countries (UN-Habitat, 2016). Cities have not only contributed to economic growth, but also to poverty reduction in rural areas. In China, for example, urban-based activities contributed to lifting 300 million rural inhabitants out of poverty. Overall, rural–urban linkages resulted in an estimated reduction of 13–25 percent in rural poverty in India between 1983 and 1999 (UN-Habitat, 2016). Research found that an increase of 200,000 people in the urban population in India corresponded to a decrease in rural poverty of 1–3 percent.

Innovation, industrial and technological development, societal advancements, entrepreneurship, and creativity

have all occurred in urban areas. The galvanizing power of proximity, density, economies of scale, and agglomeration established the foundation that allowed this transformation to take place. This transformative force still largely resides in metropolitan cities, which are no doubt the fastest growing economies in the world. According to the Brookings Global Metro Monitor (2014), with only 20 percent of the world's population, the 300 largest metropolitan economies accounted for nearly half of global output in 2014. This is also the case at the country level. For example, in the United States, in 47 of 50 states, it is estimated that metropolitan areas generate the majority of the state economic output (Berube and Nadeau, 2011). Similar patterns are observed in other latitudes of the world. While Sydney and Melbourne produced 20 percent and 17 percent, respectively, of Australia's national GDP in 2013, smaller metros like Brisbane and Adelaide accounted for 9 percent and 5 percent, respectively. Likewise in countries like Belgium, Finland, and France, capital cities—all larger metropolises—accounted for one-third of national GDP in 2013 (UN-Habitat, 2016). This phenomenon is not restricted to developed nations; however, information is more scant in the global south. In Mexico, for instance, the share of national GDP for the capital city was as high as 23 percent in 2013, while 32 other metro areas accounted for one-third of the national GDP altogether.

It is clear that economies of scale work well in urban agglomerations and metropolitan areas. That is why they tend to be more efficient and productive than cities. Recent urbanization trends confirm this pattern. UN-Habitat World Cities Report 2016 emphasized that large and small cities are expanding and merging to create metropolises (in the form of city-regions, urban corridors, and mega-regions) that are more economically efficient. These urban configurations act as nodes where global and regional flows of people, capital goods, research and science, services, and information combine and comingle, resulting in faster economic and demographic growth than the countries where they are located. Examples include the Hong Kong-Shenzhen-Guangzhou (Pearl River Delta) region in China and the Rio de Janeiro-São Paulo region in Brazil, as well as the industrial corridors connecting Mumbai and Delhi in India, and the regional economic axis forming the greater Ibadan-Lagos-Accra urban corridor in West Africa. These types of urban configurations are spatially connected and functionally bound by their economic, social, and environmental linkages. However, often the management and governance mechanisms of these large agglomerations are not clearly coordinated, and neither are their regional and metropolitan structures. Further, these metropolitan regions often lack the tools and monitoring systems to help them make informed decisions based on evidence.

Urban Sprawl, Density Decline, and Poor Planning

Although urbanization takes different forms and its incidence is not uniform, the experiences of diverse cities around the world exhibit some remarkable similarities. All of them—small or big from the north or the south—contribute to the development process and economic growth, although with different intensities. Cities continue to sprawl into their hinterlands and residential densities continue to decline, trends that were documented by UN-Habitat, New York University, and the Lincoln Institute of Land Policy (2016) in a three-year study that monitored urban expansions from 1990 to 2015.

The study was based on a global sample of 200 cities and metropolitan areas that scientifically represented the universe of cities (4,231 cities that in 2010 had populations over 100,000 inhabitants, comprising around 70 percent of the world's urban population). This sample was drawn using statistical techniques and based on three strata: different regions of the world (eight regions, similar to the UN classification); city-size grouping using four categories (small, intermediate, big, and large cities); countries with different numbers of cities (three groups, ranging from nations with 1 to 9 cities, to countries with 20+ cities in the largest group). In this manner, the confidence level of the global sample is 95 percent, making it scientifically sound (Angel, Thom, Galarza, et al., 2014). As the unit of analysis was the urban agglomeration or the contiguous built-up area of a city (and not the traditional city core or single municipality), in most cases it corresponded to the metropolitan area

or the urban extent of a city that encompassed several municipalities. In this sense, Tokyo appeared as a single metropolitan area and not as 23 wards or municipalities; the Metropolitan Region of São Paulo was considered one city rather than 39 municipalities; and the City of Johannesburg as a single metropolitan municipality and not as 18 cities or towns.

According to this study, three global trends threaten the economic performance of the metropolises: (i) urban sprawl and suburbanization; (ii) drastically declining residential density; and (iii) disorderly and unplanned urban growth.

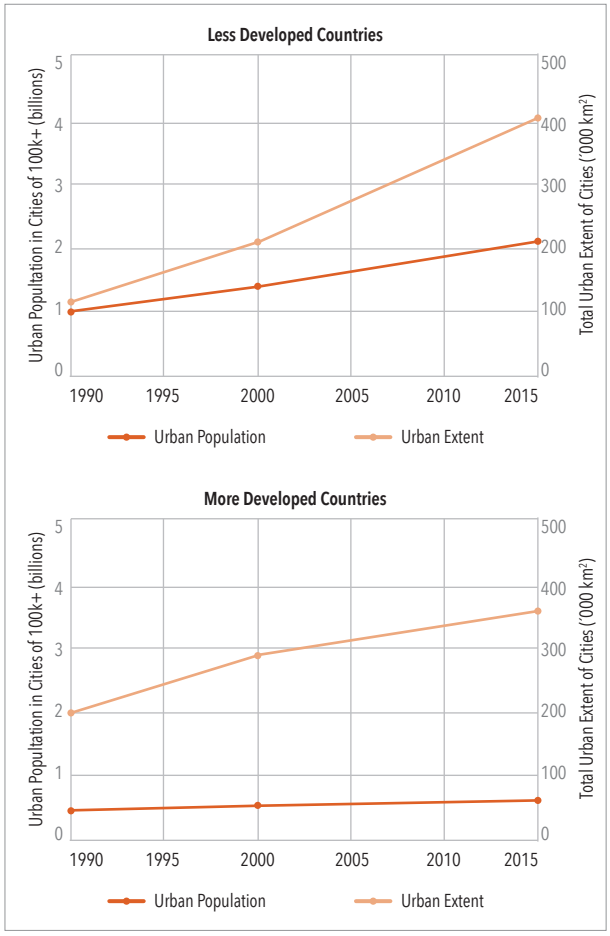
Urban Sprawl and Suburbanization

Once associated with the suburban growth pattern of North American cities, in the past 25 years, different forms of sprawl, also known as horizontal spreading or dispersed urbanization, have been taking place in cities in both developed and developing countries. Triggered by residential preferences for a suburban lifestyle, housing affordability strategies, speculative behaviors, and in some cases, peri-urban poverty and marginalization, sprawl has expanded into metropolitan regions. The causes include poor land regulation, weak planning practices, and extended commuting technologies and services.

The UN-Habitat et al. (2016) study showed that, between 1990 and 2015, cities grew at a rate and in a form not commensurate with their population growth. Cities in developed countries saw their regions almost double in size, while their populations increased by only 18 percent. Urban sprawl is also happening in developing countries. The study illustrated that the area occupied by cities in the global south increased by 3.5 times, while their urban populations only doubled (Graph 1).

The most economically prosperous cities, which in many cases are metropolises, tend to consume more land and sprawl faster. Urban expansion analysis of 200 cities concluded that land consumption per capita (a measure of sprawl) in developed and developing regions is largely explained by differences in the per capita income of cities. Richer cities consume more land and, as GDP per capita doubles, land consumption increases by a factor of 1.5. Large cities are therefore compelled to develop metropolitan governance arrangements not only for the sake of productivity but to control urban expansion, increase population density, and improve quality of life. Chapter 1.1 of this book (*Why Metropolitan Governance Matters and How to Achieve it*) demonstrates that metro areas without a metropolitan authority are more likely to increase in urban sprawl.

Graph 1. Urban Extent Growth and Population Growth



Source: UN-Habitat, NYU, and the Lincoln Institute, 2016.

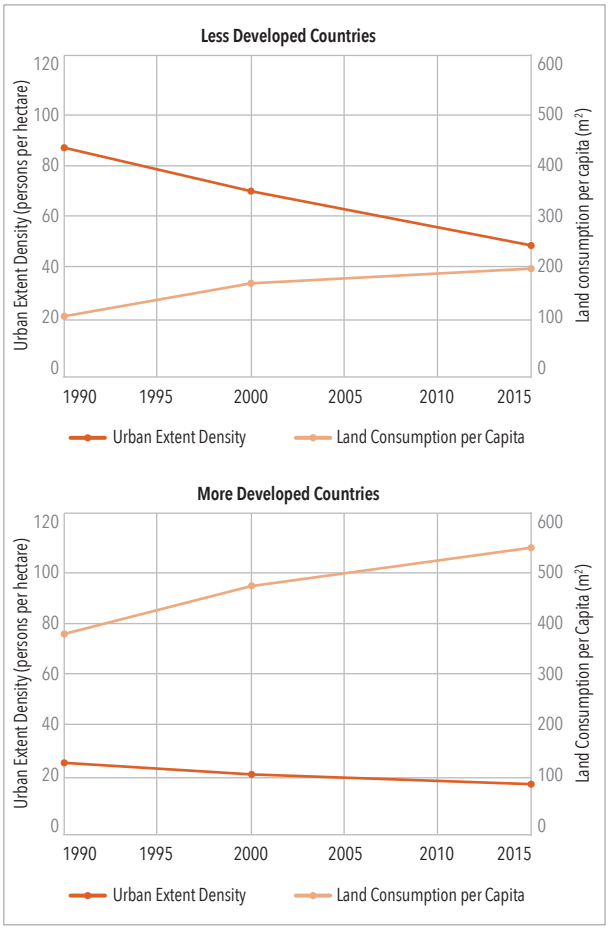
Note: Urban expansion in the past 30 years has not been related to population growth

Drastically Declining Residential Densities

Over the past 20 years, most cities around the world have expanded to distant peripheries far beyond initial or formal limits, with a high degree of fragmentation and vast open spaces. The urban fabric of many of

these cities is made up of disconnected patches and large areas of vacant land that result from poor planning systems, wasteful and disorderly urban expansion, land speculation, and suburban growth with low-density developments (UN-Habitat, 2016; Angel, 2012).

Graph 2. Population Density and Land Consumption per Capita



Source: UN-Habitat, NYU, and the Lincoln Institute, 2016.

Note: As densities decline, per capita land consumption continues to grow in both developed and developing countries.

As a result of city sprawl, there is a persistent decline in urban densities. The landmark study Planet of Cities (Angel, 2012) found strong empirical evidence for the trend that densities have been declining practically everywhere for decades because "urban land cover has been growing at a faster rate than the urban population." The study by UN-Habitat et al. (2016) corroborated this downward trend. According to their analysis, residential densities decreased in new city expansions in both developed and developing regions between 1990 and 2015. With densities that were over three times higher in the urban areas in developing countries, the annual rate declined at an average of 2 percent, while in cities in more developed countries exhibited a decline of 1.5 percent in the same period (Graph 2). As a result, a 1 percent decline in density per year between 2000 and 2015 quadrupled the urban land area of developing cities (UN-Habitat, 2016).

Disorderly and Unplanned Urban Growth

As cities have grown in endless peripheries with discontinuous forms, a high degree of spatial fragmentation, and inefficient land use patterns, urban planning strategies have been unable to steer and control city development and expansion. Despite impressive technological advances, more mature and solid public institutions, better forms of urban management, and in some places more robust civil society, urban planning has not made good use of city assets and resources, including land, to harness the potential of cities. Instead, exclusionary mechanisms and hidden powers have prevented urban planners from adequately responding to the needs of the majority, resulting in enclaves of prosperity in specific areas of a city and for particular interest groups (UN-Habitat, 2016). One of the major findings of the study on urban expansion (UN-Habitat et al., 2016) was that spatial planning producing orderly growth is declining all over the world. Cities are growing without considering municipal plans and regulations, which creates multiple problems: deficiencies in proper physical planning for urban expansion, an absence of minimum controls in the urban development process, and the inability of cities to secure adequate lands for streets and arterial roads (Angel et al., 2016). Scattered development, informal growth, and inadequate urban layouts are becoming the norm rather than the exception. A study of 30 cities from the global sample found that before 1990, nearly 80 percent of cities grew in accordance to plans, while by 2015, nearly one-third of cities were informally planned and less than another third were not planned at all. Surprisingly, slightly less than half of

cities' expansion areas between 1990 and 2015 were formally planned. In this case, "informally planned" refers to urban areas with an initial layout and territorial divisions but streets that are typically unpaved and lack sidewalks; "not planned at all" is defined as occupied land with no set layout or spatial organization and where settlement takes place in an irregular fashion, or is atomistic; "formally planned" indicates regular subdivisions carried out by the formal (public or private) sector, generally surveyed with paved streets and sidewalks (Angel et al., 2016).

Planning and managing urbanization is essential for the prosperity and sustainability of cities, particularly large agglomerations and metropolises. Lack of or poor planning diminishes the capacity of a city to generate economies of scale and agglomeration and undermines the potential that urbanization offers. Higher costs to provide infrastructure and public goods, the intensification of social and economic inequalities, and the depletion of the protected environment are some of the negative outcomes.

Understanding How Global Trends Threaten Performance

How do these global changes affect metropolitan areas? What are the factors behind building prosperous and sustainable urban agglomerations? What are the major impediments for metropolises in improving economic outcomes and quality of life for their inhabitants? The responses to all these questions demonstrate the need for metropolitan authorities to put in place sound monitoring mechanisms that provide a general outlook and periodic assessments of the state of the different municipalities—sometimes cities—that compose a metropolis. Critical dimensions of urban development need to be studied in a more integrated manner to move away from inefficient sectoral approaches. Different scales of analysis from the neighborhood, to the municipality, to the metropolis, to the region need to be part of the monitoring and evaluation framework. Cultural and spatial differences of every metropolis need to be considered, while at the same time allowing for international comparability.

Local and national authorities no longer have the option of making decisions about growing ever more complex cities and metropolises without the benefit of internationally validated data and indices. This kind of informed decision-making based on data and information is a prerequisite to deciding which policies to implement, where to allocate public and private resources, how to identify setbacks and opportunities in a city, and how to measure what has changed. In short, a long-term process of monitoring and evaluation is needed to ensure that cities and metropolitan areas are steered toward sustainable urban development.

The City Prosperity Initiative

Since 2013, UN-Habitat has implemented the City Prosperity Initiative as a tool to measure the prosperity and sustainability of cities. It has enabled city and metropolitan authorities, as well as local and national stakeholders, to identify opportunities and potential areas of intervention for their cities to become more prosperous. The initiative originated as the City Prosperity Index and was accompanied by a conceptual matrix, the Wheel of Urban Prosperity, before being transformed into a global initiative after UN-Habitat received requests to estimate the prosperity indices of numerous cities. Mayors and other decision-makers wanted to know how their cities compared to others. This included, acquiring knowledge on how to improve the ratings of their cities on the prosperity path, gaining critical insights about which programs and policies work, and assessing the possible impacts these actions have.

The CPI is both a metric and a policy dialogue that offers cities the possibility to create indicators and baseline information, often for the first time. It also serves to define targets and goals that can support the formulation of evidence-based policies, including the definition of city-visions and long-term plans that are both ambitious and measurable. The CPI operates with aggregated city values that are also systematically disaggregated by six different components of prosperity: productivity, infrastructure, quality of life, equity and inclusion, environmental sustainability, and governance and legislation (cpi.unhabitat.org).

The CPI is being implemented in more than 300 cities around the world, of which 60 percent or 180 are metropolitan areas. These are functional urban areas of different sizes that are governed by more than one local government, with some containing more than 10 local governments within their boundaries. Responding to the imperatives of the metropolises and working at different scales, the CPI is also producing indices and values for the various cities and administrative units that comprise the urban agglomeration. The complexity of these supra-urban systems is aggregated in one metropolitan value or disaggregated by urban units that are integrated into the analysis. When metropolises are large in terms of population and contain various administrative units or municipalities, the CPI includes standard deviation analysis that considers the internal disparities of the different urban units that compose the metro area. When variances within the respective indices are too wide, the overall prosperity values of the conurbation are penalized.

Since 2014, the CPI has evolved as a solid monitoring framework, adopting a holistic view of the urban agglomeration as a unit of analysis. Cities and metropolitan areas are benefiting in different ways from CPI implementation: global comparability and local adaptation, promotion of sectoral integration, integration of spatial analysis, and support for multi-scale decision-making.

Comparing Globally and Adapting Locally

The CPI has not been designed as a rigid blueprint. It is a living framework that leaves room for cities to integrate contextual needs according to existing challenges and opportunities. This flexible approach enables the CPI to play a double function.

First, it serves as a platform for global comparability in which cities can assess their situation and compare themselves to other cities in the world. This **basic CPI** is used when cities want to measure their level of development and overall performance with regards to prosperity ratings against other cities in the regional and global arena. It is based on a set of commonly available indicators that exist across all cities. CPI values are grouped into six clusters: very solid prosperity values (80+ points), solid values (79.9 to 70 points), moderately solid (69.9 to 60), moderately weak (59.9 to 50), weak (49.9 to 40), and very weak (<39.9). The metropolitan area of Oslo, for example, demonstrates a solid prosperity index of 86.7, which can be compared to other metro areas with similar values such as Paris (80.7) or Melbourne (80.3), as well as cities with lower values, such as Prague (77.3), the metropolis of Almaty in Kazakhstan (67.4), or the urban agglomeration of Jakarta (57.2) (UN-Habitat and International City Leaders, 2015). Comparisons can also be made by region or by specific dimensions of prosperity. For instance, metropolitan areas that feature high values on productivity (e.g., Oslo, Zurich, and Tokyo, or Sydney, Osaka, and Helsinki) or have similar indices in quality of life (e.g., London, Prague, and Toronto) or the equity dimension (e.g., Osaka, Montreal, and Berlin).

Second, the CPI works as a strategic policy tool, where data and information is adapted to local or contextual needs and used to measure progress, formulate specific policies, and track changes. This **extended CPI** integrates more indicators that are not commonly available across all cities, some of them spatial indicators; hence comparability is not the primary objective. This index allows for a more detailed political and technical dialogue that is essential to develop more informed public policies. In Colombia, for instance, an extended CPI process was carried out in 23 metropolitan areas to assess prosperity and prepare urban and regional plans in support of the country's efforts to develop a National Urban Strategy. In another four metropolises in Latin America (Fortaleza, Quito, Lima, and Panama City), UN-Habitat and CAF-Development Bank of Latin America implemented an extended CPI process, titled Ciudades Prósperas y con Futuro (Prosperous Cities with a Future), to define specific city action plans to improve prosperity. In Saudi Arabia, the Future Cities Programme completed an extended CPI process with a strong focus on spatial analysis and urban planning support. Designing and implementing the CPI according to local circumstances allows for the contextualization of policy responses, taking into account the metropolis' problems, risks, weaknesses, and potential.

Promoting Sectoral Integration

The CPI promotes a more holistic and integrated model of urban development in order to address the environmental, social, and economic objectives of sustainability. A metropolis that plans to improve productivity or enhance infrastructure development can better assess some of the intended or unintended consequences of these actions on the other dimensions of prosperity, for example, with regards to equity or environmental sustainability. The CPI has been designed to explore and gauge these interactions and inter-sectoral relationships. Even though causality is not always statistically defined, correlation analysis of variables and indicators provides enough information to understand some of the possible impacts of specific policy actions, particularly in the countries where CPI is implemented in numerous cities.

In 2014, UN-Habitat and Ericsson conducted a pre-impact assessment of the role that information and communication technologies (ICT) can play in driving metropolitan prosperity. The study demonstrated that an increase in ICT coverage—measured by higher penetration of technology and better quality of service—yields positive effects on various dimensions of prosperity. They found that a potential increase of 10 percent in ICT infrastructure development in the city of Zapopan, Mexico, could have a positive impact on education and social inclusion of 11 percent and 9 percent, respectively. While the same increase in ICT maturity in the City of Medellin, Colombia, would have a positive impact on economies of agglomeration and the productivity of the city of around 13 percent. In both cities, safety would also benefit from ICT development, but to a lesser degree of around 4–5 percent. These analyses and interactions can be further developed, connecting them to ex-ante impact assessments and policy simulations to improve the prosperity of the metropolises in a more integrated manner.

Integrating Spatial Analysis

The CPI framework provides a wealth of new analytical tools based on spatial data. Various indicators, such as street connectivity, public space, agglomeration economies, and public transport, are measured using satellite imagery. This helps to better understand the spatial distribution of these indicators to increase value judgment and support decision-making. The use of spatial data is based on the premise that the form and structure of the city can conspire against shared prosperity or act together to boost it.

The global study on Urban Expansion (UN- Habitat et al., 2016) demonstrated that the current urbanization model is unsustainable on many grounds: sprawl, low-density development, poor economies of agglomeration, inefficient land use, and insufficient public space, including streets. Adopting innovative spatial indicators aims to capture these transformations to intervene in the form and function of the city with a reinvigorated notion of urban planning and design and with adequate laws and regulations that are properly monitored. CPI produces accurate, reliable, timely, and spatially disaggregated data, which, when combined with socioeconomic indicators, addresses the challenge of the invisibility and inequality of some neighborhoods and urban areas, as proposed by the call for a Data Revolution for Sustainable Development (Expert Advisory Group on Data Revolution for Sustainable Development, 2014). The distribution of public space and streets across a metropolitan area is a good example. In Colombian metropolises like Santa Marta, Bogotá, Cali, Monteria, and Pereira, the land allocated to streets in formal neighborhoods is double that in informal areas; whereas in urban agglomerations in Saudi Arabia, like Dammam, Jizan, Medina, and Makkah, the share of land allocated to streets is equal in the formal and informal settlements (Figure 1). However, Saudi cities are characterized by low residential densities, which UN-Habitat CPI analysis found was due to excessive unused open space and vacant land within the agglomerations of the Saudi kingdom (Figure 1). It is estimated that nearly half the urbanized land within the 17 Saudi cities remains empty. This white land is a wasteful use of space, inefficient use of the street network, and unproductive application of infrastructure investments (López-Moreno and Orvañanos, 2015). The CPI associates urban form, planning, and the structure of the city with the notion of prosperity. A database of more than 100 cities and metropolises creates the

conditions to innovate on providing infrastructure and the layout of the city, with findings that pave the way for state-of-the-art analysis on the relationship of public space, economies of agglomeration, and densities at the different functional areas of the city, including residential, industrial, and mixed use areas.

Figure 1. Urban Form of Saudi Cities

Riyadh (formal areas)
Land Allocated to Streets: 26%
Street Density: 19km / km^2
Intersection Density: 129 int. / km^2

Makkah (informal areas)
Land Allocated to Streets: 28%
Street Density: 21km / km^2
Intersection Density: 166 int. / km^2

Jeddah (vacant land)
Land Allocated to Streets: 39%
Street Density: 15km / km^2
Intersection Density: 101 int. / km^2

Source: López-Moreno and Orvañanos, 2015.

Supporting Multi-scale Decision-Making

The CPI has been designed to support multi-scale decision-making, ranging from national governments, to metropolitan authorities, to city and sub-city local governments, and when information and data allows, even disaggregating at the local, neighborhood level. It provides adequate information to make evidence-based decisions from a territorial perspective with the participation of different tiers of government. It also facilitates better institutional coordination and the possibility to articulate sectoral interventions from metro- and city-wide perspectives. Working in this coordinated and integrated manner reinforces the principle of active subsidiarity and collaboration.

In Colombia, for example, the CPI supported the development and implementation of national urban policies, articulated in a National System of Cities. This strategy will permit all cities—small, medium, and large—to better participate in the national development plan by reassessing and reconfiguring their comparative advantages. With an innovative analysis of the CPI at the regional level, aggregating the 23 selected cities in four regions, it is possible to adopt public policies from a regional perspective that respond to geographic imperatives in more homogenous areas of development (UN-Habitat, FINDETER, APC, SDDE, and CAF, 2015).

At a metropolitan level, the Agency for Metropolitan Planning in São Paulo (Emplasa) is implementing the CPI in the 39 municipalities that comprise the metropolitan area. This study is assisting the State of São Paulo to define a metropolitan strategy and propose an action plan for sustainable urban development. In Mexico, a critical mass of data for 77 metropolitan areas that are implementing the CPI enables the Ministry of Rural and Urban Development (SEDATU) and the Housing Bank (INFONAVIT) to assess the impact of massive low-cost housing on the prosperity of these agglomerations. The study calculates specific prosperity indices for each of the 136 municipalities that form these metropolises, assisting local and national governments to identify deficits and opportunities. This analysis has identified inter-municipal inequalities and provided the tools to understand that urbanization is far from homogenous.

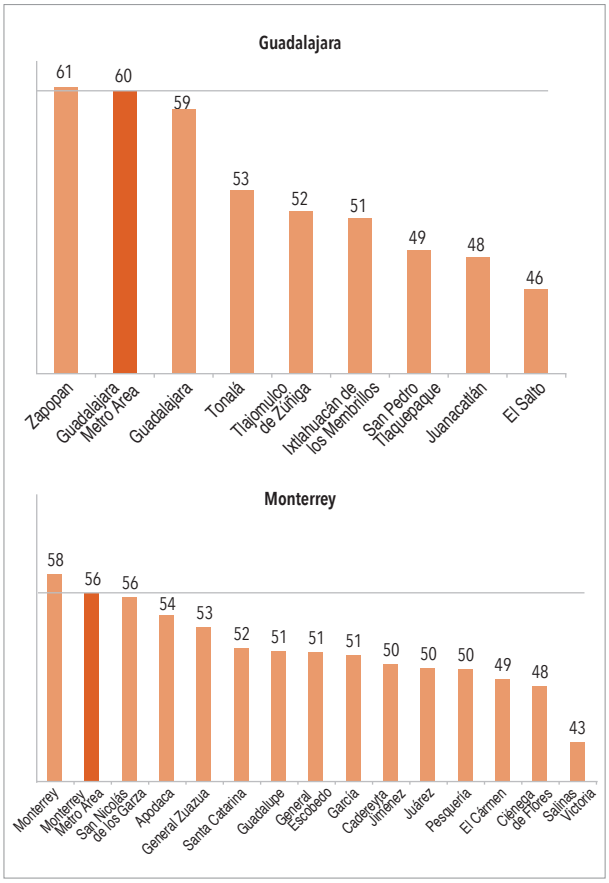
This shows that metropolitan governance and public policies have been unable to maintain the different dimensions of prosperity at similar levels.

Unequal Levels of Prosperity Within Metropolitan Areas

UN-Habitat CPI global studies have shown that the world's most prosperous cities have very little variations among the different dimensions of prosperity. In general terms, in these cities, all dimensions are well developed, with mutually reinforcing mechanisms that further advance prosperity (UN-Habitat, 2012; UN-Habitat and International City Leaders, 2015). The studies have also shown that cities within the group of moderate prosperity—as is the case with middle income countries and most of the Mexican cities and metropolises—have wider disparities between the various dimensions. Disparities are also evident at the intra-metropolitan level, with some municipalities featuring relatively high on the CPI index, while others are seriously lagging behind. A deeper analysis carried out in five metro areas—Mexico City, Puebla, Monterrey, Guadalajara, and Celaya—further confirmed that Mexican cities are growing unequally and that prosperity is far from being shared by all inhabitants and municipalities.

The greatest disparities among these agglomerations are found in the metro areas of Guadalajara, Monterrey, and Puebla (Graph 3). In some cases, the disparities between the municipalities are steeper than in others. Guadalajara, the second largest metropolis in the country, illustrates this unequal growth. Its eight municipalities exhibit significant discrepancies in CPI values, ranging from 60 to 46 points. Interestingly El Salto, the municipality with the lowest CPI, has at the same time the highest productivity values. Branded as the silicon valley of the region, the municipality hosts an important industrial corridor specializing in the electronic and automotive industries (Honda, IBM, and Sanmina have locations in the hub). However, it has been unable to leverage economic gains to create prosperity in the other dimensions. This case speaks to the dysfunctional growth of the metropolis and its different administrative units, which tend to aggravate disparities by focusing on one area of development to the detriment of the other areas. Infrastructure (32 points) and environmental (27) values in El Salto are extremely low, which is mainly due to the significant presence of slums, lack of waste water treatment, poor access to water, and the absence of mass public transport.

Graph 3. CPI in Guadalajara and Monterrey, Mexico



Source: UN-Habitat CPI Database, 2016

Metropolitan areas with similar CPI values cannot only exhibit important territorial discrepancies but also enormous differences across the dimensions of prosperity. These disparities can be captured by applying standard deviation analysis. To illustrate this point, Mexicali's CPI index has values that differ in the various dimensions of prosperity by 34 points, with a standard deviation of 15 points, while Puebla – a metro with the same CPI index (53 points) – has disparities among the dimensions of prosperity of 28 points, with a standard deviation of only 10 points. However, cities of very different population

sizes can have very similar CPI values and dispersion rates. For example, Acapulco (a medium-sized city) and Chilpancingo (a small city) have low aggregated CPI values of around 43 points and the same level of dispersion across the prosperity dimensions of 9 points. These cities perform poorly in almost all dimensions of prosperity, struggling to increase living conditions, develop infrastructure, and improve environmental indicators. Their metropolitan governance mechanisms and inter-urban redistributive mechanisms still need to be developed.

Getting Inside the Metropolis to Understand Prosperity Variances

Working with a large number of urban agglomerations provides the wealth of information needed to understand metropolitan prosperity. Altogether, the 77 Mexican metropolises analyzed produced an average value of 51 points, which corresponds to moderately weak prosperity levels as classified by UN-Habitat CPI global benchmarks. There are important variations among these metropolises, with slightly more than half falling in the moderately weak (50 to 59 points) group and only three with moderately solid values (60 to 69 points). Metro areas with moderately weak values, more than half the metro areas in Mexico, are characterized as having a high dispersion in the indices across the different dimensions of prosperity. While equity and quality of life exhibit moderately solid values above 60 points, infrastructure, productivity, environment, and governance feature indices below 50 points. These important variances are an indication that public institutions, legal and regulatory frameworks, and metropolitan governance structures are not yet consolidated. Metropolises in Mexico have made progress in social and gender inclusion and in access to social services such as health and education; however, CPI data shows that infrastructure development is still poor, environmental conditions inadequate, governance just emerging, and productivity low.

The CPI study showed that overall prosperity is neither predetermined nor connected to the size of the agglomerations. Metropolises like Juarez, Torreon, and Merida, which have populations over 1 million inhabitants, have relatively low scores of around 50 points, while small metropolises like Cajeme and Acuña, with 500,000 and 140,000 inhabitants, respectively, have aggregated indexes above 60 points.

Still, a positive correlation between city size and the productivity of the metropolis clearly exists, with large agglomerations more productive than small cities (Graph 4). This is in line with economic literature for this region and has been observed in other CPI studies, for example in 23 Colombian metropolises (UN-Habitat, FINDETER, APC, SDDE, and CAF, 2015). While the CPI index for productivity in large Mexican agglomerations is 48 points, for small metropolises it is 43. This relationship highlights the importance of the spatial concentration of the factors of production, residential densities, and economies of agglomeration that are key factors for productivity and economic growth.

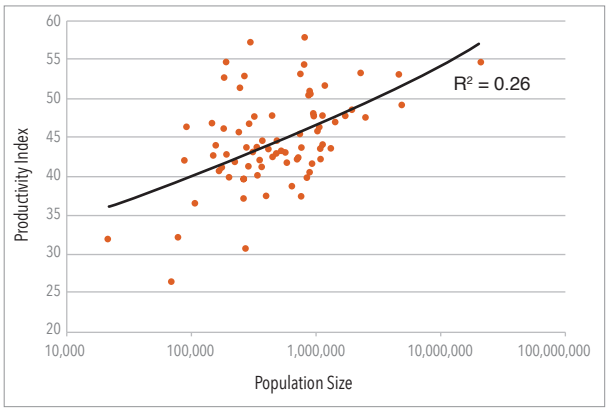
Nevertheless, Graph 4 also shows that various medium-sized metropolises with populations between 300,000 and 1 million inhabitants can be more productive than large agglomerations, while other metro areas with similar populations can exhibit very low productivity. This trend shows that some Mexican metro areas are not fully benefiting from the economies of agglomerations that they generate. The discrepancies also indicate a need for specific policies to boost productivity in metropolitan areas.

It is clear that larger metropolises are not able to benefit from the economies of scale they generate and the country is still struggling to put in place national urban policies that can contribute to amalgamating the disjointed energies and potential of urban centers of different sizes. A robust national system of cities, combined with strategic territorial planning, is yet to be implemented to reconfigure and boost the comparative advantages of each city.

The different dimensions of prosperity are also poorly correlated with the size of the metropolis. With the exception of productivity, which is moderately correlated as is normally expected, dimensions like equity, governance, environmental sustainability, and quality of life have R^2 values close to zero, which means there is no relationship between the two variables: prosperity dimensions and the

size of the city agglomeration (Graph 5). In itself, this is good news because it indicates that cities do not need to grow in population to be prosperous, otherwise inhabitants would invariably prefer to live in large metropolises. And is the case in Mexico, 43 percent of the population lives in secondary cities and medium-sized metropolises (United Nations, 2014). It also shows, however, that large metropolises are not taking advantage of their network effects, cost advantages, and production scales and are experiencing diseconomies of scale relatively soon in the urbanization process.

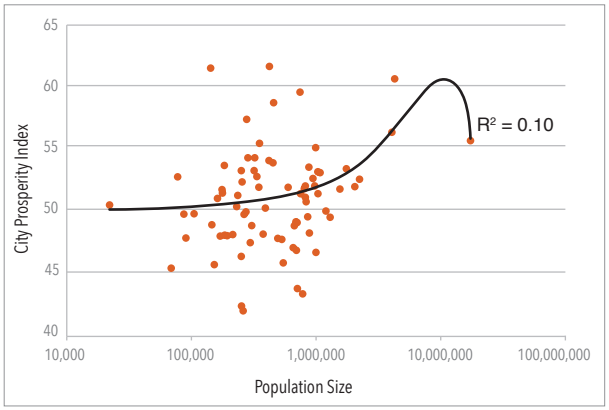
Graph 4. Productivity and Population Size in Mexican Metropolises



Source: UN-Habitat CPI Database, 2016

Note: A moderate correlation between productivity and city size exists. In general, larger agglomerations are more productive than smaller ones.

Graph 5. Prosperity and Population Size in Mexican Metropolises



Source: UN-Habitat CPI Database, 2016.

Note: Cities do not need to grow in population in order to become more prosperous. Smaller and intermediate cities can have better quality of life, inclusion, and environmental sustainability.

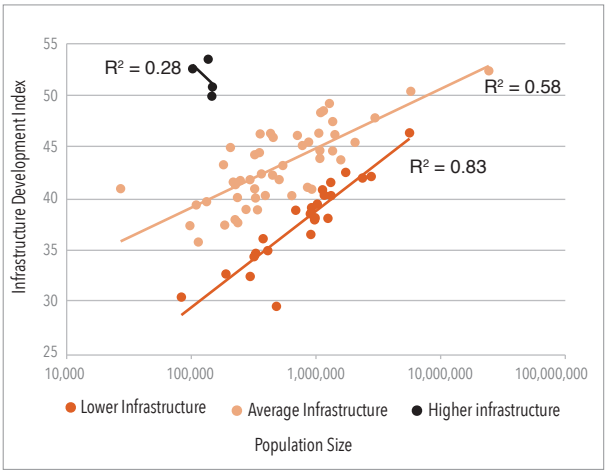
Identifying the Factors Underlying Prosperity

The limited powers of the metropolis, such as planning, laws, institutional frameworks, and governance mechanisms, play against the possibility of ensuring harmonious development; consequently, some of the dimensions of prosperity gain prevalence over others, creating distorted development. This dysfunction limits the possibility of generating self-reinforcing mechanisms among the various dimensions of prosperity, and it is possible that one dimension could interfere in the performance of the other. For instance, metropolises like Cancun, Reynosa, and Monterrey, which have the lowest infrastructure development scores can be affected by other dimensions, such as productivity or quality of life. Wider discrepancies among the values across the various dimensions of prosperity point to institutional and structural metropolitan governance failures that are further aggravated by territorial imbalances, inadequate capital investments in public goods, management inefficiencies, lack of proper monitoring mechanisms, and the lack of intra-metropolitan schemes needed to address negative externalities of the agglomeration.

The policy factors underlying the prosperity of cities are multifaceted and can be described in terms of drivers and constraints. A comparison of results between high- and low-performing metro areas on the different dimensions of prosperity allows us to identify them. With regards to infrastructure development—the dimension with the lowest values in the Mexican metro areas—it is possible to observe that the average score (42 points) hides important variations. A prosperous city maintains its physical assets and amenities—adequate water, sanitation, power supply, road network, and ICT, among others—to sustain the population and economy while also providing a better quality of life. A more refined analysis of infrastructure results, integrating population, demonstrates three main clusters of metros (Graph 6): one with a relatively high infrastructure index includes only four medium-sized metro areas (R^2=0.28, black); a second group that is close to the average of overall infrastructure values includes 49

metropolises with a moderate correlation to city size (R^2=0.58, light orange); and a third group, which includes 24 metro areas with the lowest infrastructure values, has a strong correlation to city size (R^2 = 0.83, dark orange).

Graph 6. Infrastructure Development and Population Size in Mexican Metropolises



Source: UN-Habitat CPI Database, 2016.

Note: The cities in black, with higher infrastructure development in relation to their size, are Tepic, Mazatlán, Cajeme, and Tlaxcala.

Not all factors affect infrastructure development to the same extent. Notwithstanding some form of redundancy in the analysis, factors such as urban form (-11 points), housing (-7), and social infrastructure (-6) have the most effect on infrastructure development, reducing the values of the dimension. More specifically, housing quality, the connectivity of the streets, and the availability and access to public space are the variables that most affect the poor performance of these metropolitan areas. Additional factors external to the infrastructure dimension include social inclusion (the prevalence of slums) and waste management for smaller metro areas, and air quality and safety for larger conurbations.

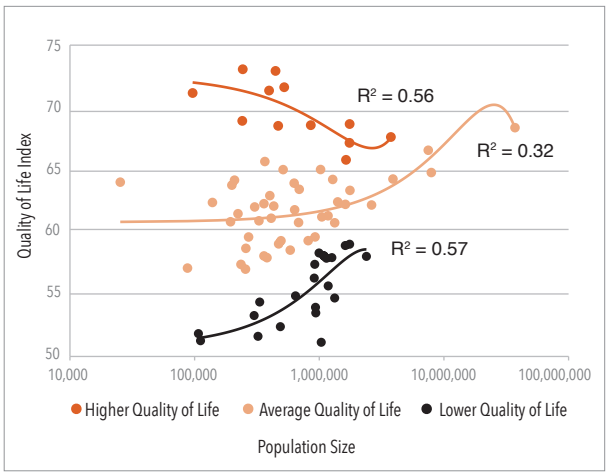
In contrast to infrastructure, quality of life is one of the highest performers within the dimensions of prosperity for the metro areas in Mexico (61.4 points). Although this dimension has different meanings, facets, and ways of measurement, the UN-Habitat CPI index measures aspects such as social infrastructure, education, health, recreation, safety, and security (UN-Habitat, 2016). As already noted, good quality of life can be found in large and small metropolises. For instance, Merida, with more than 1 million inhabitants, Pachuca with 500,000, and Manzanillo with 180,000 inhabitants have similar values on this dimension (69 points).

Similar to the infrastructure dimension, the relationship between quality of life and population size yields three clusters (Graph 7). The first cluster, which has a relatively high quality of life index, includes 12 metro areas. This cluster shows a moderately inverse correlation with city size, which suggests that, as urban areas increase in size, quality of life declines slightly (R^2=0.56, dark orange). A second group, which has close to the overall average of quality life values, comprises 43 metropolises of all sizes (R^2=0.32, light orange). The third group comprises 22 metro areas with the lowest values of quality of life and a moderate correlation to city size (R2=0.57, black).

The factors that explain good quality of life in the high performing metro areas (12) are largely related to the availability of public space, in particular green areas. No other variables are statistically significantly. Conversely, factors explaining the relatively poor results for quality of life in the 22 metros of group three are more apparent: lack of public space and poor safety. Interestingly, other factors that negatively influence quality of life are strongly related to the bad planning and poor governance and management of metropolises, namely urban form, population density, housing quality, and air quality. Poor air quality reduces quality of life by 15 points, deficient housing by 12, and urban form and population density by 9 points. Waste management particularly affects small metro areas, while the lack of or insufficient mass public transport has a strong negative effect in large agglomerations.

These results point clearly to the need for appropriate metropolitan planning and management strategies to enhance economies of agglomeration and reduce their negative externalities. Steering the metropolis to shared prosperity requires a reinvigorated notion of planning on an appropriate supra-municipal scale.

Graph 7. Quality of Life and Population Size in Mexican Metropolises



Source: UN-Habitat CPI Database, 2016.

Note: Cities with lower quality of life lack sufficient public space and have worse levels of security. Their urban form is less conductive to prosperity, they have lower population density levels, poorer housing quality, and poor air quality.

Conclusion

The review of the most important global trends and the analysis of how they affect the prosperity of the metropolis points to a direction of change. The subsequent study on the levels of prosperity and the factors underlying change or lack thereof for a more prosperous future in the Mexican metro areas suggest clear policy directions. Without adequate, timely produced, and disaggregated information, local and metropolitan authorities would not be in a position to understand urban dynamics, the factors that produce them, and the policies and actions that are needed to operate a real transformative change. Governments must pay more attention to how, when, and by which standards they measure issues such as accessible and sustainable transport, adequate and affordable housing, inclusive urbanization, and many other important issues that are crucial for the sustainability and shared prosperity of metropolises (UN-Habitat, 2016).

UN-Habitat CPI can place cities in a strong position to devise a systemic, data-driven, local approach to current urbanization issues, incorporating new analytical tools based on spatial indicators. As illustrated by the analysis of metro areas in Mexico, many urban agglomerations are growing with significant imbalances among their different administrative and political units. They are also growing unequally across the different dimensions that constitute prosperity and sustainability. The CPI enables us to understand why this is happening and know what to do to make urbanization and metropolitan growth a real transformative force.

Proper metropolitan urban planning, supported by adequate laws and governance mechanisms, can make these agglomerations more integrated, more compact, more connected, and more sustainable. The evidence demonstrates that many factors hampering prosperity have a local urban component. Well-planned metropolises can optimize economies of agglomeration, increase densities (where needed), generate mixed land use, promote public spaces, and encourage social diversity, all of which are critical elements of prosperity and sustainability (UN-Habitat, 2016). A revived form of metropolitan planning needs to respond to the imperatives of urban expansion and the mechanism of inequality and exclusion, safety, pollution, and other negative externalities, extending across various scales of intervention from municipalities to cities, and to metropolitan and regional areas. Effective metropolitan policies and management practices depend on laws and regulations as the primary framework for action, implementation, monitoring, and evaluation. The lack of these metropolitan legal frameworks acts as one of the major impediments to prosperity and sustainability.

CPI findings show that metropolitan CPI values are not only the sum of the municipal CPIs that comprise an urban agglomeration. In fact, some form of multiplication takes place to enhance the prosperity values of the overall agglomeration in a way that is much more significant than the simple average of the isolated municipalities. Synergies among different levels of government are realized and the individual capacity of cities and metro areas is strengthened, as well as their comparative advantages. Harmonious regional and territorial urban development requires strong metropolitan governance structures that facilitate subsidiarity and decentralization, but also better national coordination for the sake of more balanced social, economic, and environmental development.

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2.6 Climate Governance in Metropolitan Regions

Harriet Bulkeley (Durham University) and **Andres Luque-Ayala** (Durham University)

Abstract

This chapter reviews emerging approaches to climate change governance in cities and metropolitan regions. Targeting both climate mitigation and adaptation practices, the authors argue that governing climate change is fundamentally an urban issue. Climate change affects metropolitan regions not simply as a recent biophysical climatic condition but as a set of historically produced (social and political) vulnerabilities. While climate change in the city is both unevenly produced and has a set of uneven manifestations, urban space operates as a privileged site to imagine and develop climate solutions. The chapter examines three types of urban responses to climate change—networks, partnerships, and innovation and experimentation—and concludes with a reflection on why and how metropolitan climate responses are a matter of climate justice: enabling and developing urban policies and innovations that more adequately address issues of social and environmental justice are key challenges of metropolitan climate governance.

Governing climate change is fundamentally an urban issue. Cities and metropolitan regions are hotspots of energy consumption, by some estimates accounting for 71–76 percent of global greenhouse gas (GHG) emissions from final energy use (IPCC, 2014a). They are also primary recipients of climate impacts, as much of global climate risks are concentrated in urban environments. In the past three decades, there has been growing recognition that cities and the local scale are positioned at the frontline of responding to climate change. Metropolitan areas are primary contributors to climate change and urban expansion and the rapid growth of informal settlements and vulnerable communities within and across cities and municipalities exacerbate it (IPCC, 2014b). At the same time, as the level of government closest to the people, metropolitan governments are seen to have the potential to provide more decentralized, flexible, and locally specific forms of response to climate change. This chapter reviews key concepts within an emerging metropolitan governance of climate change, and examines why and how cities and municipalities have become critical sites for the mobilization of policies and actions toward both climate mitigation and adaptation—a perspective that becomes increasingly more salient as cities and municipalities grow into city-regions, urban corridors, and other metropolitan configurations that foreground the relevance of coordinating across municipal borders when responding to climate change. The chapter reviews the ways in which local governance is responding to climate change, focusing on the importance of transnational networks of municipal governments, partnerships with non-state actors, and socio-technical forms of innovation and experimentation to shape what metropolitan governance can do to respond to this global challenge. Climate networks, partnerships, and experimentation pose both challenges and opportunities to metropolitan regions, where two or more urban conurbations work together to address a common set of problems and objectives. To conclude, the chapter foregrounds the political nature of climate responses and the extent to which issues of justice, exclusion, and inclusion should be considered in developing effective metropolitan climate governance strategies.

Empowering Cities

The involvement of cities and municipalities in developing responses to climate change is not new. For over

two decades, large and small cities around the world have been devising ways to address the challenges of climate change (Bulkeley and Betsill, 2013). As illustrated by the early GHG inventory commissioned by Rio de Janeiro in 1998 (in the context of the Cities for Climate Protection program of Local Governments for Sustainability, or ICLEI), by New York City's 2007 PlaNYC (the city's first comprehensive sustainability plan with an emphasis on GHG reduction), and by Quito's 2009 Estrategia Quiteña al Cambio Climatico (the city's first climate vulnerability strategy), cities have long been active in imagining and implementing on-the-ground responses to climate change. This work has not gone unnoticed. Within global climate negotiations, cities are increasingly occupying center stage, positioning their role as critical to achieving international agreements and translating them into meaningful action on the ground (Bulkeley, 2015). From a marginal position on the world stage in the 1990s, cities are now playing a leading role within international climate negotiations, maintaining momentum and shaping the terms of discussion (UNFCC, 2015).

However, over time, the type and nature of urban responses to climate change have undergone significant transformations. Over the past two decades, urban climate responses have changed from what has been described as a form of municipal voluntarism—characterized by voluntary actions within the immediate control of the municipality—to strategic urbanism, where climate plans and actions play a role in shaping economic development, urban planning, and infrastructure investment (Bulkeley and Betsill, 2013). Such strategic approach to the cities and climate change interface has seen a more active participation of cities in the global South, also slowly opening spaces for cities to shape climate agendas at local and international levels. Initially, throughout the 1990s and early 2000s, most urban responses to climate change focused on issues of mitigation based on developing local action plans toward reducing GHG emissions and committing to targets above and beyond those adopted by national governments. These plans prioritized the need to measure GHG emissions and monitor progress (Alber and Kern, 2008) but have often been criticized for failing to bridge the gap between planning and implementation. In this context, different types of measures have been implemented in order to support reducing GHGs, targeting a variety of urban planning sectors—such as transport, the built environment, and infrastructure—but with a clear emphasis on energy efficiency. Significantly, much less emphasis has been placed on the need to reduce energy use and resource consumption (Bulkeley and Kern, 2006). More recently, some cities have begun to focus on issues of climate adaptation, building capacity to withstand the effects of a changing climate. Yet, to date, very few metropolitan areas around the world have a thorough understanding of the risks and impacts they are likely to experience in the coming decades as a result of climate change (Hunt and Watkiss, 2011). Climate risks have been, for the most part, assessed on national scales. And, while some cities have started to evaluate risks at a local level, much remains to be done to capture the spatial nuances of risks that cut across municipal boundaries (e.g., watersheds, ecosystems, regional infrastructure, and other vital urban resources and systems that operate at the metropolitan level). The growing movement to promote urban resilience is leading to more concerted action, but adaptation to climate change has yet to gain the same level of political and economic traction as reducing GHG emissions.

Early perspectives on climate change were based on the idea that the global atmosphere was common and needed to be managed through global arrangements and institutions, positioning national governments as the main stakeholders with the ability to develop climate responses. Recent developments have altered this perception, resulting in alternative perspectives where the role of cities, communities, and local action is at the forefront. To a large extent, this change stems from the continuous activism of municipal stakeholders participating in international climate forums (Bulkeley, 2016). Various other discourses further shape this emerging local governance of mitigation and adaptation, including the ideas of decarbonization and resilience. The first, based on recognizing the systemic nature of the climate problem, points to aspiring to transition infrastructure systems—particularly energy and transport—away from fossil fuels and toward low-carbon systems. The second,

an ecology inspired understanding of social-ecological systems, refers to coping with change and returning to conditions of equilibrium. Both decarbonization and the drive toward resilience are often seen by governments and business as opportunities to develop green economies and clean technologies, establishing links between climate responses and market-based forms of economic prosperity. Other stakeholders, particularly grassroots organizations and civic groups at the local scale, prefer a different perspective: the need to achieve both low-carbon and resilience through a radical shift to new economic systems that are more localized in their forms of production and consumption.

Today, the urban and metropolitan scales operate as privileged sites to imagine and develop climate solutions. In responding to climate change and in experimenting with new metropolitan capacities for climate governance, cities and local governments are learning by doing. A focus on policy development (e.g., through decarbonization and resilience action plans) needs to be balanced with an acute understanding of the limitations of such policies in the context of existing social and material realities of the city (Lovell, Bulkeley, and Owens, 2009). Considering the urban context brings attention to large- and small-scale metropolitan infrastructure systems, positioning urban energy, water, waste, transport, ICT, and other networks as potential sites of intervention for effective climate responses. This means advancing governance for climate adaptation and mitigation that acknowledges the materiality of the urban, recognizing that physical infrastructure defines a great deal of how climate change is experienced and addressed. Networked infrastructure plays a vital role in structuring possibilities for a low-carbon urban transition, operating as both key catalysts for environmental problems and the critical means through which governing climate change takes place (Bulkeley, Broto, Hodson, et al., 2010; Rutland and Aylett, 2008). Yet, rolling out effective infrastructure responses at the metropolitan level requires transcending a purely technological approach, emphasizing the need for novel governance arrangements, cross-boundary coordination, and horizontal management, as well as the social and political nature of the city's infrastructures.

Networks, Partnerships, Innovation and Experimentation

In practice, cities are responding to climate change primarily through three types of arrangements: transnational networks, partnerships, and innovation and experimentation. Advancing novel forms of governing across scales, transnational networks of cities and metropolitan regions are playing a key role in defining the shape of contemporary governance of climate change. Municipal networks are enabling cities to multiply their influence horizontally across cities as well as vertically with other levels of government. Similarly, city partnerships with business and community organizations are playing a significant role in developing low-carbon and resilient infrastructure, services, and goods. Finally, innovation and experimentation are key ways in which cities and metropolitan regions are bypassing the traditional tools and limitations of urban planning and sector-by-sector policymaking to put in place a new form of integrated climate governance.

Transnational Networks

Transnational networks of cities working on energy, climate, and environmental issues have been identified as key to the future structure of climate governance. While metropolitan regions and local alliances have been a critical part of global responses to climate change, this has only been enabled by the presence and action of transnational governance networks. In short, metropolitan authorities are not responding to climate change in isolation or driven by internal pressures. Rather, transnational organization of cities has led to their prominence and potential significance as a site for acting on climate change. Over the past two decades, transnational networks of cities working on energy and environmental issues have played a critical role in developing and positioning urban responses to climate change (Bulkeley and Betsill, 2003; Kern and Bulkeley, 2009; Feldman, 2012; Gore, 2010). Networks such as the Cities for Climate Protection program, Energy Cities (the European Association of Local Authorities in Energy), ICLEI, and more recently the

C40 Cities Climate Leadership Group, the Asian Cities Climate Resilience Network, or the 100 Resilient Cities program of the Rockefeller Foundation have enabled cities to learn from each other, fostering a horizontal form of climate governance. They have also provided cities with tools to influence policy at the national level by, for example, showcasing best practices, opening spaces for experimentation with technological and social innovation, and directly reaching out for international support. The actions of transnational networks of cities point to the scalar and multilevel nature of climate governance, subverting traditional, top-down governance forms (Betsill and Bulkeley, 2006; Bulkeley et al., 2011).

Studies suggest multiple other benefits associated with involvement in transnational networks. Such networks have been a way for cities to gain room for political maneuvering, supporting mobilizing climate responses to advance local objectives and strategic interests (Heinelt and Niederhafner, 2008; Hodson and Marvin, 2009; Kern and Bulkeley, 2009). They have provided members with unique support by "assess[ing] information and data, evaluat[ing] innovative management options, and coordinat[ing] the activities of key actors at local and regional levels without having to first wait upon national governments or international inter-governmental organizations to act" (Feldman, 2012, p.788). Transnational networks provide cities with new knowledge modes and sources, assemble formal case studies, create common analytical tools, and provide ways to informally exchange learning and experiences (Bulkeley and Betsill, 2003; Betsill and Bulkeley, 2007; Bulkeley, 2010; Holgate, 2007; Granberg and Elander, 2007; Romero-Lankao, 2007). Networks have several means through which best practices are developed and shared, such as formal case studies, recognition events and awards, other events, and informal ties (Kern and Bulkeley, 2009). In sharing information, networks generate efficiencies, partly given their ability to bypass the limitations imposed by the national level such as the need to secure time consuming, resource intensive, and politically demanding national policy agreements. Additional efficiencies associated with sharing information via networks result from establishing common platforms for a multiplicity of diverse stakeholders to interact (Feldman, 2012). This can result in climate, energy, and environmental policies that are flexible, decentralized, publicly acceptable, and innovative, "all supposedly salient features of local, as opposed to national governments" (Feldman, 2012, p.791).

Cities have taken advantage of the visibility and recognition generated by climate, energy, and environmental networks to garner momentum for action (Bulkeley et al., 2009). National and transnational networks have been instrumental in securing a multiplicity of resources for cities to develop and implement climate change strategies, from financial resources and knowledge, to political capital and local support. The ability of city networks and partnerships to tap into a broad network of stakeholders and members of civil society within and outside the city facilitates and empowers local governments to act, speeding up the deployment of climate responses. Thanks to the broad and participatory nature of projects and initiatives, these networks can "provide forums for discussing common issues and for building symbolic, as well as substantive political support at the grassroots level" (Feldman, 2012, p.788). Such projects, by "acknowledging the long-term experience of citizens as 'makers and shapers' rather than 'users and choosers,'" (Bontenbal, 2009, p.256) have developed favorable conditions for civic engagement, strengthening civil society's capacity to respond to climate change.

Recent UNFCCC conferences, from Copenhagen (COP15) to Paris (COP21), have seen an increase in collaboration and coordination between different municipal transnational networks. The result has been a clear positioning of the urban agenda within international climate negotiations, alongside novel forms of collaboration that transcend bilateral agreements. For example, at COP20 in Lima, the Compact of Mayors was launched under the joint leadership of the C40 Cities Climate Leadership Group, ICLEI, and United Cities and Local Governments. This initiative aims to standardize cities' reporting efforts for GHG reduction, increase the visibility of urban climate responses, and advocate for further investment of state and non-state actors in related projects. Unsurprisingly, international negotiations are proactively considering the demands and needs established by the urban climate agenda, as illustrated by the 2014 appointment by the UN Secretary-General

Ban Ki-moon of former New York City mayor Michael R. Bloomberg as Special Envoy for Cities and Climate Change, and by the UNFCCC launch of NAZCA (Non-state Actor Zone for Climate Action) as part of the Lima Paris Action Agenda. NAZCA operates as an online platform that "brings together the commitments to action by companies, cities, subnational regions, investors, and civil society organizations to address climate change" (http://climateaction.unfccc.int). By providing an overview of the commitments emerging at the subnational level, NAZCA played an important role in bringing state and non-state actors together toward the Paris Agreement that emerged out of COP21.

Partnerships

As metropolitan areas and regions seek to respond to climate change, the importance of developing the governance capacities required to address this complex issue has been key. In a metropolitan context, partnerships gain additional relevance, as they can become a vehicle for transurban (e.g., between neighboring municipalities) collaboration toward both climate change and integrated service provision. As illustrated by the Compact of Mayors, one of the main roles that city networks play in supporting local governments in responding to climate change is related to their ability to foster partnerships with non-state actors and garner widespread support from a variety of stakeholders across civil society (Bontenbal, 2009; Bulkeley and Schroeder, 2012). Given the fragmented nature of metropolitan infrastructure and service provision, where various private and public organizations at the local, regional, and national levels are tasked with delivery, a partnership mode of governance is increasingly playing an important part in developing effective climate responses. Municipal governments have embraced public–private partnerships as well as joint efforts with non-profits and community organizations as a new strategic approach to governing climate change (Bulkeley and Schroeder, 2012; Bulkeley and Castan Broto, 2012; Hodson and Marvin, 2010). Coupled with increased funding availability and a growing interest in opportunities to address climate change in private and third sector organizations, partnerships are becoming a way to lower startup costs and increase the human and capital resources available.

It is important to acknowledge that partnerships—and any type of direct action undertaken by private and civil society actors—take urban climate responses to areas outside the direct scope and influence of municipal governments and therefore are likely to be essential components of effective metropolitan governance of climate change. While partnerships may provide a multiplicity of direct benefits—such as resources, knowledge, and a pool different strengths—they also require capacity (e.g., in terms of coordination) and can be fragile in the face of competing interests. Advancing metropolitan climate responses through partnerships requires a degree of caution, as these could be exclusive, serve primarily the interests of selected groups, or omit direct linkages with broader societal needs by excluding the requirements and voice of the poor and other marginalized groups. Partnerships can also "raise questions about the legitimacy and transparency of decision-making, and the extent to which decision-making is open and democratic" (Bulkeley, 2013, p.96).

Innovation and Experimentation

Large and small cities, but particularly many of the so-called global cities, have shown a marked strategic interest in responding to climate change. Yet collective and individual urban responses have not necessarily resulted in systematic planning efforts or in consistent enactment of effective regulation. In contrast to these more planning-led approaches, a marked interest in climate change at the city level has resulted in a growing patchwork of projects and interventions as municipalities seek to take advantage of funding opportunities, potential strategic partnerships, or a reframing of local concerns in the context of a global agenda that appears to have broader traction and political appeal (Bulkeley, 2013). These projects and interventions can be thought of as a form of urban experimentation, often bypassing traditional funding and planning mechanisms while at the same time creating new forms of intervention in the absence of formal

policy channels (Hoffmann, 2011). Crucially, projects and interventions provide spaces for innovation and learning beyond purely technological domains: climate innovation and experimentation in cities is as much technical as it is social and political in forms of governance (Evans and Karvonen, 2014; Bulkeley and Castan Broto, 2013).

The idea of urban experimentation has taken hold as the new process where urban governance for both climate change and sustainability is to be achieved (Castan Broto and Bulkeley, 2013; Truffer and Coenen, 2012; Frantzeskaki, Wittmayerm, and Loorbach, 2014). Through discrete interventions, projects, and initiatives, climate innovation and experimentation is transforming how cities approach urban development and the built environment, roll out resilient and low-carbon urban infrastructure, and promote more environmentally focused forms of citizen action. From novel governance arrangements to provide services and manage resources to urban living labs and innovation districts, urban experimentation is based on the idea that cities provide a learning arena for sustainability within which innovating can be pursued collectively among research organizations, public institutions, the private sector, and community actors (Liedtke, Baedeker, Hasselkuß, et al., 2015; Evans, Jones, Karvonen, et al., 2015). Urban experimentation is seen not only as a means to gain experience, demonstrate, and test ideas, but also as a step toward scaling up responses that will improve effectiveness, political traction, and public support.

To a large extent, urban experimentation opens the possibility for a less directed process of responding to climate change, seeking to create spaces to test innovation and alternatives, and gain experience (Hodson and Marvin, 2010; Bulkeley and Schroeder, 2012; Castan Broto and Bulkeley, 2013). Experiments "create new forms of political space within the city, as public and private authority blur, and are primarily enacted through forms of technical intervention in infrastructure networks, drawing attention to the importance of such sites in urban politics" (Bulkeley and Castan Broto, 2013, p.361). Urban climate experiments cover a broad range of fronts, from forms of innovation in governance and new modes of social learning, to the material transformation of the city's infrastructure. Examples abound, including demonstration projects (the London Hydrogen Bus), iconic sustainable buildings (Hong Kong's Construction Industry Council Zero Carbon Building in Kowloon), sustainable neighborhoods and communities (the Peabody's BedZED housing development in the United Kingdom), and urban living labs (Manchester's Biospheric Foundation). Urban experimentation is not limited to cities in the global North and can also take the form of innovative governing techniques around local resource management. Since 2008, the city of Thane, in the Mumbai Metropolitan Region (India), has experimented with various techniques aimed at establishing local energy governance. This includes developing a local energy baseline, a partnership with ICLEI to implement a Solar Cities Programme, and local by-laws mandating the use of solar hot water in all new residential buildings (Luque-Ayala, 2014).

In operationalizing metropolitan governance for climate change, different actors are bound to play varied roles and mobilize social, political, and economic logics in the context of their own agendas. The ways in which such efforts unfold may result in contested agendas or misaligned objectives in relation to the city's future. Neither partnerships nor processes of experimentation and innovation for climate change are exempt from tension and conflict; they can also reveal a multiplicity of—sometimes contradictory—urban agendas. Such processes highlight the extent to which, in practice, urban climate responses emerge beyond formal institutional contexts, where agents located at different governance levels (e.g., municipalities, national governments, or transnational organizations) interact with both state and non-state partners (e.g., business, academia, community associations, non-governmental organizations). Partnerships enable resource sharing and the configuration of shared visions. Experimentation plays a role in shifting the forces at play, further contributing to aligning objectives while creating a reverberation that affects sites and agents across scales. When taking the form of demonstration initiatives, for example, experimentation tends to be seen as a means for testing technological innovation. Yet it enables a form of experiential and material learning, allowing various agents to examine the

performance and operation of new social and institutional arrangements as much as new infrastructure configurations and lower impact technologies.

Conclusion: Metropolitan Climate Responses a Matter of Climate Justice

This chapter highlights trends, challenges, and opportunities for an emerging metropolitan governance of climate change. As large and small cities increase economic and physical connectivity through mega-regions, urban corridors, and city-regions, responding to climate change also becomes a matter of metropolitan interaction and coordination. Developing mitigation and adaptation responses at the metropolitan level requires openness to partnerships across municipalities as much as with civil society and private stakeholders. It calls for an understanding of the metropolitan scale as a site for climate intervention, considering action across municipal borders by engaging with the macro-urban and regional scales at which many vital urban infrastructures and natural ecosystems operate. Finally, it opens the possibility of using the metropolitan scale as a site for climate experimentation and innovation—where experimentation is not simply understood as a technical matter, but rather a matter of governance, social innovation, and politics.

Climate change in urban areas is both unevenly produced and unevenly manifested. Increasingly, as the problem of climate change is understood in multiple, rather than singular ways. This welcome move recognizes that climate change means different things to different people across nations, regions, metropolitan areas, cities, and neighborhoods. An important consideration is acknowledging that climate change affects urban areas not simply as evolving biophysical threats in the form of, for example, increased precipitation, flooding risks, changes in the spread of vector and waterborne disease, heat waves, sea level rise, or other impacts, but primarily through a set of historically produced social and political inequalities and vulnerabilities. The effects of climate change are likely to be felt most by vulnerable communities or those struck by poverty, exposed to higher levels of risk, and with limited capacity to respond and adapt because of a low asset base (da Silva, Kernaghan, and Luque, 2012). As several scholars point to the direct links between urban poverty and climate vulnerability (Bicknell, Dodman, and Satterthwaite, 2009; Satterthwaite, 2009), it becomes clear that climate change affects metropolitan dwellers in different ways. Responding to climate change in metropolitan regions, particularly in the context of cities in the global South, requires resolving preexisting urban vulnerabilities, particularly those generated by poverty, informal housing, and access to limited services. As illustrated by the pioneering experience of many small- and medium-sized cities around the world, from Durban in South Africa to Esmeraldas in Ecuador, metropolitan governance of climate adaptation would require, first and foremost, "devis[ing] a new set of practical tools to address the needs of the most vulnerable and ensure that rapid urbanization [will] not continue increasing vulnerability" (Luque, Edwards, and Lalande, 2013, p.11; see also Roberts, 2010).

Positioning climate responses as a matter of justice transcends the domain of climate adaptation, applying equally to how we approach issues of climate mitigation. Until now, many of the urban responses to climate change have focused on establishing ambitious mitigation targets "without considering how such targets should be distributed across the urban arena or the procedures by which diverse urban publics might engage in debate about what constitutes a fair and equitable response to climate change" (Bulkeley, 2015). While issues of climate justice play an important role within international climate negotiations (particularly through the principle of common but differentiated responsibilities, formalized at the 1992 UNCED conference in Rio de Janeiro), the growing work on urban responses to climate change still has a long way to go toward considering issues of justice. Within climate change research, for example, only recently have low-carbon interventions in cities started to be examined through their potential to contribute to achieving social justice or, alternatively, their capacity to foster conditions of exclusion and inequality (Marino and Ribot, 2012; Bulkeley, Carmin, Castan Broto, et al., 2013).

Issues of justice are likely to be at stake at a multiplicity of junctions within an emerging framework

of metropolitan climate governance. They surface when establishing whether the responsibility for carbon is individual or collective, or whether it is to be managed through state regulation or by individual commitment. They also emerge when defining who has the right to benefit from low-carbon interventions or the right to be protected from climate impacts, or who bears the brunt of responsibility for paying the costs of mitigation or adaptation. These considerations underscore two relevant implications of the climate justice and urban politics interface. First, that those involved in designing and implementing climate responses in metropolitan regions must ask questions such as "for whom, how, and by what means should cities respond to climate change", as a means to explore "the types of rights, responsibilities, distributions, and procedures required to respond justly to climate change" (Bulkeley, Edwards, and Fuller, 2014, p.40). Second, that metropolitan interventions addressing climate change need to consider specific and localized political, economic, and social configurations within and across the urban space when imagining and implementing responses, so that these not only address but also avoid entrenching existing injustices. As metropolitan governance of climate change starts taking shape in and across urban conurbations, it is critical that the potential of the urban area as a site for experimentation is retained. It is also crucial that climate change is mobilized, not in response to the international architectures of climate policy but as an intrinsic local pathway to justice and social innovation.

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2.7 Metropolitan Governance for Urban Climate Resilience

Ayesha Dinshaw (World Resources Institute), **Brittany Giroux Lane** (Open Government Partnership), and **Katerina Elias-Trostmann** (World Resources Institute)

Abstract

The effects of climate change are most palpable at the local level, causing individuals and households to live in vulnerable situations and negatively affecting their safety, quality of life, and livelihoods. However, the magnitude of climate change needs to be considered on the regional or metropolitan scale, where the various and cumulative effects of climate change can endanger millions of lives, cultural heritage, and the economy. This chapter makes the case that metropolitan-scale resilience planning will be successful when it is complemented by equitable, inclusive, and participatory local-level resilience planning, and that in fact such local-level planning needs to be scaled up to inform the metropolitan level. The authors provide insights into what would be important for resilience planning at local and metropolitan levels and make the case for integrating local efforts into metropolitan resilience planning. The chapter includes examples from a diverse range of cities: Quito, Porto Alegre, Rio de Janeiro, New Orleans, Washington, D.C., and New York City.

The United Nations expects that by 2030, 41 mega-cities will be home to more than 10 million inhabitants each, predominantly in the global south (UN, 2014). Evidence suggests that growth has been uneven and has not sufficiently reduced poverty (Kneebone, 2014; Lee, Sissons, Hughes, et al., 2014). Metropolitan areas, particularly in the southern hemisphere, are marked by inequality, as poverty and insufficient infrastructure co-exists with economic development and high income households. Urban agglomerations that experience greater inequality face issues that render successful governance challenging: higher crime rates, slower economic growth, and a smaller tax base from which to raise revenues (Glaeser, Resseger, and Tobio, 2009).

Inequality also affects the distribution of vulnerability to climate change in urban areas. As such, vulnerability to climate change can vary immensely within metropolitan regions, a phenomenon not often captured in adaptation or resilience planning. Therefore, metropolitan regions cannot be treated as homogenous and planned for with only broad brush efforts. As metropolitan regions continue to grow, and the impacts of climate change continue to rise, authorities need to ensure that climate change planning accounts for the full spectrum of affected groups within a metropolitan region in ways that take into account different vulnerabilities, as well as the diverse resilience needs and priorities of populations across localities.

For the purpose of this chapter, "resilience" to climate change is the ability of a system (whether focused on a community, a metropolitan area, or a specific sector) to withstand shocks and stresses while maintaining its essential functions (IPCC, 2012). "Vulnerability" is the propensity or predisposition to be adversely affected, while "adaptation" is the process of adjusting to actual or expected climate change and its effects (IPCC, 2012). "Participatory planning" refers to urban planning processes that bring together multiple stakeholders through an iterative process to review an existing situation and work together to generate outcomes through this process. The process is founded on sharing information transparently among

stakeholders, fostering trust, and a clear understanding of the processes (Nelson, 2007).

This chapter looks at how to address local-level resilience planning (referring to the neighborhood, municipality, or city) in a way that can be scaled up to metropolitan resilience planning in order to account for differences in vulnerability and adaptive measures in different locales in a metropolitan region. Linking these two scales—local and metropolitan—in promoting climate resilience can help deliver more effective results for different local communities and the region as a whole in a more sustainable and inclusive manner.

Need to Address Metropolitan Capacity for Resilience Planning

Cities do not exist as separate entities; they exist within a broader geographical region and a subnational context, which both influence them greatly. The boundaries of large cities especially are often unclear or limiting, and metropolitan regional boundaries become a more accurate measure to estimate how a city functions and performs. Metropolitan regions, or Metropolitan Statistical Areas as coined by the U.S. Census Bureau, include both the urban core as well as surrounding areas that have a high degree of economic and social integration (Census Bureau, 1994). They share a population, economic opportunities, and infrastructure and, despite having different jurisdictions and municipalities, function as a unit. Examples include the metro area of Washington, D.C., which includes the District of Columbia and the adjacent neighborhoods of Maryland and Virginia, and metropolitan New York City, which includes Manhattan and the adjacent neighborhoods of New York and New Jersey.

As cities confront the challenge of climate change, metropolitan areas make even more sense as an administrative unit. Climate change impacts, seen through hazards such as floods, droughts, and heat waves, have effects on a metropolitan-wide scale even while exposure and sensitivity of different neighborhoods and communities within a metropolitan area result in varying degrees of vulnerability. To combat this, cities need to implement resilience measures that account for natural features and man-made infrastructure that span the entire metropolitan area, while focusing on the most vulnerable and ensuring that some communities do not feel the negative consequences of metropolitan adaptation efforts. For instance, when planning for resilience in the National Capital Region of Washington, D.C., planners included the core of the District of Columbia as well as areas in Arlington and Alexandria, Virginia, citing "[T]he region's interdependent built systems, workforce, communities, and natural systems converge here, which is the economic heart of the region, the nexus of regional transportation and services, and the confluence of two major rivers" (National Capital Planning Commission, 2013).

As much as planning for climate resilience at the metropolitan level makes sense for large cities, it brings its own set of challenges, including coordination and collaboration between multiple agencies, jurisdictions, and planning processes and timelines, as well as challenges related to accounting for differential local realities. For instance, the U.S. process of Building a Climate Resilient National Capital Region entailed a series of workshops and webinars over the course of 2013–14 and involved participation by 19 federal organizations, three regional/state agencies, three utility companies, three local/city authorities, and five departments or agencies from the city authority of D.C., as well as seven non-governmental organizations. Enabling productive interaction between individuals from 40 different organizations is challenging and time consuming but ultimately necessary for effective adaptation action.

Another challenge of metropolitan resilience planning is determining who has the authority and the incentive to implement the plans and ensure they are effective. Good metropolitan governance systems have a critical role to play here and can ensure good metropolitan resilience. It is no secret that good governance is an elusive goal to assess and achieve. However, metropolitan regions the world over need to consider how they can improve their governance systems and strategies to prepare for the increasingly frequent and severe natural disasters caused by climate change.

One way metropolitan areas can their systems and strategies is to assess their institutional capacity to adapt to climate change. Having a better sense of how ready they are to contend with the effects of climate change will enable metropolitan regions to effectively build on their strengths and address their weaknesses when planning for climate resilience. One tool to assess strengths and weaknesses is the National Adaptive Capacity framework (Dixit, McGray, Gonzales, et al., 2012), which evaluates national institutions' performance across five functions that are critical for adaptation: assessment, prioritization, coordination, information management, and climate risk management. Although the National Adaptive Capacity framework was developed for use on the national scale, it is also useful for the metropolitan scale. The following two paragraphs briefly outline the types of questions asked for each function and how conducting an assessment using the framework could be a useful first step in improving governance for metropolitan resilience building.

The first function, assessment, includes questions about whether a vulnerability and impact assessment has been conducted, whether existing adaptation efforts have been systematically inventoried, and whether there is a system in place to regularly update such assessments. All of these capacities seem equally relevant for metropolitan governance. The second function, prioritization, includes questions about the extent to which adaptation priorities have been identified, whether there is a system in place to review and adjust priorities over time, whether key services and sectors requiring coordination have been identified, and if clear coordination processes have been established. Again, all of these types of questions and capacities are relevant at the metropolitan level. The third function, coordination, was earlier described as critical for effective governance for resilience. Related questions include whether key services, sectors, and activities where coordination may be necessary for successful adaptation have been identified, whether an authoritative body has been tasked with coordination, and to what extent clear coordination processes have been established. The fourth function, information management, includes questions about the extent to which there are appropriate systems to gather data and analyze it, whether there is an appropriate platform to share the information, and the extent to which information is reaching key stakeholders. Finally, the fifth function, climate risk management, is distinct from the previous four functions, which would be necessary regardless of the issue at hand. However, this framework for good governance centers on building resilience to climate change and therefore requires a specific focus on managing information and action around climate risk. This function includes questions about the extent to which climate risk has been assessed for the given area, whether adaptation options for the area have been considered and, if yes, to what extent they have been implemented.

The National Adaptive Capacity framework can work well at the metropolitan level because it was developed to function across complex landscapes with multiple agencies creating data and plans, and work against a larger background of national priorities and strategies. The metropolitan scale acts as a microcosm of the national scale, where there is as much need for coordination and streamlining. If metropolitan regions were to conduct a National Adaptive Capacity-type assessment prior to undertaking metropolitan resilience planning, the stage could be set for a more successful and ultimately implementable metropolitan resilience plan. However, the entity responsible for conducting such an assessment would have to be chosen carefully and be respected and accepted by all the agencies and geographic areas involved.

Looking at the example of New York's PlaNYC, the Mayor's Office of Long-Term Planning and Sustainability played a critical role. This office oversaw the development of PlaNYC and now shares responsibility for its implementation. It coordinates multiple city, state, and national agencies to track the progress of the plan and focuses specifically on better integrating sustainability and resilience into how the city functions. Were a city like New York to implement a metropolitan-scale National Adaptive Capacity framework assessment, a body like the Office of Long-Term Planning and Sustainability would be a natural choice.

However, most metropolitan regions do not have such a coordinating agency and, to effectively coordinate resilience, may need to develop a consortium or create such an agency. The Office of Long-Term Planning and Sustainability was created in 2008 by Local Law 17.

Ensuring coordination and good governance at the metropolitan level alone, however, is unlikely to ensure that the most vulnerable—often the poorest and most marginalized sectors of society—are protected from the effects of climate change, unintended consequences of adaptation interventions, or maladaptation. To secure such protection, authorities and planners need to ensure a close link with adaptation efforts on a local scale so that metropolitan governance for resilience is equitable.

Need for Local, Participatory Resilience Planning

When metropolitan authorities fail to identify and include specific vulnerable communities in the planning process, undesirable outcomes can result, such as elite capture of resources and discrimination against the marginalized or vulnerable (Dasgupta, 2007; Anguelovski, Shi, Chu, et al., 2016). A top-down decision and planning process tends to work with data and analysis developed for global scale climate models (Von Aalst, Cannon, and Burton, 2008). Typically these processes are then scaled down to the local level but often omit community participation, community-driven data or assets, capacities, and present vulnerabilities (Von Aalst et al., 2008). As the impact of climate change is distributed unevenly within metropolitan areas, developing a culture of local and participatory planning contributes significant positive outcomes to a metropolitan area's overall resilience.

In some cases, metropolitan adaptation and resilience plans can exacerbate existing social vulnerabilities and inequalities. Anguelovski et al. (2016) argued that there are two forms of injustice: acts of commission and acts of omission. Projects or adaptation measures that disproportionately affect or displace disadvantaged groups are acts of commission; while projects that protect and favor economically advantaged groups over minorities or low-income residents are acts of omission. An example of this on a city scale with lessons relevant to the metropolitan scale is the initial planning process to rebuild New Orleans after Hurricane Katrina.

Amid uncertainty as to how many residents would return to the city, a debate surfaced about how much should be rebuilt and how to enable residents to return without reproducing the pre-existing social inequalities and inequity (Nelson, 2007). Mayor Ray Nagin created the Bring New Orleans Back (BNOB) Commission in September 2005 to provide city officials redevelopment assistance (Nelson, 2007). Although planning decisions had to address concerns and needs at three levels—residents, neighborhoods, and the city—Nelson (2007) writes that "the mayor, when designing the BNOB Commission, did not fully acknowledge the need for a participatory process to both build residents' trust and foster dialogue among all stakeholders about rebuilding strategies and concerns." Residents and local interests were not prioritized from the onset because of the top-down process favored by the Commission, which strongly represented business interests. The BNOB Commission created seven committees, one of which, the Land Use Committee, hired a planning firm to advise and help develop a rebuilding plan (Nelson, 2007). This plan developed recommendations that included the now infamous Green Dot Map, which laid out a strategy to restore neighborhoods identified as among the most affected by the storm into parks and green spaces for ecological functions and to manage storm water (Fields, 2009).

Most of the green dots were neighborhoods that were home to predominantly black and lower-income families. Because of the evacuation and relocation of many of these residents after the storm, and a shortage of adequate policies to help residents return to their neighborhoods, many of these New Orleans residents remained scattered throughout the United States and were thus omitted from the planning process (Nelson, 2007). A poor communications strategy

meant that green dot residents first heard about the strategy through the media. Strong public outcry against the plan arose immediately after it appeared in the media, which impeded the initiative's implementation. Affected residents organized a resistance movement, fueling an increased return rate to affected areas. As a result, the mayor and city council dismissed the proposal and permitted redevelopment in all areas, including those identified as high risk and prone to effects from future storms (Nelson, 2007).

These poor planning processes at the local level, led residents to perceive the Green Dot Map as an act of commission—a threat of destruction of their homes and neighborhoods, perpetuating an existing sense of exclusion. Institutionalizing well-managed and participatory processes at the local level can deliver more effective results for citizens and cities as a whole, particularly those recovering from disasters. As coastal cities and their communities are threatened by sea level rise and other climate risks, the New Orleans example highlights important lessons about the need for effective participatory resilience planning carried out with essential input from affected local communities. Such efforts can then be adapted to metropolitan-scale planning, as shown in the next section.

Scaling Up to the Metropolitan Level

Climate change is an opportunity for municipal and metropolitan departments to jointly coordinate policymaking and urban development (Anguelovski, Chu, and Carmin, 2014). Quito, Ecuador, has attempted to approach climate change planning in such a coordinated and inclusive manner, involving citizens and thereby reflecting more than just technocratic and climatic priorities. The metropolitan district of Quito is exposed to a range of risks, including landslides, forest fires, and floods, to which 500,000 slum dwellers in particular are highly vulnerable. In October 2009, the metropolitan district launched the Quito Strategy for Climate Change. The document is aligned with the overall Metropolitan Development Plan 2012–22 and features climate adaptation as a strategic objective across four axes:

1) access to adequate information;
2) social participation;
3) plans and measures; and
4) institutional capacity building.

To integrate climate change across different departments and governance scales, Quito created the Quito Panel on Climate Change and the Climate Change Metropolitan Committee, a multi-institutional agency to facilitate intra- and inter-institutional coordination. The rationale for creating the Climate Change Metropolitan Committee was to avoid duplication, streamline science-based policymaking, and ensure effective use of financial and technical resources (Zambrano-Barragán, Zevallos, Villacís, et al., 2010). Additionally, the metropolitan authority leadership placed significant emphasis on the need to ensure that climate change planning was cross cutting, with this message emanating from the Metropolitan Director of Environmental Policy and Planning. Under this metropolitan governance structure, Quito has implemented significant resilience measures, emphasizing those that deliver mitigation and adaptation synergies, such as monitoring forest fires, reducing water use, and separating domestic waste water. Public authorities safeguard what they call co-responsibility and participatory collective management. Among other initiatives, they launched a youth program that, in its first year, got over 1,000 young people in high-risk neighborhoods building climate-awareness movements and funding local adaptation and risk-mitigation projects.

Quito is an excellent example of how metropolitan authorities can work with local stakeholders and residents as active agents of their own resilience, rather than passive victims of vulnerability. Von Aalst et al., (2008) drew on disaster risk management literature and practice to identify key components that can link local resilience planning to the metropolitan scale. They concluded that the assessment process should involve local stakeholders closely and continuously, and that current vulnerability to climate change should be analyzed

along with current strategies, policies, and measures. In practice, metropolitan planners can engage in a range of activities to collect and analyze data with communities: community risk mapping, transect walks, asset inventories, livelihood surveys, historical and seasonal calendars, focus groups, surveys, discussions, and key informant interviews (Von Aalst et al., 2008). This community-driven information helps authorities better understand present conditions, informing and enhancing their capacity to analyze and adapt to future climate impacts. Such an approach would help a metropolitan city combine regional and local studies in order to engage in more holistic climate resilience planning, as in the example of Quito.

Rio de Janeiro and Porto Alegre, Brazil, are applying a resilience measurement tool at the neighborhood level to inform wider city planning. The Urban Community Resilience Assessment (UCRA) was implemented by city authorities in partnership with vulnerable communities to measure three main aspects of resilience: the vulnerability of the surrounding context, such as access to services and exposure to high risks; community resilience, such as social cohesion, which studies have shown is important to enhance resilience (Baussan, 2015); and the capacity of individuals to deal with climate change, such as perception of risk and knowledge and habits.

The UCRA combines community-driven and collected data with city-level climate analysis, information, and risk management to determine whether a more nuanced, neighborhood-level strategy can lead to more appropriate resilience-building initiatives that reflect the difference in the effects of climate change across neighborhoods and integrate these results into city and metropolitan resilience planning processes. To date, Porto Alegre has included the UCRA in its Municipal Resilience Plan. Rio de Janeiro has features of the UCRA as a resilience-building activity in both its Municipal Resilience Plan and its City Development Strategy, which could be used to further inform metropolitan resilience planning. Further work on developing this assessment, testing its applicability in other contexts, and understanding how it serves or links with metropolitan resilience is necessary. However, preliminary outcomes are positive.

Conclusion

As metropolitan regions become hubs of economic activity and the concentration of the global population, the issue of adaptation and climate resilience goes beyond a single, environmental narrative. Adaptation at the local level is ultimately about quality of life, allowing communities to flourish and develop sustainably, and raising their standard of living. This must be reflected not only in local adaptation and resilience plans, but also in the processes that determine and design regional plans. If the local needs of communities are not integrated into the broader picture of metropolitan governance for urban climate resilience, then maladaptation could occur, as explained in the aforementioned city-level example of New Orleans.

This chapter identifies a few opportunities to address the need to scale local-level planning into metropolitan resilience planning and presents them as potential building blocks for a more coherent, coordinated approach to resilience planning on a metropolitan scale. Metropolitan regions could assess their institutional capacity to address climate impacts prior to undertaking metropolitan-scale resilience planning and thereby produce more successful and ultimately implementable metropolitan resilience plans and supporting governance structures. Moving forward with actions and projects that promote metropolitan resilience, it is imperative that metropolitan actors do not lose sight of the local needs and vulnerabilities of communities and citizens. Through local and participatory planning and appropriate measuring tools, these needs can be identified inclusively and then integrated into metropolitan action plans to address resilience. Ensuring the disconnect between the metropolitan and local levels is adequately recognized and dealt with through a variety of measures, some of which are suggested in this chapter, can lead to a more inclusive and effective approach to urban climate resilience.

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2.8 Metropolitan Governance for Sustainable Mobility

Christopher Zegras* (Massachusetts Institute of Technology)

Abstract

Land use and mobility interactions in the modern metropolis manifest themselves in two competing, age-old, forces: centripetal forces pulling us together into agglomerations and centrifugal forces pushing us ever further into the metropolitan hinterland. Thus, mobility is a fundamental part of urbanization and metropolitanization processes. Furthermore, mobility also serves as the core metric in defining metropolitan areas, helping identify functional urban areas. This chapter aims to elucidate some of the challenges to governing metropolises for sustainable mobility, defined by the author as the ability to provide non-declining accessibility in time. The chapter analyzes mobility governance and interrelating theories with concrete examples from the United States, Portugal, and Mexico, offering a glimpse of the complexity and posing central yet still unresolved questions. In whose ultimate interest is metropolitan mobility and who should pay for it? How related are the form of governance with the quality of the governance outcome? By what outcomes can metropolitan mobility performance be compared? Can these outcomes be meaningfully compared across metropolises? The chapter concludes noting a contradiction: while the finance system is a critical factor in determining metropolitan mobility governance, formal metropolitan mobility finance systems rarely exist. The author argues that using money to move the metropolis in the right direction offers hope, largely unfilled to date, to improve, and ultimately sustain, accessibility.

Mobility has always underpinned the concept of a metropolis, dating back to the word's Greek origins: the mother city to which colonies kept their economic, political, and cultural (mobility-enabled) ties. Throughout modern urbanization, mobility has been inherent to metropolitanization. In essence, mobility infrastructure and services have enabled the widespread intra- and inter-national migration that fuels urbanization. At the same time, mobility infrastructure and services enable the urban expansion that makes the modern metropolis—large, typically multi-jurisdictional, multi-centric economic engines. This chapter aims to elucidate some of the challenges to governing the metropolis for sustainable mobility. It illustrates the fundamental role of mobility within metropolitan dynamics, how mobility systems define metropolitan areas, and the challenges to and examples of metropolitan mobility governance. It concludes with a suggestion that finance should play a more central role in helping to induce better metropolitan governance for sustainable mobility around the world.

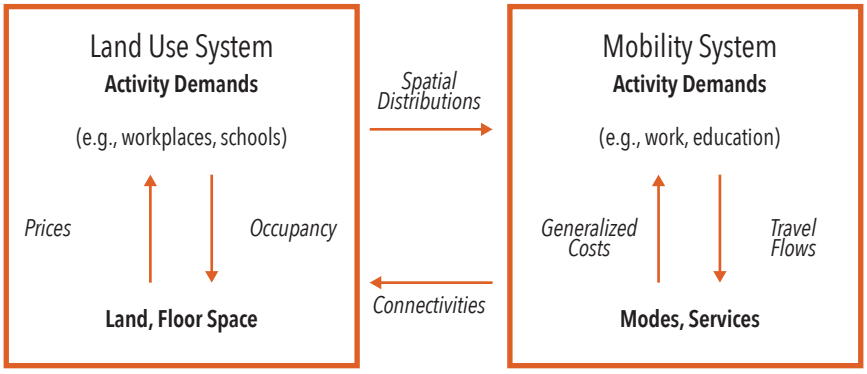
Mobility in Metropolises: Core Forces

Within a metropolis, people, firms, and other institutions interact with their land use and mobility sub-systems creating accessibility, the ultimate objective of any human settlement: access to the daily needs and wants to survive and thrive. Zegras (2011) argued that maintaining this capability "to provide non-declining accessibility in time" is the fundamental operational definition of sustainable metropolitan mobility.

*The author is grateful for useful comments on sections of this chapter from Fred Salvucci, Laurel Paget-Seekins, António Antunes, and Elisabete Arsenio.

At any spatial scale, from the block to the metropolis, examining mobility on its own presents a risk. Just as land use and mobility interact to generate accessibility, each of these sub-systems influences the other (Figure 1). The land use system, most basically, determines the locations of potential trip origins and destinations and influences the relative attractiveness of different travel modes. The mobility system, in turn, influences the relative desirability of different places and properties, positively improving connectivity, but sometimes with negative consequences, for example air and noise pollution. A major transportation investment, such as a new highway, will change the accessibility profile across a metropolitan area and the relative land and economic development attractiveness. A major new housing development will change the mobility demand patterns of a metropolis and impact highway and public transport services. Some basic coordination between these two sub-systems, at a minimum, seems like a self-evident requirement.

Figure 1. Theoretical Land Use–Mobility Interaction



Source: Adapted from Cambridge Systematics, 1991.

Mobility and Metropolitan Push/Pull

Land use and mobility interactions in modern metropolises manifest in two competing, age-old, forces: centripetal forces pulling us together into agglomerations and centrifugal forces pushing us ever further into the metropolitan hinterland.

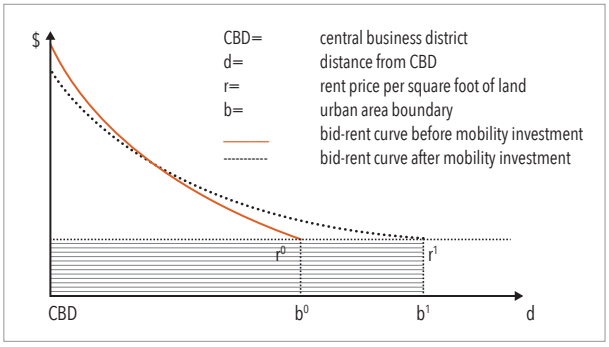
Centripetal forces involve the general and often synergistic benefits people and firms obtain from relative proximity. For people, agglomeration can bring higher earnings, possibilities for labor specialization, bargaining power, and "insurance" against unemployment, as well as access to better quality and quantity of goods, services, educational opportunities, and social networks. For firms, centripetal benefits are partly complements to those for people and include higher marginal labor productivity (e.g., due to specialization), increasing returns on scale, higher access to labor, other inputs and final markets, as well as information spillovers (Glaeser, 1998; Ingram, 1998; Mieszkowski and Mills, 1993).

Centrifugal forces, simultaneously, push us apart. These forces include classic negative urban externalities, such as traffic congestion and air pollution. Various forms of social, political, and related factors underlie the varying preferences of households and firms for public goods and services, as well as their willingness to pay for them, also tend to counteract metropolitan centripetal forces. This phenomenon rests at the core of Tiebout's (1956) sorting, whereby consumer-voters choose to reside in the local jurisdictions that satisfy their public goods preferences and willingness to pay (taxes). This positive theory leads to an efficient but not necessarily equitable outcome in terms of a market for public services conditional on freedom of mobility, among other assumptions.

Basic urban economic theory captures how these forces shape the evolution of the metropolis, showing

the role of mobility and household and firm tradeoffs in terms of location, space, and travel time (and costs). Most basically, the value of land, as an immobile asset, partly reflects the relative accessibility (ease and value of movement) to/from that land, depending on the use of the land. Alonso (1964) formalizes this theory, drawing from von Thünen's seminal work from the 1820s, deriving the bid–rent function for urban location choices. By this theory, a locating agent's utility depends on consumption of a generalized good, property size, and distance to the central business district (CBD). This agent aims to maximize utility, subject to an income constraint—the resulting bid–rent function represents the amount an agent is willing to pay for rent at different locations, with different distances to the CBD (and subsequently different transportation costs), while maintaining constant utility. The model reveals a clear tradeoff between location and lot size, and can somewhat straightforwardly be adapted to firm location choice, with profit-maximization substituting for utility-maximization. By this theory, the generalized transport costs (e.g., time and money) dictate the shape of the curve (willingness to pay for proximity) and the "end" of the built-up zone (e.g., urban area boundary).

Figure 2. The Classic Monocentric Bid–Rent Curve with a Mobility Investment



Source: Author.

A mobility improvement in relation to the CBD will lower the land value at the CBD, flatten the slope of the bid–rent curve, and extend the built-up area boundary (Figure 2). In Figure 2, if b represents a political boundary (for a local jurisdiction) and such boundaries do not change, then the basic role of transportation infrastructure and services in inducing the multi-jurisdictionality of the modern metropolis becomes clear. Alonso (1964) conceptually extended his model beyond the monocentric assumption and to different types of transportation networks.

Auto-mobility and Metropolitan Dynamics in the U.S.

Well before Alonso's writing, population growth in U.S. metropolitan areas had already become suburb-dominated, a process enabled by mobility, particularly auto-mobility (i.e., the private car) (Muller, 2004). By 1960, the majority of people in the United States living in metropolitan areas already lived outside the city center. In the post-war era, rapid suburbanization of employment followed households (Zimmer, 1974). Indeed, by the time of Alonso's writing, metropolises in the United States had already become polycentric, with many suburban bedroom communities being transformed into important centers of shopping, industry, and offices.

Mobility, intertwined with demographic, socio-economic, and cultural factors, played an important role. National investments in highway infrastructure were a key contributor, as was the growth in dominance of the automobile and an emergence of highly heterogeneous lifestyles, living orientations, communities, and travel demand patterns (Foley, 1974). Inter-related demand factors also mattered. For example, more women entering the workforce created more two-worker households, changing the commute demand equation with respect to household location choice. The growth of non-work travel as a share of households' total travel (Santos, McGuckin, Nakamoto, et al., 2011) also increased the importance of accessibility to a much wider range of potential destinations in the household location decision. The traditional CBD no longer created as much pull for households or for firms, and polycentricity broadly emerged (e.g., Giuliano and Small, 1991). In the United States, in any case, the centrifugal movement of people and jobs seems to have been associated with shorter average commute distances (Crane and Chatman, 2002). By the late

1960s, most of the metropolitan areas in the United States had become dominated by automobile travel, in low-density "autoland" residential areas (Foley, 1974). In 2009, automobile travel accounted for 80 percent or more of the transport in most metro areas in the United States, a figure that has remained steady since 1970 (U.S. DOT, 2009).

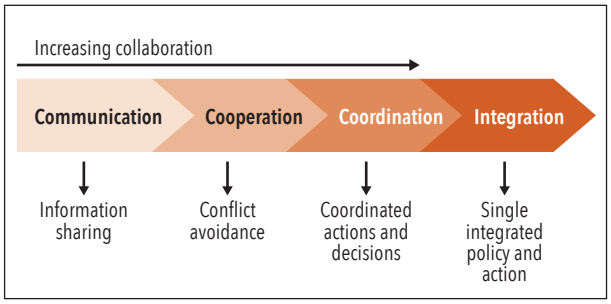
Metropolis by Mobility: Definitions

A metropolitan area can be defined politically, statistically, functionally, culturally, historically, and/or by some combination of these factors. In the end, for formal administrative and related functions, statistics play an important role in defining metropolitan extent. And, just as mobility plays a fundamental part in the urbanization and metropolitanization processes, mobility also serves as the core metric in defining metropolitan areas. In the European Union, for example, metropolitan regions (functional urban areas) are defined based on the extent of a commuting zone: if 15 percent of employed persons living in one city work in another city, the two cities are treated as a single city with commute shares calculated by the EU based on national census data (Dijkstra and Poelman, n.d.). In the United States, the Census Bureau defines the spatial scope of Metropolitan Statistical Areas according to the degree of local jurisdictions' social and economic integration as measured by commuting ties based on the Employment Interchange Measure (EIM). Similar to the EU case, the EIM in the United States is calculated based on journey to work data from the census.

Managing Metropolitan Mobility: Why Metropolitanism?

The need for some form of metropolitan governance for mobility should already be clear. Metropolitan mobility tends, almost by definition, to be inter-jurisdictional, crossing numerous local governments, requiring some administration below the national and provincial levels but above the municipal levels. Mobility infrastructures and services produce horizontal (across local jurisdictions) and vertical (different levels of government) spillovers as well as intra-sectoral (e.g., network effects between buses and cars) and inter-sectoral spillovers (e.g., labor productivity, health, environment, and real estate). Metropolitan-level collaboration, of some degree, is necessary (Figure 3).

Figure 3. The Collaboration Continuum



Source: Rayle and Zegras, 2012.

Challenges to Metropolitan Mobility Governance

Despite the need for some degree of metropolitanism in mobility, numerous challenges exist, most of which are similar to those for metropolitan governance more generally. Horizontally, and at least partially consistent with Tiebout (1956), local jurisdictions are often in political and economic competition and have few incentives to properly account for negative and/or positive spillovers associated with mobility. As metropolitan footprints grow, so do the number of jurisdictions involved. In the Metropolitan area of Mexico City, for example, over the second half of the 20th century, the number of local jurisdictions increased from 12 to nearly 60, spread across at least three states. Jurisdictional sprawl is likely associated with an increasing rate of capacity fragmentation. Some degree of higher level government incentives or interventions is necessary, but the questions of which level and how much are relevant—in whose ultimate interest is metropolitan mobility and who should pay for it?

The multi-sectoral effects of mobility, which influences, for example, housing, land development, and environmental conditions, add a level of institutional and disciplinary complexity. For instance, mobility services and infrastructure have direct and indirect effects on land development and vice versa (Figure 1). Relevant responsibilities tend to be separated and often poorly coordinated within a single jurisdiction, much less horizontally and/or vertically. The effects of this sectoral segregation are likely exacerbated by disciplinary differences, including the modeling and evaluation tools used, time frames of analysis, and even methods of intervention (e.g., zoning versus infrastructure investments).

Individual planning styles, partly associated with sector and discipline, matter also because they can come into conflict, depending on technical approach, political influence, collaborative propensity, and/or advocacy perspective (Innes and Gruber, 2005). Related underlying socio-political and cultural factors play a role, such as environment versus growth conflicts; racial, ethnic, and religious differences; and philosophical perspectives on financing collective goods and societal conceptions of public versus private goods. In public finance theory, public and private goods are defined by their degree of rivalry and excludability; mobility infrastructure and services rarely fit cleanly into these dimensions. In practice, whether societies treat a certain good as public or private depends on a combination of history, culture, laws, and ideology, among other factors (Zegras, Nelson, Macário, et al., 2013).

Metropolitanism in Mobility Governance

The possibility of achieving some form of metropolitan governance for mobility is influenced by the scale and scope of the mobility problem, the nature of the infrastructure and services, disciplinary and technocratic differences, and the need to balance potential scale-related benefits (e.g., urban rail investment) versus localized preferences (e.g., bicycling infrastructure) related to jurisdictional sorting. In considering realistic models of governance, political legacy also matters. Metropolitan governance capabilities are influenced by the form and degree of a nation's decentralization, which itself derives from a country's governing legacy, such as whether subnational governance has its origins in devolution or deconcentration (Table 1). Inman (2007) defined governance along three related institutional dimensions: number of subnational (i.e., provincial or state) governments, their policy responsibility, and their elective representation in central government. By these dimensions, Inman classified democratic countries into three basic categories: federal, such as the United States, Germany, Brazil, Canada, Switzerland, Spain, and Argentina; administratively federal (unitary with policy decentralization), such as France, Italy, Denmark, Japan, The Netherlands, and Uruguay; and unitary (without policy decentralization), such as Chile, Ecuador, Greece, Peru, Portugal, Philippines, and the United Kingdom.

Table 1. Characteristics of Governing Systems Relevant to Metropolitan Institutionality

Dimension of Relevance	Deconcentration (Subnational Administration)	Devolution (Subnational Government)
Origin and legitimacy	Arms of central government	Semi-autonomous
Broad powers	Delegated powers	Elective powers
Oversight	Central ministry control	Some oversight (some linked to funding, such as conditional grants)
Decision-making autonomy	Directed by center	Elected
Revenue mechanisms	Share of national taxes, some local	Grants, local taxes and fees

Source: Derived from Smoke, 1999.

Inman (2007) found decentralized national governance to be positively associated with a nation's performance with respect to property rights, political rights, and private sector performance, and furthermore, that constitutional decentralization (i.e., provincial or state governments) protects policy decentralization. Yet metropolitan-level governance models (Table 2) seem to be somewhat independent of national-level decentralization models. Both the United States and Canada are federal systems, for example, with similar shares of government revenue raised by non-central governments. Yet the United States is home to typically fragmented one-tier metropolitan models (e.g., Los Angeles) while Canada has consolidated one-tier governments (such as Toronto)

Table 2. Five Models of Metropolitan Governance

Model	Predominant Characteristics	Advantages	Disadvantages	Examples
One-tier fragmented	Large number of autonomous governments	Local government accountability and accessibility	Capturing scale economies, spillovers	Los Angeles, Geneva, São Paulo, Mexico City, Manila, Mumbai
One-tier consolidated	Single local government	Service coordination, streamlined decisions, scale efficiencies	Reduced competition, incentives, access, and accountability; geographic boundary	Cape Town, Toronto, Shanghai, Abidjan
Two-tier	Upper and lower tiers	Services and infrastructure delivered at or by the "right" scale or tier	Reduced transparency and clarity for citizens; delayed decision-making; duplicated services	London, Barcelona, Tokyo, Seoul
City-states	Shares boundaries with state or province (or nation)	Area-wide internalization of externalities; budget authority	Urban growth beyond jurisdictional boundary; political power conflicts	Berlin, Singapore, Shanghai
Voluntary cooperation	Local government administrative integration and political linkage	Metro-wide services without political amalgamation	Transparency; diverging local government objectives	Finland, Portugal, Brazil
Special-purpose districts	Service-specific regional provision	Service-specific spillover range; user-fee basis	Political accountability; inability to account for inter-service tradeoffs, coordination; potential disconnect between taxation and expenditures	United States MPOs and public transit agencies; Bogotá (Transmilenio); Manila (MMDA)

Source: Derived from Slack, 2015
Note: MPO = Metropolitan Planning Organization; MMDA = Metropolitan Manila Development Authority.

This matters to governing metropolitan mobility because mobility infrastructure and services, over time, influence the necessary geographic scope. Fifty years ago, Mexico City was essentially a city-state—historically, the Distrito Federal—but, since 2016, it has been formally known as Mexico City and equivalent to a state-level government. Most of the metropolitan area's subsequent growth, however, occurred beyond the Distrito's jurisdiction. Today, the Mexico City Metropolitan Area is a highly fragmented, one-tier governance model, which drastically impacts mobility infrastructure and service efficiencies. Few bus services from the surrounding suburbs are permitted to operate in Mexico City, generating massive demand for transfers (bus–bus and bus–metro), creating system inefficiencies and major user inconvenience (in 2010, approximately 2 million passengers per day made such inter-jurisdictional transfers at Mexico City transfer stations, GDF, 2011). Mexico City, with responsibility for building, operating, and financing the urban rail system (metro) has few incentives to expand services and infrastructure into the surrounding jurisdictions in the State of Mexico. Highway investments have also been

notoriously uncoordinated between Mexico City and bordering jurisdictions. Berlin, similarly, has city-state status and has unsuccessfully tried to expand its boundaries to include suburban municipalities from the neighboring state of Brandenburg (Slack, 2015). Even Singapore, a city-state nation with a dominant political party, is not immune from the challenges of metropolitan expansion. The nation's metropolitan area is spreading across the narrow Johore Strait into neighboring Malaysia. Indeed Singapore is expanding its urban rail system into Malaysia and is reportedly developing housing estates there as well. Such metropolitan growth dynamics will surely influence mobility governance in the city-state's future.

Despite the challenges, mobility also serves as a natural point for some amount of intra-metropolitan collaboration. A study of metropolitan governance in OECD countries (Ahrend, Gamper, and Schumann, 2014) found transportation to be among the three most common metropolitan governance organizations with some evidence of successful outcomes (e.g., citizen satisfaction with public transport). The OECD study, nonetheless, appears to focus on a relatively limited scope of transportation, primarily public transport authorities. This fact reveals another challenge to metropolitan transportation governance since the range of relevant planning and management responsibilities include the following:

- Planning infrastructure and services for public and private transport, roads and rails, passengers and freight, motorized and non-motorized modes
- Managing and regulating infrastructure and services, including parking, traffic, operating, and infrastructure concessions and licensing
- Designing, financing, investing in, and sometimes constructing and operating infrastructure and services
- Collaborating with relevant authorities in related sectors, including land planning and development, environmental protection, public health, and safety

Rarely, if ever, does a single metropolitan authority encompass this entire range of functions.

United States: Metropolitan Mobility Governance in a Federal System

The United States is a longstanding federal system, with elected federal, state, and local governments. Its metropolitan areas, as defined by the Census Bureau, have long been jurisdictionally fragmented. By the late 1960s, the 227 statistical metropolitan areas already comprised an average 38 local governments (counties, municipalities, townships, not including school districts and special districts) (Campbell and Dollenmayer, 1974). Most metropolitan planning and coordination in the United States originated as incentives from state and/or national government, including federal conditional grants-in-aid (Zimmer, 1974). Some authorities emerged as Metropolitan Special Districts, designed to solve specific, area-wide service problems related to the cross-boundary benefits associated with highways or public transportation, and often given special financing capabilities (e.g., revenue from fees) (Zimmer, 1974). Such limited special districts may have had the unintended consequences of further fragmenting the metropolitan governance landscape and exacerbating inter-system externalities (e.g., highways vs. transit).

Federal transportation legislation, specifically the highway investment and finance system after World War II, gave birth to the modern metropolitan transportation planning organizations in the United States—today known as Metropolitan Planning Organizations (MPOs). A series of federal laws drove the process: the 1962 *Federal-Aid Highway Act* implicitly set the metropolitan scale for highway planning in urban areas and required planning as a condition for receiving money. By 1968, each state had to designate and empower metropolitan area entities (clearinghouses) to review projects for federal aid and coordinate these projects with plans and programs among different agencies. In the early 1970s, MPO requirements were strengthened and funded through federal highway financing (Weiner, 1992). Notably, states viewed these federally empowered MPOs as a violation of state rights by creating another level of government (Weiner, 1992). Although MPOs originated in highway funding legislation (through the Federal Gas Tax), MPOs' scopes of

planning also expanded as financing was made more flexible (e.g., for public transport investments) over the decades through new laws. Note that MPOs, defined by states, and commuting ties, defined by the federal government, do not necessarily coincide. Most MPOs are strictly transportation planning entities, carrying out the federally required transportation planning process and, in theory, determining which projects should be funded.

The Boston metropolitan area offers a glimpse of the complexity. Boston's MPO covers 101 cities and towns (the metropolitan statistical area [MSA] covers at least 130, including in the neighboring state of New Hampshire). The MPO has 22 voting members, including permanent ones from six state-level agencies and the city of Boston, as well as regional and at-large members elected by the voting cities and towns. Luna (2015) found evidence that the voting structure of Boston's MPO is unrepresentative and racially biased. The metropolitan area also has a regional (land) planning agency, covering the same 101 jurisdictions. Unlike the MPO, which has some authority as the financial gatekeeper responsible for the transport project approval process, the regional land planning agency has little more than convening power as cities and towns jealously guard their local zoning and property taxation rights. Metropolitan-level inter-sectoral collaboration between land use and transportation planning can be characterized as cooperation, at best. Operationally, greater Boston's public transportation services are offered primarily by a division of the state Department of Transportation (MassDOT), the Massachusetts Bay Transportation Authority (MBTA), which has 175 cities and towns receiving some service (MBTA began as a special district in 1964). These local jurisdictions provide some direct financial support (assessments) based on population-weighted service areas; in 2016, these assessments amounted to just 6 percent of MBTA revenues (MBTA, 2016). All highways in the metropolitan area are operated by MassDOT. Most local roads, parking, etc. are the responsibility of the local cities and towns, with some collaboration among them, such as for the area's public bike share program, jointly owned by four inner-area municipalities: Boston, Brookline, Cambridge, and Somerville. Because local governments do not have direct responsibility for public transport and they rarely have to provide matching funds for MPO projects, their participation in the MPO generates an implied incentive to bring roadway projects to their local jurisdictions.

As Boston's metropolitan mobility institutional milieu shows, related responsibilities in a typical United States metropolis rest in a host of different organizations. MPOs, the most consistently federally empowered entity across metropolitan United States, have relatively limited "thematic width" (Ahrend, Gamper, and Schumann, 2014) because they deal almost exclusively with transportation planning and project prioritization. Haynes, Gifford, and Pelletiere (2005) suggested that the typical MPO voting structure poorly reflects the regional concentration of people and jobs and that money excessively drives decision-making power, giving undue influence to the federal government. Nelson, Sanchez, Wolf, et al. (2004) found some evidence that voting structure influenced modal investment priorities, with more suburban-oriented MPO boards associated with more highway-oriented investments. Gerber and Gibson (2009) found that an MPO's extent of regionalism (share of federal monies going to regional projects within an MPO) varies according to membership composition and decision-making structure. They also found evidence of electoral parochialism: elected officials were associated with more local project funding, while public managers were associated with more regionalism. Interestingly, wealthier areas and areas with larger public transport systems had more regional-scale funding. The United States' experience with MPOs suggests that the design of governance structure matters for outputs.

Portugal: Metropolitan Mobility Governance in a Unitary System

Portugal is a relatively young unitary government system. The 1976 Constitution established a framework for four levels of subnational government, although two primary levels of elected government exist in practice, central and municipal. Elected local parishes, within municipalities, play a minor administrative role.

The two autonomous regions are not included in this characterization. Metropolitan governance is limited to fragmented administrative powers, largely subsidiary to municipal governments and dependent on the central government for most financial support (Rayle and Zegras, 2013). The nation has been undergoing a relatively slow process of deconcentration and decentralization, conditioned in part by membership in the quasi-federalist EU system. Nonetheless, the nation remains relatively highly centralized in terms of spending responsibilities and tax revenue (OECD, 2017).

The nation has long struggled with creating inter-municipal governance capabilities in the two primary metropolitan areas. Various laws have defined and aimed to empower the Metropolitan Areas of Lisbon and Porto (AML and AMP, respectively). Most recently, a 2013 law further defined the AML and AMP and approved inter-municipal entities for other urbanized areas across the country. Earlier legal incarnations of the AMP and the AML did not represent metropolitan governments, per se. Instead, each played a convening role, with the constituent municipalities participating through a metropolitan assembly (members elected by municipal assemblies). Their respective attributions were relatively vaguely defined and they depended nearly entirely on their municipal members or central government for financing (Assembleia da República, 2008). The result was the promulgation of a mix of non-compulsory, somewhat visionary strategic documents (Schmitt, 2013). The 2013 law changes the political composition of the metropolitan areas, although the attributions and dependencies remain nearly identical (Assembleia da República, 2013).

A 2009 law established Metropolitan Transportation Authorities (AMTs), which jurisdictionally coincided with the AML and AMP but represented a separate governing structure. Zegras et al. (2013) suggested that the AMTs lacked the administrative and financial authority to metropolitanize transportation; risked exacerbating perceptions of a central government transportation finance bias toward Lisbon and Porto; might hamper broader intermodal and intra-system management needs by focusing primarily on public transportation; remained a heavily top-down solution, evidenced by central government dominance in the membership structure; and lacked any meaningful recourse to financial instruments. In 2015 the Portuguese government passed a law abolishing the AMTs and folding their responsibilities into the respective metropolitan governments (Assembleia da República, 2015). This may represent a promising streamlining of metropolitan governance, although only time will tell if the metropolitan institutions move beyond their strategic role toward a more fully empowered one for mobility and other responsibilities.

Given this relatively weak formal metropolitanism, some evidence of bottom-up municipal collaboration has emerged, albeit not at a fully metropolitan scale. Rayle and Zegras (2013) examined ad-hoc inter-municipal collaboration in Lisbon and Porto in the land use and mobility realms, finding that collaboration is facilitated by positive incentives (e.g., money), flexibility in the institutional system, the presence of an external catalyst, existing networks, and specific organizational characteristics. Any one of these factors is insufficient; nearly all must be present for collaboration to emerge. Even then, the existing inter-municipal collaborations reveal modest scopes. The focus of the collaboration also plays a logical role. For projects such as public transport infrastructure, with tangible, relatively short-term benefits, other factors play a modestly important role. Where benefits are more uncertain, such as for long-term planning, several supporting conditions are necessary, including an external coordinating force. Broader metropolitan coordination for land use and mobility in Portugal will likely require metropolitan governance empowered to incentivize collaboration (Rayle and Zegras, 2013). Time will tell if the new metropolitan governance structure will effectively move in this direction.

Metropolitan Governance for Sustainable Mobility: A Path Forward

The Portuguese examples of inter-municipal collaboration on land use and mobility reveal a mix of causes. Collaboration emerges, or not, due to different combinations of different factors, even when observing just two metropolitan areas in the same nation. That

collaboration does emerge still says nothing of the ultimate quality of the outcome. In the end, we are not concerned with the form of governance, per se, rather the quality of the governance outcome. How related are the two, in practice?

Answering this question requires some ability to measure performance across different governance structures. This would lend insight into whether governance matters. But, by what outcomes can we compare metropolitan mobility performance? For decades now, scholars, practitioners, advocates, and others have undertaken dozens of efforts to measure, for example, sustainable mobility. Yet, these often ambitious initiatives have not shared common definitions, much less performance indicators, making comparison across contexts difficult (e.g., Zegras, 2011). Which outcomes matter? Mode shares, emissions, financial sustainability, social rate of return? Can these be meaningfully compared across metropolises? Take a simplistic, but highly publicized measure of performance: congestion. In the United States, for example, since the early 1980s, the Texas Transportation Institute (TTI) has compiled data on urban area congestion, producing a polemic, highly publicized scorecard, ranking metropolitan areas with the worst congestion (measured by yearly delay per automobile commuter). More recently, a mobility data company, INRIX, compiled a global ranking of cities based on roadway travel delays (peak hours spent in congestion). By this metric, Los Angeles (#1), Moscow (#2), Bogotá (#5), London (#7), and Paris (#9) are among the 10 worst global cities (Cookson and Pishue, 2017).

Congestion-based measures of metropolitan mobility performance can be problematic as they focus on roadways and, often, automobile users only. Comparability can also be a challenge, as evidenced by the differences in the 10 worst metropolitan areas in the United States according to TTI and INRIX (Table 3). More fundamentally, however, congestion-based measures focus on throughput, while the ultimate outcome of interest for sustainable metropolitan mobility is accessibility (Zegras, 2011). By one measure of accessibility, metropolitan mobility performs best in some of the United States' most congested places, including New York City, Los Angeles, and San Francisco (Table 3).

Table 3. Top 10 Metropolitan Areas in United States with Worst Mobility (Congestion) and Best Accessibility (Accessibility to Jobs)

Congestion (Worst Performing Metro Areas)		Job Accessibility (Best Performing Metro Areas)		
INRIX (2016)	TTI (2014)	Automobile (2015)	Public Transport (2014)	Walk (2014)
Los Angeles	Washington, D.C.	New York City	New York City	New York City
New York City	Los Angeles	Los Angeles	San Francisco	San Francisco
San Francisco	San Francisco	Chicago	Chicago	Los Angeles
Atlanta	New York City	Dallas	Washington, D.C.	Chicago
Miami	Boston	San Jose	Los Angeles	Washington, D.C.
Washington, D.C.	Seattle	San Francisco	Boston	Seattle
Dallas	Chicago	Washington, D.C.	Philadelphia	Boston
Boston	Houston	Houston	Seattle	Philadelphia
Chicago	Dallas	Boston	San Jose	San Jose
Seattle	Atlanta	Philadelphia	Denver	Denver

Sources: INRIX: Cookson and Pishue, 2017; TTI: Schrank et al., 2015; Automobile: Owen et al., 2016a; Public Transport: Owen et al., 2016b; Walk: Owen et al., 2015.

Note: The geographic scope of the INRIX and TTI congestion measures are not necessarily consistent. TTI apparently uses the MSA, while INRIX defines urban area based on roadway density. The accessibility values are calculated for the MSA; accessibility to jobs measures are calculated using travel time estimates for metropolitan areas and the distribution of jobs, with the number of jobs reachable weighted, decreasingly, according to travel times (essentially, a cumulative opportunities approach with a gravity-type impedance applied).

Follow the Money?

(The author acknowledges Taylor [2004].)

Associating the mobility performance of metropolitan areas with governance offers an inductive way to identify good governance structures. Deductively, we can be driven by theory: effectively governing metropolitan mobility requires some capability to balance the societal benefits of scale (e.g., cross-jurisdictional infrastructure and services) with localized benefits of individual free choices. This requires coordination across jurisdictions and integration of the land use transport systems. The former is sometimes present, while the latter, rarely. Places with strong jurisdictional coordination, such as the cases of a relatively strong central government role in metropolitan areas in The Netherlands or jurisdictional integration in Singapore, run the risk of strengthening functional domains, favoring intra-disciplinary dialogue and minimizing inter-departmental collaboration (Kantor, 2006). This suggests a tension exists between horizontal and vertical collaboration and integration: centralization does not necessarily ease metropolitanization of integrated mobility governance.

Incentivizing metropolitanism in mobility might require stronger recourse to well-designed mobility finance. Bird and Slack (2007) intimated that effective metropolitan governance requires an appropriate fiscal structure. The transport finance system and related fiscal instruments profoundly influence metropolitan mobility performance and related effects such as land development patterns, environmental impacts, and social equity (Taylor, 2004). The key elements of system financing send investment signals, project and program evaluation signals, user (and system efficiency) signals, and signals for system coordination to the relevant agencies and different levels of government. The United States' experience with national highway finance (via the gas tax) being used to induce coordinated metropolitan mobility planning and project selection through the MPO process has been marginally effective.

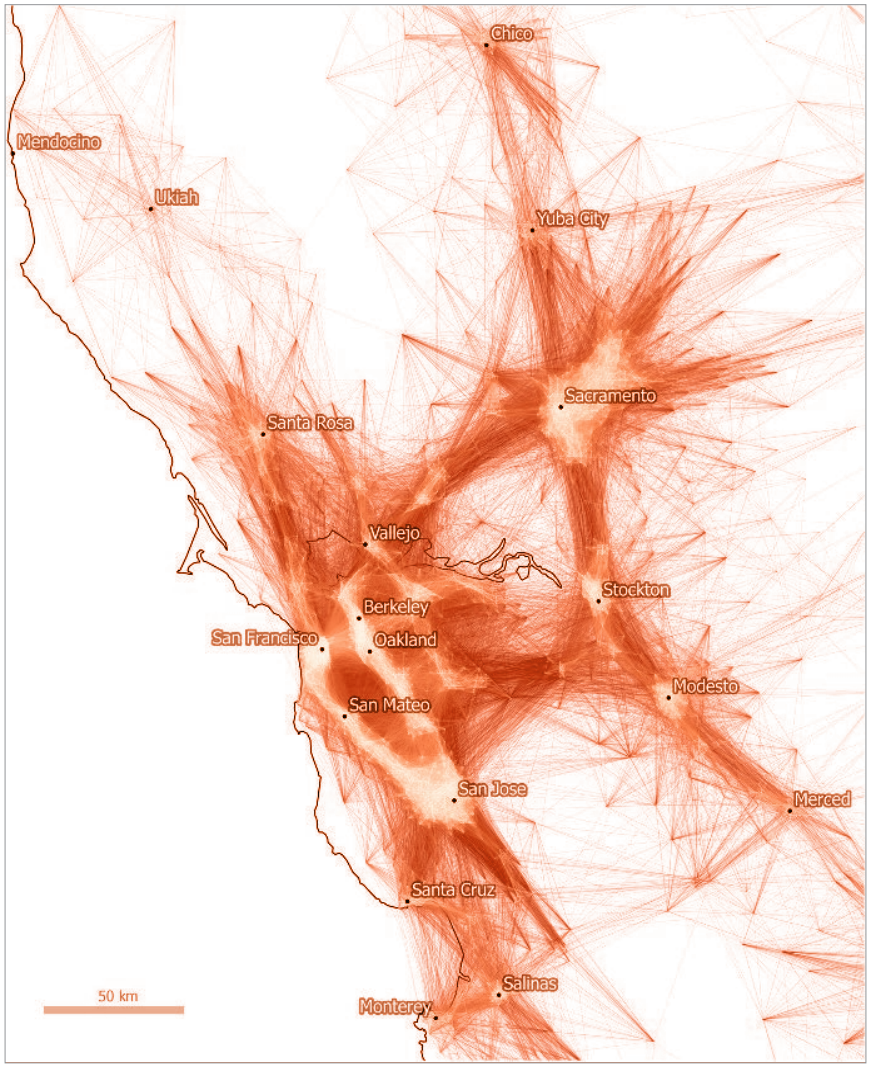
But without directly elected representatives and rarely with direct recourse to taxes or responsibility for investment and providing services, MPOs fall short, and the U.S. federal government continues to play an overly strong role. Fiscal federalism theory suggests that a metropolitan mobility finance system should aim for fiscal equivalence, whereby beneficiaries and payees are matched, and efficiency, where prices closely match marginal social costs, and price signals guide investment and management decisions. Prices should account for inter-system and intra-system externalities. In short, the finance system is a critical factor in determining metropolitan mobility governance, but formal metropolitan mobility finance systems rarely exist (Zegras et al., 2013). Of the typical instruments available—explicitly or implicitly—for financing metropolitan mobility, road charges (e.g., congestion pricing), public transport fares, and land-related taxes have the strongest theoretical adherence to a fiscal federalism–consistent metropolitan mobility system (Table 4).

Table 4. Fiscal Federalism: Financial Instruments for Metropolitan Mobility

Transport Finance Instrument	Fiscal Federalism Criteria				
	Fiscal Equivalence	Efficiency	Externalities	Equity (Horizontal)	Administrative Ease
Fuel taxes	+/−	−	−	+/−	+
Other vehicle taxes, fees	+/−	−	−	−	+
Road charges	+	+/−	+/−	+/−	−
Public transport fares	+	+/−	+/−	+/−	+
General taxes: income, sales, etc.	+/−	−	−	+/−	+
Land taxes	+	+/−	+/−	+/−	+/−

Source: Zegras Jiang, and Grillo (2013).
Note: (+) meets, (+/-) partially meets, (-) mostly fails to meet criterion.

Figure 4. Journeys to Work (80 km or less) in San Francisco Bay Area



Source: Dash Nelson and Rae, 2016.

Whether better designed metropolitan mobility finance systems can lead to better metropolitan mobility governance remains to be seen. Technical barriers to, for example, efficient road charges have largely been overcome, but political barriers remain. The spatial scope of metropolitan mobility can now be precisely determined and users charged appropriately; the finance system could match the underlying patterns of demand across regions (Figure 4). Using money to move the metropolis in the right direction offers hope, largely unfilled to date. Incrementalism will prevail in most places. May sustainable accessibility ultimately arise—despite the congestion.

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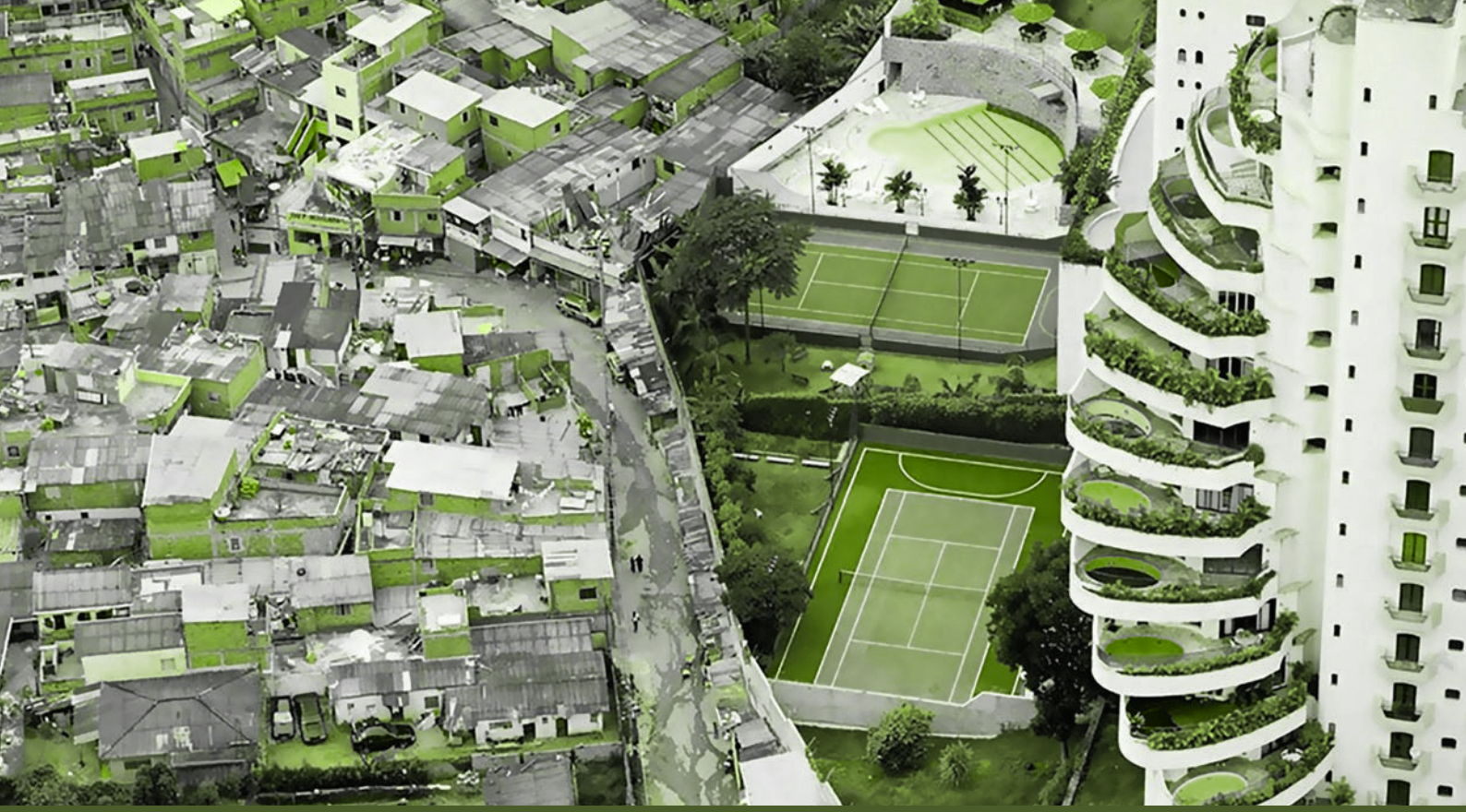


Section 3

Building metropolitan governance: lessons and good practices

Photography by Tuca Vieira. http://www.tucavieira.com.br/

3.1 Greater Cairo: Dominant National Authorities and Fragmented Responsibilities

David Sims (Urban Specialist)

Abstract

Greater Cairo offers an interesting case study of a huge metropolitan area and primate capital city that has developed under a governance system characterized by dominant national authorities and virtually no metropolitan-level coordination or structures. In spite of serious challenges that include dichotomous spatial development, very weak local authorities, massive informal settlements, serious transport problems, and imbalances in the funding of investments, attempts at instituting metropolitan governance have so far had no success. The difficulties of introducing useful reform offer a cautionary tale for efforts to promote metropolitan governance elsewhere.

Metropolitan regions, defined as metropolitan agglomerations where people live and work across jurisdictional boundaries, are becoming more economically interdependent with their surrounding settlements and hinterlands, creating metropolitan areas that are constantly expanding and need to be thought of as having a common economy, labor market, transport system, and infrastructure network. Such thoughts underlie the increasing attention to metropolitan-wide mechanisms and joint interventions that can support efficient, equitable, and sustainable urban growth. In fact, as pointed out in Chapter 1.3 of this book on Metropolitan Governance by Mats Andersson, this thinking can be called the new normal.

How does Greater Cairo measure up in terms of metropolitan governance? And does an understanding of its particular forms of governance help inform ongoing discussions about the need for and ways to encourage metropolitan-level coordination and cohesive planning and intervention?

On the face of it, Greater Cairo should be a prime case for metropolitan-scale management. It is one of some 15 megacities worldwide, with a current population of over 20 million inhabitants (some 23 percent of the national population). The metropolitan agglomeration has spread in recent decades to encompass all or most of three local administrations (governorates), and its economic and spatial influences extend even further. Cairo also is the seat of central government and by any measure it can be considered a primate city, with recent estimates putting the Greater Cairo Region's share of gross national product at 44 percent (Egypt, 2015).

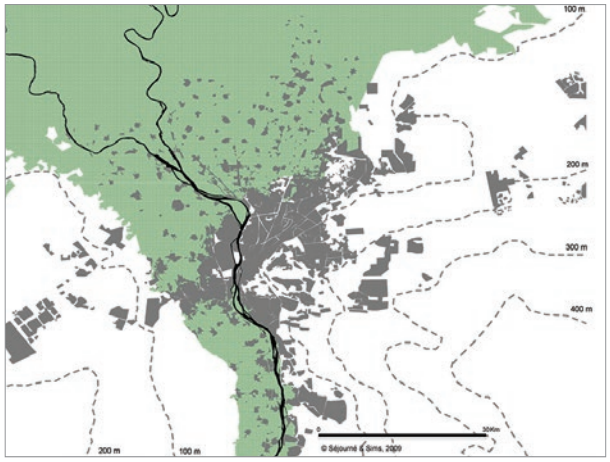
However, for decades, Greater Cairo has managed to avoid any metropolitan-level emphasis in administrative organization or in horizontal coordination, in spite of a small number of attempts to introduce these. Instead, all aspects of Greater Cairo's governance and development are controlled by national-level authorities or their subsidiaries, and all decisions about the metropolis are centralized at the highest level. The result is fragmented responsibilities, silos, and little collective effort except in an ad-hoc manner. Such a high level of management centralization represents one extreme approach to organizing metropolitan development, and thus offers an interesting case of what happens in the absence of metropolitan-level governance.

Greater Cairo as a Metropolitan Area

How such a fragmented and extremely centralized system for governing Greater Cairo came to be requires a brief look at Egypt's modern history and geography. Any understanding of Cairo's growth must first be cognizant of its unique geographic setting. Figure 1 shows urban development straddles the Nile and extends both into the intensely cultivated

agricultural plain as well as into the deserts to the east and west. Thus the potential for urban expansion is dichotomous. On one hand, there is a flat, peri-urban hinterland made up of villages, small towns, and intensive private agricultural holdings. On the other hand, there are almost unlimited desert lands, all of which are owned by the state. Such a bifurcated geography has had important implications for the ways in which metropolitan governance has evolved.

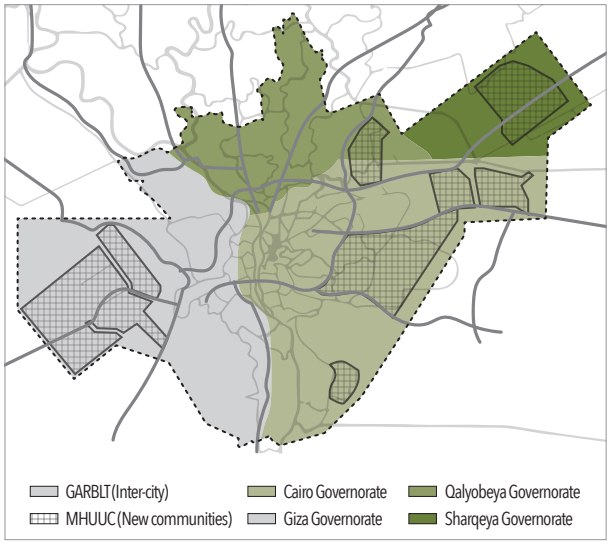
Figure 1. Geography of Greater Cairo



Source: Sims (2012).
Note: The agricultural plain is in green.

Historically, Cairo lies on the east bank of the Nile and has been the seat of government and the most important city in Egypt since at least 969 AD. Tremendous urban extensions and population growth occurred throughout the 19th and early 20th centuries under central authorities as well as utilities companies and concessions to private developers. After the World War II, urban development, which had mostly been restricted to the east bank of the Nile, began to spread west into Giza and north into Qalyubia, thus straddling three local authority (governorate) boundaries. Figure 2 shows the position of these three governorates within the Greater Cairo Region. These three governorates are part of the current local administrative structure in Egypt. Each is headed by a governor appointed by the president and is subordinate to national ministries and executive bodies.

Figure 2. Governorates of Greater Cairo Study Area



Source: World Bank (2016).
Note: The full extents of Giza and Qalyubia governorates are larger than the Greater Cairo Study Area (defined by the JICA). Also, this study area includes the new town of Tenth of Ramadan, which is nominally within the boundaries of Sharqia Governorate.

In addition to the three governorates, in 1979, New Communities Law No. 52 sanctioned the creation of new towns in Egypt. In a very short time, new cities were being created in the state-owned deserts found both directly east and west of Cairo as part of an ambitious national program. These new towns, being under the semi-autonomous and powerful New Urban Communities Authority (NUCA) within the Ministry of Housing, represented another major institutional element that made up Greater Cairo. Today there are seven new towns, two west of and five east of Cairo, extending the urban landscape as far as 70 kilometers from the city center.[1]

A succession of land use plans for Greater Cairo (1982, 1989, 1997, and 2008) were prepared by the General Organization for Physical Planning (GOPP), an affiliate of the Ministry of Housing. All of these put emphasis on the new desert towns around Cairo as the anchor of future urban expansion and the loci of major new urban commerce and services, the relocation of establishments from core metropolitan areas, and the building of almost all government subsidized housing schemes. Conversely, in these plans little attention was given to existing Cairo (under the jurisdiction of the

1 Sometimes an eighth new town, Tenth of Ramadan, is considered part of Greater Cairo.

three governorates) except for a smattering of urban renewal schemes in formal areas and the development of the underground metro and road flyover networks.

Governance System: Definitions

Egypt is unitary state, and the emphasis during the 1950s and 1960s was on consolidating national unity through a process of centralization. Since 1960, the country's territory has been divided into a number of subsidiary local administrations called governorates (presently there are 27). In 1977, a presidential decree divided the country into eight Economic Regions, with the three governorates—Cairo, Giza, and Qalyubia—designated under the Greater Cairo Region. In parallel, the GOPP established regional planning centers for each region. These forays into regionalization have never had much impact, and the centrally dominated and vertical arrangements remain key challenges facing sound territorial governance in Egypt.

Over the years, there have been various boundaries used for planning purposes to describe the Greater Cairo Metropolitan Area but there is no commonly agreed definition. A Presidential Decree in 1975 defined a boundary of Greater Cairo that included all of Cairo Governorate, Giza City, and three rural districts of Giza Governorate, Shubra al-Kheima City, and four rural districts of Qalyubia Governorate.

In master plans for Greater Cairo (1997 through 2012), GOPP has adhered to a study area boundary that includes all of the above, plus the desert tracts that contain the seven new towns.

State Institutions Control Development

There are numerous state institutions (Table 1) with functions that can be considered related to Greater Cairo's metropolitan governance either directly or indirectly. Associated with these institutions are sets of enabling legislation. Note that with only minor exceptions, all are either national level institutions or those that are part of the local administrative structure, itself a principal-agent system under the central government.

Table 1. Major Government Institutions Related to Greater Cairo Governance

Planning and Land Development
• Supreme Council for Planning and Urban Development, Prime Minister • General Organization for Physical Planning (GOPP), Ministry of Housing • New Urban Communities Authority (NUCA), Ministry of Housing • National Center for Planning of State Land Uses, Prime Minister's Office • Armed Forces Engineering Department, Ministry of Defence • Cairo Governorate, Ministry of Local Development • Giza Governorate, Ministry of Local Development • Qalyubia Governorate, Ministry of Local Development • Reconstruction Agency (gehaz al-ta'amir), Ministry of Housing
Transport
• Greater Cairo Transport Regulatory Authority, Ministry of Transport • Cairo Transport Authority, Cairo Governorate • General Authority for Roads and Bridges, Ministry of Transport • National Transport Institute, Ministry of Transport • General Authority for Tunnels, Ministry of Transport • Nile River Transport Authority, Ministry of Transport • Egyptian Railways Authority
Utilities
• Water and Wastewater Holding Company, Ministry of Housing • The water and wastewater companies in Giza, Qalyubia, and Cairo, Ministry of Housing • Ministry of Electricity and Renewable Energy • Ministry of Communications

Source: Author.

In other words, almost all decisions relating to managing and growing Greater Cairo are carried out at the national level, inside structures whose responsibilities cover the whole country. At present,

there is virtually no institutional focus on Greater Cairo as a discrete economic or geographical entity, thus management of Greater Cairo is fragmented across a wide range of central authorities. There is also no room for non-state actors in this management system. There are some civil society organizations that carry out charity or development work mainly in Greater Cairo, but even these have geographic scopes that extend beyond metropolitan boundaries.

The bulk of responsibility for providing services, infrastructure, and livelihoods for Greater Cairo's inhabitants falls on the three governorates (under the Ministry of Local Development) and their sectoral directorates. These local administrations are very weak and are beholden to central government budgetary allocations as well as the dictates of central ministries and authorities. There is practically no horizontal coordination at the local level. At the same time, there is the national NUCA, an independent economic entity that controls the new towns around Cairo and in total some 22 new towns in the country.

Imbalances and Disconnects in Greater Cairo Governance

As described above, the existing system of governance for Greater Cairo is characterized by myriad agencies and ministries, institutional fragmentation, vertical silos, and systems that rely almost exclusively on decisions made at the national level. This institutional fragmentation is a serious challenge for any metropolitan governance. But beyond this, there are serious and growing development challenges that confront Greater Cairo and that current governance systems cannot resolve in their present form without some kind of metropolitan-level approaches. It is these imbalances and disconnects that have already compromised the efficient functioning of the Greater Cairo Region, and, as it continues to grow, will become more acute.

New Towns and Public Desert Land: What Happened to the Compact City?

All plans and policies related to Greater Cairo's expansion rely on the continued availability of public desert land, and these plans are underpinned by the massive designating, converting, and servicing this land for urban uses. These lands are located both east and west of the metropolis. While in theory this is an envious situation that many metropolitan areas worldwide wish they could have, in Greater Cairo, the exploitation of this resource over decades has relied on a misplaced faith that modern, high-standard, low-density, sprawling, car-oriented new towns operating under top-down bureaucratic dirigisme would quickly create jobs, absorb the increasing metropolitan population, and provide an attractive alternative to informal urban development. That this was not happening was already apparent in the 1990s, but the same policies have been continued and even accelerated, with more and more desert tracks assigned for new town expansion.

Most new towns are located at significant distances from the metropolitan agglomeration, between 40 and 60 kilometers from the center of Cairo. All new towns are planned on vast scales; altogether, the seven new towns around Cairo currently extend over a surface area of 1,400 square kilometers, equivalent to three times that of the existing metropolitan agglomeration. The announcement in March 2015 of a new administrative capital on 700 square kilometers of land to the east of Cairo will add significantly to this extensive low-density desert sprawl.

Supply-side and rigid land development approaches have made it difficult for the new towns to attract even a fraction of their intended population targets. The populations of the seven new towns around Cairo only reached 465,000 inhabitants in 2006 (600,000 including Tenth of Ramadan), representing a meager 3.3 percent of Greater Cairo's population at that time. It is clear these towns do not offer the kinds of housing, choice, and livelihoods that would entice even a small portion of Cairene families, especially those who continue to crowd into the city's huge informal areas.

Figure 3. The New Towns Around Cairo

Source: Sims (2012).

Informal Cairo: The Elephant in the Room

Starting in the 1960s, a new phenomenon began to appear in peripheral areas of the Greater Cairo agglomeration: informal housing of solid construction, built by individuals and families on both private and state land without government approval. This process of housing creation was ignored by the state but, because it fit well with both financial and social parameters of the Egyptian family, had by the early 1980s accelerated to represent the dominant mode of housing and sparked a wholesale exodus from overcrowded inner city districts. Remittances from Egyptians working in the Gulf countries provided much of the finance.

In the 1980s and 1990s, the informal areas could not be totally ignored and progressively basic services were extended to informal areas piecemeal and ad-hoc. At the same time, the informal housing process began to reach farther afield, into the peri-urban areas in the Giza and Qalyubia governorates.

Table 2 illustrates the dominance of informal urban development in Greater Cairo by 2006. Not only did informal areas contain roughly two-thirds of the population by 2011, these areas were estimated to have absorbed an incredible 78 percent of all additions to the metropolitan population over the 1996–2006 period, partly in the informal city found within the urban agglomeration and partly in peri-urban areas.

Table 2. Governorates of the Greater Cairo Region (GCR) in 2006 and their Informal Populations

Governorate	Population	Total Population in GCR	Informal Population in GCR	Percentage Informal
Cairo	7,786,640	7,786,640	3,559,227	45.7%
Qalyubia	4,237,003	3,448,950	2,787,919	80.8%
Giza	6,272,571	4,944,420	4,337,531	87.7%
Total	18,296,214	16,180,010	10,684,677	66.0%

Source: World Bank (2012).

Such urban informality creates the most affordable housing solutions in Greater Cairo, generates a significant micro and small enterprise sector, allows for compact and low-energy living, and ensures considerable social capital and community solidarity. However, due to past neglect, infrastructure networks are insufficient and overburdened, with poor access to informal areas and very few paved roads. Further, schools, health clinics, and open recreational areas are sparse and mostly dilapidated, and the accumulation of refuse is endemic. Population density is extremely high. Since the bulk of the metropolitan labor force lives in these disadvantaged areas and considering almost all investment in modern enterprises is in the distant new towns around Cairo, it is difficult for these workers and entrepreneurs to be integrated into the economy of Greater Cairo.

The implications of increasingly dominant informal urban development processes in the Greater Cairo metropolitan region has immense consequences for metropolitan governance, yet informality has largely been ignored by planning authorities.

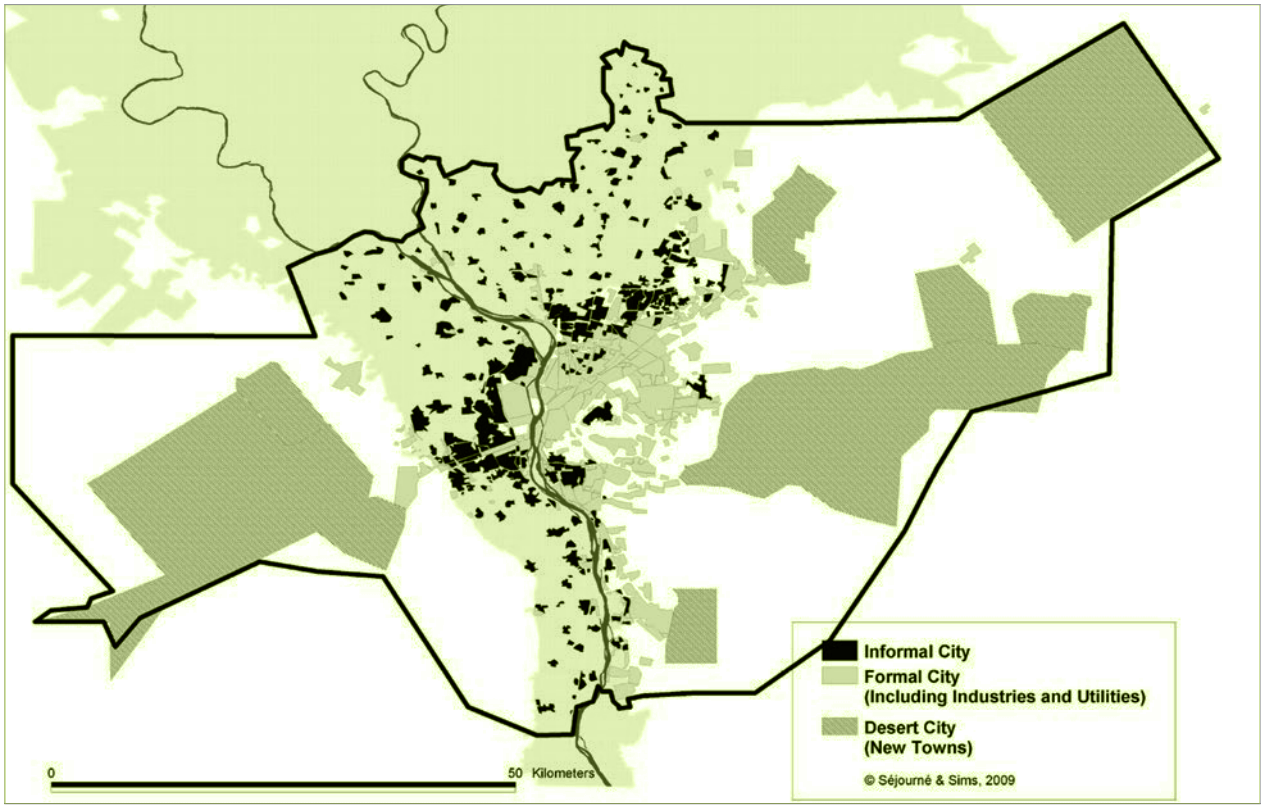
Governorates as Elements of Greater Cairo's Expansion and Governance

The three governorates—Cairo, Giza, and Qalyubia—should be extremely important elements of Greater Cairo's governance structures, especially since the jurisdiction of these governorates covers over 90 percent of Greater Cairo's 20 million inhabitants. However, their roles have become limited and weak.

First, the governorates have been denied almost all hinterland desert areas for urban expansion, with the development rights over these captured mainly by NUCA. Second, governorates powers over urban planning and development have been seriously truncated. Third, Egypt's governorates have never enjoyed all the powers and funding sources implied in *Local Administration Law 43/1979*, nor have any of the many decentralization initiatives over decades resulted in giving governorates and their subunits more power and authority.

The three governorates of Greater Cairo operate under the same local administration legislation as do all governorates in Egypt, and nowhere are they given any special status. Not even Cairo governorate receives any special status, despite recognition in the 2014 Constitution as the legal capital of Egypt. Furthermore, governorate operations remain completely dominated by appointed local executive councils and directorates beholden to central ministries. Most local decisions are made by governors (themselves appointed by the President) or need prior approval from the central government and its representatives. Central government exercises control over the units of local government, and within governorates, power is centralized in the office of the Governor and his Local Executive Council. As such, the local administration system can be described as partly deconcentrated rather than decentralized.

Figure 4. The Component Parts of Greater Cairo, 2009



Source: World Bank (2012).

Public Transport, Traffic, and Armageddon

Greater Cairo is an extremely large city in terms of population. It is also huge in surface area, given the headlong development of vast desert spaces over the past 30 years. Greater Cairo is also a very congested city, traffic management is chaotic, and the public transport system is disorganized and inefficient. In 2010, The World Bank (2014a) estimated the cost of congestion in Greater Cairo at approximately US$8 billion per year or at least 3.6 percent of the nation's GDP.

There are some 18 separate governmental entities and four additional parastatal organizations that have a significant role in Greater Cairo's transportation. There seems to be no concerted policy to strengthen public transport systems and their attractiveness as the only rational alternative to this rising congestion. The only system that is presently separated from general traffic is the Cairo metro, but work on its various lines is well behind schedule, meaning that its system coverage cannot attract anywhere near the ridership that might discourage the use of surface transport, in particular private cars.

There is a great opportunity to reverse transport trends in Greater Cairo if public transport were given higher priority over private vehicles. Car ownership in Greater Cairo remains very small at some 15 percent of households. As a result, the integration of public transport (the metro plus bus rapid transit and light rail) with surface public transport (especially private mini- and micro-buses) would bring about significant economic and environmental benefits. And were such an efficient public transport network in place, even some car-owning inhabitants would prefer to use it rather than be stuck endlessly in road and overpass congestion.

But the prognosis is bleak. It appears that there is no political will to combat the dominance of private cars in Greater Cairo. For the metropolitan area to

continue to function and benefit from its agglomeration economies in the future, a solution to the increasing transport mess is critical.

Unequal Financing and Power: NUCA versus Governorates

Due to its control over all new towns in Egypt, NUCA has become a very powerful authority. Most of its power derives from the fact that, almost unique among economic authorities in Egypt, it generates substantial revenue from land sales, especially from land in the new towns around Cairo where development pressures, and thus market prices for land, are greatest. Controlling such a large amount of land also bestows political importance, as almost all land being allocated to various government authorities for their own projects is to be found in the new towns. Likewise, the large private real estate sector is very much reliant on NUCA for access to immense tracts of land, mainly for prestigious residential and commercial schemes in the new towns around Cairo. Promoting these large private estates dominates media advertising and foreign Gulf investors feature prominently in these areas.

With all the urban developments in new towns around Cairo, copious information should be publicly available about land phasing, upcoming land releases, and other development plans. However, the information is challenging to find and "need to know" is a carefully guarded principle. Even maps showing development zones, studies of redevelopment, and new town strategic plans are extremely difficult to come by. For most, even urban researchers, the first they hear about a scheme is when a contract signing or a memorandum of understanding for a new initiative is announced in the press.

This is worrisome given the fact that it is Greater Cairo's deserts where all new urban development is planned to take place. And it is indicative that more and more power is being concentrated in the hands of a very opaque NUCA, giving it more land to deal with and more fiscal autonomy.

It is clear that NUCA is increasingly being used by the national government as a cash cow to finance prestigious megaprojects such as the new administrative capital and desert land reclamation projects. Yet most surpluses continue to be plowed back into further expansion of NUCA's portfolio of inefficient new towns.

It needs to be underscored that virtually all financial surplus generated by NUCA comes from revenue extracted from three of the new towns around Cairo. Thus the vast majority of inhabitants of the Greater Cairo metropolitan area see no benefit from the highly profitable development of its own new towns.

The contrast between Greater Cairo's governorates and NUCA could not be more stark. Although at least 90 percent of the population of the metropolitan area resides in areas that are under the authority of the governorates, which have tiny investment budgets, little fiscal autonomy, and practically no way to improve their revenue bases. This represents a fiscal, economic, and development imbalance that does not bode well for Greater Cairo as a functioning, integrated whole.

Efforts to Reform Greater Cairo Governance

It is important to realize that many people see Greater Cairo in a negative light. There is a long standing attitude among government planners and many Egyptian observers that Greater Cairo is too large, too crowded, too dominant, and too much of a magnet for rural-urban migration. Starting in the 1980s, there were even calls to restrict migration into Cairo, relocate government establishments outside the metropolitan area, and impose entry controls.

The philosophy of providing alternatives to the pull of Greater Cairo continues. In fact, the 2012 Greater Cairo Urban Development Strategy adopted a policy of "reducing the attraction/pull of Greater Cairo on the national territory by proposing alternate growth poles and new centres of growth" (GOPP, 2012, p. 27).

These attitudes toward Greater Cairo, its make up, and its governance are important to understand, as they help explain the failure of deliberations that have been undertaken to redraw Greater Cairo's boundaries and reform its governance. The need for a metropolitan-focused approach to Greater Cairo has been identified over

the years. In the late 1970s, GOPP created the Greater Cairo Regional Planning Centre as one of seven planning regions, but this has never had much clout and, crucially, never included the new towns around Cairo. In the 1980s, a Greater Cairo Governors' Committee composed of the three Greater Cairo governors was created by the then Governor of Cairo, but it only met a couple times.

In 2009, an effort was made by GOPP to develop legislation that would give Greater Cairo special status and special powers. A Capital City Law was proposed to tackle the sectoral, administrative, and financial confusions that constantly plague the three governorates and to improve coordination with central level service and infrastructure authorities. Additional financial resources were to be given to the capital city (including a surcharge on the national sales tax), special funds were to be created with dedicated revenues, and the capital would be exempt from some national budget laws and regulations. The aim of the law was to transform Greater Cairo into a strong economic, administrative, and cultural entity with considerable independence befitting its status as the nation's capital. Conversely, all manufacturing was to be relocated outside the capital city. The geographical extent of the law was to include all the new towns around Cairo and Cairo Governorate, but only some districts of Giza and Qalyubia Governorates. Parenthetically, the excluded areas just happened to be where informal peri-urban growth was occurring.

Although considerable work on the proposed Capital City Law was carried out by the Ministry of Housing in 2010, all efforts were aborted after the January 2011 revolution and the concept has yet to reappear.

In the 2012 Greater Cairo Urban Development Strategy (GOPP, 2012), a Greater Cairo Supreme Council was proposed in order to monitor, coordinate, and supervise the numerous projects and elements of the strategy. This Supreme Council would operate at the highest level, in parallel with the existing Supreme Council for Urban Planning and Development. It would be responsible for official approvals of the strategy and its implementation and would arbitrate conflicts between different parties. In terms of its composition, "all competent ministries and the governors of the three governorates located within the Greater Cairo boundaries must be members of the proposed supreme council. Furthermore, the highest authority in the country will head up the proposed supreme council" (GOPP, 2012, p. 181). Based on the principle of executive subsidiarity, each project would be steered at a level close to executive authority, meaning that in most cases this would be the three governorates of Greater Cairo. Also, a number of pilot projects were proposed that would extend across governorate boundaries and would be under the direct responsibility of the Supreme Council, with their budgets approved by this council.

As far as this author knows, until now (2016), no steps have been taken to establish the Greater Cairo Supreme Council or its supporting technical authority. At a minimum an amendment to Law 119/2008 (which set up the Supreme Council for Urban Planning and Development) would be required.

In mid-2012, a transportation agency—the Greater Cairo Regional Transport Regulatory Authority—was established by the Ministry of Transport. The role of this agency was to regulate, plan, follow-up, supervise, and assess the performance of all activities related to transport in the Greater Cairo Region. An executive director was designated in July 2013. However, as of early 2016, there had been no progress in organizing, staffing, or making operational this authority (World Bank, 2014b).

These efforts show that the concept of metropolitan governance for Greater Cairo does not enjoy much support. Many senior planning and administration experts—who are fully cognizant of the advantages of such an approach—have become disillusioned. At an Expert Group Meeting on Governance of the Greater Cairo Region (GOPP, 2016), participants despaired that nothing will ever change unless the will for reform is taken up at the highest political levels, something that seems unlikely to happen. Moreover, for some this can only happen if there is fundamental reform of the principal-subsidiary relationship between central government and local administration nationwide.

Lessons to Be Learned: A Cautionary Tale?

The central government agencies that control almost all aspects of Greater Cairo and its expansion reflect Egypt's very centralized organization. These agencies operate as administrative silos, and their territory and funding are jealously guarded. The situation is exacerbated by the extreme economic and political importance of Greater Cairo, from which much of the power of these agencies is perceived to derive. After all, with almost half of the nation's GDP being generated in Greater Cairo, it could be argued that the metropolis is Egypt, and that central control is logical.

This helps explain why there have been no successful initiatives at metro-level governance or even formal coordination, in spite of the crying need and despite Egypt's considerable exposure to the expanding international discourse on metropolitan governance. Reform initiatives to institutionalize metro-level management for Greater Cairo have always had to call for new and powerful mechanisms at the highest level of government, which is almost a guarantee that they will never be instituted.

Even softer, more or less voluntary approaches to coordination among metro actors have been stymied. The three governorates, fiscally weak, subsidiary to national agencies, and struggling to deal with the massive challenges of service delivery for the vast majority of Greater Cairo's inhabitants, have not been able to rise above day-to-day crisis management, let alone engage in cross-governorate coordination. On the other hand, new desert developments on public land around Cairo represent both the sole urban development strategy of the government and the only moneymaker at hand, meaning that NUCA, which has no interest in or reason to make Greater Cairo function better, dominates the playing field.

In effect, Greater Cairo and its lack of metropolitan governance represents a cautionary tale, especially for other countries with extreme political centralization and fragmentation. Business as usual will dominate unless there are conscious and continual efforts to promote, one step at a time, modes of cooperation across agencies and municipalities within a metropolitan region, based on real issues or entry points (e.g. public transport, environmental degradation, infrastructure, or revenue-sharing). Awareness raising, greater transparency, and community engagement can certainly help. And looking at successful international cases can inform the debate. Only when momentum is generated and enough political capital is amassed can more structured, formal arrangements for improved metropolitan management for Greater Cairo have a chance of success. The problem is that time is passing and the Greater Cairo agglomeration is accelerating toward an extremely dichotomous landscape, with the modern, unsustainable desert hinterlands capturing most attention and investments, and the rest, where almost everyone lives, being ignored.

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3.2 Metropolitan Governance in South Africa: eThekwini City Council

Purshottama Sivanarain Reddy (University of Kwazulu)

Abstract

South Africa's two-tier metropolitan government system was ushered in through the *Local Government Transition Act* in 1993. The eThekwini Municipality, established in 2000, incorporated the then City of Durban and neighboring towns and rural areas. It is the only metropolitan council in Kwazulu Natal and the third largest nationally. Challenges include low literacy levels and skills, high unemployment and poverty, poor basic services, rise in HIV/AIDS and communicable diseases, decline in economic growth, natural capital loss, unsustainable development practices, inadequate water and energy supply, crime, infrastructural degradation, climate change, and inward looking local government. eThekwini has projected itself as the learning city for its innovative initiatives and creative thinking, specifically in relation to participatory planning, financial management, and environmental sustainability. Innovation has been prioritized and demonstrated by the impressive capacity for good practice nationally and continentally. However, political will is imperative to ensure greater integration and coordination between diverse systems, processes, and policies. The benefits of metropolitization have yet to be experienced by local communities. Municipal functionaries have to demonstrate a strong passion, patriotism, and decisive leadership in responding to the above-mentioned challenges to enhance the quality of life.

The eThekwini Metropolitan municipal area extends from the east along the coastline to the western border of Cato Ridge to the southern edge of Umkomaas and to Tongaat in the north. The municipal area covers 2,297 square kilometers and more than two-thirds of the population is considered rural or semi-rural (eThekwini, 2011a). The eThekwini City Council governs the largest municipality in the Province of Kwazulu Natal and the third largest in the country. There are currently eight metropolitan areas, 52 districts, and 213 local municipalities in South Africa. eThekwini City Council is the only metropolitan municipality in Kwazulu Natal that incorporates a highly diverse municipal area that extends from urban (35 percent) to peri-urban (29 percent) to rural (36 percent) communities. The area is also a mix of racial and cultural diversity, with the African community being the largest (71 percent), followed by Indians (19 percent), whites (8 percent), and colored (2 percent). The metropolitan population of 3.8 million people comprises one-third of the population of Kwazulu Natal province and 7 percent of the South African populace (eThekwini, 2009). Of the eight metropolitan areas nationally, Durban has the highest number of poor, which creates unique challenges.

In 2013, the municipality's growth rate of 2.85 percent exceeded the national growth rate of 2.5 percent and the growth rates of other major metropolitan municipalities, notably Johannesburg (2.7 percent) (eThekwini, 2013). However, this positive growth rate has yet to translate into poverty eradication or job creation. Still, Durban has retained the highest credit rating available and consequently has a good track record for financial governance. It has also endeavored to develop a positive linkage between social, financial, economic, and environmental sustainability as well as strategic priorities like accessibility, sustainable livelihoods, and safety, with a goal of becoming "Africa's Caring and Livable City" (eThekwini, 2011c, 2015a).

The eThekwini metropolitan area plays a strategic role in the South African and provincial economies and as a result it is of international, continental, national,

and provincial significance. The Durban Harbour is the busiest port in the country and the city of Durban is a major tourist destination in South Africa given its subtropical climate (eThekwini, 2011b). This chapter critically reviews the context for metropolitan governance and critiques the development of metropolitan governance in Durban and the resultant challenges. The author then presents recommendations to move toward the global goal of sustainable local development.

Metropolitization in South Africa: Conceptual Framework and Context

Metropolitan areas in South Africa, as defined in local government terms (*Municipal Demarcation Act*, 1998; *Local Government: Municipal Structures Act*, 1998) are "large urban settlements with high population densities, and a high degree of functional integration across a larger geographical area than the normal jurisdiction of a municipality" (South Africa, 2009a). The *Constitution of the Republic of South Africa Act*, 1996, provided the legal basis for metropolitan unicities, the guiding principles of which were providing efficient and effective services; developing socially just and equitable governance; coordinating public investment and strategic land use planning; and creating a socio-economic development framework (Reddy, 2008a). The unicity conceptualized then and defined as a Category A municipality denoted the spatial, political, administrative, and economic unification of the entire metropolitan area. The *Local Government: Municipal Structures Act*, 1998, read in concert with section 155 (1) of the Constitution made provision for a single tier metropolitan structure for the major metropolitan areas (Reddy, 2001c). There was a strong view that the centralized system of metropolitan government would be more appropriate in terms of responding to the flaws of the then two-tier system introduced during the interim period. It was pointed out that a single dedicated political and administrative entity would enhance service delivery through economies of scale and at the same time ensure certain distinct benefits, namely a rationalized rating system, a subsidy for the indigent, and access points to facilitate payments to ensure convenience (Reddy, 2003). The defining characteristics of a Category A municipality, detailed in section 2 of the Act, are intensive movement of people and services and goods, high population density center of economic activity with a complex and diverse economy, multiple business districts and industrial areas with extensive development, constituent units that are independent but socioeconomically linked, and a single area for integrated development planning (Reddy, 200, p. 110).

Given the apartheid legacy and the distinct socio-economic framework that was inherited, the seminal White Paper on Local Government (South Africa, 1998a) highlighted the fact that metropolitan municipalities had to be introduced to promote socially just and equitable governance across municipal boundaries with coordinated public investment in both social and physical infrastructure. The White Paper also alluded to the fact that metropolitan bodies as local governance structures were sufficiently equipped and strategic in terms of attracting and securing investment and promoting competitiveness in all parts of the metropolitan area given that they are a single entity (South Africa, 1998a). Metropolitan government was initially introduced as a governmental structure as part of the 1994 post-local government dispensation to integrate the traditionally white city centers and suburbs and sprawling black townships into a unified integrated municipality and, more importantly, a single tax base (Woolridge as cited in Reddy, 2008b). Indeed it was part of the broader pre-1994 political strategy and campaign that was referred to as "One City, One Tax Base." A tax base that is integrated and inclusive, particularly in metropolitan areas, was intended to facilitate equitable and fair sharing of municipal resources, be it financial or otherwise.

Metropolitization in Durban: eThekwini City Council in Context

South Africa had its first democratic elections on April 27, 1994, which facilitated the process to

establish municipal structures in December 2000. The *Local Government Transition Act*, 1993, provided for the first metropolitan council and four sub-councils, which were then increased to six in June 1996, and finally into a unicity in 2000. The eThekwini City Council was created following the amalgamation and restructuring of the seven entities administering the former Durban Metropolitan Area. Following the December 2000 elections, 200 councilors were elected, 100 of whom were elected on the basis of proportional representation and the other 100 as ward councilors. The Mayor is elected for a two-year term and may be re-elected. He chairs an executive committee comprising 10 councilors who report to a 200-member council (Reddy, 2008). There are 17 traditional leaders and a headman representing 18 traditional communities that are part of the council structures in Durban. Sections 81(1)(2) of the *Local Government: Municipal Structures Act* of 1998 provide for the formal participation of traditional leadership in local governance. These provisions are presently being implemented, thereby ensuring meaningful participation of traditional leadership in council activities (eThekwini, 2015). The local governance vision enshrined in the Constitution is that cooperative governance should be extended to the traditional authority areas based on a partnership between municipalities, local communities, and traditional leadership.

Toward a Notion of Lessons and Good/Best Practices

The eThekwini Municipality has always prided itself on being a learning city and to this end has sought to enhance its local capability and service provision through innovative initiatives and critical thinking, specifically in the areas of environmental sustainability, energy, participatory planning, and financial management. Considerable emphasis has been placed on innovation and the municipality has demonstrated impressive capacity for good practice (eThekwini, 2011b). The local citizenry and public institutions within the municipal area have been part of this process in terms of developing new and innovative responses to challenges faced collectively as a city. The city has defined "successful" and "good practice" and related concepts as follows (eThekwini, 2010):

- Successful: outcomes being achieved
- Innovative: original (i.e., has not been done before)
- Sustainable: all encompassing
- Participatory: comprises and embraces many stakeholders
- Easily replicable: can be completed by others in similar contexts
- Three characteristics of best practices highlighted by the United Nations are as follows (Andrews, 2008):
- A demonstrable or tangible bearing on enhanced quality of life
- Effective resultant partnerships between public, private, non-governmental organizations
- Socially, economically, and environmentally sustainable

Alberti and Bertucci (cited in Andrews, 2008) pointed out that the concept of good practice is more appropriate because it allows the implications of the concept "best" to be avoided. "Best" can generate considerable debate and discussion. Andrews (2008) added that some authors, like Farah (2006) and Lopez (2006), prefer the term "innovative" to "best" practices since innovation is viewed as responding to long-standing issues with a fresh approach and the possibility of dealing with new, emerging challenges.

Since 1994, South African municipalities have attempted to create a vibrant and robust base for local government to serve as the pillars of local economic development, social equity, and environmental sustainability. However, according to the national government (South Africa, 2009a, 2009b), the majority of municipalities have failed to forge a strong relationship with local communities, which has negatively affected local governance and the resultant processes.

Integrated Development Planning

There was considerable discontent surrounding the manner in which the municipal budgetary process was executed previously, as a result of conflicts arising from the project prioritization practice, implementation delays due to the late approval of budgets (after the financial year), no systematic programmatic manner to decide on projects, and no linkage of the budgets with the Integrated Development Plan (IDP) or City Strategy since these were determined by sector outputs, not customer outcomes (eThekwini, 2002). The line item budgeting system was initially used when the *Local Government Transition Act*, 1993, was introduced. The new budgeting system, in accordance with the *Municipal Finance Management Act*, prioritized performance and service delivery, while the latter only focused on rules and procedures. Furthermore, there had to be alignment between the strategic objectives of the municipality in the IDP and the budget, as well as public participation, which was not previously a requirement (Punchee, 2017).

Municipal budgeting had to be aligned with the IDP. This was a compliance issue in the *Local Government: Municipal Systems Act*, 2000, that was viewed as a radical break with previous practice where two distinct processes were now linked in a developmental context to achieve pre-defined goals. Some of the benefits of the new, merged approach included a single coordinated system for planning, budgeting, implementation, and evaluation; focused and strategic analysis relating to data collection and analysis; a strong distinct move to holistic as opposed to just sectoral integration; citizens being integral to the process instead of strictly an add on and critical to developing in-house capacity as opposed to outsourcing (eThekwini, 2002).

The IDP can be viewed as the strategic facilitator for the budgetary and performance management system to ensure accelerated service delivery to local communities. Citizen participation and consultation with local communities and organizations are part of the process. It is also aligned with policies and strategies of the national and provincial governments, more specifically the government's Back to Basics Programme, which prioritizes enhanced service delivery, prudent management of public funds, economic use of financial and non-financial resources, and good governance (eThekwini, 2015). Creating IDPs is a compliance issue detailed in the *Local Government: Municipal Systems Act*, 2000, complemented by the *Municipal Finance Management Act*, 2003, which supports sound local financial governance. In the final analysis, integrated development planning ensures that development activities are aligned with the budget in terms of the needs of local communities and at the same time comply with the budgetary programs of the Auditor General (eThekwini, 2015a).

Area-Based Management

As highlighted in the 1996 Constitution, municipalities have a developmental mandate and must respond to socioeconomic challenges within their communities. The eThekwini Municipality adopted the Area-Based Management and Development Programme in 2003. The two key challenges that needed to be addressed at that stage were poverty and underdevelopment, with a view to enhancing the quality of life for local communities (eThekwini, 2001c, 2011b). Area-based management allocates staff and resources to designated geographical areas within the municipality, where the priority is working with local communities or stakeholders to govern the area successfully. It is an important institutional mechanism where service delivery is prioritized within designated areas (eThekwini, 2002). The accomplishments of the Warwick Junction and Cato Manor Development Association projects served as a guide when prioritizing five areas within the metropolitan area: South Durban Basin (the largest manufacturing base in the city); Inner eThekwini Regeneration and Urban Management Plan (in the inner city); rural areas (new challenges); INK (Inanda, Ntuzuma, and Kwamashu); and Cato Manor. The five areas selected for area-based management had varied spatial and socioeconomic circumstances and represented diverse

issues in terms of integration and, more importantly, locally based problem solving and decision-making. It was accepted that the programs would use and develop the skills of the local populace and at the same time draw on the expertise and skills within the municipality to facilitate development (eThekwini, 2015b). The need for development initiatives in the selected areas was indisputable as each was characterized by high levels of poverty, poor municipal services, and socioeconomic disadvantage (eThekwini, 2011b).

The program was viewed as a catalyst and facilitator for examining and learning creative ways to execute the IDP (eThekwini, 2015b). It was led by small specialist teams, which created an opportunity to coordinate and integrate the development initiatives of different government spheres, line function departments, the private sector, and community-based organizations to ensure good practice in rural and urban regeneration approaches. Specifically, it presented a chance to facilitate innovation and creativity in development strategies and, more importantly, provide a vehicle for citizen action and partnerships (eThekwini, 2011b).

Lessons learned include the importance of a collective vision that is clear, coherent, and hopeful in order to motivate people and take action; the significance of champions who can make a difference between success and failure; the need for ongoing commitment; that the choice of zones for area-based management must be communicated; that the delineation of accountability and reporting is critical; the necessity of a tighter policy framework; that due consideration must be given to financial sustainability; the need to develop internal networks; and the importance of mentoring, capacity, and leadership development (eThekwini, 2011b).

2010 World Cup and Beyond Strategy

An event-led economic development strategy was pursued for the 2010 FIFA World Cup. Considerable emphasis was placed on developing the local economy and ensuring that the infrastructure built would provide a lasting legacy and facilitate long-term economic growth. The facilities were intended for multipurpose activities, with minimum running costs and maintenance requirements (eThekwini, 2011c). Several other projects and economic activities were also prioritized to facilitate job creation and promote the economic benefits of the World Cup, notably ensuring that fans had positive and memorable experiences exploring the city and surroundings, and showcasing the artistic and cultural capacity of the city of Durban. The Moses Mabhida Soccer Stadium, built for the World Cup, has several key design features that will contribute to its long-term sustainability: flexible seating capacity (ranging from 56,000 permanent to 70,000 temporary places); the capacity to host several types of events, including soccer, rugby, athletics, and music festivals; and a multi-functionality that accommodates retail outlets, smaller events, leisure, and tourist activities (eThekwini, 2011c).

eThekwini Municipality has won the bid to host the 2022 Commonwealth Games. Despite some initial euphoria, the reality of the serious financial implications for the residents of Durban, the province, and the country have become apparent. The full costing and funding mechanism has not been finalized. Though the economic and tourism benefits have been acknowledged, there will be a massive, negative financial impact (eThekwini, 2015a). There is a strong view that this will not be sustainable in years to come, and that the city has greater priorities than the games. The question that has been posed is, "how can we meet the cost of the Games and at the same time meet our commitments to the poor"? (Natal Mercury, 2015). This has generated a great deal of debate and discussion among local citizens.

New Procurement Policies

A key consideration in the post-1994 local government dispensation was how to respond to historic developmental imbalances and backlogs in relation to service delivery, while also ensuring service delivery was carried out in line with the progressive new procurement

legislation. eThekwini Municipality (cited in Reddy and Wallis, 2015) prioritized several basic principles to guide the local procurement process: using more local resources; ensuring job creation and addressing poverty; promoting black economic empowerment; enhancing skills development and transfer; and supporting the sustainability of small, medium, and micro-sized enterprises.

The Council approved the Affirmative Procurement Policy on July 30, 2003, with implementation commencing shortly thereafter (eThekwini, 2002). The policy seeks to ensure enhanced participation of smaller contractors, service providers, and consultants from formerly black, disadvantaged communities. Critical components of the policy include financial guarantees and payment procedures, processes for tendering, and a points reference system. In addition, dedicated organizational support units and integrated procurement management monitoring systems were introduced to inform and facilitate delivery at both strategic and operational levels (eThekwini, 2002). Implementation of the policy has been successful, as the eThekwini Municipality has considerable experience in using local procurement as a strategy to facilitate local economic development. Implementation has been comparatively successful and there are possibilities of replication elsewhere. The crucial lessons, as highlighted by the eThekwini Municipality Supply Chain Management Unit, are "get the basics right, one step at a time and don't reinvent the wheel" (cited in Reddy and Wallis, 2015, p. 249).

Regional Centers

A network of one-stop municipal service centers has been created throughout the metropolitan area, thereby ensuring local communities have greater access to municipal services and find it more convenient to pay their utility bills. This is in line with the change in philosophy where the ratepayers and consumers are now referred to as customers (eThekwini, 2011c). There is greater commitment to prioritizing the local communities and treating them with the required professionalism and respect (eThekwini, 2010).

Five strategies to attain this vision were implemented by the regional centers with the goal of "every eThekwini resident [having] easy access to all council service providers, in a way that is helpful, friendly, empowering, and uniform across the City" (eThekwini, 2002, p. 6). This vision is espoused in the Batho Pale Principles, a government initiative to enhance service delivery to local communities and promote the strategic objectives of integrated development planning within the municipality. The principles emphasize service standards, consultation, transparency and openness, access, value for money, courtesy, redress, and information (De Visser, 2005). The notion of regional centers incorporates an array of customer services, viewed as a one-stop facility that offers basic information and document management (eThekwini, 2011c). Forty *Sizakala* centers have been opened in metropolitan Durban, which signifies a considerable change in the lives of the rural population, with emphasis placed on centrality, access, and the ability to take advantage of existing services and buildings. *Sizakala* is an *isiZulu* word meaning "to get help" (eThekwini, 2010). Establishing the centers required consultation with local leaders and ward councilors, as well as information sessions with local communities. However, municipal service delivery is fragmented and uneven, and the centers have limitations. In particular, they do not extend beyond the urban areas, which means they do not address the needs of 25 percent of the local population, leaving access for deep rural communities a challenge (eThekwini, 2010). Nevertheless, it represents a good practice model that other municipalities can replicate.

Sustainable City Exhibition

The inaugural Sustainable City Exhibition was held in August 2010. The main objective was to highlight the many sustainability efforts within the municipal area and create a platform for local citizens to share

information, ideas, and experiences, with a view to encouraging and motivating local communities to practice sustainability (eThekwini, 2011c). School children have been an integral part of the process. The exhibition displayed a variety of sustainability initiatives by the municipality, non-governmental organizations, businesses, and schools, such as minimizing waste and recycling, energy efficient technologies, water conservation, organic food, gardening, and harvesting rainwater. The exhibition was a first with such an emphasis on environmental considerations and creating a stage for non-government organizations and environmental companies to network and market their goods and services (eThekwini, 2011c).

Developmental Challenges and Constraints

Considerable progress has been made in responding to the development challenges faced by the municipality. However, there are still major constraints negatively affecting its progress, namely high unemployment and poverty; limited access to community and household services; inadequate energy and water supply; food insecurity, low literacy, and skill levels for development and economic growth; an increase in communicable diseases and HIV/AIDS; natural capital loss; unsustainable development practices; climate change and degradation of infrastructure; inward–looking local government and financial sustainability, effectiveness, and efficiency (eThekwini, 2012, 2015a).

The City Treasurer or Chief Financial Officer, Mr. Krish Kumar, has noted that rapid urbanization is exerting considerable pressure on the city. He highlighted several constraints on governance and sustainability, notably the cost to rollout of integrated public transport (operational costs could cripple metros if not properly managed); unfunded mandates on housing, health, library, and museum services to the tune of R948 million; low economic growth and rates base; high unemployment; high water (39.2 percent) and electricity distribution (6.11 percent) losses; and high development backlogs, particularly in relation to public housing (personal communication from the Chief Financial Officer of eThekwini Municipality, 2016; eThekwini, 2015a). He added that environmental issues, specifically climate change, energy efficiency, and water efficiency, were also high on the agenda, while balancing social, environmental, and economic expenditures would be a key challenge (Personal communication from the Chief Financial Officer of eThekwini Municipality, April 25/26, 2016).

Hesse and Allan (cited in Reddy, 2008a) alluded to the fact that massive infrastructure backlogs have created a situation where housing demand has exceeded supply and funds in reserves have already been spent. Reddy (2008a) added that informal trading, illegal immigrants, street children, informal settlements, and the failure to implement bylaws have led to urban decay and a reduced rates base in several parts of metropolitan Durban. There is a lack of political will to address the latter despite new rules being introduced to address these issues, notably the *Problem Building Bylaw*, 2015, and the *Nuisances and Behavior in Public Places Bylaw*, 2015. A *Daily News* editorial ("Metro Sets Itself a Test", 2016), reflected on "whether we were far advanced in our slovenly, discourteous and lawless ways to create a contented city, [the] question is now whether it will have a traction in reversing urban decay in greater Durban."

The election or appointment of municipal functionaries who do not have the required qualifications, experience, and expertise can stifle progress and development as it negatively affects service delivery. Political appointments were the norm in the first two decades of local democracy in South Africa and, unless this trend is halted, development and improved service delivery is likely to be impeded (Reddy, 2008a).

A Municipal Services and Living Conditions Survey conducted by eThekwini Municipality (2011e) highlighted some of these issues, specifically the problems faced on a daily basis such as unemployment, the cost of living, crime, health, and public transport. Some local residents believed that the

municipality was doing a good job in terms of responding to issues, while others felt the responses took too long and problems were not resolved. Although the municipality could respond to many of these issues, the issues were often outside their area of jurisdiction. There was a positive linkage between the above-mentioned issues and the pessimism of the residents on issues including crime, corruption, unemployment, poor service delivery, and lack of development (eThekwini, 2011c).

Residents were only marginally satisfied with service delivery in 2011–12, and this turned to dissatisfaction a year later; in 2013–14 they were still dissatisfied. The majority of those dissatisfied (68 percent) felt that there was just no service delivery. Approximately 13 percent cited no service delivery and 5 percent mentioned terrible or bad service in the survey (eThekwini, 2015). The low performance scores for National Key Performance Indicators, Batho Pele Principles, were accepted and the mission and vision now signify that urgent measures need to be taken to address these issues (eThekwini, 2015a). The seven Key Performance Indicators are service delivery, good governance, performance monitoring and evaluation, intergovernmental relations, spatial planning, local economic development and financial management, and compliance with the *Municipal Finance Management Act 56* of 2003 (Umshezi, 2012). The Batho Pele Principles include openness, transparency, consultation, courtesy, information, access and service standards, redress, and value for money. They were introduced by the Department of Public Service and Administration to serve as a benchmark for public sector service delivery. The mission and vision of eThekwini Municipality has been described as being "Africa's most caring and liveable city."

Conclusion

The introduction of metropolitization in South Africa as part of the post-1994 democratic local government dispensation was a key strategy for non-racialism, redistribution, and equity. Metropolitan government was also seen as an authoritative and powerful institutional mechanism at the local level to facilitate economic growth and respond to the socioeconomic challenges affecting society, namely, poverty, unemployment, job creation, and economic growth. Following 22 years of local democracy, the issue of equity has been addressed in a political context, however, there are still major gaps in relation to basic municipal services, job creation, and economic growth. It would seem that the metropolitan governance model based on a two-tier system was not adequate or appropriate to respond to the socioeconomic challenges. The metropolitan unicity introduced shortly thereafter was viewed as a panacea in some quarters. However, it has since been demonstrated that structural change and reform alone is incapable of addressing these governance and socioeconomic challenges. There has to be political and management will to take decisive action in responding to the critical metropolitan governance issues highlighted.

Against this backdrop, eThekwini Municipality has emerged as a learning city, one that has embraced and promoted the notion of good governance and in the final analysis good or best practices. The municipality has been innovative and creative across a range of issues, including integrated development planning, area-based management, regional centers, local procurement, hosting the 2010 World Cup, and creating an economic development strategy. To this end, the city has emerged as a key player at provincial, national, continental, and global levels.

There are serious governance challenges affecting the present and future sustainability of the city, including poor service delivery, non-implementation of bylaws, unfunded mandates, lack of capacity, and cadre deployment. The declining growth rate is an added source of concern. There will have to be firm and decisive action taken at all levels of government to address the issues highlighted. More specifically, it is incumbent on municipal functionaries in eThekwini City Council to ensure that they get back to basics in local government, in other words, discharging basic services efficiently and effectively and being responsive to local communities.

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3.3 Political Stability, Metropolitan Governance, and Transformation in Lagos

Femi Olokesusi (Independent Consultant) and **Samuel Danjuma Wapwera** (University of Jos)

Abstract

Metropolitan Lagos is the largest and most important economic region in Nigeria. Occupying less than 0.15 percent of the Nigerian landmass, it holds about 6 percent of the country's population. As a coastal metropolis, Lagos faces the daunting challenge of climate change in addition to inadequate access to infrastructure, slum settlements, non-inclusive development, and poverty, as well as rapid and unplanned urbanization necessitating good governance. Relying on secondary data, this chapter analyses the provision of public goods, especially in the areas of infrastructure, urban regeneration, metropolitan planning, and mobilization of financial resources since the return to democracy in 1999. Emphasis is also placed on finance and the roles of key state and non-state actors. Findings indicate that seamless political transition and stability, as well as rising internally generated revenue experienced over time, have contributed significantly to metropolitan governance and service delivery but at the expense of local government autonomy. As a policy imperative to strengthen metropolitan governance, the state government should ensure full access by local governments to their funds and establish functional local planning agencies under a state-wide Metropolitan Planning Authority.

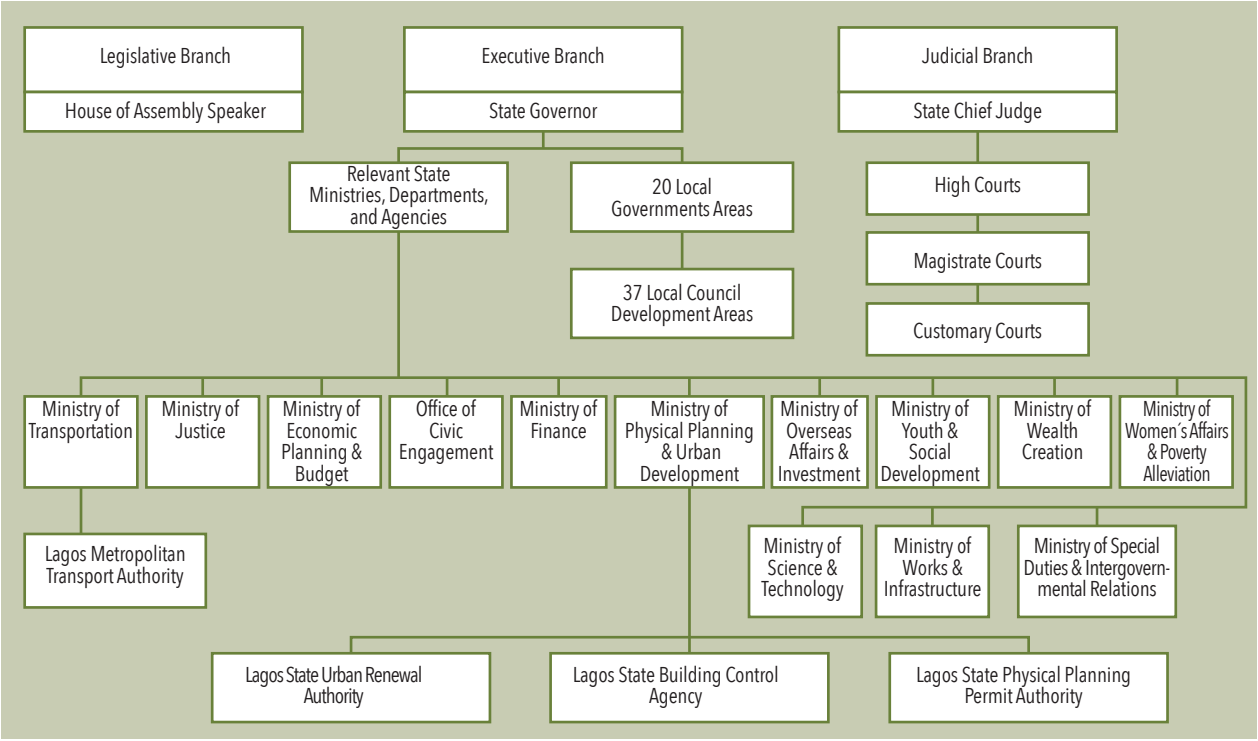
Metropolitan Lagos is located in Lagos state in the south west corner of Nigeria. The metropolis sprawls over large islands, separated by creeks, on a vast lagoon on the Bight of Benin, bordered by the Atlantic Ocean. The entire region lies within the coastal lowland of south western Nigeria, generally less than 100 meters above sea level. The metropolis' population has grown from an estimated 500,000 in the late 1960s to over 17 million today. The population growth is projected at an average rate of 5 percent per annum (Figure 1) (United Nations, 2012; Lagos, 2012; UN-Habitat, 2010; Nigeria, 2007).

Metropolitan Lagos is the most economically important part of the country, and innovations in metropolitan governance have earned the metropolis commendation from The World Bank and Carnegie Corporation, among others. The spatial and socioeconomic influence of Lagos extends beyond its administrative boundary, reaching the Ota Town Local Government Area (LGA) as well as Mowe and Ibafo towns in Obafemi Owode LGA in Ogun State (De Gramont, 2015; Economist, 2011; Filani, 2010; Salau, 2006). Lagos accounts for about 40 percent

of Nigeria's non-oil GDP. In the 2015 Human Development Report for Nigeria, Lagos state was ranked the highest in the country with a Human Development Index of 0.6712, well above the national value of 0.2712 (UNDP, 2015).

It is against this background that this chapter seeks to analyze the urbanization phenomenon and its implications for metropolitan governance and transformation in Lagos. In this context, the chapter examines the situational and legal contexts of metropolitan governance in Nigeria in general and Lagos in particular as well as the issues of urbanization, metropolitan planning, finance, and provision of selected public goods.

Figure 1. Institutional Framework for Governance in Metropolitan Lagos



Source: Derived from records of the Lagos state government by Olokesusi and Wapwera, 2016.

Governance and the Challenges of Rapid Urbanization in Lagos

The rapid and unplanned urbanization experienced in Metropolitan Lagos is largely due to a natural population increase, in-migration, and the spatial annexation of several unplanned towns and villages. While urbanization has several positive impacts (UN-Habitat, 2012), empirical evidence indicates that the informal process of urbanization in developing countries is accompanied by significant negative impacts (UN-Habitat, 2013; World Bank, 2006). A major spatial consequence is the pressure placed on both the built and natural environments.

In spite of the ongoing transformation, Lagos is still confronted with several challenges, such as an unattractive and inefficient use of urban land and resources; loss of farmland, green space, and environmentally sensitive areas; excessive infrastructure costs to extend water, sewers, and roads to remote districts; the need to travel, the time spent commuting, and access to employment; and the problems associated with slum communities, traffic congestion, and pollution (Rydin, 2011; Olokesusi, 2010; Mabogunje, 1995). In addition, due to its low lying coastal location, the metropolis is experiencing the challenges associated with climate change in the form of rising seas, ocean surge, and flooding. Thus, metropolitan governance through spatial planning, innovative policies, and proper management is an attempt to regain control in order to manage and regulate change and to be creative in urban areas that are themselves experiencing considerable transformation.

Because urban agglomerations are expanding beyond the municipality or transition areas, it has become imperative for the metropolitan areas, especially in the global north, to adopt appropriate models of governance. This involves making the necessary institutional arrangements to cooperate and coordinate, and resolve conflict, and to ensure power sharing between the jurisdictions (areas) and other agencies, such as provincial,

municipal, and parastatal. The next section briefly examines metropolitan governance in Nigeria before discussing Lagos specifically.

Metropolitan Governance in Nigeria

When Nigeria achieved independence in October 1960, governance was based on federalism. But military intervention in Nigeria's politics as well as the rejection of federalism in favor of a unitary system of governance between 1966 and 1999 not only blocked the country's progress, but also hindered metropolitan governance (Richard, Taylor, and Agbaje, 1996). Thus, even after 17 years of unbroken civilian rule from May 29, 1999 to date, Nigeria is still searching for true federalism, inclusive governance, and economic development. For administrative purposes, the 1999 Constitution of the Federal Republic of Nigeria outlines three levels of government: federal, state (36), and LGAs (774). The Federal Capital Territory, Abuja, is considered separately. Each government tier has specific responsibilities.

Although Abuja is administered by the federal government, the Constitution contains schedules of distinct responsibilities (the Exclusive List) for each tier of government and Concurrent Lists that contain shared responsibilities or acts that require collaboration and coordination between two or more levels of government. Section 7 of the Constitution allocates specific responsibilities to the LGAs, including refuse collection, construction and management of markets, cemeteries, educational, and healthcare facilities, collection of rates, and urban planning. Section 162 (1) establishes the Federation Account into which all revenues collected by the government of the federation are paid with a few exceptions. It is from this account that each of the three tiers receives its allocation. Under this arrangement, 54 percent goes to the federal government, 26 percent to state governments, and 20 percent to local governments.

The majority of the 36 state governments rely on fiscal transfers, an overdependence that several discerning political observers have termed the "feeding bottle of fiscal federalism." Because the allocations to LGAs are credited to the constitutionally backed State and Local Government Joint Account, most LGAs do not have access to their full entitlements. Furthermore, Section 7 of the Constitution states that only democratically elected persons should manage the LGAs. Yet most state governors, apart from constituting caretaker committees for local councils under their jurisdiction, have also established entities such as the Ministry of Local Government, Local Government Service Commission, and Office of the Special Adviser to the Governor on Local Government Affairs. Invariably, most LGAs have low executive capacity, inadequate motivation mechanisms, and poor work attitudes toward city governance (Oni and Olomola, 2006; Olokesusi, Akanji, Oni, et al., 2013).

With reference to physical planning in the process of metropolitan governance in the country, the 1992 Nigeria Urban and Regional Planning Law specifies responsibilities for each tier of government. However, the constitutionally derived powers of the LGAs remain severely constrained, and Lagos is no exception.

Metropolitan Governance in Lagos Since 1999

Conceptually, the definition of metropolitan governance adopted in this chapter is a set of institutions, rules, and actions that delineate policies and conditions for the life and economy of a metropolitan region (GIZ, GmbH, and UN-Habitat, 2015). These include the so-called Good Urban Governance Principles of transparency, accountability, equity, performance, participation, law and order, strategic vision, and commitment (UNCHS, 2000).

The institutional framework for Lagos state contains all three branches of government: the executive, or state government; the judiciary, or state courts; and the legislature, or House of Assembly. The executive is headed by the State Governor's office, under which are 20 LGAs and 37 Local Council Development Areas (LCDAs), as well as 28 ministries and 87 departments and agencies. A selection of the 115 ministries, departments and agencies are illustrated in Figure 1 above.

Since the return to democratic rule in 1999, the first attempt to create additional local governments in Nigeria was thwarted by political intolerance. The LCDAs in Lagos state were initially created to function

as full-fledged LGAs. This initiative conforms with provisions under the 1999 Nigerian Constitution, which empowered states to create LGAs subject to ratification by two-thirds of the House of Assemblies (36 states) and both chambers of the National Assembly. In 2003, the Tinubu administration, with the approval of the Lagos state House of Assembly, created 37 LGAs and applied to the National Assembly for their agreement. The Peoples Democratic Party, which controlled both the federal government and the National Assembly at the time, turned down the request, not because the application lacked merit but because Lagos state was being governed by an opposition party, the Alliance for Democracy. The aborted 37 new LGAs were therefore converted to LCDAs and placed under the jurisdiction of relevant LGAs.

With a view to forcing the Lagos state government to conform, the federal government refused to transfer statutory allocations to the 20 officially recognized LGAs for several months. Eventually, Lagos state government instituted a case against the federal government seeking constitutional clarification at the Supreme Court, the highest tribunal in the country. In 2004, the Supreme Court ruled (State Attorney of Lagos State v Attorney General of the Federation) that the creation of the 37 LGAs by Lagos state was a valid act, but that the laws were inchoate and required additional steps to be taken by the National Assembly. It further ruled that the withheld allocations should be released immediately. The federal government disobeyed the court's judgment.

It was not until 2007 that the succeeding Yar'Adua administration released the withheld funds. Although the National Assembly refused to acknowledge the LCDAs, the Lagos state government has continued to recognize and finance the activities of the LCDAs in an effort to bring governance closer to the people. The decision of the federal government to withhold allocations owed to the 20 LGAs became a blessing in disguise as it prompted the Lagos state Inland Revenue Service to generate significant income through innovative thinking. This development is examined later in this chapter.

Nonetheless, the Lagos state government and its ministries, departments, and agencies dominate the governance of Metropolitan Lagos. Collaboration by contracting and sub-contracting for service delivery among metro areas is rare. As soon as Ahmed Bola Tinubu became Governor of Lagos State in May 1999, he swung into positive action and committed to delivering the long-sought dividends of democracy. He prepared a State Development Blueprint based on his party's (Alliance for Democracy) manifesto. As a bridge builder and mobilizer, he laid a solid foundation for inclusive governance and infrastructure provision. New public service institutions were created, while others were progressively reformed in order to enhance their capacities for quality service delivery. In addition, several new policies were formulated and implemented (Filani, 2010). The fact that his successors—Mr. Raji Fashola (2007 to 2015) and Mr. Ambode (May 2015 to date)—belonged to the same party greatly facilitated policy and program continuity and stability. Fashola actually built on the foundation laid by his predecessor while Ambode is sustaining the tradition of service and commitment to the welfare of Lagosians. The seamless political transition is responsible for both stability and continuity in the process of metropolitan governance.

For governance purposes, the Lagos state government comprises the 16 urban LGAs plus the rapidly growing Ibeju-Lekki LGA. To a large extent, this institutional arrangement is akin to a Metropolitan/Regional Authority, sometimes referred to as a special purpose district (GIZ, GmbH, and UN-Habitat, 2015). But the LGAs and LCDAs within the metropolis still perform some functions, such as drainage and flood control, tree planting, markets, and educational and healthcare services, as well as minor urban road construction and management. Although this institutional arrangement has encroached on the functions of the constitutionally recognized LGAs, there is the benefit of economies of scale and service efficiency, and it reduces regional inequality in the state.

The overarching objective of the Lagos state government has been to transform Lagos into Africa's model megacity; to build a world class city state that is clean, secure, liveable, functions efficiently, and enables the people to express their potential. The three administrations consistently devised and implemented new but complementary policies, plans, and initiatives.

The Fashola administration for example, focused on a 10-point agenda for development (Olokesusi et al., 2013; Lagos, 2006, 2007, 2008, 2009). In 2013, the Lagos state government devised the Lagos Development Plan: 2012-2025, which is a long-term strategy to guide development for Lagos, providing a framework that all sectors of the economy can use to improve the quality of life of the people. The plan was partly financed by the Department for International Development (DFID) of the United Kingdom (Lagos, 2015).

In an attempt to improve budget implementation, the Lagos state government adopted a system to closely monitor the budget. The state must adhere to its Medium Term Expenditure Framework, which forms the basis for preparing projects and programs in annual budgets and ensuring that annual revenue and expenditure estimates are consistent. The Medium Term Expenditure Framework seeks to increase the value of public spending, in addition to reinforcing fiscal discipline and strategic prioritization.

The Lagos state government involved several development partners in its effort to build local capacity, innovation, and financial support. Pertinent among these are The World Bank, DFID, and the United Nations Development Programme (UNDP). Public–private partnership arrangements also allowed for renewal of outdated physical infrastructure and construction of new projects. The private sector was organized, while community development associations and other community-based organizations were revived and brought on board as key actors in the governance process. The non-state development partners participated in the governance process by playing the role of enablers and brokers. The next section discusses some results of the above initiatives in a few key sectors.

Transportation in Lagos

Reliable, convenient, and affordable transportation of people, goods, and services constitute the crux of prosperous and sustainable cities. Thus, perhaps the greatest achievement of the Lagos state government is the transformation of the previously disorganized transport sector in the metropolis. Using the Lagos Metropolitan Development and Governance Programme (a US$200 million World Bank-assisted program to provide funds and logistic support) as an entry point, the Lagos Urban Transport Project led to the creation of Lagos Metropolitan Transport Authority (LMTA) in 2002. As a result, Africa's first bus rapid transit scheme became operational in Lagos on March 7, 2008. The Ikorodu Mile 12 route was added two years ago. The LMTA manages the bus rapid transit scheme under its enabling law of 2002. The funding is based on a tripartite arrangement between The World Bank, Lagos state government, and private sector operators such as LAGBUS Asset Management and local banks (World Bank, 2011; LMTA, 2009). The success of the Lagos Urban Transport Project, facilitated largely by political stability and continuity in metropolitan governance, has inspired the Kano state government in northern Nigeria to invite the LMTA to replicate the program in metropolitan Kano. Kano is the second largest metropolis in the country. Both Lagos and Kano state governments have received a grant from the Global Environmental Facility for the project through the federal government of Nigeria.

The Lagos state government has commenced construction of a light rail mass transit system but progress has been delayed due to the archaic *Railway Act* and inadequate financing. Commissioning of the project is now scheduled for 2017. Furthermore, the state government has recently signed a Memorandum of Understanding with Japan International Corporation Agency to construct a US$1 billion Urban Automated Guide Transit, a type of monorail system to link major economic areas of the metropolis (Aworinde, 2016).

Metropolitan Planning

Prior to 1999, the Nigerian *Urban and Regional Planning Law* operated in the metropolis, after which a new legal and institutional framework was established to guide metropolitan planning. The state Ministry of Physical Planning and Urban Development (MPPUD) was established as the body responsible for policy formulation and major program implementation, such as developing planning standards and preparing model city plans. To guide physical development, a new master plan was

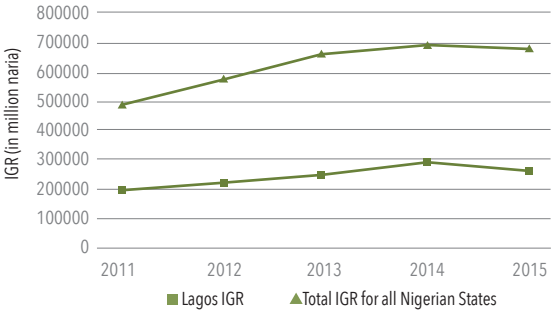
prepared for the metropolis in 2001 (MPMI, 2001). In 2010, the enactment of the Lagos state *Urban and Regional Planning Law* was followed by the creation of several new state institutions, including the Urban Renewal Authority, Physical Planning Permit Authority, and Building Control Agency. The Physical Planning Permit Authority vets and approves development permit applications, while the Urban Renewal Agency is responsible for slum improvement across the state, and the Building Control Agency monitors the structural integrity of buildings and development control. The three agencies are affiliated to the MPPUD (see Figure 1 above).

To accelerate land use administration and urban planning, a digital map of the entire Lagos state was completed over eight years ago. Currently, applications for building permits, land subdivisions, and land title searches are done online. However, none of the LGAs and LCDAs has urban planners on their payroll. MPPUD, in consultation with critical stakeholders, has prepared physical development plans for major areas as distinct but inter-related entities. Examples of such plans are the Lekki Master Plan (2011–31), Ikeja Model City Plan (2012–32), Apapa Model City Plan (2012–32), Mainland Model City Plan (2012–32), Agege Model City Plan (2013–33), and the Ikoyi-Victoria Island Model City Plan (2013–33).

Internal Revenue Generation for Metropolitan Governance

As outlined above, the decision of the federal government, which is controlled by the opposition Peoples Democratic Party, to withhold statutory allocations due to LGAs compelled the Lagos state government to seek alternative financial resources. Aside from the allocation from the Federation Account, the major source of financing for metropolitan governance is internally generated revenue. Sources include land and property rates, personal and business taxes, value added tax, market and motor park fees, parking fees, and fines. State-level internally generated revenue has risen astronomically (Lagos, 2009, 2010). Recent statistics indicate that Lagos state is ranked first in Nigeria in terms of internally generated revenue. During the same period, Lagos state accounted for an average of 38.79 percent of all state-level internally generate revenue in Nigeria. Figure 2 highlights the impressive growth of internally generated revenue between 2011 and 2015. The Lagos state government has leveraged information and communications technology in its bid to facilitate online payments in order to continue this growth (Olokesusi et al., 2013). The state government also has a policy of accessing public funds by floating a series of bonds on the Nigerian Stock Exchange. Since the policy began in the early 2000s the government has been able to garner more than naira 150 billion (roughly US$1 billion) and has met its obligations to all investors. Additional funds have since been raised from the capital market.

Figure 2. Internally Generated Revenue: Lagos State and 36 Nigerian States



Source: National Bureau of Statistics, 2016.
Note: IGR = Internally Generated Revenue.

Local Economic Development

Prosperous cities tend to be well planned, play host to vibrant industrial and commercial enterprises, and have low incidences of poverty. These in turn drive competitiveness and sustainability. This was the rationale behind the Lagos state government creating the Ministry of Economic Planning and Budget in 1999 and placing greater emphasis on local economic development. Since 1999, the overall development policy thrust has been poverty alleviation and sustainable economic growth. Of the 2016 total state budget of

N663 billion (US$3.3 billion), 32 percent has been earmarked for the economic development sector.

The economy of Metropolitan Lagos is dominated by manufacturing and service industries; however, the performance of both industries has been mixed. The service industry has continued to grow, especially with the explosion in information and communications technology such that the popular Ikeja Computer Village and the cell phone stores. The local computer software sub-sector is flourishing as well. Due to inadequate space, the Computer Village has been replicated in another area of the metropolis under a public–private partnership arrangement. Software hubs have also been created with support from Facebook.

A similar framework has been used to transform several old open markets such as Yaba and Balogun markets. In 2015, the government created a new Ministry of Wealth Creation. This ministry manages the Employment Trust Fund with initial capital of US$134 million for disbursement to micro, small, and medium enterprises at concessional interest rates.

Meanwhile, foreign investors have partnered with local investors and the state government to construct world class shopping malls such as Spar and Shoprite. The hospitality sector has witnessed new establishments by reputable transnational hotel chains such as Best Western, Sheraton, and Protea. The newly created Office of Overseas Affairs and Investment has been striving to attract foreign direct investments. This informed the recent contract between the state government and Dubai Smart City Inc. aimed at transforming the metropolis into a smart city within the shortest timeframe possible. However, the manufacturing industry, which has been unable to produce at installed capacity, has experienced declining growth.

In the mid-2000s, business organizations raised concerns about instances of multiple taxation. While the cost of doing business in Lagos is still high, 2016 data demonstrates significant improvement since 2013 (World Bank, 2016, 2013). Street trading is still a common feature of the urban scene due to the inability of the economy to absorb mostly unskilled labor. This is a challenge that must be addressed in order to achieve real transformation.

The Environment and Climate Change Adaptation

Metropolitan Lagos was once notorious for poor environmental sanitation (Olokesusi, 1994; Onibokun, Adeniji, Agbola, et al., 1986). However, since 1999, it has witnessed tremendous improvement in waste management through a re-engineered Waste Management Authority. The agency introduced private sector participants and adopted modern technology. About 624 private sector participants are now licensed to collect and transport waste from households, streets, and markets to designated landfill sites at approved fees payable by serviced clients.

In addition, the Lagos state Waste Management Authority has used several innovative strategies for effective waste management in the city, including storage facilities; waste sorting; resource recovery; collection and transportation; transfer loading stations; reduction, composting and recycling; and waste to wealth initiatives. In order to improve both the sanitation and aesthetics of Lagos, highway managers have been created in the state Ministry of Environment. Highway managers are groups of men and women who are allocated specific roads, streets, corridors, and open spaces that must be kept clean. In 2011, there were more than 3,000 people employed under the program and additional recruits of about 5,000 were projected for 2015. Again, the improvements in environmental sanitation were made possible by stability in the political environment.

Since 1999, tree planting has become a state policy known as Operation Green Lagos. More than a million trees, shrubs, and flowers have been planted, creating over 10,000 jobs. The notorious street gangs popularly referred to as Area Boys were major beneficiaries of the program (Olokesusi, 2011). The heavily congested, dreary, and unsafe Oshodi market has been redeveloped and is now cleaner and safer with reduced crime levels (Alausa Alert, 2010). The various construction works resulted in the forced relocation of some homeowners, tenants, and traders, who were equitably compensated by the state government.

To complement the state's climate change policy, some adaptation measures have been put in place with a view to taming ocean surge and flooding. One example is the demolition of structures at the Kuramo Beach on Victoria Island. The government appropriated about N36 billion (US$184 million) in 2012 for the phased construction of 18 gyrones (sea breakers) at intervals of 400 meters in the Atlantic Ocean. The first phase commenced in 2013 and the entire project should be completed by 2017.

Perception of Public Service Delivery by the Government

The results of a recent study in the metropolis indicate that, despite the general poor public perception of government in the country, Lagosians still rated the state government far above its federal and local government counterparts in terms of delivery of public services in 2013. While 30 percent of sampled households rated delivery as good and 45 percent fair, only 14 percent rated delivery by the federal government as good and 44 percent fair. On the other hand, 18 percent rated delivery by local governments as good and 44 percent fair (Lagos, 2013).

Conclusion

It is evident that since 1999, good metropolitan governance in Lagos has contributed immensely to the transformation of the metropolis, a feat recognized by Lagosians and key stakeholders in and outside Nigeria. The major enabling factors for the transformation can be summarized as follows:

- seamless political transition, enabling stability and continuity of policies and programs;
- laws and regulations allowing metropolitan arrangement;
- supportive state government;
- incentives;
- political will of the leadership and support from most if not all LGAs in the metropolis;
- clear division of functions between levels of government, the LGAs, and LCDAs, as well as the Government of Nigeria and its ministries, departments, and agencies;
- availability of realistic institutional, administrative, and financial capacity for any additional governance arrangements, pragmatic policies, and support of critical stakeholders; and
- effective coordination of management of services and infrastructure.

However, the current economic challenges and gap between the rich and poor mean that more innovative policies and initiatives are required to better empower the less privileged and move them out of poverty. Additional efforts and investments are necessary to improve environmental quality, as well as the supply and affordability of reliable power, water, transport, and housing.

To increase adherence to the rule of law and devolution of powers, the state government should ensure that the 20 LGAs regain full autonomy and have access to their statutory allocations. Support could be given to the LGAs by the state government on participatory budget preparation and implementation. Also, each LGA should have an active Urban Planning Authority in line with the legal instruments guiding physical planning in the country. To coordinate the urban planning of the LGAs, a Lagos Metropolitan Planning Authority is recommended. The state's climate change policy should be popularized and implemented with greater vigor. Finally, greater attention should be paid to local economic development to guarantee wealth creation, youth employment, poverty reduction, and inclusive growth.

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3.4 Bogotá: Cities System and Territorial Organization

Carlos Córdoba Martínez (Central Region of Colombia) and **Jorge Iván González** (National University of Colombia)

Abstract

In Colombia, there is a conflict between two forms of territorial planning: one that focuses on the cities system and another that seeks to strengthen the country's departments. This chapter argues that Bogotá's Special Planning Administrative Region (SPAR) brings the benefits of the system of cities into a regional context, which presents a way to reconcile the two territorial planning approaches. The living conditions in Colombian agglomerations or metropolitan areas are better than in uninodal cities, but the potential benefits of convergence have not yet been fulfilled. Public policy should enhance the intrinsic benefits of agglomerations. SPAR, in Bogotá, is an adequate alternative that can contribute to addressing the fight against inequality, the consolidation of the internal market, the improvement in productivity, and environmental sustainability.

Cities in Colombia have achieved important results in terms of decreasing poverty and improving quality of life. However, there has been little progress in terms of reducing inequality and strengthening productivity.

In Colombia, there is a conflict between two forms of territorial planning: a system of cities and a strengthening of the country's departments. Colombia has not yet decided on a particular territorial planning form, nor has it designed mechanisms to complement one another. The criteria to assess the effectiveness of each planning alternative should be convergence and sustainability. In this chapter, the analysis of convergence is carried out indirectly by comparing agglomerations with uninodal cities. This case considers, specifically, the performance of Bogotá and its surrounding municipalities, for which results indicate that there is no convergence.

The authors also examine the characteristics of Bogotá's SPAR, which includes Bogotá and the departments of Meta, Boyacá, Tolima, and Cundinamarca. This form of organization brings the benefits of the cities system into a regional context. The SPAR is a factual solution to the conflict between the two approaches to territorial planning.

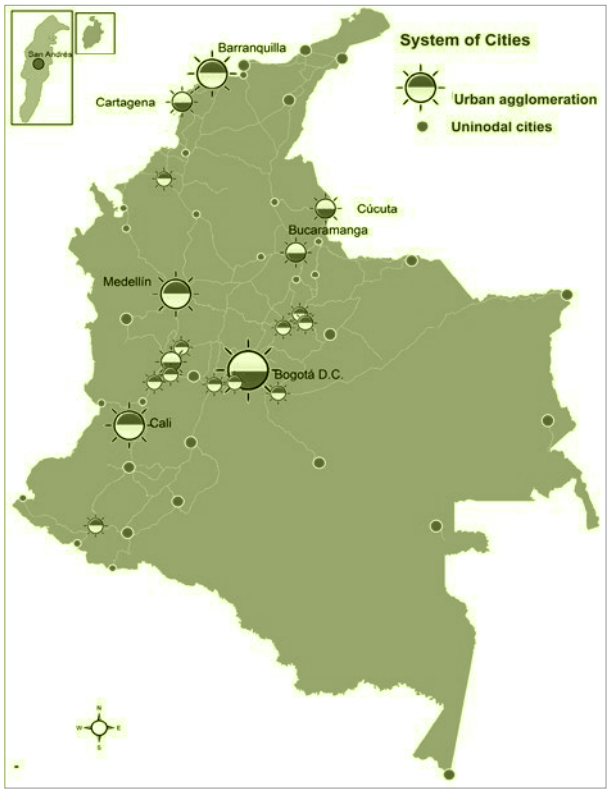
Two Modalities of Territorial Planning

There are three levels of government in Colombia: national, department (32), and local (1,101 municipalities, including the cities). In this context, there is tension between two models of territorial planning: system of cities and strengthening the departments. Colombia has yet to settle on one form and instead maintains a highly centralized government scheme that reduces the capacity of autonomous decision-making in territorial entities. This lack of definition is an obstacle for regional development, convergence, and sustainability. The absence of leadership in territorial planning was evident during 2016, as most of the 916 municipalities had not submitted their own territorial planning models. As the plans are reviewed and adjusted every 12 years, now could be an opportunity to advance territorial planning. Progress could be achieved beyond simply land use, in a much broader sense of territorial planning. Territorial planning and territorial development should become coordinated and complementary policy instruments.

Although in the last development plan—Santos II: All for a New Country, Peace, Equity, and Education

(Colombia, 2015)—the system of cities was mentioned, not enough importance was given to it and it was not proposed as the model that should guide territorial planning. Further, the development plan does not present the department level as the institution that facilitates coordinating territorial planning at the municipal level. Finally, the plan proposes a fictitious regionalization, in which the departments are grouped together in order to respond to a legal reform of the royalties system, but it ignores the regions that are being built from the territorial entities in the country.

Map 1. Colombia's System of Cities



Source: Adaptation of Barco, 2013, p. 48.

An analysis of the system of cities was coordinated by Carolina Barco[1] (2013). Among the cities with more than 100,000 inhabitants, there was a strong difference between urban agglomerations and uninodal cities (see Map 1). The first set is characterized by cities with a changeover rate of 10 percent of the municipalities' labor force. This represents an initial analysis of the flows and exchanges between cities. As the information improves, the study of the dynamics of agglomerations must consider other variables, such as the exchange of goods and people.

The analytical approach through the system of cities has several advantages. First, the relevance of geography is highlighted and it shows that the urban and regional processes are inseparable. The sustainability of the city is closely related to the ones in the surrounding region. Second, the importance of density and distance becomes evident. These two variables, which are traditional elements of analyzing economic geography, are explicitly incorporated in the assessment. Third, demography and population settlements in the territory are brought to the forefront. Fourth, to better understand the characteristics of growth and labor markets, the flows of goods and people and dynamic notions are introduced. Finally, from the point of view of convergence, the role of the city that acts as the nucleus of each agglomeration can be examined.

The advantages of the system of cities has not been fully recognized and, as a result, public policy actions have not been developed to take advantage of them. Therefore, it is necessary to examine territorial planning based on departments or ad hoc zoning, as proposed in the Santos I Development Plan: Prosperity for All (DNP, 2010). This is where the endogenous development index, which was designed to carry out zoning for the *Prosperity for All* development plan—is introduced. Although the index incorporates density, it does not include distance. Zoning that emerges from the endogenous development index interrupts the flows between the cities of the agglomeration. For example, the Pacific area classified by the index includes Buenaventura but excludes Cali, another major regional center. This separation is unacceptable from the point of view of the system of cities, as the flow of people and merchandise between Buenaventura and Cali is intense. The economies of the two cities are interdependent. This reality, which is recognized in the system of cities, is denied by the government, which still does not understand the positive implications that would result from the cities system planning approach. Another issue is that the *Organic Law on Territorial Planning* (Law 1454 of 2011) does not consider urban agglomerations and does not offer sufficient tools to carry out adequate territorial planning, particularly

1 Carolina Barco is a current employee of the IDB and did not participate in the authorship of this chapter.

in rural areas. Territorial planning cannot be conceived only as local land use. A broader emphasis should be placed on economic development and ecosystem sustainability.

However, if there is no clear definition about the role of the system of cities, fiscal and policy fragility may arise in the future, like the one that currently exists in the departments. If the departments are chosen as the adequate level at which to coordinate territorial planning, their finances should be strengthened because they remain weak compared to those of the municipalities. For instance, the departments could receive a portion of the property tax that is currently municipal. This solution is feasible only if the real estate tax valuations are updated and the cadastral collection is improved. Departments can play a key role not only supporting and coordinating the municipalities and the urban agglomerations internally, but also improving delegated powers on several fronts, such as rural development.

Convergence

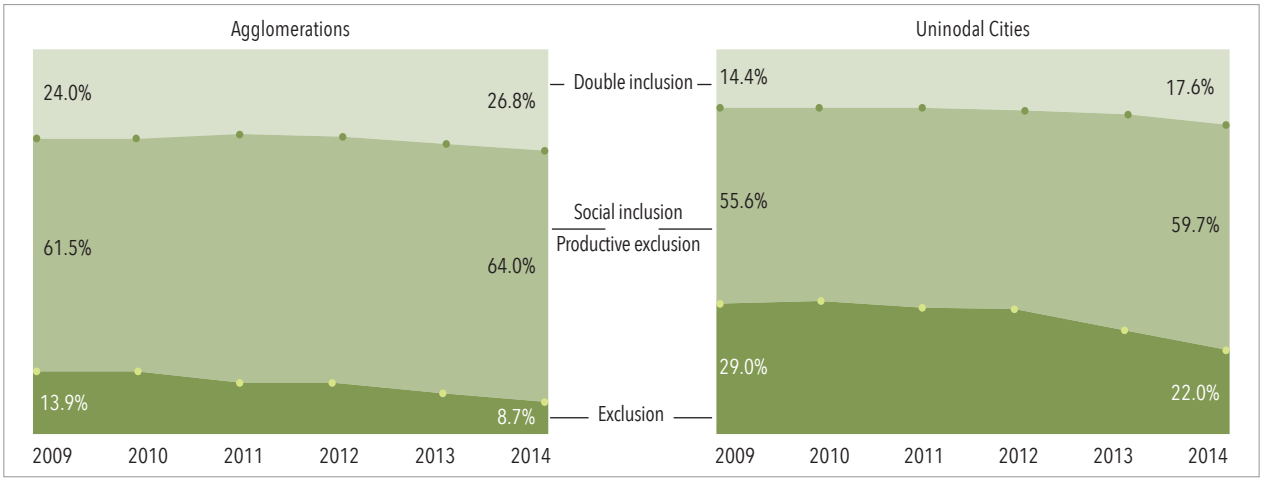
From a general perspective, it could be argued that territorial planning is adequate if it favors convergence and sustainability. The analysis in this chapter is performed at several levels. The first comparison is between crowded (agglomerated) cities and uninodal (non-agglomerated) cities. The overall conclusion is clear: the agglomerated cities are better off than the non-agglomerated ones. Later, the authors compare Bogotá and the surrounding municipalities and find that the gap in social conditions is significant. The third approach compares the cities, independently from the level of agglomeration. This exercise shows that the living conditions improve but that there is no convergence. Finally, the fourth comparison looks at the localities of Bogotá, finding a high level of segregation. The following sections explain these comparisons in detail.

Comparison between Agglomerations and Uninodal Cities

Angulo (2015) compared agglomerations and uninodal cities using two indices. The first is the social inclusion index, which modifies the multidimensional poverty index developed by Alkire and Foster (2008) and includes four dimensions: education, childhood and youth, health, and housing condition. Angulo, Díaz, and Pardo (2011) explained the Colombian version of the poverty index. The second is the productive inclusion index, which is composed of three dimensions: poverty by income, perception of inadequate employment, and informality (understood as no pension contributions). This second index is more demanding than the first and highlights the relevance of informality.

Figure 1. Evolution of Social and Productive Inclusion Indexes: Agglomerations vs. Uninodal Cities

(Percentage of Households)



Source: Angulo, 2015, p. 41.

The conjunction of these two indices shows the differences that exist between agglomerations and uninodal cities (Figure 1). In 2014, 26.8 percent of the households that lived in agglomerations exceeded social and productive shortcomings. In uninodal cities, the corresponding value is 17.6 percent. The percentages of exclusion are 8.7 percent and 22.0 percent, respectively.

The intermediate zone is interesting because it corresponds to the households that are included from the social point of view but excluded in productive dimensions. Agglomerations have good results in the social sphere but do not achieve productive inclusion. Employment is inadequate and informality is high, meaning productive inclusion is not achieved. In uninodal cities, social inclusion is lower and they also have difficulties with productive inclusion.

Although agglomerations are better than uninodal cities, the fact that an agglomeration exists does not mean that there is convergence in terms of quality of life and of productivity within the cities that comprise it. The study found that there was relative convergence in the agglomerations of Medellín and Bucaramanga, and that there was no convergence in the Bogotá and Cali metropolitan areas.

Bogotá and the Neighboring Municipalities

In 2014, a multipurpose survey on quality of life and payment capacity was released. It included Bogotá and 31 municipalities in La Sabana (20 municipalities) and Cundinamarca (11 provincial capitals) (DANE, 2014). The results showed a profound divergence between the municipalities of the north and of the south. Bogotá, as a center of attraction, has failed to reduce the gaps between the municipalities.

The lack of convergence between Bogotá and the municipalities of La Sabana is clear in Table 1. The differences are significant among the municipalities of metropolitan Bogotá. In Soacha, the poverty rate is 35.5 percent, more than double that of Bogotá (15.8 percent), while in Sibaté it is 37.6 percent. The municipality with the lowest poverty rate is La Calera (11.3 percent).

Table 1. Incidence of Poverty and Indigence in the Municipalities of Cundinamarca and La Sabana de Bogotá (2014)

	Poverty	Indigence
La Calera	11.3	3.3
Chía	12.0	5.2
Cota	12.5	3.5
Mosquera	13.8	1.5
Sopó	14.1	4.9
Funza	14.2	3.8
Madrid	15.6	4.2
Cajicá	16.0	5.1
Tabio	16.7	4.3
Tenjo	17.0	4.7
Subachoque	17.5	3.4
Tocancipá	17.7	4.3
Zipaquirá	17.8	3.8
Facatativá	19.1	4.5
Gachancipà	20.4	4.8
El Rosal	23.5	4.5
Girardot	25.2	8.0
La Mesa	26.7	9.7
Chocontá	29.4	8.8
Fusagasugá	31.5	10.6
Bojacá	32.3	8.2
Cáqueza	34.7	12.8
Ubaté	35.2	7.6
Guaduas	35.2	10.7
Soacha	35.5	9.6
Villeta	37.2	16.1
Sibaté	37.6	12.9
Gachetá	37.8	13.1
Pacho	48.7	19.2
San Juan de Ríoseco	52.1	19.2
Medina	60.6	29.7

Source: SDP, 2015; Dane, 2014.

Living conditions in Bogotá and the municipalities of the north are more homogeneous (Sopó, Chía, and Cota). In turn, the differences between the municipalities of the south are remarkable. These gaps show that the agglomeration (Map 2) has not favored

convergence. The differences that are observed in the incidence of poverty are also present in other social indicators. The considerable gap with respect to Bogotá demonstrate the need to integrate metropolitan policies and to have tools to effectively generate convergence.

Map 2. Bogotá Metropolitan Area

Source: Prepared by the Central Region, 2016.

Comparison between Cities

The comparison between cities is carried out using the City Prosperity Index (CPI, Table 2). The UN-Habitat led study (UN-Habitat, FINDETER, APCSDDE, and CAF, 2015) of the 23 cities included showed that the CPI improved between 2010 and 2013 (Table 3), but that this progress was not accompanied by a reduction in the gap. As the differences between cities did not decline, there was no convergence. The differences are significant in productivity and environmental sustainability.

Table 2 summarizes the results of the basic CPI in 2013 (UN-Habitat et al., 2015; González, 2015). Cities are ordered by the final score (last column). The considerable differences confirm the findings of López and Carrera (2014) regarding the heterogeneity of city behavior within the same country.

On average, Equity and Social Inclusion had the highest score (69.391) and Productivity the lowest (36.093). The latter result is consistent with the productive exclusion observed in Figure 1. Once again, cities offer important improvements in living conditions but weak results in terms of productivity, expressed in inadequate employment and informality.

To observe the degree of convergence, UN-Habitat et al. (2015) estimated the coefficient of variation (CV) for each of the index components. The most notable differences are found in Environmental Sustainability and Productivity (Table 2).

The study led by UN-Habitat reflects on this convergence over time. According to the data in Table 3, the CPI increased in all municipalities between 2010 and 2013. But the CV shows that the gap between municipalities did not decline systematically and, even worse, rose between 2010 and 2012.

In discussions of economic policy, convergence is not usually proposed as a desirable objective. The evolution of the gap between cities is not a subject of concern. This myopia has not allowed a continuation of design mechanisms that contribute to convergence.

On the poverty side, dynamics between cities are convergent. A decrease is observed in the poverty gap between Bogotá and the rest of the cities. Figure 2 compares the percentage of the population living in poverty in Barranquilla, Bogotá, Bucaramanga, Cali, and Medellín. In 2014, the incidence of poverty nationwide was 28.5 percent; however, in Bogotá it was 10.1 percent and in Bucaramanga, 8.4 percent. Among the cities mentioned, the incidence of poverty does converge. There is less poverty in the cities than in the countryside.

Table 2. Components and Final Value of *CPI* (2013)

	Productivity	Infrastructure Development	Quality of Life	Equity and Social Inclusion	Environmental Sustainability	CPI
Bogotá	60.093	58.757	72.664	75.351	70.767	67.178
B/manga	52.822	58.591	68.673	77.045	61.800	63.246
Pereira	37.204	60.352	64.541	71.704	70.850	59.347
Medellín	44.245	72.065	64.036	71.316	49.872	59.185
Manizales	33.772	66.155	56.833	73.595	75.083	58.779
Pasto	35.832	56.114	64.943	71.054	70.867	58.021
Valledupar	33.601	56.510	66.024	72.445	70.833	57.768
Tunja	35.071	57.572	75.345	74.453	54.000	57.187
Neiva	32.643	57.338	64.155	71.731	70.800	57.153
Ibagué	30.842	70.442	68.499	74.417	54.117	56.955
Santa Marta	32.006	52.044	65.013	66.982	70.500	55.176
Popayán	28.555	58.982	65.537	65.435	70.667	55.155
Cali	39.534	62.620	61.497	69.521	45.650	54.553
Barranquilla	46.628	58.508	66.471	70.245	37.750	54.501
Armenia	26.087	63.055	59.408	69.048	70.883	54.443
Montería	31.391	48.673	62.627	66.948	70.517	53.824
Cartagena	43.496	59.250	66.937	69.479	37.383	53.736
Villavicencio	42.847	55.235	63.925	74.901	37.417	53.146
Cúcuta	28.859	56.768	62.597	67.946	49.983	51.096
Sincelejo	33.262	53.106	65.610	68.455	37.550	49.524
Florencia	29.780	60.039	59.907	65.533	37.650	48.352
Riohacha	29.835	46.748	65.181	62.341	36.400	46.015
Quibdó	21.736	42.049	57.618	46.057	34.500	38.417
Average	36.093	57.868	64.697	69.391	55.906	54.902
CV	0.246	0.118	0.066	0.090	0.272	0.106

Source: González, 2015.

Note: CV is the coefficient of variation that is equal to the standard deviation on the average.

Table 3. *CPI* Dynamics

	2010	2011	2012	2013
Armenia	51.622	52.139	53.772	54.443
Barranquilla	52.361	52.988	53.511	54.501
Bogotá	64.469	65.304	66.075	67.178
Bucaramanga	59.757	60.876	61.403	63.246
Cali	51.844	52.575	53.380	54.553
Cartagena	51.632	52.447	53.022	53.736
Cúcuta	49.521	50.031	50.158	51.096

	2010	2011	2012	2013
Florencia	44.904	46.305	46.648	48.352
Ibagué	53.412	54.509	56.033	56.955
Manizales	55.508	57.392	58.272	58.779
Medellín	58.756	60.290	60.912	59.185
Montería	50.224	51.018	52.447	53.824
Neiva	54.346	55.741	55.870	57.153
Pasto	53.356	54.686	56.000	58.021
Pereira	55.144	57.462	58.055	59.347
Popayán	50.217	51.593	51.687	55.155
Quibdó	36.154	36.603	36.990	38.417
Riohacha	42.605	44.953	43.633	46.015
Santa Marta	53.542	53.534	54.110	55.176
Sincelejo	47.886	48.043	48.304	49.524
Tunja	54.453	55.311	55.571	57.187
Valledupar	53.982	55.275	55.830	57.768
Villavicencio	49.029	50.654	51.545	53.146
CV	0.111	0.110	0.113	0.106

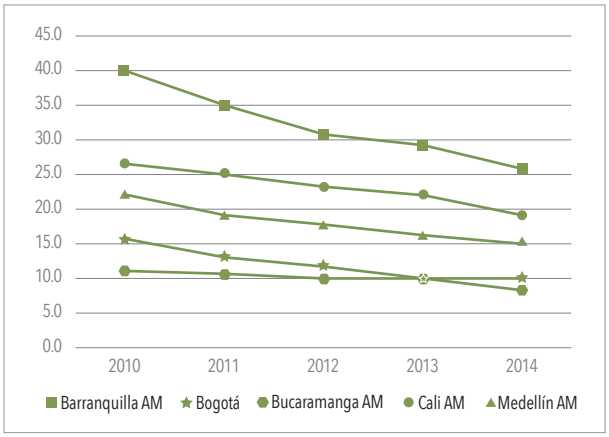
Source: González, 2015.
Note: CV is the coefficient of variation, which is the standard deviation above the mean.

In extreme poverty, the trend is also decreasing and converging between cities. Bucaramanga and Bogotá have the lowest levels of extreme poverty. Between 2013 and 2014, the incidence of extreme poverty in Bogotá grew from 1.6 percent to 1.9 percent, and in Bucaramanga it decreased from 1.2 percent to 1.1 percent. Nationwide, in 2014, the percentage was 8.1 percent. The reduction of extreme poverty is more difficult when levels are low. For this reason, Bogotá and Bucaramanga find it increasingly difficult to decrease destitution.

Since targeted policies have a limit, to eliminate extreme poverty it is necessary to resort to more structural measures. Some have to do with designing strategies that cover the metropolitan area, while others are related to reducing inequalities. The Gini coefficient in the country is stable and does not change with fiscal policy, understood as the net balance between taxes and subsidies. For growth to be pro-poor, it is necessary for development to be accompanied by a better distribution of income and wealth.

The decrease of monetary poverty favors the component of productivity of those indices of prosperity and of productive inclusion. But the positive effect achieved through income is offset by the quality of employment and informality.

Figure 2. Incidence of Poverty



Source: DANE, 2014.

Bogotá and its Localities

Bogotá is internally divided into 20 localities (Map 3). Asymmetries are significant inside the city (Table 4). In 2014, the incidence of poverty (per the poverty line) in Ciudad Bolívar was 29.3 percent, whereas in Teusaquillo it was 4.3 percent (Table 4). With good reason, it has been argued that Bogotá has a high level of socioeconomic segregation in the urban areas.

Map 3. Localities in Bogotá

Source: Prepared by Central Region, 2016.

The incidence of poverty increased in some localities (Santa Fe, Fontibón, Barrios Unidos, Teusaquillo, and Puente Aranda), which means that the achievements in the fight against poverty can be reversed. One of the ways to prevent this situation is changing the structural dimension, decreasing the concentration of income and wealth.

SPAR, System of Cities, and Territorial Planning

Colombia is in arrears in terms of consolidating processes that articulate cities and regions. The Special Planning Administrative Region (SPAR) was recently created, bringing together the departments of Boyacá, Cundinamarca, Meta, and Tolima with Bogotá, the capital.

The SPAR (Map 4) acknowledges the importance of the system of cities, but places agglomerations in a broad territorial context, in which environmental issues are fundamental.

Map 4. The SPAR comprises Bogotá and Meta, Boyacá, Tolima, and Cundinamarca

Source: Prepared by Central Region, 2016

Table 4. Rates of Poverty and Indigence: Localities in Bogotá

	2011		2014		Change	
	Poverty	Indigence	Poverty	Indigence	Poverty	Indigence
Teusaquillo	3.5	2.5	4.3	3.5	0.8	1.0
Suba	11.8	3.2	8.1	2.3	-3.8	-0.9
Engativá	9.2	2.1	9.0	3.2	-0.2	1.1
Fontibón	8.8	2.8	9.1	3.4	0.2	0.6
Chapinero	5.7	2.5	9.1	6.1	3.4	3.5
Usaquén	9.5	3.4	9.4	3.7	-	0.3
Antonio Nariño	14.1	3.9	9.5	2.4	-4.6	-1.5
Barrios Unidos	9.6	3.9	10.2	3.7	0.7	-0.2
Puente Aranda	10.0	3.0	12.5	5.8	2.5	2.9
Tunjuelito	19.7	3.3	15.0	2.3	-4.7	-0.9
Los Mártires	19.9	6.2	15.6	4.6	-4.2	-1.6
La Candelaria	21.5	8.6	15.9	5.0	-5.5	-3.6
Kennedy	13.3	3.8	17.4	4.9	4.2	1.1
Rafael Uribe	26.4	5.2	17.8	3.5	-8.6	-1.7
San Cristóbal	30.3	6.9	23.1	4.7	-7.2	-2.3
Santafé	21.9	6.2	23.2	4.6	1.3	-1.6
Bosa	25.1	4.8	23.5	5.2	-1.6	0.4
Usme	34.1	6.5	29.1	5.3	-5.0	-1.2
Ciudad Bolívar	33.0	5.4	29.3	6.3	-3.8	0.9

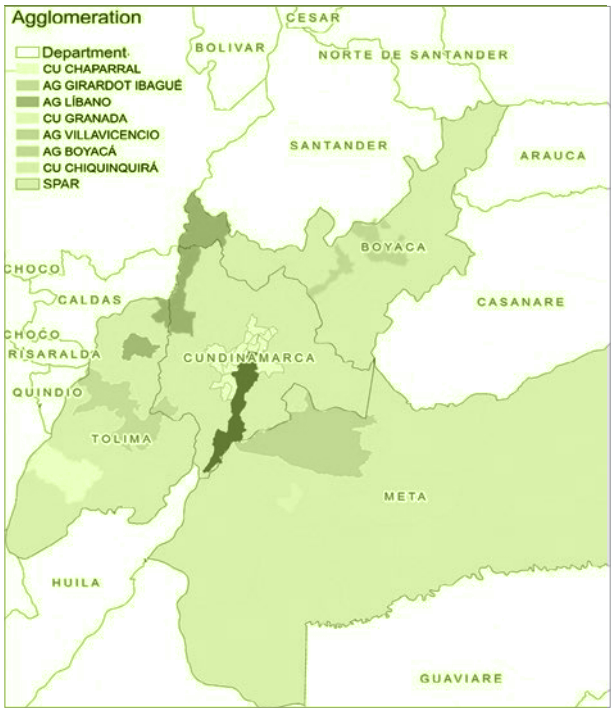
Source: SDP, 2015; DANE, 2014.

The Central Region represents 29 percent of the country's population, or almost 14 million inhabitants, 14 percent of the national territory, and 30 percent of the municipalities (316) of Colombia. It has 30 percent of the water resources of the entire country and contributes 40 percent of national GDP.

The urban dynamics of the Central Region (Map 5) show that there is a strong connection or incidence of flows between 71 of the 316 municipalities, where 83.3 percent of the population is located, 81.5 percent of GDP is generated, and 83.7 percent of the commercial establishments are situated.

Several agglomerations and urban-rural articulations have been forming inside the region that evidence their own dynamics and are found within a macro-metropolis. The complementarities and functional relations of a traditional agglomeration are not found inside the SPAR.

Map 5. Agglomerations in the Central Region



Source: Prepared by Central Region, 2016.

However, given the conditions in the Central Region, it is much easier to promote them because there is proximity on physical and spatial axes. It is clearly different to manage six disconnected agglomerations than an urban-regional continuum that takes advantage of the proximate economies. This is good news for the continued management of this extending metropolis. In any case, a very worrying message remains, which is that a dichotomy is emerging in the region of very different realities between the urban and rural worlds. This segmentation remains, and the development continues to be concentrated in municipalities that make up the system of cities, excluding the rural municipalities and failing to overcome the existing territorial divergences

In the SPAR, the problem of economic development is not being intrinsically rural (i.e., not belonging to an urban system) but being disconnected from the opportunities of inherent development in large markets. Distance is a main variable and, in fact, municipalities with traveling time exceeding 90 minutes to reach urban centers have lower levels of development, quality of life, and human development.

To foster development, it is necessary to continue configuring the macro-metropolis and, at the same time, to generate specific instruments that stimulate convergence. These mechanisms must allow economic synergies to develop in the region and municipal administrative limitations to be overcome.

The success of the Central Region—SPAR—will depend, on one hand, on continuing with the socioeconomic development of the municipalities of the consolidated system of cities. On the other hand, for municipalities not belonging to the system of cities (especially those rural municipalities that are highly disconnected), success will depend on being economically and institutionally linked to places of greater development (Bateman, 2015).

Conclusion

Public policy should enhance the intrinsic benefits of agglomerations. In Colombia, the living conditions in agglomerations are better than in uninodal cities. But apart from this result, it is necessary to ask about convergence, in particular regarding convergence on quality of life. Several differences were found in the study: between agglomerations and uninodal cities, between Bogotá and the municipalities of its agglomeration, between the major cities of the country, and between the localities of Bogotá. The search for convergence has not been a target of national public policies. In further studies, the first step must be creating indicators that allow us to evaluate changes in convergence.

The Colombian government has not given sufficient importance to the dynamics generated by urban agglomerations, nor has it been adequately concerned with understanding the interactions between cities and the rest of the territory. It is necessary that those rural processes are understood from the perspective of a connection to urban centers, and that this principle becomes the guiding criteria behind land rules and regulations.

The system of cities has shown the importance of analyzing agglomerations, the flows of goods and people, the integration between urban and rural processes, and environmental sustainability. Colombia requires territorial planning that is compatible with the dynamics of agglomerations. From this perspective, the SPAR is an adequate alternative that can contribute, from a regional perspective, to solving priority tasks such as fighting inequality, consolidating the internal market, improving productivity, and creating environmental sustainability. Finally, SPAR is an adequate space to generate instruments for metropolitan-regional convergence.

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3.5 Advancing Metropolitan Governance in Buenos Aires

Francisca M. Rojas (Inter-American Development Bank)

Abstract

The Buenos Aires Metropolitan Area (BAMA) is among the most populous and productive urban areas in Latin America. It comprises 13.6 million people and generates nearly half of Argentina's GDP. It is also a highly fragmented metropolis, where its political-institutional structure assigns responsibilities for urban management and service delivery to the federal government, a state government, a capital city, and at least two dozen municipalities. There are existing metropolitan institutions that currently deal with waste management, watershed restoration, and the wholesale distribution of produce. But other critical areas that require coordination, like transportation and land use, have yet to be addressed. Traditionally, political differences between metropolitan decision-makers have been strong disincentives for coordinated action. But for the first time in decades, the 2015 election created a high level of political alignment between the federal government, provincial authorities, and a third of the metropolitan mayors. Among the signs of renewed interest in metropolitan governance is the establishment in 2016 of two new efforts to create more integrated metropolitan governance structures. Prior experience in Argentina indicates that, in order for these coordinating bodies to be effective, they must quickly create a metropolitan action agenda that reflects the interests of municipal leaders and clearly defines key investment projects with an explicit metropolitan impact.

The political stars aligned for BAMA in late 2015. For the first time, many of the authorities responsible for investment decisions and service delivery in Buenos Aires are from the same political coalition, creating a unique opportunity for coordinated action in Latin America's third largest megacity (UN-Habitat, 2013). While some metropolitan arrangements already exist, BAMA does not have a political or administrative body in any formal sense (Klink, 2008). The challenge in this respect is considerable because BAMA's governance structure involves overlapping functions and responsibilities among at least two dozen jurisdictions and multiple levels of government. The political alignment of metropolitan actors is thus significant as it helps to overcome an important barrier to developing and implementing metropolitan-scale actions. Given the complexities of BAMA, how can local actors leverage this recent political opportunity to advance a strategic metropolitan vision? And what are the available pathways through which the relevant actors can produce the legitimate coordination mechanisms needed to put that vision into effect?

This chapter explores these questions by first, introducing the multi-dimensional complexities of BAMA; second, giving an overview of the origins and functions of existing metropolitan arrangements; third, identifying critical issues that could also be addressed through a metropolitan governance approach; and finally, proposing a pragmatic strategy for advancing a metropolitan vision and implementing coordinated investments in BAMA.

Defining Metropolitan Buenos Aires

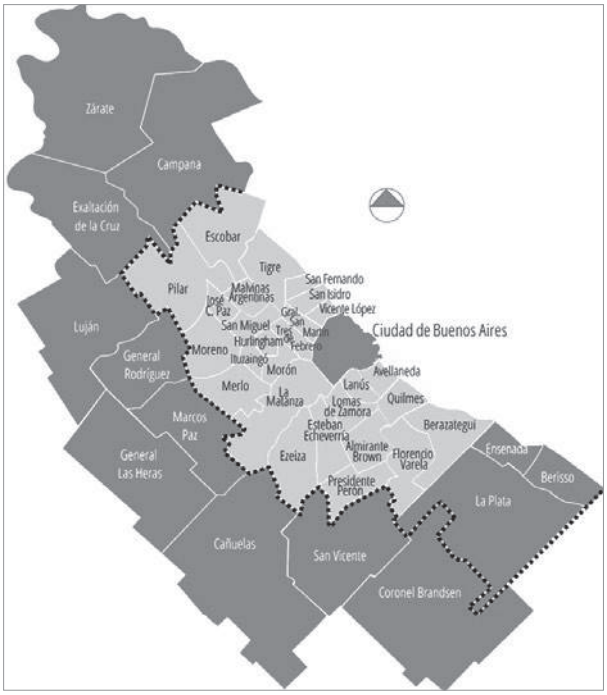
The importance of Buenos Aires to Argentina's well-being and development is substantial. It is home to over a third of Argentina's population and generates nearly half of its GDP (Pírez, 2012). The demographic and economic primacy of BAMA in Argentina is unrivaled by any other comparable megacity. Mexico

City comprises just 18 percent of Mexico's population and contributes 21 percent of its GDP (Muzzi et al., 2016). It also far outweighs any other metropolitan area in Argentina. Córdoba is the country's second-ranking metropolitan area but it only represents 4 percent of the national population and 2 percent of its GDP (IDB, 2015).

According to the Argentine census bureau, there are at least two scales through which metropolitan Buenos Aires can be viewed (INDEC, 2003). One is known as the Metropolitan Region, which in 2010 contained 14.8 million people and 40 local governments, plus Argentina's capital city known as the Ciudad Autónoma de Buenos Aires (CABA in Spanish). The Metropolitan Region is spatially distributed along three concentric rings radiating out from the capital over an area of 14,000 square kilometers (CPAU, 2010). A second, smaller scale is the Metropolitan Area (BAMA), which includes CABA plus the 27 municipalities located along the first two concentric rings where 12.8 million people live. BAMA's demographic growth is concentrated in this second ring, which is currently home to 5 million people, a figure that rose by 28 percent between 2001 and 2010 (Fernández, 2011). If we also consider the provincial capital of La Plata and its suburbs to be a part of BAMA's functional urban area—clearly reflected in the area's urban footprint even though the census considers it to be a separate urban agglomeration—then Buenos Aires' population rises to 13.6 million and 30 local governments within Buenos Aires province plus CABA. Due to its relevance for metropolitan governance and the high level of functional dependency among the localities in the first two rings and the southern corridor to La Plata, this chapter focuses on BAMA and the La Plata agglomeration (Map 1).

Buenos Aires' economic dynamism is concentrated in CABA, which serves as the country's political and administrative heart. It also plays the role of regional command and control center for knowledge-intensive industries related to financial services, cultural production, and higher education. Economic activities in the municipalities just outside CABA are oriented toward consumer services and the manufacturing industries that survived the de-industrialization process of the 1980s and 1990s, most notably textiles (Provincia de Buenos Aires, 2007). Located along the northern metropolitan corridor toward Pilar and Escobar are the back-office functions for multinational firms, while along the southern corridor, through Avellaneda, Quilmes, and Ensenada, there are large-scale facilities related to the regional port, and the oil and chemical industries. Generally speaking, CABA has higher employment rates and income levels relative to its metropolitan area, which is less skilled and less economically dynamic.

Map 1. Administrative Map of the Metropolitan Region of Buenos Aires and Its Local Governments



Source: Professional Council of Architecture and Urbanism, Metropolitan Observatory. Retrieved from http://www.observatorioamba.org/.

Note: The dotted line delineates the 30 municipalities and the City of Buenos Aires that are the focus of this chapter.

The contrasting characteristics between CABA and its metropolitan area are also reflected in the population's access to infrastructure and urban services. Coverage of the water system is 99 percent in CABA, while several localities in BAMA rank among the 15

municipalities in Argentina with the lowest rates of access to water services: Malvinas Argentinas (11 percent access), José C. Paz (17 percent), Escobar (23 percent), and Pilar (27 percent). The availability of sewage services is similarly unequal within BAMA. Again, CABA enjoys nearly full access to the sewage network, while over 50 percent of households lack access in the remainder of the metropolitan area (Argentina, 2010).

Table 1. Characteristics of BAMA at Each Metropolitan Level

	State-Level Governments	Municipal Governments	Population	Area (km^2)
Buenos Aires Metropolitan Region	2	40	14.8 million	14,000
Buenos Aires Metropolitan Area + La Plata	2	30	13.6 million	5,000
Buenos Aires Metropolitan Area (BAMA)	2	27	12.8 million	3,800
City of Buenos Aires (CABA)	1	1	2.9 million	200

Source: Professional Council of Architecture and Urbanism, Metropolitan Observatory, based on data from INDEC, 2010.

Metropolitan Governance in Buenos Aires

There is a high level of spatial and political fragmentation in BAMA. Administratively, four spheres of governance coexist within a single, functional territory (Pírez and Fernández, 2014):

1. CABA, whose authority corresponds to that of a provincial government given its autonomous status as the federal capital;
2. the Buenos Aires provincial government;
3. the municipal governments within Buenos Aires province; and,
4. the federal government.

These various actors share responsibility over vital urban services, including transportation, environmental management, and security. Table 2 details the different metropolitan-scale services and the related competencies assigned to each sphere of governance.

As mentioned earlier, BAMA does not have a formal political or administrative body to coordinate actions between these four spheres of governance. In the Argentine political structure, the federal government is responsible for inter-provincial matters, and the provincial government is responsible for inter-municipal matters (Pírez, 2012). Generally speaking, there is no provision in the Argentine constitution for a metropolitan-scale government. BAMA is in effect an inter-provincial city, and critical systems like transport, security, and the environment cross boundaries between CABA and Buenos Aires province, giving the federal government a prominent role in service delivery. CABA and the province also hold considerable responsibilities in governing BAMA, as functions like waste management, land use decisions, and health and education services are decentralized in Argentina. Where governance is weakest is at the municipal level since local governments in Buenos Aires province have limited autonomy and are highly dependent on the transfer of financial resources from the provincial level. As Pírez and Fernández (2014) pointed out, this sets up competition for resources between municipalities, making metropolitan coordination and cooperation schemes particularly difficult to achieve.

These challenges notwithstanding, there are a few existing institutional mechanisms charged with metropolitan-scale coordination in BAMA. The oldest is the central market of Buenos Aires, established in 1967 between the federal government, Buenos Aires province, and CABA to control the distribution of produce throughout the metropolitan area. It is financed through service charges, fines, and member contributions. According to Klink (2008), the central market "is one of the rare examples of a supra-municipal initiative that was aimed at streamlining regional logistics" (p. 110).

Table 2. Competencies of the Four Spheres of Governance in Metropolitan Service Delivery

Metropolitan Service		Jurisdiction in BAMA			
		Federal	Buenos Aires Province	CABA	Municipal
Transportation	Public transit	Suburban trains		Subway	
		Metropolitan buses	Inter-municipal buses		
	Roadways	Access to highway network	Inter-municipal roadways	Maintenance of local roads, traffic management	Maintenance of local roads, traffic management
Environment	Water and sewage network	Supply network	Regulate and control service	Maintenance of storm water drainage	Maintenance of storm water drainage
	Waste Management		Final disposal	Collect, final disposal of solid waste	Collect solid waste
	Parks and public spaces	Environmental oversight	Environmental regulation	Build and maintain	Build and maintain
Security		Federal police	Provincial police	Metropolitan police in CABA	
Land Use			Building permits and land use	Building permits and land use	Building permits and land use
Education		Universities	Primary and secondary education	Primary and secondary education	Early childhood
Health			Hospitals	All health services	Primary health care

Source: Adapted from Pírez, 2012, pp.194–95.

The Ecological Coordination Agreement for the Metropolitan Area, known as CEAMSE in Spanish (*Coordinación Ecológica del Área Metropolitana Sociedad del Estado*), was formed jointly by the city of Buenos Aires and Buenos Aires province in 1977. It is responsible for the final disposal of garbage in CABA and 32 surrounding municipalities, primarily those located in the first and second rings of the metropolitan region plus La Plata and its suburbs. The CEAMSE currently operates three waste disposal sites. Two sites are over capacity and have restricted operations by judicial order due to environmental risks, and a third site, located in the municipality of General San Martín, currently receives 86 percent of the area's waste and is also nearing the end of its useful life.

The need to reduce the volume of waste that reaches these landfills has driven local governments to implement efforts to separate waste at its collection point. A related incentive is that the collection and transport of waste often constitutes a municipality's largest budget item. Local efforts have advanced in this regard since 2012 and, as of 2014, only five of the municipalities that use CEAMSE lacked any type of source separation program (Gutierrez, 2014). By 2014, the volume of waste disposed of by CEAMSE had declined by 13 percent relative to 2011. These advances notwithstanding, experts believe that it is time for CEAMSE to evolve into an integrated waste management entity tasked with the full waste cycle, involving waste collection, separation, recycling, and disposal, and serving the entire metropolitan region. For instance, there remain eight municipalities in the third ring of the metropolitan region that do not employ CEAMSE and instead dump their waste in untreated municipal landfills. There is also the question of CEAMSE's political legitimacy as it is an entity controlled by CABA and the provincial government, and as such the municipalities that pay for its services and house the landfills have had little voice in its management or decision-making structure (Klink, 2008; Pírez, 2012).

One of the most recent mechanisms for metropolitan coordination is also its most institutionally complex. The Matanza-Riachuelo Watershed Authority (*Autoridad de Cuenca Matanza-Riachuelo*, ACUMAR) is an inter-jurisdictional public agency tasked with the social and environmental restoration of the country's most contaminated river corridor. It spans 14 municipalities in Buenos Aires province and CABA, with an affected population of 8 million people, 2 million of which live in high-risk health situations (ACUMAR, 2010). The federal government established ACUMAR in 2006 by decree after neighbors from Avellaneda sued the national, provincial, and Buenos Aires city governments for the detrimental health effects suffered due to high levels of water, soil, and air contamination along the watershed. The Supreme Court ruled that the three jurisdictions were responsible for the watershed's condition and ordered the implementation of an integrated environmental restoration plan (Argentina, 2008).

ACUMAR is responsible for the coordinated implementation of the restoration plan by national, provincial, and CABA authorities, including investments by metropolitan agencies like CEAMSE and the federally controlled water and sewerage authority (*Agua y Saneamientos Argentinos*, AySA). The institutional structure includes a governing board composed of representatives from the federal government, Buenos Aires province, and CABA; a municipal council for the 14 local governments; and a social participatory commission composed of civil society organizations. The latter has been particularly active in monitoring the implementation of the restoration plan, which includes relocating families living in informal settlements on contaminated land, clearing an accessible pathway along the river's edge, remediating illegal dumps, and reconverting the polluting industries. The municipalities are responsible for some of these actions, particularly preventing new illegal dumps by effectively collecting garbage and relocating families living on contaminated land in informal settlements. As with CEAMSE, the municipalities have a weak voice in ACUMAR's decision-making process. Operationally, the Authority depends mainly on the federal government for its financing and policy guidelines.

Advancing the Municipal Role in Metropolitan Governance

One of the aspects identified by Lefèvre (2008) as important for the legitimacy of metropolitan governance is that the proposed arrangements be acceptable to local governments. This level of municipal buy-in can be achieved by creating a space for local governments to be represented in the governing structure of the metropolitan entities, as in the case of ACUMAR's Municipal Council. Another aspect that contributes to the legitimacy of metropolitan arrangements is a sense of belonging to a metropolitan region, shifting people's identity from the smallest scale of governance, the municipality, to the functional area wherein various urban systems affect vital dimensions of quality of life, such as transport mobility and environmental quality.

Some municipalities within BAMA have sought to assert their identities and strengthen their role vis-à-vis the provincial and federal governments by associating with their neighboring jurisdictions. There are two examples of such municipal associations: the Northern Metropolitan Region (*Región Metropolitana Norte*, RMN) and the Municipal Consortium of the Southern Region (*Consorcio de Municipios del Conurbano Sur*, COMCOSUR).

The RMN was established in 2000 by the four municipalities situated north of CABA along the Rio de La Plata coast (Vicente López, San Isidro, San Fernando, and Tigre) and represents just over 1 million people. Like many voluntary associations, the RMN has garnered varied levels of interest from its members throughout the years. The RMN has been rekindled since the 2015 elections, with local mayors joining forces to demand better health, education, and water and sewerage services from the provincial authorities (En Cuatro Líneas, 2015).

The COMCOSUR was established in 2004 and joined the seven municipal governments located immediately south of CABA where over 3 million people live. It had an early victory in 2006 in its advocacy to expand the authority for collaborative municipal arrangements within the provincial legislation, giving municipal associations the ability to manage their own budgets and contracting (Pírez, 2012). The COMCOSUR has been

dormant for a few years, but with the political alignment of the provincial and federal governments in 2016, renewed demand to address environmental deficiencies in the southern metropolitan area is likely.

These municipal associations are limited in the sense that they consider only a fraction of the metropolitan territory. During 2016, however, two initiatives emerged to promote a more comprehensive metropolitan body. Recognizing the importance of Buenos Aires to Argentina's wellbeing and development, the federal government established the Buenos Aires Metropolitan Area Consultative Commission (*Comisión Consultiva del Área Metropolitana de Buenos Aires*, COCAMBA) whose purpose is to promote dialogue between the political authorities and BAMA in order to identify actions and propose institutional innovations that can drive inter-jurisdictional coordination (Telám, 2016). The COCAMBA responds to the Minister of the Interior, Public Works, and Housing and is composed of nine members total, three from each level of government—federal, provincial, and CABA (the members designated by the Province of Buenos Aires can be drawn from the municipal level). The structure also includes a consultative council which represents civil society and academia. Together, commission members aim to submit an institutional proposal to the minister for a more integrated metropolitan governance body for BAMA, at which point COCAMBA will be dissolved. The most immediate challenge for this initiative is defining a politically legitimate roadmap to achieve an operationally legitimate governing body.

The second initiative came from the subnational level, where the governor of Buenos Aires province and the mayor of CABA established a Metropolitan Cabinet in order to define a common agenda and agree on concrete actions that put that agenda into effect (Screnci and Straface, 2016). It is an arrangement that brings together ministers from the provincial and CABA governments every three months to propose and monitor those metropolitan initiatives. In the interim, a technical committee is responsible for achieving intermediate milestones. The first announcement was undoubtedly a feel-good proposal: co-organizing cultural festivals and creating an exchange program between performing arts venues in the metropolitan area. This was followed by more substantial proposals related to establishing shared emergency response protocols and digitizing health care records between the provincial and CABA systems so that providers on either side of the jurisdictional boundary can have access to the same patient information.

The Metropolitan Cabinet is a promising initiative but represents a rather weak and volatile coordinating mechanism whose resolutions can be easily ignored by local jurisdictions. In particular, it should be noted that the municipal voice has not yet carved out its space in the Metropolitan Cabinet. Nevertheless, a process of local collaboration is developing between CABA and the immediately adjacent municipalities of Vicente López, Tres de Febrero, and Lanús, all of which are aligned with the same political party as CABA and the federal and provincial governments. Led by CABA, and including the participation of local residents and civil society organizations, working groups have begun to come together to discuss, identify, and prioritize issues for which coordinated action is needed to improve the quality of life in those neighborhoods that straddle two jurisdictions. It is considered a, "…first step that seeks to simply establish a conversation between neighboring jurisdictions, based on the participation of those representatives who are closest to the citizens" (Ricciuti, 2016). Indeed, this is a bottom-up, incremental way to generate a metropolitan conscience that leverages the new political affinities between actors as a starting point. If they are sustained, the working groups have the potential to coalesce over time into legitimate instances of collaboration and coordination between actors at the sub-metropolitan and, perhaps eventually, the metropolitan scale.

Transforming Metropolitan Projects into Policy

How could this nascent interest among local governments to identify with a broader metropolis be sustained and built into legitimate metropolitan institutional arrangements? The actions of COCAMBA, the Metropolitan Cabinet, and the municipal working groups are promising and necessary first steps. But prior experience with the process of building metropolitan

governance in Argentina and abroad (see the case of France in Lefèvre, 2008) suggests that interest translates into action when local actors participate in tangible projects to solve well-defined problems. The process by which the problems are defined and the corresponding projects are implemented places decision-makers in a space where they "rehearse" metropolitan collaboration. Over time, these rehearsals become iterative, confidence-building exercises between actors who can then convert this social capital into more robust collaborative arrangements to tackle shared urban problems.

This approach has been put into effect in Argentina since 2012 through the Ministry of Interior, Public Works, and Housing's Development of Metropolitan Areas program (*Desarrollo de Áreas Metropolitanas del Interior*, DAMI), executed initially with US$40 million of financing from the Inter-American Development Bank (IDB) and extended in 2016 with a US$240 million line of credit over 15 years. The program incentivizes provincial and municipal governments to create innovative metropolitan institutional arrangements by financing the implementation of metropolitan-scale investment projects. Metropolitan areas that participate in the program build up their collaborative capacity for metropolitan governance by advancing through a series of four steps to achieve:

1. **Metropolitan identity**, giving metropolitan problems as voice by placing them on the public agenda;
2. **Political legitimacy**, generating political agreements between provincial and municipal leaders to address metropolitan problems;
3. **Functional legitimacy**, formulating investment projects that address metropolitan problems and designing the institutional framework to implement and manage them; and
4. **Operational legitimacy**, sustaining the metropolitan institutional structures by managing, financing, and implementing other metropolitan-scale investments (Rojas, 2015).

These four phases correspond to the elements that Lefèvre (2008) identifies as the basis of metropolitan success.

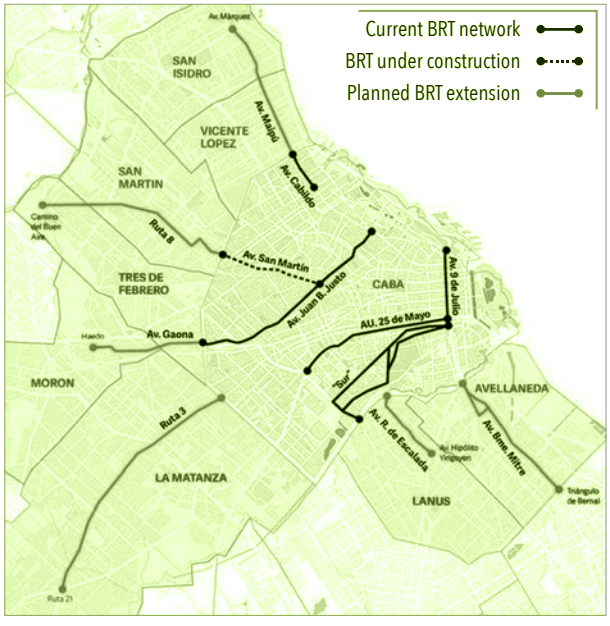
This process has proven effective in the seven metropolitan areas where the DAMI program currently operates (DAMI, 2016). In the Salta Metropolitan Area, for example, the program initially supported workshops to generate a metropolitan identity among the eight municipalities in the area, whose mayors then drafted and signed a metropolitan agenda identifying common priorities. Among those priorities was creating a metropolitan park that could serve as a recreation and open space resource for all residents. The DAMI program financed the construction of a new 75-hectare Bicentennial Park and supported the creation of a Metropolitan Parks Management Office within the provincial government. Both the park and the parks office became proofs of concept for metropolitan coordination by demonstrating functional legitimacy. The parks office was initially intended to manage just the Bicentennial Park but has since also taken on managing other parks in the Salta Metropolitan Area. Further, the Bicentennial Park is now seen as the first node of what aims to become a more extensive metropolitan parks system for the region. The metropolitan experience has been further consolidated in Salta with the creation in 2016 of a Metropolitan Office within the provincial government and a Network of Metropolitan City Councils, both of which are strong indicators of the operational legitimacy of the project-to-policy process.

In BAMA, two critical issues stand out for their potential to be addressed through this project-to-policy approach: transit and parks. In transit, there are already concrete advances in inter-jurisdictional coordination between CABA and adjacent municipalities by implementing a metropolitan bus rapid transit system, known locally as Metrobus (Map 2). Two Metrobus lines were built in CABA in 2011–13, which reduced traffic in the city by as much as 50 percent. In a metropolitan area where the average travel time is over an hour and where 27 percent of people have daily commutes of 1.5 hours or more (IDB, 2014), expanding the Metrobus network quickly became a priority for CABA. Buses in Buenos Aires are run by private companies and regulated by the federal government. The Metrobus does not modify this arrangement but instead physically adapts the local right-of-way to create dedicated bus lanes, special bus

stops with high-quality signage and street furniture, and improved pedestrian access on sidewalks and crosswalks. Because local governments have jurisdiction over their roadways, this strategy allows municipalities to coordinate with each other to improve transit service without requiring action from the federal government.

The first metropolitan Metrobus was built in 2015 between CABA and its northern neighbor, Vicente López, accommodating 20 bus lines and 39 stations along a five kilometer corridor. CABA fully financed the project, including the investments on the Vicente López side of the city boundary in exchange for Vicente López financing a future flood prevention project that will benefit CABA (La Nación, 2015). Another metropolitan Metrobus is also being implemented between CABA and La Matanza to the west, in this case with financing from the federal government and The World Bank. Another four lines are projected for a total of 118 kilometers of bus rapid transit, all of which are the product of the capital city's initiative and technical leadership (Clarín, 2015).

Map 2. Existing and Proposed Metropolitan Bus Rapid Transit (BRT) Network



Source: Clarín, 2015.

These advancements in metropolitan transit service signal the willingness of local government actors to solve a pressing problem at the scale at which it can most effectively be addressed. Buenos Aires has a Metropolitan Transportation Agency (MTA) in place—established in 2014 by CABA, the province, and the federal government—but at present it is a consultative body only and lacks municipal representation. It is plausible to imagine that as the Metrobus projects expand, municipal leaders may begin demanding that the MTA play a more proactive role in issues ranging from coordinating the different modes of transit (Metrobus, bus, subway, regional trains, and bicycles), applying a single fare for intermodal trips, and assisting municipalities with transit-oriented land use strategies along the new corridors. In this way, the Metrobus projects could influence and strengthen metropolitan institution building, developing the MTA's operational legitimacy.

The matter of a metropolitan parks network in BAMA has yet to appear on the metropolitan agenda of local decision-makers. But Garay and Fernández (2013) identified significant environmental deficits in BAMA, both in terms of water and soil contamination and access to open spaces. They estimated that by World Health Organization (WHO) standards only six of the 40 municipalities in the metropolitan region provide decent access to green areas. Through a careful analysis of existing plazas, parks, and other unoccupied land, Garay and Fernández delineated a metropolitan system of green corridors, nodes, and links that could bridge the gap between existing open spaces and the WHO standards of access by 80 percent. If designed to double as green infrastructure, a metropolitan parks network could also contribute significantly to the mitigation of recurrent and increasingly devastating flooding that afflicts the metropolitan area, a problem that is squarely on the agenda of the provincial government.

As with the Metrobus, a parks network is an area where municipalities can be leaders in developing proofs of concept that serve as cornerstones for a broader metropolitan system. Building and maintaining parks are functions delegated to the local governments. But open spaces are also vital elements of the natural systems that sustain the

built environment and, as such, parks can achieve important economies of scale and optimal functionality when operated as a network. Advancing this issue could benefit from applying the sequence of four steps described above. First, so that local leaders understand the ecological and social functions of parks from a metropolitan systems perspective. Then, so that leaders agree to prioritize the issue on the metropolitan agenda. And finally, so that implementing tangible projects can incentivize creating, or strengthening, politically and operationally legitimate coordinating mechanisms needed to reach a metropolitan scale.

Conclusion

By tracing the characteristics and existing governance arrangements of metropolitan Buenos Aires, we find that there are existing entities tasked with pressing problems like waste management, watershed restoration, and transportation. But these entities tend to operate in a top-down manner, offering little space for municipal governments to voice their concerns or proposals. Prior experiences in metropolitan governance suggest that effective coordination is achieved when relevant actors are engaged in a complex interplay between horizontal and vertical networks, when this process is sustained over time through an incremental and progressive process, and when relevant actors build up a measure of social capital and trust. With the current political alignment in BAMA between the federal government, provincial authorities, the capital city, and a third of the metropolitan mayors, there are signs of renewed interest in metropolitan governance at least partly because a base level of political trust brings these actors to the table. Voluntary, inter-jurisdictional collaborations like the Metropolitan Cabinet, the inter-municipal working groups, and the joint implementation of the Metrobus system are already engaging local actors in rehearsals and point to the potential to develop more mature and consolidated forms of urban governance in Buenos Aires.

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3.6 Guadalajara, Mexico's Metropolitan Governance Laboratory

Karina Blanco-Ochoa (Specialist in Development Policy), **Efrén Osorio-Lara** (UN-Habitat), and **David Gómez-Álvarez** (University of Guadalajara, Mexico)

Abstract

The emergence and consolidation of metropolitan areas all over the globe has brought with it several problematic issues with political, social, environmental, urban, and legal implications. Thus, achieving effective metropolitan governance has become one of the most formidable challenges of our time. In this context, the absence of institutional and legal frameworks at the metropolitan level is a common problem faced by the great majority of metropolises, especially those located in Latin America. Mexico's metropolitan development used to be no exception. As the Mexican Constitution does not recognize metropolises as an administrative or governmental unit, there was no institutional framework to regulate them prior to the enactment of the General Law on Human Settlements, Land Management and Urban Development in 2016. This chapter presents the case of the Metropolitan Area of Guadalajara, a conurbation that has led an unprecedented effort in Mexico to consolidate a robust metropolitan governance structure. The governance regime entailed creating three Metropolitan Coordination Entities that represent both government and civil society: the Metropolitan Coordination Committee, the Metropolitan Planning Institute, and the Citizen Metropolitan Council. As a result of this new institutional architecture at the metropolitan level, the first metropolitan-scale planning instrument has been developed, aiming to achieve effective coordination across the metropolis, as well as an appropriate territorial planning strategy aligned to the new normative body.

As the metropolitan phenomenon dramatically arises all over the world, achieving effective metropolitan governance has become one of the most pressing challenges of our time. In this context, the absence of institutional and legal frameworks at the metropolitan level is a common problem faced by the great majority of metropolises. In Latin America, the metropolitan phenomenon has been taking place in a context characterized by insufficient normative and technical capacities to attend to this particular aspect of the urban agenda. As a result, local governments from several cities in the region have been facing tremendous difficulties in efficiently providing services and fulfilling the needs of their citizens. Thus, metropolitanization is a common challenge at the core of the New Urban Agenda.

Mexico's metropolitan development is no exception. Even though rapid urban sprawl has overflowed traditional administrative boundaries of Mexican municipalities, the country lacked adequate legislation, and institutional frameworks to attend to this metropolitan reality until 2016. This is key to understanding the historical challenges faced by the Metropolitan Area of Guadalajara (MAG), the second largest metropolis in the country, particularly regarding its governance and management.

This chapter describes the path followed by the MAG in pursuit of a robust and efficient governance structure through different institutional reforms that have taken place since the 1940s. The case demonstrates how the MAG has adapted to the metropolitan phenomenon, and it can serve as an example for other Latin American cities experiencing similar challenges.

The authors first present a brief overview of metropolitanization in Mexico, pointing out the main obstacles and challenges faced by the country in terms of governance. Second, they describe the MAG and recount the

governance evolution of this region since it began showing metropolitan features until today. Third, they offer a glance at Guadalajara's metropolitan governance structure and the functions of its Metropolitan Coordination Entities. Finally, they provide an outline of possible alternatives to strengthen governance of the MAG.

Metropolitanization in Mexico

In a context of rapidly increasing dominance of urban areas around the world (UN-Habitat, 2015) megacities, conurbations, urban corridors, and metropolitan areas or regions have become the new territorial expressions of the urban phenomenon in Latin America (UN-Habitat, 2012). However, in the great majority of Latin American countries, managing metropolitanization has been constrained by unresolved governance issues and lack of legislative frameworks. This translates into the absence of an institutional architecture to govern Latin American metropolises and weak capabilities to attend to the metropolitan agenda in the region.

In Mexico, the metropolitan phenomenon began mainly during the second half of the 20th century and the country is now highly urbanized. The National Urban System concentrates 72.3 percent of the national population (CONAPO, SEDESOL, and SEGOB, 2012), which is 81.2 million inhabitants living in 384 cities, 59 of which are considered metropolitan areas, 78 conurbations, and 247 urban centers.

Throughout Mexico's metropolitanization process, a key challenge among local and regional authorities in the country was the absence of regulations and legal frameworks to articulate, coordinate, and manage the development of its expanding urban areas. However, the year of 2016 set a watershed in this regard. A major constitutional reform was approved by the end of the year, leading to the enactment of the General Law on Human Settlements, Land Management and Urban Development, which incorporates a chapter on metropolitan governance for the first time, filling a vacuum on Mexican legislation.

The new law seeks to put an end to a period in which each state in the country drifted when deciding how to exercise their authority to govern, to legislate, and to create institutions related to metropolitan agglomerations (Gamboa, Montejano, and Ayala Cordeo, 2007) in the absence of an overarching normative body setting basic guidelines. Of the 32 states that comprise the Mexican Federation, only eight have a law regarding metropolitan areas (Silva Rodríguez, 2012). Those eight laws all provide different scopes and propose similar mechanisms that have failed to achieve a common denominator, which in turn led to a highly disharmonized governance structure.

This situation was further complicated by the fact that Mexico's Constitution does not recognize metropolitan areas as an intermediate level for public administration among the states and municipalities, nor as an administrative unit. Municipalities were responsible for solving challenges and problems of metropolitan character that by far surpassed their capabilities for coordination and association recognized in Article 115 of the Constitution. Yet, by providing guidelines that establish minimal conditions to create institutional structures of metropolitan governance, the introduction of the new legislation aims to resolve this issue. The already existing laws of metropolitan governance must subordinate and align to the new regulations, whilst the states lacking of laws in the subject, will have to legislate their own regulations according to this new normative body.

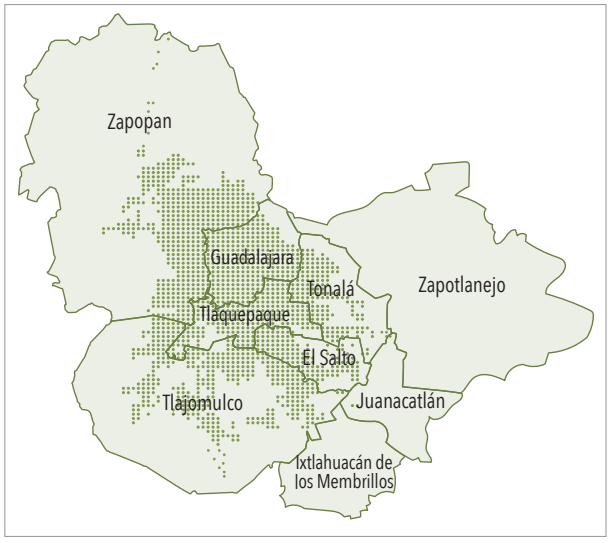
Despite the obstacles and challenges faced by Mexican cities in managing the increasing occurrence and expansion of metropolitan areas across the country, the MAG excels at both the national and regional levels. This metropolis has led an unprecedented effort to consolidate a metropolitan governance regime that filled the prior legal and institutional void, setting a precedent as a good practice and as a national point of reference at the time of legislating the new General Law on Human Settlements.

Guadalajara: From Institutional Fragmentation to Metropolitan Governance

The MAG, commonly known as the City of Guadalajara, is the second largest Mexican conurbation after the megalopolis of Mexico City. Guadalajara,

located in the center of the State of Jalisco, resulted from an increasing process of urban expansion, demographic growth, and densification that goes back to the 1940s (IMEPLAN, 2015). As a result of this ongoing process, presently the metropolis extends over the territory of nine neighboring municipalities (Map 1), accounting for a total of 3,265 square kilometers.

Map 1. Municipalities of the Metropolitan Area of Guadalajara



Source: Elaborated by the authors.
Note: Dots in green are the urbanized area.

Guadalajara, the core municipality, along with Zapopan, San Pedro Tlaquepaque, Tonalá, Tlajomulco de Zúñiga, and El Salto, are considered central municipalities given that they share a contiguous inter-municipal conurbation. On the other hand, Ixtlahuacán de los Membrillos, Juanacatlán, and the recently added municipality of Zapotlanejo are considered external municipalities because they are not part of the contiguous conurbation but they obey planning and urban policy criteria recognized by the national (federal) and local governments.

However, the fact that the above-named nine municipalities are considered part of the MAG does not mean that all of the territory is necessarily urban (IMEPLAN, 2016 b). On the contrary, MAG municipalities comprise urban and rural areas and the development of each has been asymmetric. The municipalities have experienced different paths and timelines in their inclusion into the MAG.

As a whole, the MAG has become a very important piece of Mexico because of the relevance and dynamism of its forceful economy, as well as its demographic weight. In fact, it has been recognized as the western industrial capital of Mexico given that it hosts 40 of the 500 largest companies of the country, representing 75 percent of Jalisco's industry. Demographically, the metropolis has been recognized as the second most populated metropolitan area in the country, as it concentrates 4.5 million inhabitants (INEGI, 2010), a figure that represents 60 percent of Jalisco's population.

However, what makes this metropolis a very interesting and particular case is its metropolitan governance regime. The regime has been created as a system of metropolitan coordination with a tripartite structure formed by three main Metropolitan Coordination Entities with political, technical, and citizen participation plus an additional entity with consultative functions. Because of this system, Guadalajara has become the national spearhead of developing a metropolitan legal framework.

Aligned with the national and regional trend, the metropolitanization process of Guadalajara can be divided into three main historical periods:

1. Early development, from 1940 to 1976
2. Consolidation, from 1976 to 2000
3. Transition to better urban governance, from 2000 to 2016

The history of the metropolis can to be told as a tale of reforms and institutional evolution.

During the 1940s, Guadalajara began to experience its early metropolitan development. At that time, the city consisted of one single municipality with urban and rural characteristics, while the surrounding municipalities were rural, having agriculture as their main economic activity. In those years, some neighboring municipalities began to experience an increasing process of urbanization.

The *Law of Urbanization of the State of Jalisco* was enacted in 1940. This law marked a significant inflection point in the urban development of the state's municipalities. Having this event as a preamble, in 1947

the Congress of the State of Jalisco enacted the *Law for Urban Improvement*, the first attempt to consolidate a legal framework to regulate the region's planning. In the same year, Jalisco's government created the Planning Commission for Guadalajara, the first institution with a joint decision-making approach where the state government, the municipalities, and the private sector shared the same discussion table. By 1958, as a result of the inexorable increase of urbanization in the region, the municipalities that were represented in the Planning Commission for Guadalajara were recognized as part of the city's conurbation.

In 1959, the enactment of the *Law on Planning and Urbanization* by the state authority resulted in the creation of the Planning and Urbanization Board of the State of Jalisco (an institution that followed its predecessor, the Planning Commission). This board was given greater planning authority with a broader scope in territorial terms, meaning that its attributions were no longer exclusive to the City of Guadalajara. Once again, the state government was the head of the institution (Arias García, 1995).

Another feature that characterizes this period is the rapid demographic explosion and urban sprawl. Guadalajara's population grew from 500,000 inhabitants in 1950 to 1 million in 1964 and 1.5 million by 1970 (SEDESOL, CONAPO, and INEGI, 2010), meaning it tripled in size in 20 years. The demographic explosion led to the city expanding beyond its traditional municipal boundaries. As a result, by 1975, the board was granted new powers, such as zoning, land management, and the elaboration of urban plans (Arias García, 1995).

In sum, the early development of MAG solidified the first legal and institutional pillars that shaped the path toward consolidating the metropolis. It is important to emphasize that the metropolis existed long before its official recognition in 1978. Unikel (1976), Regalado (1995), and López-Moreno (1996) agree that the City of Guadalajara gained the territorial characteristics and population to be considered a metropolis between 1940 and 1970 (IMEPLAN, 2015).

During the 1970s, urbanization was already a reality across Mexico. However, the national legislation on human settlements that existed at that time was weak and inadequate to address the increasing metropolitan phenomenon. Therefore, in 1976, prior to the United Nations Conference on Human Settlements held in Vancouver (better known as Habitat I), a legislative effort to improve the national legal framework on the subject was triggered in Mexico. As a result, Article 27 of the Mexican Constitution was reformed in 1976, resulting in the first *General Law on Human Settlements*.

Enacting this law was a watershed moment because it aimed to balance the living conditions of inhabitants with ecological wellbeing by adequately planning and managing human settlements regardless of their urban or rural location (Diario Oficial de la Federación, 1976). The spillover effect that this law had on the great majority of Mexican Federation States was significant. In Jalisco, the law was published in 1977, followed by the official recognition of the City of Guadalajara as a conurbation by the state congress in 1978 (IMEPLAN, 2015).

The Decree of Guadalajara's Conurbation also meant including the municipalities of Tonalá and Tlajomulco de Zúñiga into the city core and recognizing the first metropolitan ring, which consisted in a 15-kilometer radius from the city center to its urban limits (Cabrales Barajas, 2010). Furthermore, also in 1978, the Planning and Urbanization Board was replaced by the Regional and Urban Development Commission of Guadalajara, which represented the first attempt to achieve a participatory urban planning process.

In contrast with the previous board, this new commission had more heterogeneous representativeness as it was composed of diverse actors and stakeholders from society, yet all were subordinated to strong state government dominance. The most significant achievements of this commission were the elaboration of the Regional Urban Plan in 1979 and the 1982 Land Management Plan for Guadalajara Conurbation, which had a metropolitan spirit. In addition, the commission allowed the municipal authorities to reach coordination agreements, such as creating inter-municipal agencies and organizations to provide inter-municipal public services.

The creation of the Inter-Municipal System of Water and Sewerage in 1978 was the most iconic organization to improve service provision in the conurbation. Another significant case was the creation of SISTECOZOME (Inter-Municipal System of Collective Transportation for the Metropolitan Area) in 1982 to coordinate the city's transport system.

The efforts to consolidate greater coordination among the municipalities were reinforced by the reform of Article 115 of the Mexican Political Constitution in 1983. This article increased the authority of the municipalities to collect taxes and manage their own finances while recognizing the coordination mechanism among the local authorities and the state government as a means to jointly plan, regulate, and develop the conurbation. This important event was followed by the creation of the Metropolitan Council in 1988, replacing the former commission of 1978, and giving voice to other surrounding municipalities.

By the beginning of 1990s, the city continued to experience significant changes. On one hand, the first democratic transition in history took place in the State of Jalisco, leaving the hegemonic party out of power. On the other hand, the national legal framework started to change. In 1993, the national *General Law on Human Settlements* of 1976 was abrogated, giving place to a new one. This led to a reform and update of Jalisco's *Law on Human Settlements* of 1977. In addition, the new legislative framework in the state included enacting the *Law on Urban Development*, which recognized the creation of new institutions such as the Secretariat of Urban and Rural Development and the state's Council on Urban Development.

As metropolitanization continued to rapidly expand within the city, the neighboring municipality of El Salto was included as part of the conurbation in 1998, reaching a total of six municipalities at the city core and a population of more than 3 million inhabitants. This process of metropolitan consolidation was reinforced in 1999 by an additional reform of the constitutional Article 115, recognizing the municipalities' authority to associate for planning and management purposes within the conurbation. Because of this new authority, the Inter-Municipal System of Water and Sewerage became a municipal association, changing the decision-making structure of the agency to a democratic system, and thus, moving toward a more horizontal governance structure. These changes had spillover effects in other recently created institutions.

By the beginning of 2000, the Metropolitan Council was the strongest metropolitan institution created thus far, it had representation from the three levels of government, and it allowed the participation of different sectors of the society for consultative and advisory purposes, making it an important space for political bargaining (Arellano Ríos, 2013). One of the most significant achievements of this council was the creation of the System on Electronic Urban Transportation, an agency that managed the multimodal transport system in the city.

The Metropolitan Council failed, however, to find solutions to manage metropolitan waste and disposal, allocate high-impact investments for infrastructure with a metropolitan impact, update existing land management plans, and control urban expansion (Arias García, 1995; Arellano Ríos, 2013). Thus, the urbanization process of the MAG became characterized by accelerated and segregated sprawl. Its improvised planning put pressure deficient public services and had a strong impact on the environment and the citizens' quality of life (Cabrales Barajas, 2010).

In this context, several organizations from civil society emerged. Notably, Guadalajara 2020 was one of the most influential non-governmental organizations on the metropolitan scene. Guadalajara 2020 aimed to develop a mechanism to give voice and bring together different opinions, interests, and projects from many stakeholders in the city (Guadalajara2020, 2005). Likewise, several other non-governmental organizations demanded a more inclusive, enjoyable, and equitable city, emphasizing the environmental and mobility agendas and having a significant impact on the agendas of the authorities and city inhabitants.

In 2007, Jalisco's congress created the Legislative Commission on Metropolitan Affairs, aiming to improve the metropolitan legal framework in order to foster better coordination mechanisms. Later on, in 2008, Article 80 of Jalisco's State Constitution was

reformed, while Article 81 Bis was included in the legislation. This event constituted an inflection point in the development of a metropolitan governance structure because it led to the creation of a compulsory mechanism for metropolitan coordination.

Another significant step in consolidating Guadalajara's metropolitan governance structure took place in 2009, when the state congress enacted an Urban Code that specified the responsibilities of the state government and the municipalities in terms of urban governance. In addition, in the same year, congress issued a new Decree for the Metropolitan Area of Guadalajara, recognizing a second metropolitan ring of 35-kilometer radius (Cabrales Barajas, 2010). The second ring included the external municipalities of Juanacatlán and Ixtlahuacán de los Membrillos.

In continuation of those efforts, in 2011, the state congress enacted the *Law on Metropolitan Coordination*, which is currently the most important legal framework in terms of metropolitan governance. This law establishes both the procedure to recognize and establish metropolitan areas in the state and the basis for the organization and functioning of the Metropolitan Coordination Entities in accordance with Article 81 Bis of Jalisco's Constitution (Periódico Oficial del Estado de Jalisco, 2011).

In this spirit, in 2011, the mayors from the municipalities of the MAG signed an agreement to create the Board of Metropolitan Coordination, a political entity within the governance structure. After an intense year of negotiations, the board was finally constituted in December 2012. Furthermore, a temporary commission to elaborate the organic statutes of the rest of the Metropolitan Coordination Entities was established in the same year, having important support from diverse organizations from the civil society such as the Assembly for Metropolitan Governance.

By February 2014, the Organic Statutes of the Metropolitan Coordination System were published, leading to the subsequent consolidation of the Metropolitan Planning Institute (IMEPLAN in Spanish), which is the entity with technical authority; the Citizen Metropolitan Council, an entity for citizen participation; and the Consultative Council for Metropolitan Planning, a non-permanent entity for consultative purposes. Bearing these new metropolitan bodies in mind, the state congress reformed the Urban Code of Jalisco in 2015. The external municipality of Zapotlanejo was also included as part of the MAG, increasing the total number of municipalities to nine.

Finally, the most recent advance in the path toward better metropolitan governance was launching the Plan for Metropolitan Territorial Planning of the Metropolitan Area of Guadalajara (POTmet in Spanish), which took place in June 2016, prior to the enactment of the General Law on Human Settlements, Territorial Planning and Urban Development, in November 2016. The POTmet aims to achieve an appropriate territorial planning strategy across the metropolitan area, while it also intends to "support and give legal weight to the territorial planning decisions taken by the Metropolitan Planning Institute" (IMEPLAN, 2016a). The POTmet also formulates the essential criteria to address problems caused by urban sprawl that the city has been experiencing during the past decades (IMEPLAN, 2016b).

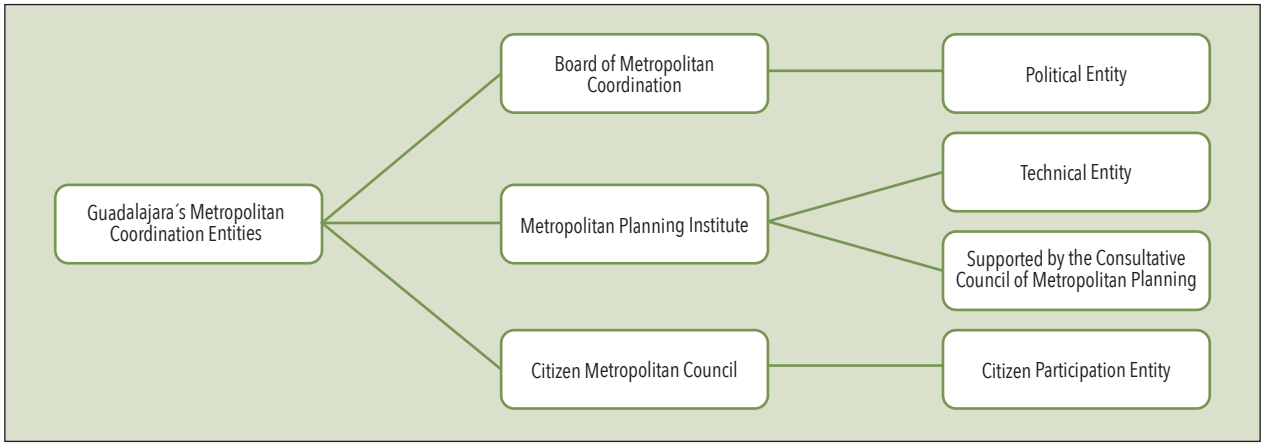
In order to complement the objectives and goals set for the POTmet, IMEPLAN is currently working on a second strategic instrument that aims to draw a roadmap for metropolitan development toward the year 2042 through a participatory and comprehensive planning approach. This instrument is the Metropolitan Development Programme of the Metropolitan Area of Guadalajara, 2042. Additionally, the Board of Metropolitan Coordination is currently discussing the creation of metropolitan agencies to effectively provide public services such as security and solid waste management.

Guadalajara's Metropolitan Governance Structure

As mentioned, the MAG is now the most advanced Mexican city in terms of metropolitan governance. This is the result of governmental efforts to achieve better coordination at the metropolitan level throughout the years. Further, it is a consequence of significant

social claims that resulted in the consolidation of a Metropolitan Coordination System that relies on a tripartite structure where government and civil society play key roles. The bodies recognized in the Law of Metropolitan Coordination, which are fully aligned to the new national legal framework, are the Board of Metropolitan Coordination, the Metropolitan Planning Institute, the Citizen Metropolitan Council, and the Consultative Council of Metropolitan Planning (Figure 1).

Figure 1. Metropolitan Coordination Entities



Source: Authors.

The Board of Metropolitan Coordination is conceived by the law as an inter-municipal body for political coordination. It comprises the mayors of the nine municipalities of the MAG, the state governor or his representative, and a technical secretary, who is at the same time the Managing Director of IMEPLAN. Some of the most important responsibilities attributed to the board are setting the metropolitan agenda and ensuring compliance to it, approving technical metropolitan planning instruments and the annual work and investment plan, and performing necessary actions for the effectiveness of metropolitan coordination actions. The aforementioned metropolitan agenda is considered an instrument to establish priorities, objectives, strategies, and actions for the metropolitan area.

The Metropolitan Planning Institute is an inter-municipal decentralized public body with a legal identity, its own assets, and technical, financial, and managerial autonomy. It includes a managing director (appointed by the Metropolitan Coordination Board), a governing board, and technical and administrative units. Some of its main responsibilities are to develop and propose metropolitan planning instruments such as the Metropolitan Zoning Plan, the Metropolitan Development Program, and the Risk Atlas; it also provides a Metropolitan Information System.

According to the law, IMEPLAN also has the authority to establish partnerships with organizations and universities in order to create further technical studies and propose additional coordination mechanisms. However, all of the instruments and mechanisms proposed by this organization are subject to approval by the Metropolitan Coordination Board and by the city halls of the MAG municipalities, when appropriate.

Finally, the Citizen Metropolitan Council is an inter-municipal advisory body for citizen participation with an honorary character. It is a group of citizens of neighborhood associations as well as citizens from academic, professional, and civic organizations that seek to promote social impact on the public policy cycle. The council includes a minimum of two citizens from each metropolitan municipality, who are elected through public nomination. Its main purpose is to participate in monitoring and evaluating the metropolitan agenda, while it is also responsible for elaborating, receiving, and discussing proposals from civil society.

Conclusion

The current scheme of metropolitan governance of the MAG, created under the form of a tripartite system of metropolitan coordination, is a good example of how a Latin American city is trying to address the metropolitan phenomenon. The institutional structure of this metropolis was a point of reference at the moment to enact a new national regulation that has included the metropolitan approach into the Mexican legislation on human settlements and urban planning. However, this governance structure is in the process of consolidation and still has significant challenges to overcome related to its integration, representation, performance, scope, and funding.

For instance, in order to keep advancing in consolidating a robust and effective metropolitan governance regime in the MAG, and in the whole urban and metropolitan system, it is crucial to reform Article 115 of the Mexican Political Constitution, which has a significant legal vacuum in terms of metropolitan affairs Although the enactment of the new General Law on Human Settlements set a crucial inflection point to attend the metropolitan phenomenon in Mexico, reforming such constitutional article could pave the way for deeper coordination and a more efficient governance at the metropolitan level. Furthermore, the city is currently "very different from the basic conception expressed in Article 115 of the Mexican Political Constitution" (IMEPLAN, 2016 b, p.6).

Another significant challenge faced by the city is overcoming political and partisan logic when it comes to reaching metropolitan agreements. Although the Board of Metropolitan Coordination is a space characterized by strong political bargaining, it is paramount that the spirit of the Metropolitan Coordination Entities remains focused on the metropolitan development path that the city wants to follow. The willingness of the state government and the municipal authorities to cooperate and collaborate in the metropolitan agenda is a crucial pillar to keep advancing toward a more efficient and effective metropolitan governance scheme.

The way forward for the MAG seems promising since it has been taking a more horizontal and comprehensive governance path. The upcoming launch of the Metropolitan Development Programme and the consolidation of metropolitan agencies to provide public services will likely be important milestones.

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3.7 Metropolitan Reform in Mexico City: Some Key Ideas

Alfonso Iracheta (Colegio Mexiquense)

Abstract

Continued and rapid urbanization in Mexico is creating larger and more spread out cities. Neither the spatial and urban planning system nor the administrative structures in any of the three tiers of the Mexican government have assumed responsibility for planning and governing metropolises from a comprehensive governance approach. The Metropolitan Area of the Valley of Mexico stands out for its fragmented and sectoral features, which have made it enormously difficult to define and execute a long-term metropolitan vision. And yet the city works! But how is it working? Does it offer reasonable conditions for comprehensive development and sustainable environment? The answer is no, as the positive conditions it has to offer diminish and the simple problems disproportionately grow. This raises some key questions: Why is metropolitan governance so important for national and local security and development? What are the key proposals to move from metropolitan crisis to successful metropolitan governance? This chapter provides some answers and advocates for the importance of metropolitan governance and the need for a long-lasting and effective urban reform in Mexico as well as a metropolitan strategy for The Metropolitan Area of the Valley of Mexico.

Continued and rapid urbanization in Mexico is creating larger and more spread out cities where long distance commuting and conurbation have become an everyday experience for a growing number of urban inhabitants and local governments. Such urban growth has usually occurred over multiple jurisdictions, making local governments responsible for some areas, without necessarily taking into account the rest of the city. Metro areas are not only integrated and interrelated entities from social, economic, spatial, and environmental perspectives, but also share a single labor market with strong interdependent linkages between the economic core and the workforce at the periphery. Furthermore, they often share common environmental features, such as air and watersheds, among others. However, neither the spatial or urban planning system nor the administrative structures in any of the three tiers of the Mexican government have assumed responsibility for planning and governing the metropolises from a comprehensive governance approach. The Metropolitan Area of the Valley of Mexico (MAVM) stands out for two reasons. First, it comprises Mexico City, which is the national capital and the indisputable political, economic, social, and cultural driver of the country. Second, the metropolitan area includes 79 different jurisdictions, each with executive bodies of its own, in addition to two state governments (the State of Mexico and State of Hidalgo), the federal district, the federal government, and 59 corresponding legislative bodies. This translates into at least 80 different territorial plans and programs to plan the metropolis (Iracheta, 2006).

There is not a national legal and/or planning framework to deal with the metropolitan phenomena. At best, some big cities have developed metropolitan plans and some states have produced metropolitan legislation, however, with poor governance arrangements. This is the case of the 1998 Metropolitan Program for the MAVM, which has been updated at least four times, but never applied. This problem can be traced to how state and municipal boundaries were historically defined in the

country, responding to military conflicts, political arrangements, and other historical events, but not to geographic or urban development circumstances. Therefore, current urban growth patterns show relevant disparities between local jurisdictions, severely restraining any possibility for inter-state or inter-municipal coordination and metropolitan and regional governance arrangements. Consequently, the magnitude of most of the metropolitan problems that require public intervention has increased to the point of jeopardizing the governing capacity and sustainability of cities. Again, the MAVM stands out as

fragmented and sectorized action prevails, and it is proving enormously difficult to define and execute a long-term metropolitan vision. And yet the city works! But how is it working? Does it offer reasonable conditions for competitive economic development, improving quality of life and security for the community, and making its organization and environment sustainable? The answer is no, since the positive conditions it has to offer grow thinner, and the feeling of basic problems increasing disproportionately grows larger. (Iracheta, 2006, p.1)

Some key questions remain: Why is metropolitan governance so important for national and local security and development? What are the key proposals to move from metropolitan crisis to successful metropolitan governance? This chapter suggests some answers and advocates for the importance of metropolitan governance and the need for a long-lasting and effective urban reform in Mexico, and a metropolitan strategy for the MAVM.

Mexican Metropolitan Shortcomings

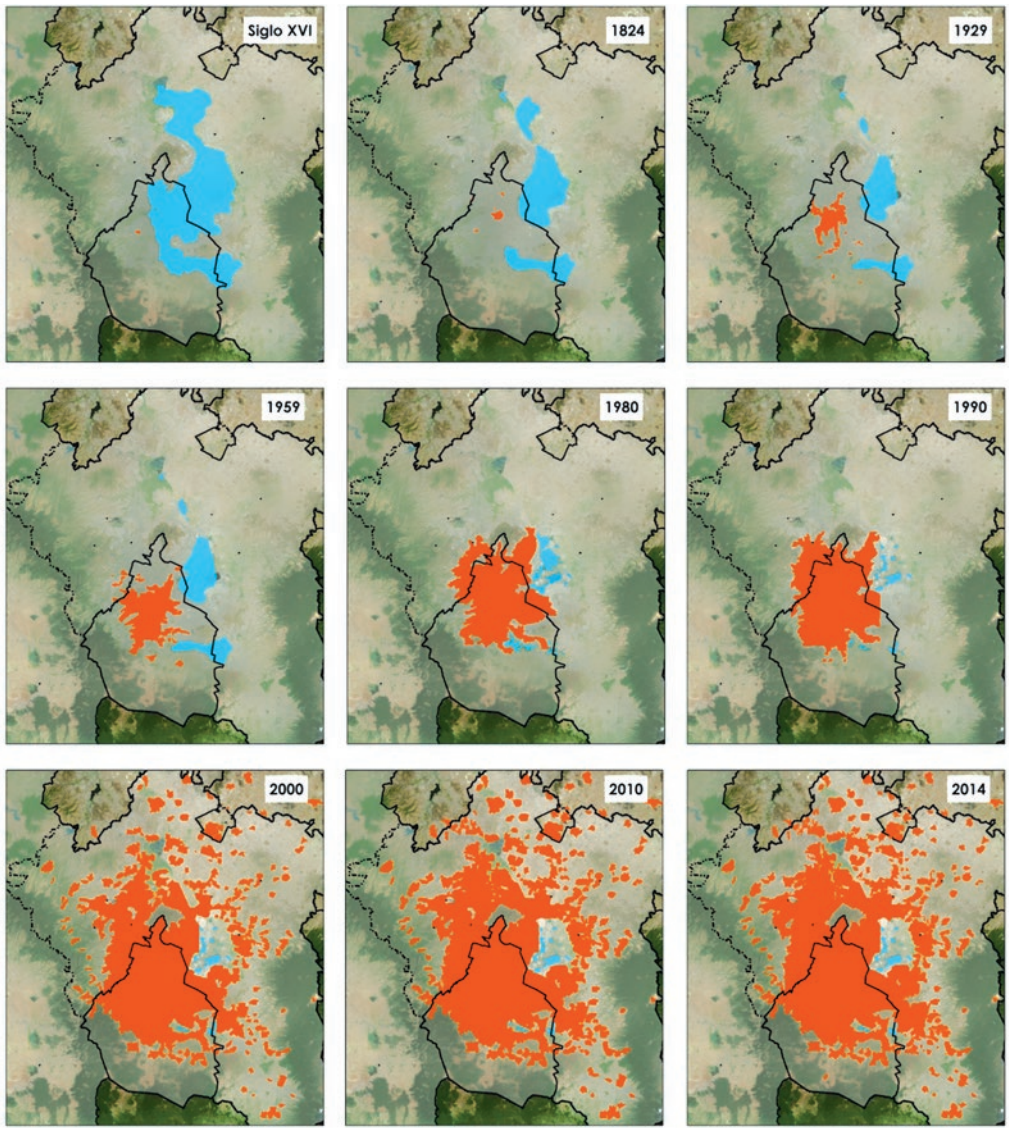
More than three-quarters of the Mexican population lives in an urban setting (80 million inhabitants in 383 cities) and almost 60 percent lives in metropolitan areas (Centro Eure, 2013). By 2030, Mexico's population is expected to reach around 135 million people (Centro Eure, 2013, p. 13). Furthermore, one in five Mexicans live in the MAVM (Table 1 and Map 1), where the population reached 20.9 million in 2015. Around 57 percent live in the 59 State of Mexico suburban municipalities and the remaining 43 percent in the 16 territorial jurisdictions of Mexico City. Although the annual rates of growth are falling for the metro area as a whole (4.37 percent for 1970–80, 0.9 percent for 2000–05, and 0.76 percent for 2010–15) and Mexico City is not growing, the municipalities of the State of Mexico are expanding at a rate of 1.3 percent per year, which is higher than the national average of 1.25 percent (Table 1). If present socioeconomic conditions continue, the majority of the new population at the national level is expected to settle in cities and most will be part of the lower income deciles.

Table 1. Mexico's Population

	2000		2005		2010		2015	
	Abs.	%	Abs.	%	Abs.	%	Abs.	%
National	97,483,412	100.00	103,263,388	100.00	112,336,538	100.00	119,530,753	100.00
National Urban System	66,649,000	68.36	73,715,053	71.38	81,231,281	72.31	---	---
Metro Zones*	54,284,700	55.68	58,983,151	57.11	63,836,779	56.82	68,131,230	57.00
Cities*	53,609,886	55.00	56,469,765	54.68	60,156,765	53.55	64,116,483	53.64
Central Region of Mexico	31,532,144	32,34	33,138,164	32.09	35,418,952	31.53	37,310,161	31.21
MAVM*	18,396, 677	18.87	19,239,910	18.63	20,116,842	17.91	20,892,724	17.47

Note: *The population numbers for 2000 and 2005 were calculated with the universe of Metro Zones of 2010.

Map 1. From Tenochtitlan to Mexico City to Metropolitan Area of the Valley of Mexico: Five Centuries of Urbanization (1524–2014)



Source: Centro Eure.

The growth rates for the Mexican Central Megalopolis, or Central Region of Mexico (CRM), are around 1 percent per year. The CRM comprises a macro-regional area surrounding the MAVM with 37.3 million residents, 12 metropolitan areas, six federal entities, and 535 municipalities. Notwithstanding the huge number of activities and socioeconomic relations shared by the six state jurisdictions that intersect the CRM, there is a lack of effective coordination and an inability to properly deal with the needs of the megalopolis. Public policy, and institutional and governing decisions are made independently without regard for the other jurisdictions, leaving legislation, planning, and urban taxation (property taxes), among other issues, with barely any common ground.

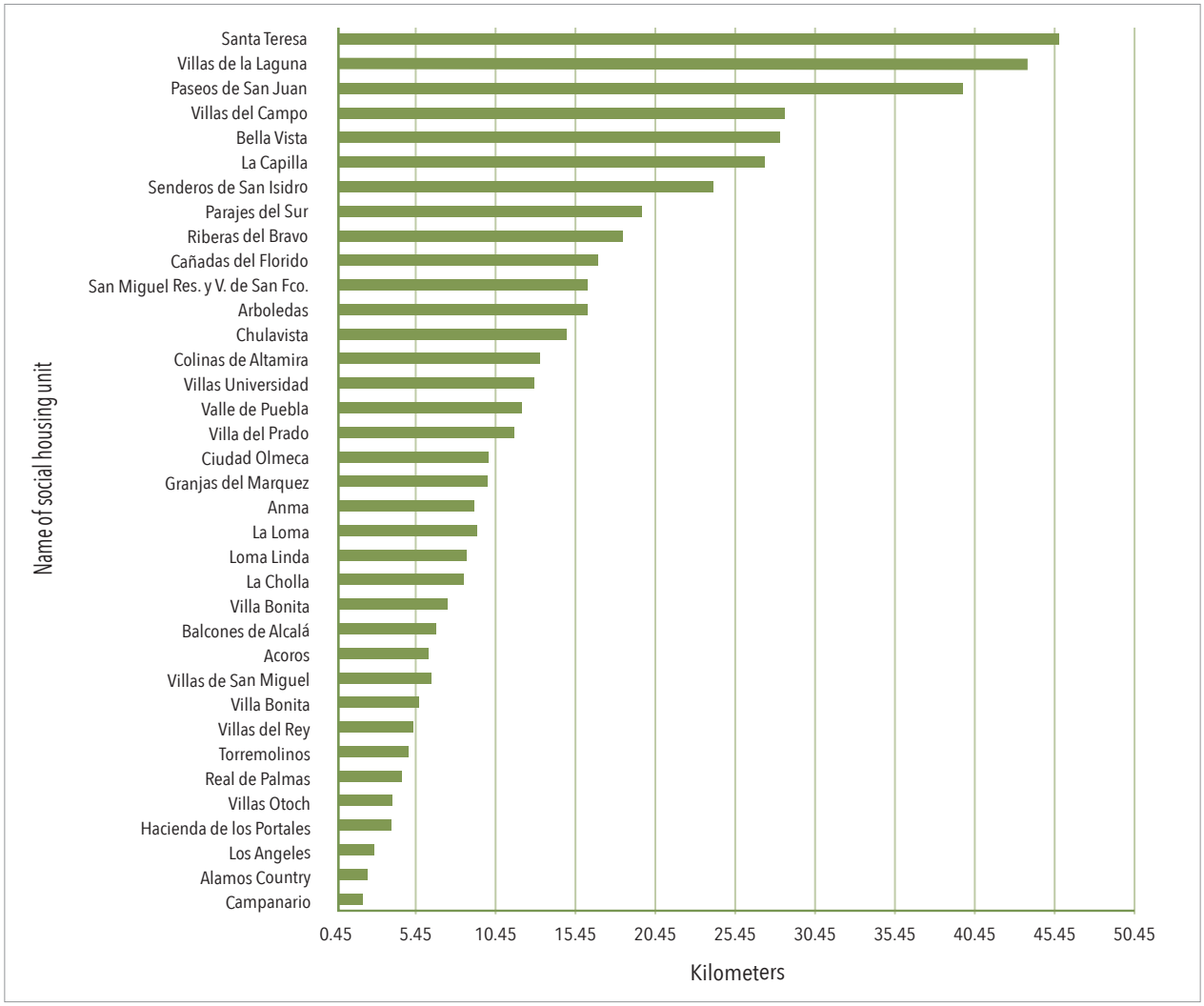
From an economic point of view, more than 80 percent of GDP is produced in cities and more than 70 percent in metropolitan areas, where 26 percent is produced in the MAVM and 31 percent in the CRM (Table 2).

Table 2. Mexico's Gross Domestic Product (million MX pesos, 1980=100)

	2000		2005		2010		2015	
	Abs.	%	Abs.	%	Abs.	%	Abs.	%
National	6,848,302	100.00	7,939,059	100.00	9,203,545	100.00	10,669,431	100.00
National Urban System	5,589,109	81.61	6,523,331	82.17	7,617,268	82.76	8,896,285	83.38
Metro Zones*	4,171,538	74.64	4,779,582	73.27	5,614,716	73.71	6,521,036	73.30
Cities*	1,417,571	25.36	1,743,749	26.73	2,002,552	26.29	2,375,249	26.70
CRM**	2,371,833	34.63	2,644,077	33.30	2,939,994	31.94	3,256,124	30.51
MAVM*	2,091,005	30.53	2,316,041	29.17	2,556,239	27.77	2,806,969	26.30

Notes: *GDP of all cities and metropolises is calculated from municipalities with 15,000 inhabitants plus. **GDP of the CRM is calculated from each federal state.

Figure 1. Distances from Social Housing Developments* to Nearest Urban or Metropolitan Center (2015)**



Source: INFONAVIT, 2015, p.69.

Notes: * Housing developments were designated by INFONAVIT based on greater housing abandonment. ** These distances were measured as straight lines between the social housing development and their respective urban/metropolitan core. Real distances following road networks are therefore longer.

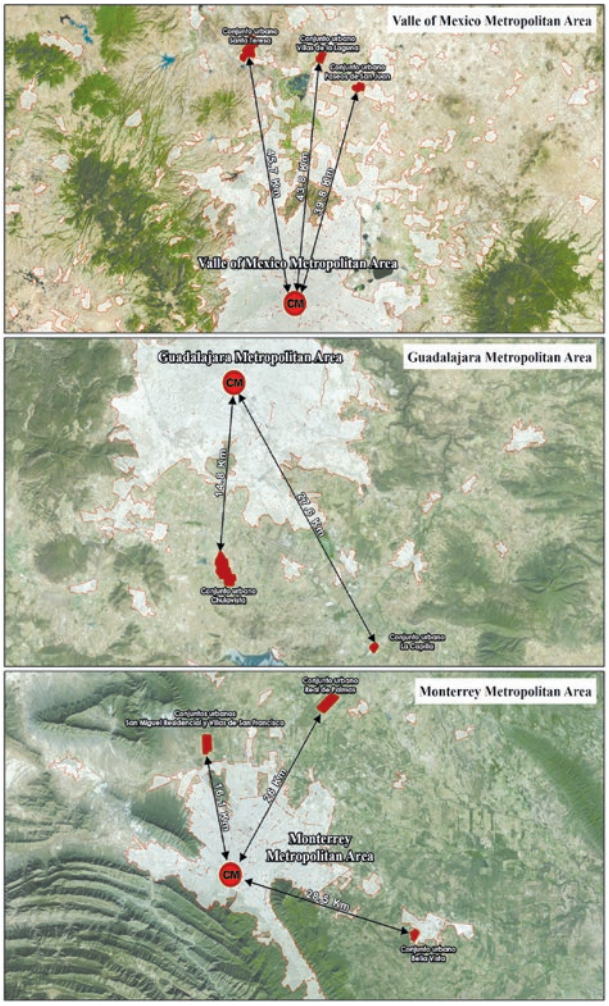
Mobility in almost all Mexican cities and particularly in the large cities has become a very sensitive issue. The poorest of the population are estimated to spend almost 50 percent of their family income on urban transportation. To be more precise, according to Carruthers, Dick, and Saurkar (2005), the maximum sustainable expenditure on urban transportation for one person should be no more than 30 percent of their total income. A study of 36 of the worst-off social housing developments scattered throughout the country (INFONAVIT, 2015) showed that average per capita transportation expenditure represented almost 19 percent of total household income.

Even though this value was below the sustainable threshold, it is relatively easy to reach and surpass that threshold because it is highly sensitive to additional family members spending to regularly commute to workplaces, education centers, and other places. Finally, almost 40 percent of the population settled in social housing developments require more than one hour to commute on each leg of their daily public transportation trips (INFONAVIT, 2015). Three of the 36 social housing developments were located in the MAVM, with the State of Mexico's suburban municipalities showing the worst results.

It is clear that public transportation systems within Mexican metro areas are inadequate for connecting social housing developments with their metropolitan centers, hence fostering the use of private cars (INFONAVIT, 2015).

It has been estimated that US$2 billion per year are lost in MAVM alone as a result of a deficient working class transportation system (IMCO, 2012; 2014) and that excessive use of cars represents around 4 percent of metropolitan GDP in five of the most populated metropolises: MAVM, Monterrey, Guadalajara, Puebla-Tlaxcala, and Leon (Medina, 2012). Furthermore, this transportation pattern has direct negative effects on environmental quality and human health. The latest example goes back to early march 2016 when MAVM faced one of the worst air pollution crises in the past two decades. Most experts agreed that it originated to a large extent from poor environmental and urban planning and the absence of a sustainable metropolitan transportation system.

Map 2. Some Social Housing Development Locations within the 3 Major Metropolitan Areas (Valley of Mexico, Guadalajara, and Monterrey), 2015



Source: INFONAVIT, 2015, p.70.

The dependence of the vast majority of Mexican cities on vehicles reinforces this problem. Evidence of this pattern can be found in MAVM vehicle fleet size that increased at twice the rate of the United States and Canada between 2000 and 2010. The Metropolitan Federal Fund evaluation (Iracheta and Iracheta, 2014) found that, for 16 metropolitan areas during 2006–09, around 47 percent of total financial resources were used for road-related infrastructure projects, or 54 percent of the total number of projects, whereas less than 4 percent were public transportation projects, and these received 15 percent of the resources. The MAVM

dedicated 30 percent of the total financial resources to road-related infrastructure projects (31 percent of total projects) and 22 percent of financial resources to public transport for 7 percent of total projects, showing a better performance than the rest of the metropolises. The OECD has stated that "...better integrating the governance of transport and the governance of spatial planning—which are, respectively, main fields of work for 70 percent and 60 percent of OECD metropolitan governance bodies—can contribute significantly to higher growth and well-being" (OECD, 2015, p. 11). Regrettably, this is not the case for Mexican metropolises, where spatial planning is not aligned with metropolitan mobility and social housing policies, thus resulting in uncontrolled urban expansion.

These metropolitan shortcomings cannot be overcome with the current urban planning system, which has not carried out plans as approved and therefore cannot reach legal outcomes. Similarly, the spatial legal framework has become obsolete, and local authorities are unable to develop proper coordination mechanisms for transportation, environment, housing, and spatial planning. In addition, authorities are highly vulnerable to corruption arising from external pressures to approve land use changes and grant construction permits, particularly in those local governments with relevant human and financial resources constraints.

Where to Go? Toward Urban–Metropolitan Reform

Governing metropolises to achieve more equal, spatially organized, and sustainable urban development means reaching a social and political agreement, organized in a coherent framework, based on the knowledge of effective, long-lasting metropolitan governance. Mexico can offer, if not actual examples of good practice, a range of new ideas that have been widely discussed by the federal legislature, politicians, academia, and diverse social and private actors over the past eight years that constitute the basis of the urban–metropolitan reforms passed by Congress at the end of 2016. Although some of the reform's key ideas refer clearly to the urban system and not to metropolitan governance, the author believes that metropolises are much more complex cities, but still essentially cities. Therefore, from a planning and governance perspective, they continue to be within the scope of local governments, despite the important role of regional governments, particularly those with a clear regional or national hinterland, as is the case of the MAVM. From this standpoint, to look for metropolitan reform means also to develop urban reform, including issues of urban complexity.

Urban–Metropolitan Reform: Key Ideas

The metropolitan governance debate has not yet been resolved and, bearing in mind that each metropolis is a complex and specific phenomenon, it is hard to imagine a unique formula for all metropolitan zones. Something that can be done is to look for orientations that can lead us to certain governance arrangements on Mexican metropolitan areas, stressing those needed by the MAVM. In past studies, the author has identified the following general orientations (Iracheta, 2010, p. 53):

- New autonomous public bodies need to be created with strong political and technical capabilities to make decisions at metro level at least on economic, land use, and transportation (sustainable mobility) planning.
- It is more feasible to enforce, promote, and incentivize cooperation and coordination among federal states (inter-state metropolises) and particularly among municipalities (inter-municipal metropolises) than to promote a centralized metro government.
- A metropolitan vision is needed not only at the national level (a national metro policy) but at each metro level. The vision has to be built by local governments along with selected social stakeholders in a way that the metro development plan will precede municipal planning. Such a vision requires a long-term perspective and the proper legal, administrative, financial, and fiscal tools to enforce and induce its instrumentation.

Strong metropolitan governance first requires the legal recognition and regulation of metropolises. In the same way, the spatial planning system in Mexico has to recognize municipalities as the basic territorial jurisdiction making up metropolitan areas and regions. Hence, a first step is to conceptualize both cities and metropolises from a legal, spatial, and statistical standpoint because they are currently not defined in national or state legal and spatial planning frameworks. A significant difficulty in planning a city or a metro area under the current system arises when the only recognized spatial entities are the municipalities and census tracts. Furthermore, the concept of a population center that is the closest approximation to a city and is regularly used for urban planning is still outside the generally accepted norm. Therefore a population center cannot generally be considered valid in determining city or metropolitan boundaries nor for public policy decision-making. As a result, many cities and metropolises have different criteria and methodologies for their spatial delimitations and pursue different objectives that are not necessarily recognized by public administration bodies that make decisions. The recently passed *General Law on Human Settlements and Urban Development* (2016) legally recognizes metropolitan areas and conurbations, however, federal states still need to update their own spatial and urban planning legislation.

Metropolitan governance also requires a strong and inclusive national strategy oriented toward promoting participation and collaboration among municipalities. It means recognizing them as key stakeholders in building metropolitan governance, becoming owners of the system, and therefore taking responsibility for metropolitan issues, such as defining boundaries and formulating plans. Metropolitan management arrangements to facilitate joint functions and projects among stakeholders should be subject to promotion and regulation. From this perspective, it is desirable that urban municipal plans be derived from metropolitan plans in order to build a participatory vision of the totality (metropolis) first and of its parts (municipalities) afterwards. It is also necessary to make inter-municipal and inter-state coordination compulsory within metropolises, promoting and rewarding those inter-municipal public policies, projects, and actions with clear metropolitan scope. The former is addressed by the new legislation, which opens up the possibility for the construction of a real metropolitan strategy comprising inter-state and inter-municipal participatory planning processes.

It is fundamental to legally set forth a clear definition of responsibilities for the three tiers of government within spatial planning and governance public bodies. The federal government has many social programs and policies to assist urban, low-income neighborhoods and address local urban problems. However, there are difficulties implementing a national metropolitan coordination strategy or a metropolitan sustainable mobility policy, among other long-term national spatial issues. This may be because electoral purposes influence Mexican politics and public policy definition.

It is necessary to officially recognize the right of all citizens to enjoy a sustainable, more equal, democratic, and secure city/metropolis where the human rights of everybody are fully respected. After a series of measures passed by the Mexican government in 2011 amended the Constitution to recognize international human rights, this became a starting point for full recognition of the right to the city within the 2016 law.

As it was stated earlier, Mexican cities and metro areas have suffered from a disordered and unsustainable expansion. In order to face these issues, metropolitan governance needs to move toward a more consolidated and compact metropolitan spatial pattern, which has been formalized within the new legislative agenda. There are three main proposals that stand out:

1. Give priority to occupying the inner city's vacant land.
2. Control peripheral urban sprawl.
3. Determine strategic lands in order to locate social facilities and housing developments for the urban poor, hence improving control and reducing informal expansion of settlements.

To achieve such a new urban–metropolitan spatial pattern, additional national and local policies have to be established to approach public space not only as a key instrument to make the right to the city a reality but also to use it within city neighborhoods as the cornerstone for a more compact city.

A national urban land policy is needed to recover the social function of land within cities and metropolises, and to define real estate responsibility in urban development. It is also required to promote a massive supply of well-located and serviced housing plots for the urban poor, and to develop a new national social housing strategy to prevent the development of isolated social housing projects deprived of urban facilities that could otherwise be endorsed by local spatial planning systems. Occupying vacant urban land and recycling unoccupied homes should be the priority for all three tiers of government and should be encouraged and supported by urban planning, using government incentives. The creation of the National Sustainable Land Institute in late 2016 opened the way for such strategies.

Effective governance in cities and metropolises requires the assurance of real and co-responsible participation of citizens, social organizations, and businesses in urban planning, as well as in the decision-making process that affects the everyday life of urban communities. Such an inclusive approach is not meant to be present in the territorial legislation only, but also in existing participatory bodies such as local–metropolitan planning institutes, urban–metropolitan observatories, deliberative and advisory urban councils, inter-municipal coordination bodies, public–private enterprises for mobility, and urban infrastructure, among other entities. Mexico City created a Metropolitan Planning Institute; however, this initiative looks rather contradictory when compared to the limited attention given within this legislative proposal to an effective long-term, integrated metropolitan inter-state strategy.

As most urban–metropolitan plans and programs are not designed to be actual decision-making instruments for politicians, civil servants, or stakeholders. Their content and methodologies tend to lack the soundness required for effective urban transformation. In addition, different plans and programs regarding urban land use, urban environmental planning, and urban local development have their own legislation and are implemented by specific public administration entities. Hence, the common factor in these plans and programs is the poor alignment and disconnection they have with other initiatives, even though they address the same socio-spatial reality. It is therefore paramount for urban–metropolitan reform to pay attention to the necessary alignment and coordination of these three planning systems operating within cities and metropolises. It is also fundamental to ensure effective and co-responsible social participation in urban planning, that such planning is implemented, and that it carries legal consequences that are respected by all stakeholders.

To overcome many of the above-mentioned urban–metropolitan planning shortcomings, the national information system for urban development and planning and the legal normativity and participatory bodies for public accountability of urban planning and governance have to be up to date.

Finally, such an overarching spatial planning transformation will require the production of new instruments for urban–metropolitan development and land planning, such as capturing and administering urban land surplus value and land betterment resulting from urban–metropolitan development, flexible land taxes, development rights, or new professional opportunity areas.

Conclusion

Urban–metropolitan governance in Mexico and in the MAVM could be achieved if all social forces work together to make urban–metropolitan reform a reality. It has been widely recognized that the 21st century is the metropolitan century (OECD, 2015a). Today, participatory and long-term spatial planning and governance are as important as economic and social policies; however, they have not been considered a priority by all tiers of government or social actors. Even now, with new legislation on the table, political and partisan differences persist, reducing the possibility of long-term, participatory, and integrated strategies to exist. This is what currently happens in MAVM.

Mexican territorial reform should be considered a milestone for national and local security and socio-economic development, as almost all decision-making processes that affect present and future national development take place in cities. This is particularly the case for large agglomerations and metropolitan areas, where the MAVM stands out, making them arenas for either social wellbeing or social disruption.

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3.8 Governing the Metropolis: New York and the Metropolitan Region

Thomas K. Wright (Regional Plan Association)

Abstract

New York Metropolitan Region is a case of historical decline in metropolitan governance. It shows the lack of institutionalism and the discontinuity of public policies that once favored sustainable mobility and quality public spaces. While the region has grown, prospered, and seen changes, the institutions have remained stagnant or have been influenced by political cycles. This chapter critically analyzes the governance structure and how fragmentation poses major challenges for urban management and planning, particularly because of the lack of coordination in public policy and investment. The three states in the metropolis—New York, New Jersey, and Connecticut—squabble over funding and compete for business, rather than understanding their collective destiny. Though funding presents problems, the greatest challenge for New York Metropolitan Region is not paying for the projects, but agreeing on new systems to address the shortcomings in planning, financing, governing, and implementing regional infrastructure. One example is analyzed in-depth: Port Authority of New York and New Jersey and its cousin, the TriBorough Bridge and Tunnel Authority.

One of the fundamental questions facing all metropolitan regions today is how to address change. In a rapidly evolving world of environmental, technological, cultural, economic, and political transformation, is a metropolitan region able to embrace change and transformation? Can its public agencies and political leaders, businesses and economic foundations, and civic leaders and institutions adapt? Or will a region be stuck with the same basic institutions, organizations, political structures, and capabilities of its past?

In 2000, London created the Greater London Authority, a new administrative authority with wide-reaching powers and the ability to consolidate housing, land use, economic development, and transportation. On January 1, 2016, the Metropole du Grand Paris established a structure for cooperation between the City of Paris and its suburbs, with jurisdiction over planning, housing, and environmental protection. From Tokyo to Singapore, the tremendous growth of Asia's cities has been managed in most cases by institutions less than a decade old. New York's governance history is not much changed over the past hundred or so years.

Challenges to Governance in the Metropolitan Region of New York

The institutions that have shaped and continue to govern the New York Metropolitan Region were created during the beginning of the last century, from 1890 to 1940. During that period Greater New York was fashioned by consolidating dozens of smaller communities on Long Island and Westchester (including the city of Brooklyn, already a major city in its own right) with the wealthy city on Manhattan. Two great public authorities—the Port of New York Authority and TriBorough Bridge and Tunnel Authority—were established to build bridges across the rivers that separated Manhattan from the mainland and Long Island. They were given semi-autonomous governance structures and the ability to self-finance their investments, which they used to build a foundation for extraordinary metropolitan growth and development. Business and residents flocked to the city, which grew from 1.5 million inhabitants in 1890 to 7.5 million by 1940 and built what is now perhaps the greatest metropolis on the planet (if you ask a New Yorker, at least).

But even as New York and the surrounding region have grown and prospered—and seen enormous changes—the institutions have remained stagnant. If the 8.5 million residents of New York City and 15 million residents of the surrounding region are going to continue to enjoy prosperity while combating the new challenges of climate change and extreme inequality, the institutions that provide the vital services binding the region together—the subways and mass transit, highways, seaports, and airports—need to evolve, adapt, and reform. It is unclear if they have the capacity to do so.

The government structures do not easily lend themselves to reform. The region is composed of three states (New York, New Jersey, and Connecticut), which are enshrined in the United States Constitution. They squabble over funding and compete for business, rather than understanding their collective destiny. Perhaps more troubling, land use decisions and planning are governed at the municipal level, thanks to a theory that home rule is the best form of making decisions about land use. New York City has a strong city planning department and, thanks to Mayor Bloomberg and his PlaNYC initiative (now called OneNYC under Mayor de Blasio), the city has a relatively clear vision of where growth should go, how to address issues of affordability and access, and even a path to lowering carbon emissions and addressing the threat of climate change. Local communities fight against growth and development, but the city at least has an understanding of what it needs to be doing (de Blasio, 2015).

Not so for the more than 600 cities, towns, and villages outside New York City that are part of the metropolitan region. Each creates its own local plans, often in direct conflict with their neighbors. Communities on Long Island oppose rental housing despite a crisis in affordability. The single most important improvement for Long Island would be to build a third track on the main line on the commuter railroad, which would allow for reverse commutes during the peak hours (when both of the existing tracks are used for express and local services). But for decades the state has been unable to build the project because of local opposition from a few dozen homeowners who do not want to see additional trains in their backyards.

Connecticut has underinvested in transportation for a generation and finds itself mired in debilitating congestion along its coastal corridor. The state boasts some of the wealthiest communities in the nation, such as Greenwich, but also some of the poorest cities, including Bridgeport. How can such extremes coexist? The state disbanded county government over 40 years ago, so there is no regional entity between the state and municipalities. As a result, the towns each control more of their destiny, which exacerbates income polarization, crime, poor schools, and other segregating forces. Recently, a state judge issued a scathing condemnation of Connecticut's public education system, which allows for extreme differences in educational quality between wealthy and poor communities, and gave the legislature just six months to devise a better system to allocate resources and address inequalities. The state legislature had claimed that local control absolved them of responsibility. But the judge noted that local governments are all inventions of that same state legislature: "It certainly can't say its hands are tied when it tied the knots itself," he concluded (Connecticut Coalition for Justice in Education Funding v. Rell, 2016).

New Jersey has been the most progressive and fastest growing piece of the tristate region over the past generation, but that is changing too. As a member of a political party that denies that climate change is a man-made threat to the planet, Governor Chris Christie pulled New Jersey out of a successful model to lower carbon emissions, the Regional Greenhouse Gas Initiative (Baxter, 2011), so that he could raid the funds and pay for tax cuts. Likewise, he diverted funds for a critical rail link to New York City so that he could delay raising taxes on gasoline for a couple of years (Marcus, 2016). Finally, when funds for infrastructure were depleted earlier this year, the governor put almost all capital projects on hold, rather than allow an increase in the gas tax to fund infrastructure investment (Marcus, 2016).

In the U.S. system, the states have always served as laboratories for public policy, from education to community policing, to economic development and

environmental stewardship. But the New York/New Jersey/Connecticut region lacks any coordination of public policy or investment. The New York Metropolitan Region does not have a single public institution that thinks about the wellbeing of the entire region. There is no federal, state, county, or municipal agency tasked with thinking about the built environment, infrastructure, or natural systems. Even the federal agencies that interact with New York—the Federal Energy Regulatory Commission, the Housing and Urban Development Agency, the Environmental Protection Agency, the Department of Transportation, and the Commerce Department—split the region into different zones. Connecticut is combined with New England to the north, while New York and New Jersey are often combined with the mid-Atlantic region (and sometimes Puerto Rico, which makes even less sense). While electricity markets place each state in a different region entirely.

As a result, there's no single vision for the entire region—no entity that thinks about the balanced growth of its communities or needs of its citizens.

There is nearly universal support to make changes to the underlying system, yet few observers are optimistic that necessary changes will be made any time soon. Perhaps the critical issue facing New York is whether its institutions can embrace radical reform or if technology and changing demographics will make it unnecessary.

Perhaps nowhere are the shortcomings of the current structure as evident as they are in the shining exemplar of progressive governance from the last century: the Port Authority of New York and New Jersey.

The Port Authority of New York and New Jersey

History

In four years, the Port Authority of New York and New Jersey will celebrate its centennial. When the agency was created in 1921, it represented modernity, coordination, and opportunity. Created by an act of Congress, it recognized that the destinies of New York and New Jersey were linked (Doig, 2001).

Demand for the services provided by the Port Authority—and its cousin, the TriBorough Bridge and Tunnel Authority (created in 1933)—was insatiable. The public authorities were granted extraordinary powers. They were governed by independent boards, appointed by politicians, but not directly accountable to the public. They could borrow money from investors without having it count toward a city or state's debt. The interest payments they made to their investors were tax exempt, which meant they could borrow money at lower rates than private companies. The property they owned was designated public, so they did not pay property taxes, and they could override local zoning and land use laws. Moreover, they had the power of eminent domain, forcing private citizens to sell property to them as long as they paid fair market value.

Over the next five decades, the growing agency built bridges, tunnels, a bus terminal, airports, and seaports to serve the expanding metropolis. Each of its major investment projects generated profits that could then be directed to the next undertaking. The authority was governed by board members appointed to six-year terms by the governors of New York and New Jersey, but beholden to the larger interest of the two states and the region. The staff was recognized as the pinnacle of the planning profession, and the institutional model was replicated from Los Angeles to London.

The key to this success was a business model that prioritized professionalism over politics. And for a while, the politicians were held at bay. Then, in the 1950s, the federal government started building the interstate highway system and offering big subsidies to states to connect to it. Nineteenth century transit operators such as the Pennsylvania Railroad and the Hudson and Manhattan Railroad (H&M) found themselves going bankrupt, unable to compete with the automobile. They needed to be bailed out. The resulting institutions married profit-making automobile tolls with money-losing transit operations. In 1962, the Port Authority purchased the bankrupt H&M and re-branded it the Port Authority Trans

Hudson (PATH). Today it loses over $400 million a year in operating expenses, a deficit that is paid for by drivers on the George Washington Bridge and Holland and Lincoln tunnels. The New York City subway was combined with the TriBorough Bridge and Tunnel Authority to create the Metropolitan Transportation Authority in 1968 by Governor Rockefeller, again creating a financial linkage between the profit-generating roads and bridges and the money-losing transit operations.

Merging the financially independent Port Authority and TriBorough Bridge and Tunnel Authority with transit operations broke the firewall between public and private. Now that the authorities needed state assistance, they struggled to maintain their independence. Politicians began to see these public authorities as just another extension of state government. Rather than appointing independent boards and letting them do their work, politicians began directly hiring senior staff, directing which projects would be built, and controlling the fares and tolls that paid for the investments. Senior staff selections were hit-and-miss, sometimes resulting in excellent public stewards and other times in political hacks. But even the good administrators were hampered by reporting directly to a politician rather than a board of director. And, instead of selecting projects that would generate a positive return on investment, the capital investments were politically driven and usually financial losers.

The Future

Today, the Port Authority finds itself limping toward its centennial celebration. Divided by politics and tainted by scandal, it has been unable to carry out the governance reforms it committed itself to almost two years ago. At that time, it became clear that senior staff at the agency had intentionally caused major traffic problems as political payback to local politicians for not endorsing the reelection of Governor Christie. Recent political bargaining between New York and New Jersey over capital projects underscores the agency's inability to follow a rational and coherent planning process. A 2014 report by the Special Panel on the Future of the Port Authority called for an overhaul of the Port Authority of New York and New Jersey's governance structure, replacing it with a unified CEO position that would report to an independent board with a rotating chairman. At the time of writing, this position had not been filled.

Rebuilding LaGuardia Airport has been a priority for New York State Governor Andrew Cuomo ever since Vice President Biden declared it a third world facility (Santora, 2014). The Port Authority had already been moving ahead with plans to rebuild the Central Terminal Building long before the Vice President's declaration. However, the JFK and Newark airports are experiencing the greatest increases in air travel and the worst delays. They serve the international market, which is growing most rapidly and major investments are necessary to increase their capacity, including, someday, new runways. And, if the region wants to build transit links to the airports, the priority should be extending the PATH to Newark or eliminating the AirTrain transfer at Jamaica, each of which would provide line-seat rides to Newark and JFK.

On the other side of the river, New Jersey politicians and commuters are furious about the condition of the Port Authority Bus Terminal, with good justification. The terminal was built in 1950 to serve less than 100,000 riders. Today, it handles over twice that number. It is a crumbling, decaying, depressing facility that is well past its useful life cycle.

But replacing the bus terminal with a modern facility raises many difficult questions that overlap into competing jurisdictions. The Port Authority owns and operates the facility and the tunnels under the Hudson River that connect it to New Jersey. New York City owns and operates the streets around it—streets that many inter-city buses use to pick up or drop off passengers. The Metropolitan Transportation Authority operates the subways than run through the facility, onto which almost half of the bus riders transfer. And NJTransit runs the buses that most of the commuters ride on.

Any attempt to plan for the future of the Port Authority Bus Terminal needs to start with the

needs of the riders who use it. The economies of New Jersey and New York are tied at the hip. New York provides New Jersey residents with high-paying jobs—more than 2 million jobs in Manhattan alone, with a median salary of $79,000, 60 percent higher than in New Jersey—while New Jersey provides New York businesses with a rapidly growing, well-educated workforce. The economic fortunes of each side of the Hudson River depend on the other.

The number of New Jersey residents who work in New York has grown steadily—from 162,000 in 1970 to 230,000 in 1990 and 358,000 today. All the major ways to cross the Hudson River—by bus, commuter rail (NJTransit), car, and PATH—are at capacity. This means that with today's infrastructure, the number of people who are able to cross the Hudson River during peak times is capped at its current level. Operating all of these systems at full capacity also means frequent and increasingly detrimental disruptions in service.

Decades of poor decisions, underinvestment, and a lack of coordinated planning have led to a rail crossing and bus terminal in Manhattan that are deteriorating at a rapid rate, a situation that has only worsened since the rail tunnels were flooded with corrosive saltwater during Superstorm Sandy in 2012. The Port Authority Bus Terminal's structural condition continues to decline, having been pounded by 65 years of high volume and heavier buses. And when the 100+ year old rail tunnels need to be shut down for emergency structural repairs, hundreds of thousands of daily commuters will be left stranded for months, if not years. The impact on the region's economy will be calamitous.

The Port Authority and Amtrak are spearheading the effort to address these crises. The Port Authority has recommended replacing the existing bus terminal in Manhattan with a modern and larger facility just south and west of the current terminal. But the proposal faces many challenges, including funding. The plan also fails to provide alternative routes for a growing commuter population. Recognizing these shortcomings, in 2016, the Port Authority hosted a design competition to explore a wider range of options. While most teams focused on rebuilding the terminal in its current location or moving it a block to the south and west (further from transit the destinations of virtually all the commuters), one innovative proposal called for the terminal to be relocated into the basement of the Jacob Javits Convention Center. The proposal faced specific challenges but also provided a very creative approach. Sadly, because it would involve yet another state-governed public authority, it was rejected without much consideration. Once again, we see political and institutional shortcomings shape the geography and infrastructure of the region, often in detrimental ways.

After the Access to the Region's Core project was canceled in 2010, Amtrak proposed its own rail tunnel under the Hudson River, called Gateway. This alignment connects the tunnel with most of Penn Station as it exists today and with a future extension of Penn Station one block south, also being planned by Amtrak. This expansion, Penn South, would add four or more platforms and up to seven additional tracks.

Separately, Governor Cuomo has published a request for proposals to design and redevelop the Empire Station Complex, which includes the existing Penn Station and future Moynihan (Farley) complexes to the west across Eighth Avenue.

In 2010, Mayor Bloomberg proposed extending the number 7 train to Secaucus, in addition to several other subway extensions that have been suggested over the years. None of these projects, however, have gained much traction at the Metropolitan Transportation Authority, in the governor's office, or with Mayor de Blasio.

These initiatives must be carried out correctly. They are enormously expensive. The cost for the Port Authority Bus Terminal replacement has been estimated at between US$10 billion and US$12 billion, Gateway at up to US$23 billion, and the Empire Station Complex at US$3 billion. A subway extension would be equally expensive. Importantly, each of these projects is a long-term commitment for the region. We may not have another chance to build a trans-Hudson crossing for another generation.

Conclusion

Even during this period of relative prosperity, the New York Metropolitan Region faces enormous challenges. The city is growing rapidly, but investments and policies have not kept up with recent demand. To maintain the quality of life and improvements that residents and workers have come to expect, the region will need to invest at least $50 billion in transportation infrastructure over the next 25 years. But the institutions that oversaw the last period of sustained growth are now almost 100 years old. Around the world, cities are creating new government structures to deliver services and investment. The greatest challenge for New York is not paying for the projects, but agreeing on new systems to address shortcomings in planning, financing, governing, and implementing regional infrastructure. If changes are to be made, leadership will not come from existing institutions or political leaders. As they did a century ago, New York's civic and business leaders will drive this innovation.

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3.9 Replacing Sprawl with Compact, Sustainable Regional Development in Portland, Oregon

Robert Liberty (Urban Sustainability Accelerator)

Abstract

Metro, the metropolitan regional government for 25 cities and three counties in the Portland, Oregon region, has had measurable successes in replacing the typical American pattern of sprawling growth with more compact, higher density development that supports a higher level of transit use, walking, and biking. An important component of its strategy is an urban growth boundary coupled with strong state-level protections of farm and forest lands. The factors that contribute to its successes in changing the patterns of regional growth most relevant to other (primarily mid-sized) metropolitan areas in other parts of the world are (i) the independent political authority of its council derived from its direct election by electoral districts that are more populous than almost all of the local government electoral districts; (ii) sufficient powers to achieve its missions derived both from state laws and a mission and charter directly approved by its voters; (iii) being integrated within a supporting statewide framework of planning and land regulation that delegated to Metro the responsibility to adopt and amend an effective urban growth boundary and that has protected lands outside Metro's jurisdiction from development; (iv) a much greater level of land use and transportation planning and forecasting analytic capacity and competence than any other unit of government, which is essential in a system that is controlled by legal and numeric standards; and (v) delivering sufficient results that enable it to withstand political pressure from the local governments that often resent and sometimes resist compliance with Metro's regional planning mandates.

Metro is a regional government in the Portland region, a small metropolitan area of 2.4 million people in the northwestern United States, straddling the Oregon and Washington states. Metro has achieved notable results in reshaping the pattern of development from the American norm of low-density, auto-oriented sprawl and inner neighborhood decline to a much more compact and denser development pattern with a vibrant central city with a significant share of its residents using transit, walking, and biking. How and why this has been accomplished, despite the occasionally vigorous opposition of some of the 25 cities and three counties within its boundary, is the subject of this chapter.

Vignette of a Regional Government in Action

On September 9, 2015, mayors, city councillors, and commissioners representing 25 cities, three counties, a regional transit agency, school districts, water, and sewer districts gathered around a ring of tables to provide advice on a very important question: Does this growing metropolitan region need to increase the supply of land available for new housing, jobs, and amenities?

To the participants, the event combined the mundane with the momentous. These local government representatives met twice a month in the same location, year-in and year-out. They knew each other well enough to use each other's first names, to make jokes about each other's political views, and to complain about the tediousness of their endless arguments about metropolitan policy and data.

But to an outside observer from other parts of the United States and many other parts of the world, the event would be remarkable in several respects. First, in many metropolitan regions, a meeting of local officials of this type never occurs, let

alone twice a month. Second, it would be surprising that a metropolitan region would—or could—make a binding decision about its urban land supply and concurrently about the preservation of rural lands for farming, forestry, and the protection of natural resources. Third, this group of officials was not making that decision itself, but advising an elected metropolitan government that had the authority and the responsibility to make a metropolitan-level decision about how much land would be available for regional urban development. Finally, and perhaps most importantly, the metropolitan government's decisions about urban land development were so effective that the results could be seen from orbit.

The location of the meeting was Portland, Oregon. The participants in that meeting were members of the Metro Policy Advisory Committee (MPAC) and the advice they were preparing to give was to the Metro Council, the directly elected governing body of the regional government. MPAC voted 11 to 4 in favor of a decision not to expand the regional urban growth boundary (Christensen, 2015). Several weeks after MPAC voted, the Metro Council voted unanimously (7-0) that no additional land was needed for urban development to accommodate the region's vigorous growth over the next five years.

The region and its largest city, Portland, are regularly identified as among the most sustainable cities in the United States as measured by such things as compact growth, the amount of travel made by biking, walking, and transit, energy efficiency, and recycling. In one article, Portland was ranked America's top green city as "half its power comes from renewable sources, a quarter of the workforce commutes by bike, carpool, or public transportation, and it has 35 buildings certified by the U.S. Green Building Council" (Svoboda, Mika, and Berhie, 2008; Light, 2013). Portland was ranked third in a Natural Resources Defense Council study (Thompson, 2009).

Metro, the regional government, is one of the explanations.

The Portland, Oregon Metropolitan Region

The Portland metropolitan area is located in the northwest of the United States, straddling the Columbia River, which separates the states of Oregon and Washington.

It has a population of about 2.4 million, roughly comparable to the metropolitan areas of Vienna, Stockholm, Toluca, Manaus, Yangzhou, Nagpur, or Accra. About three-fourths of the metropolitan population lives in the state of Oregon; the remainder lives across the Columbia River in Washington State. The region was first settled about 12,000 years ago. Colonization by Americans from the eastern United States began in the 1840s; the city of Portland was founded in 1845. In recent decades, the region's economy has diversified from forest products and agriculture to high tech manufacturing and software design, sportswear design and production, and a mixture of professional services. No single industry dominates the economy.

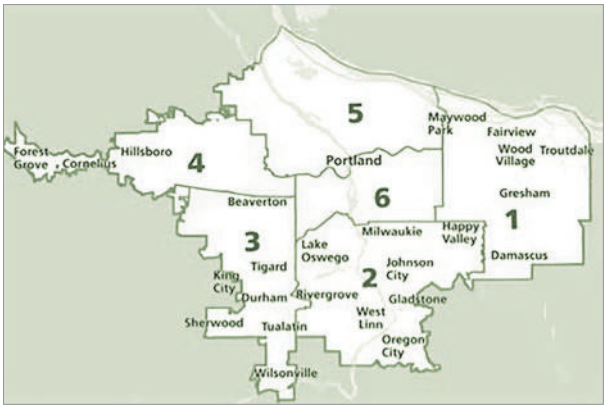
Creation, Structure, Powers, Finances, and Activities of Metro

In the 1950s and 1960s, a number of regional planning entities and associations of governments were formed in the Portland area. Concerns about the adequacy of these organizations in the rapidly growing region were documented in a series of reports by non-profit organizations.

In response to these concerns, authorizing state legislation was passed in 1973, leading to an election in May 1978 when the voters in the region approved the creation of a regional government, initially called the Metropolitan Service District and shortened to Metro in 1992. The district encompassed the urban portion of the Portland metropolitan area in the state of Oregon but excluded the part of the urban area in Washington State. A chronology of significant milestones in Metro's organization and function can be found in Metro's adopted budget for 2015–16 (Metro Council, 2015).

Within Metro's political boundary today are 25 cities and small portions of three counties with a population of about 1.6 million (Map 1). The city of Portland had a population of about 634,000 in 2015. The populations of the other 24 cities within Metro's boundary range from 110,000 to 752. In addition, several hundred thousand people inside Metro's boundary live in urbanized areas administered directly by counties, without any city government.

Map 1. Six Metro Councillor Districts and Location of the 25 Cities within Metro's Boundary



An important step in the evolution of Metro occurred in 1992 when the voters in the region approved a charter for Metro. The preamble for Metro's 1992 Charter states:

We, the people of the Portland area metropolitan service district, in order to establish an elected, visible and accountable regional government that is responsive to the citizens of the region and works cooperatively with our local governments; that undertakes, as its most important service, planning and policy making to preserve and enhance the quality of life and the environment for ourselves and future generations; and that provides regional services needed and desired by the citizens in an efficient and effective manner, do ordain this charter for the Portland area metropolitan service district, to be known as Metro. (Preamble of the Metro Charter Section 5(2)(e) "Regional Plan Implementation;" Oregon Revised Statutes 268.)

Metro's authority is described in its Charter:
Metro has jurisdiction over matters of metropolitan concern. Matters of metropolitan concern include the powers granted to and duties imposed on Metro by current and future state law and those matters the Council by ordinance determines to be of metropolitan concern.

The matters of metropolitan concern over which Metro has jurisdiction (as of 2016) are:

- Regional land use and transportation planning
- Development and delivery of regional research and data
- Operation of the regional system of waste prevention, recycling, and disposal
- Acquisition and management of a system of parks and natural areas
- Operation of regional visitor facilities: the Oregon Zoo, Oregon Convention Center, Portland Center for the Arts, and the Portland Expo [Exposition] Center

Metro has granted itself the authority to play a role in regional housing issues, which are closely related to its planning authority. It also has played convening roles in other areas, including regional water and disaster response and recovery.

Metro has the statutory authority to absorb the regional transit agency, TriMet. It has declined to do so for a variety of reasons, including the anticipated strong opposition by the transit agency and its allies (including its union members), concern about absorbing its substantial employee pension obligations, and lack of enthusiasm for having customer complaints directed at the regional government.

Metro has broad taxing authority but its budget is relatively modest at US$611 million in 2015–16 compared to the city of Portland's annual budget in 2015–16 of US$3.7 billion. About 40 percent of Metro's revenue is derived from the fees it charges for its services, especially disposing of solid waste, but also from admission fees to the Oregon Zoo. About 15 percent of its revenue comes from property taxes that support continuing operations of its facilities and another 30 percent comes from property taxes approved by the

voters used to fund significant capital investments (Metro Council, 2015).

There are some fundamental differences between Metro and almost all other regional government and regional planning entities in the United States. The first is its form of governance. Metro is governed by a directly elected president who represents the entire region and a council of six members elected from districts of equal population. Those district boundaries do not correspond to local government boundaries.

This government arrangement makes it almost impossible for a metro councillor to be politically subordinate to another government. It means that elected officials from local governments find it awkward to claim that their voters want some different policy from what the metro councillor wants because they are the same voters.

This is unlike regional associations and government councils in the United States, which are governed by representatives of the constituent cities, counties, towns, and townships. In addition, these associations do not allocate votes in proportion to population; often the representatives of the largest cities have the same vote as the representatives of much smaller cities.

Given the size of Metro's electoral districts, the number of voters in Metro Council elections is larger than the number of votes in local elections. For example, in 2012, about 400,000 votes were cast in the race for Metro Council President compared to about 247,000 votes cast in the 2012 race for Mayor of Portland.

The Metro Council and Metro President are non-partisan positions, which means that party platforms and ideological positions are largely absent in Metro Council races (and in most, but not all, other local government races in the region).

The Metro Council President receives a salary about double the average household income in the region, or $122,000. Metro councillors receive a salary that is about two-thirds of an average household income ($41,000).

The Metro Council can refer matters to the voters for direct action, such as the approval of tax measures to fund Metro operations and capital programs. The voters within Metro's boundary have the power of initiative and referendum, meaning that through a petitioning process, they can refer a measure adopted by the Metro Council to a vote of the public or initiate their own Metro-wide legislation.

MPAC is the most prominent of Metro's advisory committees but Metro makes use of many other permanent and ad hoc advisory committees, such as the Joint Policy Advisory Committee on Transportation, Solid Waste Alternatives Advisory Committee, Natural Areas Program Performance Oversight Committee, Regional Trails Committee, and Equity Strategy Advisory Committee. This is one of the characteristic features of its governance.

Delegation of Planning Powers to Metro from State and Federal Governments

Metro's extensive authority over regional land use and transportation planning is derived from a combination of its own powers under state law (Oregon Revised Statues § 268.300—268.393, 2015; Oregon Const. art XI, § 14) and the power delegated to it through Oregon's unusually rigorous land use planning system (Liberty, 1992).

Among other objectives, the state land use goals require the establishment of urban growth boundaries around every city in the state to stop low-density sprawl, allow for a wider range of housing types, and preserve more than 90 percent of all private land in the state for farming, forestry, ranching, or natural resources. Metro is also responsible for setting and amending the regional urban growth boundary, which now coincides with its political boundary.

Metro was charged with carrying out a special state regulation adopted in the early 1980s. The regulation required local governments to change residential zoning to allow the construction of many more apartments, condominiums, and townhomes and to reduce the minimum size lot allowed for single family zones in order to meet target minimum densities.

Metro has supplemented these efforts over the years by adopting a regional plan and regulations

that allow for more infill and redevelopment, such as a requirement that all governments inside the Metro urban growth boundary allow accessory dwellings (small homes) on all lots in single family residential zones.

Metro is responsible for implementing a state land use goal requiring the protection of natural resources, such as perennial streams and significant wildlife habitat, within the urban growth boundary.

Metro serves as the region's Metropolitan Planning Organization (MPO) under national law. The MPO governing body is comprised of Metro's Joint Policy Alternatives Committee on Transportation and the Metro Council. The MPO is responsible for adopting a regional transportation plan and a transportation improvement plan, a role that includes planning for and making investments in regional highway, bridges, and transit facilities (23 U.S.C. § 134 §§ (c)(1)).

These state-derived powers over land use and transportation plans and decisions were integrated with planning responsibilities assigned to Metro under its 1992 Charter, adopting its own regional goals and objectives, a regional framework plan, and various functional plans. Under state laws and its charter, Metro was given the power to enforce compliance by local governments with its regional framework plan and to adopt regulations to carry out that plan (Metro Charter § 5(2)(e); Oregon Revised Statutes § 268).

Opponents of Metro, including some local governments and development interests, have challenged its powers in the courts, unsuccessfully, and attempted to curtail its powers by state legislation, also unsuccessfully, thanks to countervailing support from some local governments and citizens who back Metro's mission.

Results of Metro's Sustainability Efforts

Conferring powers is one thing; effectively exercising them is another matter. Metro is interesting not because of its structure but because it has effectively reshaped regional growth patterns in ways that vary dramatically from the standard pattern of development for urban areas in the United States.

Reducing Sprawl and Promoting Compact Growth

The United States has led the world for decades in continually falling urban densities, caused by a mixture of consumer preferences, public investments in transportation, and urban facilities that assume and support low-density development, and by land use. But even more important have been regulations adopted by local governments that prohibit higher density types of housing over large swathes of metropolitan regions (Liberty, 2002), that mandate large areas of parking for automobiles, and that separate uses, like areas for housing, shopping, and offices, into separate districts.

Metro's planning has helped focus development into or adjacent to existing urbanized areas. Metro analyzed about 100,000 new housing units (single family homes, apartments, etc.) approved within the roughly 8,000 square kilometers of the three Oregon counties where Metro is located. About 92 percent of these residential permits were for sites within the Metro urban growth boundary, which is about 1,040 square kilometers, and an additional 4 percent were for locations inside the boundaries of other cities in counties outside Metro's boundary. Approximately 2 percent of the total permits were located on lands zoned for low-density rural residential development (1 to 4 hectares per house) and 2 percent were on lands zoned for farming or forestry (Z. Christensen, personal communication, November 28, 2008; Metro, 2010).

Other research has confirmed the substantial difference in growth patterns taking place in Metro compared to other metropolitan areas in the United States (Nelson and Sanchez, 2003; Ingram and Hong, 2009; Institute for Natural Resources, 2008).

Today, the edges of Portland's metropolitan region (in Oregon) and of other urban areas is easily seen on Google Earth.

Transportation Choices and Greenhouse Gas Reductions

Although Metro does not operate the transit system, it often leads the analysis and development of transportation and transit projects. In the past 20 years, Metro developed an internationally recognized approach to integrating land use and transportation planning based on knowing that the arrangement of land uses determined by regional and local land use plans and regulations are often primary determinants of how much people travel and how they travel. For example, if zoning regulations separate stores or professional services from homes by long distances, then trips to the store or the doctor will become impossible to make by walking or biking. On a broader scale, if land use regulations sharply limit housing densities, then transit service to those areas will be impractical. There are also trade-offs in household budgets between how much can be spent on housing and how much can be spent on transportation. Metro's efforts to integrate land use and transportation planning has helped support many alternatives to single-occupant commuting. A report by 1000 Friends of Oregon (1997) demonstrated how Metro made changes in local land use regulations, road standards, and parking fees for a highway ring road and thereby helped develop modern scenario planning.

The 2014 Regional Transportation Plan noted that the amount of driving per capita between 1996 and 2014 fell by 15 percent and attributed that decline to the regional transportation strategy (Metro, 2014b). The 2014 Transportation Plan sets targets for travel by other than single occupancy vehicle of 60 to 70 percent in the Portland central district; 45 to 55 percent in the regional centers, station areas, and local main streets; and 40 to 45 percent in the outer suburbs (Metro, 2014b). The plan reports that, according to Metro's own land use and transportation models, the region will make substantial progress toward increasing travel by walking, biking, and transit but still fall far short of the regional goals for 2040. The share of walking trips, for example, will increase to 10 percent of the total but fall far short of the target share of 27 percent.

In December 2014, the Metro Council approved its Climate Smart Strategy (Metro, 2014a). If implemented fully, the strategy will achieve a 29 percent reduction in per capita greenhouse gas emissions. Metro's Climate Smart Strategy has several separate elements that each contribute to reducing greenhouse gases. Perhaps the most important are to promote compact growth through infill and redevelopment and to increase investment in transit, biking, and walking facilities. All of these efforts reduce the amount of greenhouse gases generated by driving. Other elements include support for clean fuels and electric and hybrid vehicles.

Waste Reduction

In 2008, Metro adopted its decennial Regional Solid Waste Management Plan, setting goals for waste prevention and recycling, with an overall recycling and waste reduction goal of 64 percent of disposed materials (Metro, 2008). Per capita waste generation in the region decreased 23 percent between 2005 and 2013, although Metro acknowledged that "part of this decrease can be attributed to the Great Recession that began in approximately in 2007" (Metro, 2015). Additionally, "greenhouse gas reductions in 2013 from recycling, composting and energy recovery totaled approximately 1.9 million metric tons of carbon dioxide equivalents—equal to tailpipe emissions from nearly 420,000 passenger vehicles."

Statistical comparisons of waste generation and recycling between U.S. metropolitan regions are not available. However, the city of Portland has ranked in the top 10 U.S. cities for recycling according to various reports (Clarke, 2014).

Economic Development

Observers both inside and outside the Portland metropolitan region have speculated for years about whether Metro's effort to curb urban sprawl and protect the environment might dampen job creation.

In November 2015, a workforce economist with the Oregon Employment Department reported that between 2010 and 2015 "137,000 new jobs [were] created in the region over the past five years, more than twice as many as were lost during the Great Recession…Portland is the second fastest growing metropolitan economy in the [United States]" (Redden, 2015).

According to a *Bloomberg News* article published in February 2016, Oregon "had the best-performing economy in the nation measured by employment, home prices, personal income, tax revenues, mortgage delinquency, and the publicly traded equity of its companies, according to data compiled by Bloomberg" (Winkler, 2016).

Rather than detracting from its economic development, the region's commitment to urban sustainability and environmental protection is an important reason it is able to attract the young, college-educated people who are in the tech and creative industries and who start new businesses. According to Badger (2014), "young people are drawn to the compact living, the easy access to nature, the possibility that a farm might actually be near your table, the emphasis on communal assets—parks, public transit, tool shares—over individual ownership."

Lessons for Metropolitan Regions in Other Countries

Some parts of Metro's experience are relevant to others parts of the world while other reasons for Metro's successes depend on the unique political and cultural circumstances of the Portland region, Oregon, and the United States.

Direct election by a metropolitan electorate gives Metro political power and legitimacy that is far greater than a council made up of representatives of other governments. Another contributor to Metro's political effectiveness is that its council districts are separate from, and with the exception of the city of Portland, more populous than any single city and any county commission district in the region.

Part of its success is further derived from the powers and responsibilities over land use and transportation delegated by the state legislature and executive agencies. Such an arrangement of delegated power and responsibility for implementing regional sustainability objectives is possible in many, perhaps most, systems of government.

Another important factor in Metro's success is that it is not a general purpose government. Its charter and authorizing state legislation focuses its work on regional issues, especially sustainability. This makes Metro less threatening to local governments, which continue to exercise major power over critical functions like police and fire protection, local road construction and maintenance, and water and sewer services.

Metro's specialization and scale has allowed it to develop staff competency to a depth that cannot be matched by most or any of the governments within its boundaries. This is particularly evident today in land use and transportation planning, for which it has developed sophisticated modeling and forecasting capacities of national reputation that draw on immense amounts of local data.

Less appreciated is the way in which its narrow focus on sustainability issues shapes the politics of elections to the Metro Council. Metro Councillors run primarily on platforms related to Metro's regional sustainability plans: whether they support or oppose additions to the urban growth boundary, how strongly they approve or criticize investments in transit, and the degree to which they back Metro's regional perspective versus deferring to the judgments of local governments.

The trend over the past 20 years has been clear—virtually all successful candidates for Metro Council and Metro President support the general direction of compact growth and environmental protection.

The two candidates in the run-off election for Metro Council President during the Great Recession in November 2010 were a suburban mayor running as the candidate supported by business and the former director of the non-profit organization 1000 Friends of Oregon, which is dedicated to compact urban growth, transit investments, and environmental protection. Despite the economic conditions, the candidate endorsed by business won the Metro Presidency by less

than 1 percent. Yet the policy differences between the candidates were actually modest. By 2015, the Council President (who had been re-elected) announced that he did not support expansion of the urban growth boundary but backed expansion of light rail to the southwestern suburbs and endorsed tax increases to pay for the operation of Metro's regional natural area system.

Other aspects of Metro's success seem to depend on factors specific to Oregon or the region. One of these factors is the relatively modest population of the metropolitan area and another is the similarly small number of local governments within the region. The Nashville, Tennessee, metropolitan area had a population of about 1.5 million in 2010, very similar to the population inside Metro's boundary, but that region has 10 counties and 61 cities compared to three counties and 25 cities inside Metro's boundary.

The high level of civic capacity as reflected in the large number of effective and well-staffed non-governmental organizations specializing in state and regional environmental and planning matters, also explains some of Metro's success in implementing sustainability programs. For example, just six of the many environmental and sustainability organizations in Portland—the Audubon Society of Portland, Oregon Environmental Council, Bicycle Transportation Alliance, 1000 Friends of Oregon, Willamette River Keeper, and OPAL (an environmental justice organization)—had combined annual budgets of more than $5 million and almost 80 combined staff members, plus hundreds of volunteers. By comparison, in its 2015–16 fiscal year Metro had the equivalent of 48 full-time staff dedicated to land use and transportation planning and 92 for parks and nature operations.

A more interesting question is the degree to which the institution of Metro, a regional government with some notable achievements in promoting sustainability, is part of a self-reinforcing dynamic of attracting sustainability minded immigrants to the region, and those residents supporting and pushing Metro to undertake more sustainability efforts. If so, then Metro's model may have greater significance worldwide than could be expected from a small regional government in a modest sized urban area in a remote part of the United States.

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3.10 Recent Trajectory and Perspectives in Greater São Paulo

Jeroen Klink (Universidade Federal do ABC)

Abstract

This chapter provides an overview of metropolitan governance in São Paulo, which is grounded within an understanding of the limits and potentials of ongoing regulatory changes and developments in Brazil in general and metropolitan São Paulo in particular. After a brief primer on the evolution of Brazilian metropolitan governance since the demise of the national developmental regime in the 1980s, the chapter prioritizes the analysis of recent developments in Greater São Paulo in light of the approval of new federal legislation (the Statute of the Metropolis). The legislation implies the collaborative elaboration of integrated urban development plans at the metropolitan level involving state and local governments, the private sector, social movements, and organized civil society.

Brazil is an excellent example of what has become known as the metropolitan paradox. While most city-regions and metropolitan areas usually see the bulk of country-wide social deficits and economic potential and, as such, should figure as high priority on the national development agenda, they have notoriously deficient institutional, organizational, and financial frameworks to guide their planning and management (Magalhães, 2010).

This chapter analyzes the case of São Paulo in light of recent changes in the structure of metropolitan governance in Brazil. After this introduction, the author briefly discusses the regulatory restructuring that has been taking place in Brazilian metropolitan areas since the 1960s, including the introduction of a new federal framework (the Statute of the Metropolis) in January 2015. A subsequent section provides the basic characteristics of metropolitan governance in São Paulo until the creation of a new legislation for this area in 2011. Then the author discusses the region's perspectives in light of the emerging institutional framework in the country. The final section of the chapter provides some conclusions and main findings.

Brazilian Metropolitan Governance during State Restructuring

As mentioned in the literature, any analysis on the trajectory of Brazilian metropolitan governance cannot be dissociated from a broader historical analysis of how the developmental state effectively organized and intervened in these territories (Campanaro, Klink, Freire, et al., 2015; Klink, 2013; Magalhães, 2010).

During the military regime (1964–1985), metropolitan areas performed a key role in the development of an integrated national market. A centralized, techno-bureaucratic command and control approach was instrumental in organizing investments in housing, urban development, and logistical infrastructure in metropolitan areas. Nevertheless, the democratic deficit, the excessive sector-wide approach, and the lack of funding and initiatives effectively targeted at low-income groups marked the contradictory intervention of the developmental state in urban-metropolitan spaces during this period. Eventually, from the mid-1980s onward, the macroeconomic and fiscal crisis and emergent democratization destabilized the authoritarian developmental state and its metropolitan institutional arrangement.

The 1988 constitution signaled a delegation of the metropolitan agenda from the federal to the state level, with the latter becoming formally responsible for creating and organizing metropolitan areas. Nevertheless, effectively not much happened, particularly considering newly emerging actors—elected mayors, social, and housing movements—associated

the metropolitan agenda with the technocratic and centralized development approach that had prevailed during the military regime.

More specifically, the rare moves that could be detected in the institutional restructuring of Brazilian metropolitan areas in the 1990s—a period simultaneously marked by intense economic transformation and liberalization of the Brazilian development regime—can be summarized from three perspectives. First, following a curious pattern of path dependency, some states (like São Paulo) created metropolitan regions that resembled the highly criticized structures that had been created during the military regime, with little room for effective participation of civil society and local governments in decision-making procedures. Second, especially in states such as Minas Gerais and São Paulo, there was a gradual dissemination of inter-municipal collaboration through consortia, particularly in specific sectors such as health and, to a lesser extent, in basic sanitation and solid waste. Finally, as an exception to the rule of not much progress, in some places the institutional vacuum and economic crisis that surrounded city-regional and metropolitan spaces was being filled in by creative, participatory, and multi-level/scalar planning and management that mobilized a series of non-governmental and governmental actors alike. The next section briefly highlights some of the experimentation and learning that has taken place in São Paulo since that period and some of its implications for the contemporary debate.

In the meantime, in the past decade or so, there has been a gradual re-emergence of the metropolitan agenda in Brazil. Several states (and metropolitan cities) have recognized the significant opportunity costs of neo-localism and the lack of any institutional framework and, as such, have started to work on metropolitan issues. For example, since 2006, the State of Minas Gerais and the cities in Greater Belo Horizonte have constituted a new structure for metropolitan governance. This involved creating a metropolitan deliberative council, including participation by civil society (albeit still limited), and constituting a metropolitan development agency. Since 2010, the latter has, in partnership with the Federal University of Minas Gerais, coordinated the formation of a metropolitan development plan with associated zoning, while mobilizing civil society and the private sector around the discussion of this plan.

This renewed recognition of the metropolitan agenda has also generated initiatives aimed at institutional strengthening of collaborative governance. For instance, Federal Law 11.107, approved on April 6, 2005 (better known as the *Law on Public Consortia*), consolidated the legal structure of inter-municipal and federative consortia, strengthening their operational capacity, allowing them to not only plan but also execute common infrastructure services that have been delegated to them by cities, states, or the federal government.

At the same time, disputes that have been pending for decades, such as the responsibility for basic sanitation in metropolitan areas (states versus municipalities), were the subject of a 2013 federal court ruling providing general guidelines for shared responsibility among cities and states. To be specific, the federal court was asked to determine whether Laws 87/1997, 2.869/1997 and Decree 24.631/1998, all issued by the State of Rio de Janeiro, agreed with the principles of the Brazilian Constitution. The State of Rio the Janeiro had effectively used these laws to centralize responsibility for basic sanitation in metropolitan Rio de Janeiro, which was challenged by a view that this duty should be municipal. After almost two decades of insecurity, the federal court has now established that states and municipalities in specific metropolitan areas should work out, on a case-by-case basis, institutional arrangements to plan, manage, and finance these services.

Finally, after more than 10 years of discussion in parliament, the federal Statute of the Metropolis was approved on the January 12, 2015 (Presidência da República, 2015). It provides badly needed general guidelines for the constitution of metropolitan areas by states as well as their minimum institutional requirements in terms of a deliberative and consultative council and arrangements for community participation. In terms of the law, metropolitan regions are urban agglomerations that have evolved into a

metropolis, which is "an urban space with a territorial continuum which, in light of its population and politic and socioeconomic relevance, has either a national or a regional influence which presents, at least, a functional area structured around a regional capital according to the criteria adopted by the National Brazilian Institute of Geography and Statistics" (Presidência da República, 2015). A key feature of this law is that in all existing metropolitan areas a metropolitan development plan (or an integrated urban development plan, IUDP) has to be elaborated and discussed in collaboration between the state, municipal governments, and civil society. Moreover, cities are expected to adjust their master plans in line with the IUDP. In other words, the coordination of land use planning among municipalities emerges as a key element in the new legislation, complementing earlier guidelines of the City Statute that had framed urban planning (Presidência da República, 2001).

In the next two sections the author fleshes out the specific trajectory of metropolitan São Paulo within this broader framework, including elements of the ongoing planning process in Greater São Paulo that has now mobilized both the state and municipalities.

Hollowing Out and Partial Filling In (1990–2011)

The Metropolitan Region of São Paulo had 22 million inhabitants in 2015 and included 39 municipalities. It is by far Brazil's biggest metropolitan area in terms of population. The region represents somewhat of a paradox: the sheer scale of its challenges and potential in relation to, until 2011, its lack of a transparent and coherent institutional framework to guide sustainable planning and management. Its development trajectory is characterized by important mismatches between land use patterns and service delivery (Campanaro et al., 2015). Relatively faster growth in housing construction is taking place in the western outskirts of the metropolitan area (in cities such as Vargem Grande Paulista, Taboão da Serra, Itapevi, São Lourença da Serra, Cajamar, Franco da Rocha, and Mairiporá) precisely where the infrastructure conditions are worst, particularly sewage and sanitation. At the same time, the local governments' lack of leverage over real estate markets has pushed poorer income groups to environmental protection areas in the metropolitan outskirts, with very poor services. Not surprisingly, both in the capital and surrounding city-regional agglomerations (such as the ABC region), slums have persisted. For example, 18 percent of total units in Mauá and São Bernardo (Greater ABC) are located in slums. This expansion of the metropolitan periphery has also generated a substantial increase in intra-metropolitan work and study related to daily commuting, generating additional burdens for its population. For example, during 2000–10, the share of residents who commuted outside of their municipality of residence for work or study increased in cities such as Vargem Grande Paulista (from 17 percent to 28 percent), Taboão da Serra (from 32 percent to 39 percent), Itapevi (from 29 percent to 38 percent), São Lourença da Serra (from 14 percent to 24 percent), Cajamar (from 10 percent to 20 percent), Franco da Rocha (from 28 percent to 37 percent), and Mairiporá (from 16 percent to 20 percent). While more than half of this commuting exceeded 30 minutes, 25 percent took more than one hour (Campanaro et al., 2015).

The vacuum in metropolitan governance in São Paulo during the 1990s has led to some innovative bottom-up experimentation among municipalities, which has gained momentum and critical mass. Specifically, the ABC region, composed of seven cities located in the southeastern industrial heartland of Greater São Paulo, created an inter-municipal consortium in December 1990. The innovation was related to its multi-sector approach; in its initial years, the institution launched initiatives in areas such as regional economic development, environmental management and planning, and solid waste.

From the mid-1990s onward, regional governance in the ABC region gained momentum and mobilized the private sector, labor unions, and social and environmental movements, as well as the state government of São Paulo itself (Pose, Tomaney, and Klink, 2001). In 1997, all these stakeholders joined the

informal Council of the ABC Region, which proved instrumental in triggering a series of strategic planning exercises aimed at sustainably developing the region. One spin-off was the creation, in 1998, of a Regional Economic Development Agency with participation of labor unions, private enterprise, local governments, and academia. This agency aimed to strengthen and modernize the region's network of small and medium sized enterprises.

This relatively successful trajectory of public–private and participatory governance has stimulated other initiatives of collaborative governance among municipalities. For instance, the inter-municipal consortium of the south-western area of the Metropolitan Region of São Paulo (CONISUD in Spanish) and the multi-sector development consortium of the cities of the Alto Tiete River Basin (CONDEMAT in Spanish) have prioritized water governance and sustainability. The more recent proliferation of arrangements for collaborative inter-municipal governance has created a new scenario to revisit the agenda of metropolitan governance itself.

Perspectives in Greater São Paulo

Until recently, the state of São Paulo had not moved on its constitutional prerogatives to create a new institutional framework for metropolitan governance in São Paulo.

In that sense, Complementary Law No. 1139/2011 signaled renewed interest on the part of the state by formally creating the Metropolitan Region of São Paulo, designed with a consultative and deliberative council, a metropolitan fund, and an executive secretary. The São Paulo State Metropolitan Planning Agency (EMPLASA in Spanish) had survived the era of downsizing and extinction of metropolitan bodies during the 1990s (Governo do Estado de São Paulo, 2011). Yet the design did not significantly innovate in relation to the already existing institutional arrangements in metropolitan Santos and Campinas, which had been created during the 1990s.

For instance, the Deliberative Council was composed of representatives from local and state government as well as state parliament but without any direct participation of civil society, which was only provided for in the consultative council. Likewise, along the lines of the arrangement in Santos and Campinas, the metropolitan fund was not directly linked to the budget or the multi-year investment planning cycle of the state, which was a longstanding demand of local governments and regional consortia.

At the same time, however, the mere constitution of a metropolitan structure for São Paulo created some momentum, at least in 2011–13, to reinvent the roles of the executive secretary and EMPLASA. More specifically, the initial intention was for EMPLASA to enter a new stage in its institutional trajectory, performing a double role planning and managing Greater São Paulo and strategically reaching out to the other metropolitan areas and planning agencies in the state of São Paulo.

According to that design, the institution was expected to oversee the implementation of the state's ambitious macro-metropolitan strategy (PAM 2013–40 in Spanish), which includes specific guidelines and strategic projects in metropolitan São Paulo, Sorocaba, Santos, Campinas, and the recently created metropolitan region of Vale de Paraíba/Litoral Norte. The PAM is structured around three strategic axes: territorial connectivity and competitiveness, territorial cohesion, and inclusive urbanization and metropolitan governance. Each of these axes guides the elaboration of specific projects around a portfolio that amounts to more than R$400 billion worth of investments (approximately US$115 billion) to be financed by both public and private sector resources (EMPLASA, 2013). To some extent, the PAM could be considered an ambitious portfolio of strategic projects for the above-mentioned set of metropolitan regions. Moreover, the PAM was designed before the Statute of the Metropolis was approved. As such, and somewhat different from the integrated metropolitan master plans that were projected by the Statute, the PAM explicitly did not touch on issues of land use planning and intervention since these were considered part of municipal autonomy.

The high ambitions of the PAM would quickly suffer a drawback, however. For one, the macroeconomic downturn that affected the country after 2013 started to shake the planned institutional and organizational strength of EMPLASA. In its initial set up, EMPLASA

was the executive agency of the State Secretary for Metropolitan Affairs, which, among others, was intended to coordinate the state's overall metropolitan strategy. In the midst of general political and economic turbulence that affected the country in June 2013, Governor Geraldo Alckmin somewhat surprisingly announced the downsizing of the recently created Secretary for Metropolitan Affairs. After the re-organization, the secretary (and, as such, EMPLASA) lost institutional status and was transformed into a sub-secretariat of the state cabinet. Furthermore, the resulting fiscal austerity hollowed out any prospective additional financial resources and manpower. As a result, the 2013–14 marked a turning point in the positive momentum that had surrounded EMPLASA in terms of its capacity to effectively shape new forms of metropolitan governance in the state of São Paulo.

From a more fundamental point of view, however, it was clear from the outset that the newly created governance structure in metropolitan São Paulo suffered from a lack of effectively functional mechanisms for collaborative planning and management that could involve and mobilize both private and public actors alike, including local governments and inter-municipal consortia. While there was of course recognition of the role of consolidated city-regional governance, as exemplified by experiences in the ABC region as well as the more recent consortia, not much articulation between the state, cities, and inter-municipal consortia had effectively occurred around the elaboration of the PAM.

How has the approval of the Statute of the Metropolis affected this somewhat truncated and cumbersome scenario? Although the date is likely to change, the legal requirement for states and municipalities to collectively develop integrated urban development plans (IUDPs) by January 2018 (three years after the Statute of the Metropolis was approved) appears to have reinvigorated the metropolitan development agenda of the state in general and EMPLASA in particular, which has assumed the role of executive secretary in the process.

It remains to be seen, however, how this new phase of city-regional and metropolitan planning will eventually be filled in by the state of São Paulo and its municipalities, particularly in light of the unresolved legacies that surround Brazilian metropolitan governance in general and São Paulo in particular.

The remaining part of this chapter provides a preliminary analysis of this emerging scenario, emphasizing metropolitan São Paulo.

Emerging Regional Planning

As a starting point, it is important to stress that most states and cities were caught by surprise by the sudden approval of the Statute of the Metropolis. As such, there was a certain vacuum and lack of precise understanding as to the scope and content of the new metropolitan IUDPs.

For good or bad, in metropolitan São Paulo, two institutional players were quick to present their project for the IUDP. From the start of the process in July 2015, EMPLASA used its PAM as a blueprint for the IUDP. At the same time, the city of São Paulo had just completed its master plan while it was also finalizing the discussion of a new macro-zoning law. Both EMPLASA and the city of São Paulo demonstrated their desire to elaborate the metropolitan plan as soon as possible and, possibly, send it for approval to state parliament before municipal elections (in October 2016).

Local and city-regional representation, however, complained about the lack of time for more fundamental debates and discussion on the scope and direction of the plan, as well as structural issues such as metropolitan governance and finance. According to that view, the calendar should be designed according to a two-stage approach: a diagnosis and general guidelines should be established before the elections, while during 2017 the detailed proposals for macro-zoning, coordination of land use planning, and investments would be fleshed out. In the end, however, the official methodological terms of reference for elaborating the IUDP that was approved in January 2016 by the metropolitan council favored EMPLASA's position and only postponed final delivery of the plan to December 2016 (EMPLASA, 2016). At the time of writing this chapter, however, implementation progress of the IUDP had indeed proven more cumbersome, meaning that proposals for macro-zoning and coordinating instruments and

investment strategies for urban and environmental policies were only to be approved during 2017.

In the meantime, during 2016, the inter-municipal consortium of the ABC region was strategically working at two levels in the IUDP process. First, while contesting the tight time schedules that were stimulated by both EMPLASA and the municipality of São Paulo, the consortium continued to participate in the technical and executive committees that provided inputs for the IUDP planning process. As such, it actively contributed to an informal working document, elaborated in partnership with the cities of São Paulo and Guarulhos, with proposals on metropolitan zoning and governance. This document still has to be discussed by the Metropolitan Deliberative Council and will most likely to undergo changes in light of the significant number of new mayors that will begin their administrations in January 2017. (Consórcio Intermunicipal Grande ABC; Prefeitura da Cidade de São Paulo; Prefeitura da Cidade de Guarulhos, 2016).

Second, since December 2015, more or less on a parallel basis, the inter-municipal consortium has discussed elaborating its own regional development plan, not only to provide inputs to the IUDP process but also in order to add an explicit land use and territorial dimension to its long standing strategic planning tradition. The consortium established a partnership with the Federal University of the ABC region (UFABC) to provide support services and research for the regional plan. Consequently, UFABC has been intensively involved in territorial diagnosis and reviews, the organization of seminars on national and international practice (Inter-municipal Consorcio and UFABC, 2016b), and development of scenarios for regional development (Inter-municipal Consorcio and UFABC, 2016c), as well as specific proposals for zoning and coordinating land use regulation and infrastructure investments. The territorial diagnosis undertaken by the consortium as part of its own plan pointed out to the specificities of its regional development trajectory as well as the interdependencies with the metropolitan scale that were not worked out very clearly in the initial diagnosis and guidelines that emerged within the IUDP process (Inter-municipal Consorcio and UFABC, 2016a). For instance, the IUDP recognized the greater ABC region as an important industrial heartland that had been undergoing an intense process of industrial restructuring. At the same time, however, there was no prospective analysis on economic diversification that would link the region to an overall metropolitan strategy of productive complementarity based on strengthening and tapping into the available economics of agglomeration and regional systems of learning and innovation. Moreover, the diagnosis undertaken by the consortium and the UFABC provided a detailed analysis of a booming metropolitan real estate market in the 2003–12 period, mapping the emergence of new developers linked to the capital markets through initial public offerings, and, consequently, providing key insights on how new investments and products that were introduced at the metropolitan level also affected the ABC region. Likewise, the territorial review that underpinned the diagnosis of the IUDP looked on the ABC region as an important concentration of water basins that could provide clean and accessible water supply through its reservoirs such as Billings, among others. At the same, however, the IUDP was generic when addressing the complexities associated with the collective elaboration of a strategic project for watershed protected areas on a metropolitan scale, which should mobilize the state, city-regions, and the tripartite water basin committees that comprise the state, cities, and civil society. Like most metropolitan areas, environmentally protected areas and watersheds in Greater São Paulo have witnessed a proliferation of informal and slum settlements, aggravated by the governments' lack of leverage over speculative real estate and housing markets.

Finally, and still in relation to process, the inter-municipal consortia that have emerged more recently have been unable to get organized to prepare for and engage with the IUDP. More specifically, unlike the ABC region, the CONISUD and CONDEMAT consortia did not participate in the technical and executive committees that were established as the main platforms to discuss and formulate the IUDP. Both consortia as well as the smaller municipalities, with less technical staff and capacity, were notoriously absent in most of the activities that took place during 2016.

However, there is a more fundamental point in relation to the design that underpinned the process of the IUDP until May 2016. Both EMPLASA and the city of São Paulo worked on the basis of their recent practice and existing knowledge that was established in house through the PAM and the municipal master plan. While both the PAM and the city of São Paulo's municipal master plan provide valuable insights for ongoing metropolitan planning, they are not directly replicable for the IUDP process. As mentioned, the PAM is a strategic plan that outlines a portfolio of social, economic, and environmental projects and programs. As such, it is not a territorial plan. Moreover, it explicitly does not prioritize issues of land use planning, considering "the lack of state leverage over land use planning falls within the responsibilities of local governments" (EMPLASA, 2013).

Likewise, while the São Paulo master plan is indeed a territorial plan, it incorporates specific land use instruments (e.g., floor area-to-land ratios of 1 in combination with area-based development contributions; compulsory subdivision, utilization, and building on vacant land; and progressive property taxes and other value capture instruments) that cannot automatically be exported, at least in their existing format, to other parts of the metropolitan area.

In other words, articulating existing land use planning instruments on a metropolitan scale still requires complex negotiations among public and private actors, the state, municipalities, and social-environmental and housing movements in light of their impacts on real estate and housing markets and local interest groups.

The ongoing work in 2016 proved that more time was needed. While there are initial proposals on metropolitan zoning and coordination of urban and environmental policy instruments circulating in the technical and executive committees of the IUDP process, these still need to be elaborated and discussed in the committees and tested in public meetings. More fundamentally, these initial proposals have also made it more clear that there is no agreement between the state government and municipalities on important issues such as the degree of participation of local government and organized civil society in the governance arrangement for metropolitan planning and decision-making. It is most likely that any proposal for the IUDP will not be approved before the end of 2017.

Finally, financing metropolitan areas is still an unresolved issue. There have been abundant signs over the past few years that institutional strengthening and renewed interest in the metropolitan agenda has not been reflected in any significant progress in the design of stable, predictable, and transparent sources of finance for equitable and efficient metropolitan planning and management.

For example, the intense negotiations that accompanied the aforementioned federal law on public consortia eventually led to a significant hollowing out of the financial capacity of consortia. Although these institutions could receive grants, they were only allowed to borrow (national or international) for development and infrastructure projects that generated revenues guaranteed and backed by user charges and tariffs.

Likewise, the initial design of the Statute of the Metropolis incorporated a clause that constituted a metropolitan fund that would receive its sources from the federal budget, contributions from states and municipalities associated with the joint costing of common projects, and grants from national and international development agencies, among other examples. The presidential veto of this clause argued that it would introduce additional rigidity and would result in a loss of efficiency associated with the creation of another specific-purpose fund.

While the veto reflected a lack of political will to move forward on issues related to finance, the voluntary character of the fund and its lack of linkages with more structural fiscal reform structured around a metropolitan logic would have nonetheless made it ineffective as a predictable and transparent source of metropolitan finance.

It is not the objective of this chapter to flesh out possible details of a proposal aimed at structural financial reform on a metropolitan scale in Brazil; this has already been discussed in previous work (Magalhães, 2010). Such a proposal would have to deal with various reforms, including formula-based intergovernmental transfers; the constitution of fiscal intra-metropolitan

equalization funds in order to reduce inequalities among metropolitan cities; introduce conditionalities of federal grants and loans structured around a metropolitan logic; and the streamlining of regulatory frameworks for public–private partnerships and land value capture instruments. It should be stressed that several dimensions of the Brazilian institutional landscape regarding metropolitan areas were still being discussed and fleshed out at the time of writing this chapter. In its present format, however, the Statute of the Metropolis, with the exception of a general mention of the role of public–private partnerships, does not addresses any of these politically sensitive issues that encroach on vested interests in Brazilian fiscal federalism.

In practice, then, metropolitan finance either depends on the political willingness of states to articulate their budget with collaborative metropolitan planning that involves municipalities or on horizontal mechanisms of coordination among a large number of disparate cities structured around consortia (triggering high transaction costs and cumbersome negotiations). Neither of these options is likely to provide a sustainable (i.e., predictable, transparent, and yet flexible) financing pattern for metropolitan areas. In the state of São Paulo, for example, neither the metropolitan fund that was created in 2011 nor the arrangement of inter-municipal consortia provide any concrete prospect of financing the portfolio of investments projected in the PAM. Although the PAM includes cost estimates on projects, it is largely generic and does not provide any insights on how sources of funds are mobilized and linked to specific institutional and financial-economic arrangements in order to implement programs in an efficient, equitable, and transparent manner.

This leaves the only financial instrument that is indeed mentioned generally by the Statute (Article 9): the inter-federative public–private partnerships and inter-federative Urban Partnership Operations (UPOs). Regarding the first, while experience is being accumulated gradually by municipalities and the states (e.g., the public–private partnership for low-income housing in the city center of São Paulo that involves federal, state, and local governments), there is still considerable uncertainty around how shared and collaborative planning and management (the aforementioned federal court ruling) will eventually be organized by state companies and municipal autarchies, particularly in areas such as basic sanitation. In practice, this uncertainty will provide barriers to private sector investments in such areas as a result.

UPOs are a Brazilian creation, established by federal legislation that provides general guidelines for land value capture, redistributive land use planning and zoning, and public–private partnerships in urban development (the earlier mentioned City Statute, Federal Law nº 10, 257/2001). The instrument aims to stimulate area-based revitalization and renewal through concentrated public and private investments that are allocated within a predetermined perimeter. Its principal source of finance is designed around contributions that provide developers the right to build beyond pre-established floor area ratios (i.e., the relation between built area and the size of the land) and/or to change land usage. Development contributions can be charged by using more traditional formula-based mechanisms (linked to infrastructure planning criteria and municipal tax cadasters) or by creating and auctioning development certificates that can be traded in secondary markets on the stock exchange before being effectively used in real estate development. Although UPOs backed by securitized building certificates have raised more money in São Paulo than the more traditional formula-based development contributions (Sandroni, 2010), in many cases they have been the result of significant initial injections of (semi)public funds or transfers of public (land) assets. Moreover, by their very nature, all revenues raised from UPOs must be recycled back into the perimeter of the urban renewal area; as such, accumulated experience in cities such as São Paulo have proven that they tend to reinforce already existing patterns of real estate dynamism, rather than redistributing financial resources at the city-metropolitan level (Fix, 2007, 2011). Finally, there is no experience with UPOs on city-regional or metropolitan scales. There is no reason to believe, however, that some of the challenges of UPOs (lack of transparency in governance, difficulty in providing social housing within the perimeter of operations, or loss of redistributive capacity at the city level) will disappear when moving to inter-federative operations at city-regional and metropolitan levels.

Conclusion

If there is any lesson that can be drawn from the experience in São Paulo it is that institutional strengthening and building technical capacity are necessary but insufficient conditions to improve metropolitan governance. Technical and political legitimacy are two sides of the same coin in terms of strengthening metropolitan planning and management. In the setting of Brazilian metropolitan regions in general—and in São Paulo in particular—this means that without a political agreement that involves metropolitan cities, the state government, and civil society regarding the main directions of a metropolitan project and strategy, the Statute of the Metropolis is unlikely to produce its expected results. The recent planning process in São Paulo, as described in this chapter, has neither generated this political understanding between the state and municipalities, nor has it been able to mobilize participation from non-governmental organizations, businesses, and social movements.

While this conclusion seems rather pessimistic, there is nothing inherent in the metropolitan institutional and political landscape that will emerge in the coming years in São Paulo. For one, many of the newly elected mayors are politically aligned with the governor. Moreover, the continuing macroeconomic adjustment and fiscal austerity will affect metropolitan economies in a way that requires collective territorial responses. After all, it was the scenario of economic crisis and productive restructuring of the 1990s that initially drove public and private civil leadership to establish a series of innovative city-regional arrangements for collaborative governance. The question emerges, is it back to the future in metropolitan São Paulo?

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3.11 Toronto: Metropolitan Transformation and the Governance of Sustainability

Gabriel Eidelman (University of Toronto), **Martin Horak** (University of Western Ontario), and **Richard Stren** (University of Toronto, Global Cities Institute)

Abstract

Toronto is the largest and most economically important city-region in Canada. The core City of Toronto has 2.7 million residents, while the Greater Toronto Area has more than 6 million. In the absence of a single governing authority, and as the region has expanded and become a major continental center for finance, education, and tourism (among other major functions), it has struggled to find solutions to govern an increasingly diverse population within the constraints of important sustainability requirements. Over the past several decades, the core city of Toronto has (i) amalgamated a previously successful two-tier metropolitan system (with an upper-tier government and five lower-tier municipalities) into a single-tier city; (ii) developed a planning framework to densify development in the region within a perimeter bounded by a greenbelt, which is the source of much of the fresh water flowing into the city from the north; and yet (iii) struggled to develop a regional transit policy by forming a provincially based transit agency. Each of these initiatives is the subject of ongoing political challenges, but there is no further major reform on the horizon.

Toronto, the largest and most economically important city-region in Canada, has a core municipality, the City of Toronto, and a broader region, the Greater Toronto Area (GTA). The GTA produces over 20 percent of Canada's GDP and about 50 percent of the GDP of the province of Ontario (Statistics Canada, 2014). In recent decades, this metropolis has been transformed from a national industrial and commercial center to Canada's leading post-industrial global city. The Toronto region experiences ongoing and significant population growth, driven largely by immigration—almost half of the 250,000 immigrants that come to Canada each year settle in the GTA. As a result, Toronto is now perhaps the most ethno-culturally diverse city-region in North America.

Like many other globalizing cities, Toronto faces environmental and social sustainability challenges that stem from rapid economic, demographic, and social transformation. Our main purpose in this chapter is to examine how the metropolitan governance system has responded to these challenges. In the second half of the 20th century, Toronto was internationally known for creating innovative metropolitan institutions. These institutions are still in place, but they are now structurally and functionally inadequate to govern a growing and dynamic global metropolis. In recent years, political leaders at both the local and the provincial level have struggled to forge new governance practices within this frame, while shying away from any effort to alter the institutions of local government themselves. The story, then, is one of governance innovation and experimentation, shaped and constrained by institutional inheritances of an earlier era.

Local Government and Urban Governance in Canada

Perhaps the most basic defining feature of the Canadian system of local government is strong provincial control and oversight. The Canadian federal constitution does not recognize the local level as an independent authority. Instead, local governments are subordinate to provincial governments, which can

(and periodically do) unilaterally change local government structures, functions, and financing arrangements. As a result, metropolitan governing structures in Canadian urban areas, including Toronto, are largely the product of a historical sequence of provincially led reform initiatives. Since Canada's federal government has no jurisdiction over local government, it has not been involved in developing metropolitan governing institutions or, with the exception of two brief periods in the 1970s and the early 2000s, has it engaged systematically with urban policy issues.

While provincial governments have full formal control over local governing systems, in fiscal terms local governance in Canada's cities is highly decentralized. During the heyday of the welfare state in the 1960s and 1970s, some urban policy fields such as housing and public transit enjoyed significant intergovernmental support, but much of this fell victim to spending cuts in subsequent decades. Today, Canadian local governments are highly dependent on locally raised revenues, especially property taxes. For example, in 2015, 81 percent of the City of Toronto's operating revenue came from local sources, with property taxes alone accounting for 34 percent of the total. Provincial transfers, by contrast, contributed 18 percent, most earmarked for local delivery of provincially mandated social programs, and federal transfers a mere 1 percent (City of Toronto, 2015). The high dependence on local revenue sources puts local governments in urban areas under significant fiscal stress and limits their ability to deal with the large-scale policy problems associated with urban growth and transformation.

In addition, Canadian local governments are weakly integrated with the provincial and federal levels in political terms. The vast majority of Canadian municipalities, including all municipalities in Ontario, have non-partisan local political systems by legal mandate. As discussed later in this chapter, local politics in the City of Toronto, non-partisanship certainly does not mean that local politics is bereft of ideological content. But it does mean that Canada lacks the intergovernmental partisan ties that facilitate the coordination of urban policies in many other advanced industrial democracies. As a result, intergovernmental coordination of urban policy initiatives is often built on a piecemeal basis and can be difficult to sustain even in the face of obvious need.

Together, these three key characteristics of the Canadian local government system—strong provincial control, high dependence on local revenue, and weak intergovernmental political integration—have shaped and constrained both the historical evolution of metropolitan governance in Toronto and present-day efforts to reform governance practices in response to current sustainability challenges.

Metropolitan Governance: History and Limits of Structural Reform

For several decades, governance reform in the Toronto area was driven by an Ontario provincial government that embraced local government restructuring as the primary means for responding to the challenges of urban growth and change. Toronto was the first urban area in North America to adopt a two-tier metropolitan system. Established by the provincial government in 1954, this system consisted of an upper-tier Municipality of Metropolitan Toronto (Metro), which was responsible for metropolitan planning, policing, infrastructure development, public transit, and social policy, and several lower-tier municipalities that were responsible for remaining local matters. Buttressed by significant intergovernmental funding, this system successfully addressed key urban policy challenges such as mass transit and social housing (Frisken, 2007) and gave Toronto an international reputation for effective metropolitan governance.

By the 1970s, Toronto's suburban growth reached beyond Metro's boundaries. The provincial government responded by essentially replicating the Metro system. It divided the outer suburbs of the GTA into four areas and established a two-tier governance system in each. The new upper-tier regional municipalities of Halton, Peel, Durham, and York were granted powers analogous to those of Metro, with remaining local matters the responsibility of some 20 lower-tier municipalities. Initially, these reforms were part of a

larger provincial policy initiative to comprehensively guide regional growth. However, between the 1970s and the 1990s, the province gradually decreased its involvement in regional planning, transit, infrastructure development, and social housing, leaving the Toronto area's five two-tier local government systems to manage urban policy largely on their own (Taylor, 2015).

By the early 1990s, the lack of governing coordination between Metro and the booming outer suburbs led to calls for a new round of structural reform. The Golden Task Force, established by a center-left provincial government, concluded that the five existing upper-tier local governments should be abolished and replaced by a single regional authority (Donald, 1999). However, political leaders in the outer suburbs saw this as a proposal to redistribute resources to the Metro core and opposed it. As a result, the conservative provincial government of Mike Harris, elected in 1995 with strong support from the outer suburbs, rejected the city-region solution. Instead, despite widespread protest, and for reasons that remain unclear to this day, the province in 1998 amalgamated all of the municipalities in Metro into one "megacity" of Toronto, while leaving the outer suburbs politically untouched.

The new City of Toronto faced major fiscal stress. Harmonizing public sector salaries and services across formerly autonomous municipalities significantly raised internal costs (Horak, 2008). At the same time, the province transferred to municipalities funding responsibility for social housing, public transit, and social services—all services that were in high demand in the urban core. Amalgamation also had political consequences. It brought together parts of Metro that had previously operated under very different lower-tier political regimes. The result is a municipality with a volatile, internally divided politics, which is discussed in some detail below. By the same token, the amalgamated City of Toronto houses almost one-quarter of the population of Ontario and can thus exercise strong intergovernmental bargaining power.

Since 1998, the spatial organization of government in the Toronto region—featuring a large, unified central City of Toronto and four two-tier regional governing systems in the outer suburbs—has not changed. The increasingly populous suburban municipalities oppose any effort at city-regional integration, and confronting such opposition is politically too risky for provincial politicians. In addition, any regional governing authority for the Toronto area would constitute (from the provincial point of view) a dangerously strong political counterweight to the provincial government itself. Furthermore, boundary fixes in and of themselves cannot address the challenges of financing urban policy needs in a highly decentralized fiscal system. The region thus appears to have reached the limits of structural reform to local government, at least for the foreseeable future. There are no significant structural reforms to local government in the Toronto area on the political horizon. Yet ongoing spatial, economic, demographic, and social transformations continue to produce new policy and governance challenges. In response, political leaders at both the provincial and local levels have in recent years begun to experiment with new, issue-specific modalities of governance reform.

Transformation and Sustainability Challenges: 1995 to 2015

By North American standards, the GTA is growing at a rapid pace. In recent years, the population of the census metropolitan area has increased by 80,000 to 100,000 residents per year (Statistics Canada, 2015). While the urban core has seen modest population growth, the outer suburbs have grown rapidly, adding well over 1 million residents between 1996 and 2011 (Table 1). Population growth is driven largely by immigration. Nearly half of the population of the GTA is now foreign-born. Recent immigrants have many different places of origin, and the Toronto region has significant populations of many ethno-cultural groups, including Chinese, Tamil, Vietnamese, Caribbean, Sikh, and Latin American. Nearly half of the GTA's population identify as "visible minority." The increase in ethno-cultural diversity has been particularly remarkable in the booming outer suburbs.

Table 1. Toronto Population, Immigration, and Diversity

	Census Metropolitan Area		City of Toronto		Outer CMA Suburbs	
	1996	2011	1996	2011	1996	2011
Population	4,263,950	5,583,064	2,385,421	2,576,025	1,879,529	3,007,039
% foreign-born	41.9	46.0	47.6	48.6	34.6	43.8
% visible minority	31.4	47.0	37.3	49.1	23.9	45.2

Source: Authors' calculations based on Statistics Canada current and historical census tables.
Note: The Census Metropolitan Area includes about 90 percent of the population of the GTA.

Demographic transformation is both a product of and a contributor to the Toronto region's economic transformation from a national urban hub to a post-industrial global city. While the proportion of the GTA workforce employed in manufacturing decreased from 16.7 percent in 1996 to only 9.6 percent in 2011 (Statistics Canada 2015), a wide variety of post-industrial sectors have boomed. The Toronto area is now home to the country's largest economic clusters in global finance, research, higher education, media, and cultural production. But not everyone has benefited from Toronto's economic transformation. The changing structure of the economy, combined with the decline of intergovernmental social assistance supports since the 1980s, has produced an increasingly socially divided city-region.

Social polarization is at the heart of the first of three major sustainability challenges that Toronto now faces: the challenge of building a socially inclusive city. The next section examines this challenge, focusing on the core City of Toronto. In this section, two other regional sustainability challenges are also examined: containing urban sprawl and modernizing the public transit network. In all cases, local and provincial political leaders have developed new governance initiatives to respond to these challenges, yet the shape, success, and sustainability of these responses have been constrained by the existing character of the institutional landscape of urban governance.

Social Inclusion in Post-Amalgamation Toronto

The post-amalgamation City of Toronto is one of the most ethnically diverse municipalities in North America. It is also increasingly socially divided. The growth of high-end post-industrial sectors of the economy has inflated real estate prices, which has increasingly pushed lower-income residents, many of them recent immigrants and members of visible minority groups, into concentrated areas of high-rise housing. Most of these areas are located in older post-war suburbs that are now part of the amalgamated city (Hulchanski, 2010). A city that a generation ago prided itself on its socially mixed urban fabric now faces significant challenges of political and social inclusion. The ability of local government to respond to these challenges is influenced and constrained by the city's electoral and representative structures and fiscal foundations.

Toronto's City Council is a non-partisan body that consists of 44 councillors elected by ward and a mayor elected at-large by voters across the city. Councillors play both a legislative role (i.e., deliberating and establishing city-wide policies) and a constituency role (i.e., representing ward constituents) and, in the absence of a political party structure, exert considerable power over local affairs. The mayor enjoys limited executive power and formal authority but, as the only local politician elected by voters across the entire city, the mayor exercises significant political legitimacy and therefore influence in matters of policy. By contrast, Canada's Prime Minister, who is the leader of the largest party in Parliament, is directly elected only in a single constituency.

Like all Ontario municipalities, the City of Toronto goes to the polls every four years. In the most recent 2014 municipal election, nearly 1 million eligible electors cast votes. The winning mayoral candidate, John Tory, received over 395,000 votes, giving him the most direct popular support of any elected official in

Canada. Turnout in the 2014 election was 55 percent, higher than the 51 percent level in 2010 and considerably higher than the 2006 election when only 39 percent of eligible voters cast ballots (City of Toronto, 2014). By North American standards, these figures are relatively high, indicating strong citizen involvement in their local electoral system.

Yet this involvement is by no means socially neutral. The prime importance of property taxes in local finance leads to disproportionately heavy election turnout by property owners, a phenomenon common across Canada (McGregor and Spicer, 2016). Since real estate in Toronto is very expensive, property ownership is biased toward the wealthy and long-standing residents. The implications in terms of representation are significant. All four of Toronto's mayors since amalgamation have been upper-middle class, white politicians. Of 43 current councillors (one seat is currently vacant), only 14 (33 percent) are female, and only five (12 percent) are considered a visible minority in a city where nearly half the population is foreign-born. Such disproportion is by no means limited to the core City of Toronto. A 2010 study of elected representatives at all three levels of government for the GTA found that visible minorities are underrepresented throughout the GTA (Siemiatycki, 2011). The study noted that visible minorities were best represented in provincial government and least in municipal government.

Between elections, Toronto's governance structure provides ample opportunities for citizen involvement. The City manages relationships with a vast array of advisory committees, municipal corporations, and special purpose authorities, most of which include citizen appointees. Yet in these organizations, too, structural biases are apparent and the interests of homeowners and property owners are often privileged.

Overall, the city's political geography is sharply divided. Residents of the old central city tend to support socially progressive local government, while residents of the post-war inner suburbs are much more likely to support a low-tax, back-to-basics governing agenda. This divide has produced ideologically unstable local politics, especially at the mayoral level, which has had a direct impact on policies meant to promote social inclusion.

In recent years, the City of Toronto has launched a variety of initiatives intended to secure intergovernmental support for marginalized populations. Yet in the context of an ideologically divided electorate, such efforts have seldom survived a change in mayoral administration. One example is the Strong Neighborhoods Strategy, a policy framework aimed at directing resources from all three levels of government toward poor neighborhoods. This initiative was launched during the tenure of Mayor David Miller (2003–10), whose support was among educated professionals, unions, and central city (downtown) residents, and who embraced an expansive governing agenda that included attention to social issues.

While the federal government did not support the Strong Neighborhoods Strategy, the provincial government did, and between 2006 and 2010 many poor Toronto neighborhoods saw significant investment in a variety of programs (Horak and Dantico, 2014). However, in 2010, Miller was replaced by Mayor Rob Ford (2010–14), who put the strategy on hold. Ford came to office on the basis of slogans to "stop the gravy train" and to govern the city "like a business," drawing most of his electoral support from outlying wards of the city, including neighborhoods with recent immigrants. The current mayor, John Tory (2015-) draws his electoral support from all over the city, but most significantly from the business community and upper- and middle-class residents concentrated in the central and northern parts of the old City of Toronto. Tory has made no effort to revive the practice of targeted investment in poor neighborhoods.

Containing Suburban Sprawl in the Outer Suburbs

The growth of the GTA is most rapid at the region's outer edges. Between 2006 and 2011, the population of the City of Toronto proper grew by 4 percent. By contrast, growth in Toronto's outer suburban municipalities ranged as high as 15 percent (Statistics Canada,

2016). Over the next 25 years, that disparity will stretch even further. Best estimates suggest that by 2041 the population of the GTA as a whole will rise by nearly 3 million to reach over 9 million people, with over 80 percent of that growth occurring in the outer suburban belt (Hemson Consulting, 2013).

To date, growth in the outer suburbs has predominantly been low density, with land consumption long outpacing population growth. Between 1971 and 2006, the suburban population grew by 80 percent but the region's urban footprint more than doubled (Government of Ontario, 2015). The rate of urban expansion appears to have slowed in recent years. Between 1991 and 2001, the population of the GTA grew 19 percent, while the urbanized area expanded by 26 percent; by comparison, between 2001 and 2011, the population grew 18 percent and the urban area expanded by only 10 percent (Neptis Foundation, 2014).

As the economic, social, and environmental problems associated with unchecked sprawl have risen on the public agenda, regional land use planning—largely abandoned by the province in the 1970s—has once again become a political priority (Eidelman, 2010). In the absence of a regional government for the GTA, the provincial government, led by Premiers Dalton McGuinty (2003–13) and Kathleen Wynne (2013–), has gradually assumed the role of de facto regional planning authority. In doing so, it has also redefined the boundaries of the urban region for planning purposes, focusing on what it calls the Greater Golden Horseshoe (GGH), a large, predominantly urbanized area that reaches well beyond the GTA and has a population of 8.7 million (Statistics Canada, 2015). All municipal land use plans must now conform to a package of legislative and regulatory frameworks enforced by the Ministry of Municipal Affairs and Housing and a quasi-judicial appeal body known as the Ontario Municipal Board.

The centerpiece of the province's regional planning framework is a strategic blueprint known as the Growth Plan for the GGH first released in 2006 (Government of Ontario, 2013). The Growth Plan is complemented by several interrelated regulations and statutes, including the *Places to Grow Act*, the Greenbelt Plan and *Greenbelt Act*, the Niagara Escarpment Plan, the Oak Ridges Moraine Conservation Plan, and the *Provincial Policy Statement and Planning Act*.

The Growth Plan establishes specific density and intensification targets for all municipalities across the GGH, complemented by the world's largest permanent greenbelt (urban growth boundary) protecting over 700,000 hectares of agricultural and environmental sensitive lands. The plans sets a region-wide intensification target of 40 percent, meaning that in every municipality across the region, 40 percent of all new residential development must be located within existing built-up areas.

Whether or not these targets are truly being met remains unclear. In its first progress report, the government concluded that the Growth Plan remained on track to protect as much as 800 square kilometers of land from development by 2031 (Government of Ontario, 2011). But this forecast depended on the Plan's complete implementation, which has not yet been achieved. A recent independent analysis cautions that, while most municipalities in the region have indeed adopted the minimum targets of the Plan, only two out of the GGH's 130 municipalities plan to exceed the minimums and many have been granted exceptions to use even lower targets (Allen and Campsie, 2013).

In 2015, the province appointed an advisory panel chaired by former Toronto mayor David Crombie to inform a coordinated review of all provincial growth plans. The Crombie panel's final report noted that although there is widespread support among the general public and affected stakeholders for the overall intent of the province's land use goals, the policy regime in place is in urgent need of strengthening and improvement (Government of Ontario, 2015). In May 2017, Ontario "released four updated land use plans that work together to help grow communities in the GGH and on the Niagara Escarpment in a way that attracts jobs and investments in vibrant urban centers, while also preserving and protecting green spaces, farmland and ecologically sensitive lands and waters" (Government of Ontario, 2017).

Planning and Funding Regional Transit

A natural consequence of suburban growth is traffic congestion. The social and economic costs of congestion in the GTA have been estimated at C$6 billion per year. The problem is exacerbated by poor transit infrastructure and chronic underinvestment. For several years in the late 1990s and early 2000s, Toronto received absolutely no funding from the federal or provincial governments for transit (Horak, 2012). Today, the severity of congestion in the region has made transit a universal priority. Transit planning and funding is characterized by complicated negotiations between all three levels of government. But decision-making has been driven as much by matters of political expediency as by expert evidence or the needs of affected communities. Although the region is experiencing its largest transit expansion in more than a generation, poor coordination has led to a series of political mishaps and policy reversals.

In 2007, Mayor David Miller unveiled Transit City, an ambitious plan to build 120 kilometers of new light rail lines that would reach all parts of the central City of Toronto, including the chronically under-served inner suburbs. The project happened to dovetail with regional transportation plans being developed by the province, known as MoveOntario 2020 and The Big Move, which together called for C$50 billion in transit investments across the GGH over 25 years. Miller thus managed to persuade Premier McGuinty to commit C$8.15 billion to fund the first four of seven proposed routes.

To deliver on its transit promises, the province established a dedicated regional transportation authority known as Metrolinx. Its original mandate was to coordinate plans among the region's 17 separate transit operators. But in 2009, it too became a transit provider. First, it merged with GO Transit, a commuter rail and bus system owned and operated by the province. Then, it took over Transit City. This benefited the cash-strapped program financially, but shifted control over implementation to the province. Facing a C$21 billion budget deficit, Premier McGuinty soon directed Metrolinx to scale down Transit City, cutting 24 stations and 23 kilometers from the network and deferring C$4 billion in capital spending. Construction was held up and expected completion dates were delayed by up to five years (Metrolinx, 2010).

In late 2010, Transit City's most vocal opponent, Rob Ford, was elected mayor. Transit planning was thrown into further disarray. On his first day in office, Ford declared Transit City dead and began negotiations with the province to redirect funds toward a subway extension to Scarborough, a suburb in Toronto's east end (and one of Ford's strongest bases of political support). Respecting the mayor's popular support, Metrolinx agreed to a compromise: it would reallocate the C$8.4 billion (adjusted for inflation) committed to Transit City to bury just one of the proposed light rail transit (LRT) lines, known as the Eglinton Crosstown, so that it operated similarly to an underground subway, and the rest of the network would be cancelled. The City would pay the cost of any dedicated subways to Scarborough, which Ford promised would be supported by the private sector (no partner ever came forward). In 2012, after it became clear that Ford's financing plan was completely unworkable, city council revolted and restarted Transit City. A year later, council reopened its decision yet again, reinstating the Scarborough subway, leaving Metrolinx to revise its plans once more.

Mayor Ford was succeeded by John Tory in late 2014. Tory campaigned on his own transit plan, which included the Scarborough subway and remnants of the Transit City plan, but added a new C$8 billion express rail line, marketed as SmartTrack, that builds on Metrolinx's plans to deliver all-day, two-way express rail service in the region. Tory promised that the 53 kilometer transit line could be built in seven years at no cost to municipal taxpayers, despite offering no detailed evidence to support such claims. Tory has since acknowledged that large portions of the plan will have to be revised to keep costs down.

Meanwhile, Metrolinx continues work on what it describes as the next wave of regional transit projects envisioned in the Big Move, including new bus rapid transit and LRT lines in the outer suburbs. The plan to pay for these projects was spelled out in Metrolinx's investment strategy, which recommended

drawing funds from increased sales and gas taxes, a parking levy, and a share of development charges (Metrolinx, 2013). An independent advisory panel asked by the premier to review these recommendations agreed that new transit investments will require increases in sales and gas taxes, as well as corporate taxes. But the panel concluded that, currently, "the public has very little trust in how transit is planned, in how money is managed, and in how projects are delivered" (Transit Investment Strategy Advisory Panel, 2013, p. 4). Premier Wynne has since rejected both Metrolinx's and the advisory panel's conclusions, promising that the government will find a way to invest more than C$2 billion a year for transit across the GGH without increasing taxes.

Conclusion

From a distance, Toronto appears to be a relatively well-run, orderly city. But like all rapidly growing cities in North America and around the world, metropolitan governance in the region is anything but straightforward, involving multiple levels of government. Efforts to design and coordinate public policies on the metropolitan scale have resulted in considerable innovation and experimentation but have also exposed serious institutional inadequacies created by past rounds of government restructuring. Twenty years on, the bitter legacy of the 1998 Metro amalgamation endures, dampening any political enthusiasm for change. One would be hard pressed to find a single elected official at any level—in government or in opposition—who has publicly declared even the slightest interest in pursuing a new round of comprehensive structural reform. Instead, political leaders have opted to address the growing list of metropolitan governance challenges on an issue-by-issue basis.

Currently, the city-region faces three main environmental and social sustainability challenges: social polarization and integrating new immigrants and low-income residents into the fabric of city life; controlling urban sprawl in the outer suburbs; and effectively planning and funding regional transit. With regard to social inclusion, local governments have been forced to go it alone. The City of Toronto has attempted to partner with federal and provincial governments to invest in targeted social programs, but both local and intergovernmental political support for such initiatives has been unstable. By contrast, the province has emerged as the central policy actor in regional land use planning, using its constitutional powers over municipalities to design a comprehensive legislative and regulatory framework aimed at curbing suburban sprawl. Finally, on regional transit, the success of ambitious new policy initiatives and governance arrangements has been hampered by poor coordination between all three levels of government, leading to a series of political setbacks and policy reversals.

From an international perspective, various features of Toronto's metropolitan governance system could be considered idiosyncratic. Provincial intervention in regional land use planning, for example, can be traced to unique electoral imperatives as much as prudent policymaking. The Toronto model, as it were, could not be easily replicated in other contexts. That said, from an analytical perspective, the Toronto case does offer at least one useful insight applicable to metropolitan governance systems in other city-regions: the absence of a functional metropolitan government does not preclude the possibility of responsive metropolitan governance.

The challenges facing policymakers in the GTA do not require a top-to-bottom institutional redesign. Sound ideas, such as addressing social polarization by making strategic investments in low-income neighborhoods, could very well be championed by future political leaders given the right timing and electoral conditions. Poor coordination between governments, as demonstrated by the transit file, is equally remediable given the right political incentives. These incentives are invariably the product of the region's political institutions. But the institutional fix required to alter incentive structures has more to do with emerging norms of intergovernmental relations than with the establishment of any new, formal metropolitan government

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3.12 Beijing-Tianjin-Hebei: Regional Governance Under a Highly Centralized Political System

Yan Tang (Tsinghua University), **Dong Yang** (Tsinghua University), **Kai Chen** (Tsinghua University), and **He Zhu** (Tsinghua University)

Abstract

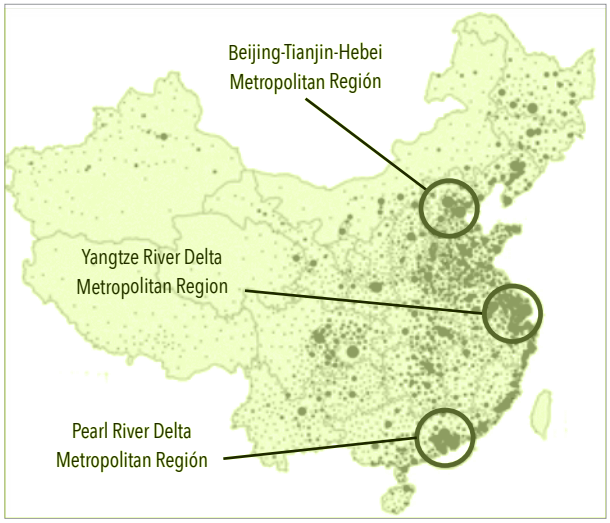
The Beijing-Tianjin-Hebei metropolitan region (BTH) has a population of over 100 million. It is now in the world media spotlight not only due to its great development achievements over the past 20 years, but also because of its well-known heavy smog, environmental pollution, and water shortage. These problems highlight the urgency of collaborative action to deal with regional issues and build an effective regional governance system in BTH. This chapter analyzes the development problems grounded in China's peculiar social, political, and economic context, and BTH's special identity. Further it analyzes the regional power system and the roles of stakeholders, as well as regional initiatives and barriers to inter-municipal collaboration to explore the characteristics of the region's governance mechanism. Under a highly centralized political system, the dilemmas, causes, and solutions for BTH's regional governance are both discussed and interpreted.

After the reform and opening up of China in 1978, the country's urbanization level increased dramatically, making cities and metropolitan regions the backbone of national social and economic development. Statistics from the Ministry of Housing and Urban-Rural Development of China (MOHURD) and National Bureau of Statistics of China (NBOSOC) show that, from 1978 to 2014, the number of cities in China increased from 193 to about 653, and the urbanization ratio increased from 18 percent to 55 percent (MOHURD, 2014; NBOSOC, 2015). The competitiveness of big cites, metropolitan regions, and urban agglomerations have been developed, and people's general living quality has improved (MOHURD, 2011). The three inshore mega-metropolitan regions that are driving the engine of China's economy—Pearl River Delta, Yangtze River Delta, and Beijing-Tianjin-Hebei (Figure 1)—accumulated 18 percent of the national population, attracted 87 percent of foreign investment, and produced 37 percent of the nation's GDP by 2012 (Housing and Construction Department of Guangdong Province, 2014). There is little doubt that the mega-metropolitan regions in China, products of the rapid urbanization, are significant spatial units with global influences, whose healthy development will strongly influence China's future.

However, many of China's mega-metropolitan regions are now facing severe challenges, including unbalanced regional economies, lack of regional identity, poor internal-region collaboration, deterioration of ecological environments, and vicious local competition. On example is the Beijing-Tianjin-Hebei metropolitan region (BTH region), with a population of over 100 million. The region is now in the global media spotlight, not only due to the great development achievements that the mega-metropolitan region has made over the past 20 years, but also its recent, well-known suffering from heavy smog, environmental pollution, and water shortages, which highlight the urgency of collaborative action to deal with regional problems and build an effective regional governance system. As one of the three significant poles of China's economic development, the BTH capital region is made up of 10 local authorities, two province-state cities (Beijing and Tianjin), plus eight cities in Hebei province (Tangshan, Baoding, Langfang, Qinhuangdao, Changzhou, Zhangjiakou, Chengde, and Shijiazhuang). These are referred to as "2+8" or 10 independent kingdoms located in a spatially linked area. These local authorities are accustomed to dialogues with their upper-level leaders while ignoring or even refusing dialogues with their neighbors as a result of China's highly

centralized political system, a situation that has long hindered the BHT's sustainable regional development.

Figure 1. Location of the BTH Region in China

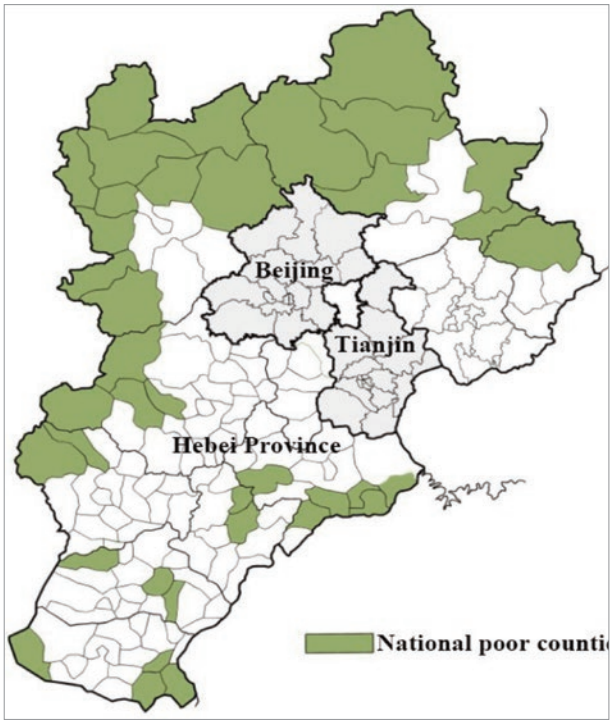


This chapter analyzes the BHT region, grounded in China's peculiar social, political, and economic context, including its development problems, government power system, roles of stakeholders, and efforts and dilemmas of inter-municipal collaboration, in order to explore the region's governance mechanism with a view toward integrated regional development. Together with the analysis of the latest regional policies and actions, such as moving Beijing's municipal administrative departments to Tongzhou Newtown, the chapter explains the evolution of BTH's regional governance and its dilemmas, causes, and possible solutions. In doing so, the authors provide a comparative reference for mega-metropolitan region studies around the world.

Beijing-Tianjin-Hebei: Strong Center, Weak Hinterland

The unbalanced 2+8 development model has led to a distinct spatial structure of a strong center (dual-core) and a weak hinterland in BTH. Presenting a spatial pattern of fragmented archipelagos, the comprehensive competitiveness of the BTH region is much weaker than that of the Yangtze River Delta and Pearl River Delta regions, as the two mega-cities of the BTH developed independently and contributed to the underdeveloped surrounding hinterland. Both ranking in the top 10 cities on the National Urban Competitiveness List announced by the Chinese Academy of Social Sciences in 2015, Beijing and Tianjin have been two dominant cores in the BTH region. Just two of the eight Hebei cities (Tangshan ranked 29 and Shijiazhang ranked 42) were listed in the top 50 (Chinese Academy of Social Sciences, 2015). Beijing and Tianjin performed better than Hebei province regardless of population, GDP, household consumption level, urban built-up area, and investment in fixed assets. The total GDP of Beijing and Tianjin was 1.25 times that of the Hebei province in 2014 (National Bureau of Statistics, 2015). The weakness of the hinterland is further evidenced by the existence of a national poor county ring surrounding Beijing (Figure 2).

Figure 2. Distribution of 39 National Poor Counties in the BTH Region



Generally, BTH can be divided into three sub-regions in terms of spatial relations: north, middle, and south.

The northern sub-region. The cities of Zhangjiakou, Chengde, and Qinhuangdao are located in the north, upstream of regional rivers and

mountainous areas. They are the important guardians of regional ecological security and protectors of water and greenery. But these cities are also unwilling to give up their industrial and economic development opportunities, restricted by this regional ecological and environmental security duty, because there are no effective regional financial compensation and transfer institutions to pay for their sacrifice.

The middle sub-region. This active area consists of four cities (Beijing, Tianjin, Tangshan, and Langfang) and has the strongest economic development performance in BTH. Connected by a 30-minute high-speed railway, the linear belt from Beijing to Tianjin has been the significant regional development corridor, even though the two so-called big brothers are fighting fiercely for market, talent, and resources instead of sharing. As for the other two cities, Tangshan is a vital energy-producing city that supplies significant electricity and coal to both BTH and the rest of the country (and is now suffering serious economic issues in light of the dropping coal price), while Langfang is a city with a flourishing real estate market because it borders on Beijing and Tianjin.

The southern sub-region. Developed for manufacturing and port industries, three cities are located in the southern sub-region: Shijiazhuang, Cangzhou, and Baoding. Due to their relative distance from the Beijing-Tianjin corridor, these industrial cities developed more independently.

Purposes of Intra-regional Collaboration

As early as in the 1980s, some researchers, such as Wu Liangyong, started to identify Beijing, Tianjin, and Tangshang as one regional spatial unit in their studies (Wuliangyong, 2004). However, the economic and social exchange between Beijing, Tianjin, and Hebei has been limited by administrative segregation, which has blocked the integrated development of the BTH region (Li Xiaojiang, 2008). Disputes including a war for water and a fight for the location of the second International Capital Airport, among others, are frequent between local authorities in BTH.

Along with globalization and modernization, there is more and more desire for intra-regional communication and collaboration in BTH. The flow or exchange of materials, information, and population has already broken through the city boundaries, and issues like fog haze, water shortages, and environmental pollution can only be resolved through cross-border regional collaboration. Based on related interviews and research, the main reasons for collaboration between the cities are summarized in Figure 3. The emergence of a willingness to collaborate regionally can also been demonstrated by the spatial development strategies of Beijing, Tianjin, and Hebei.

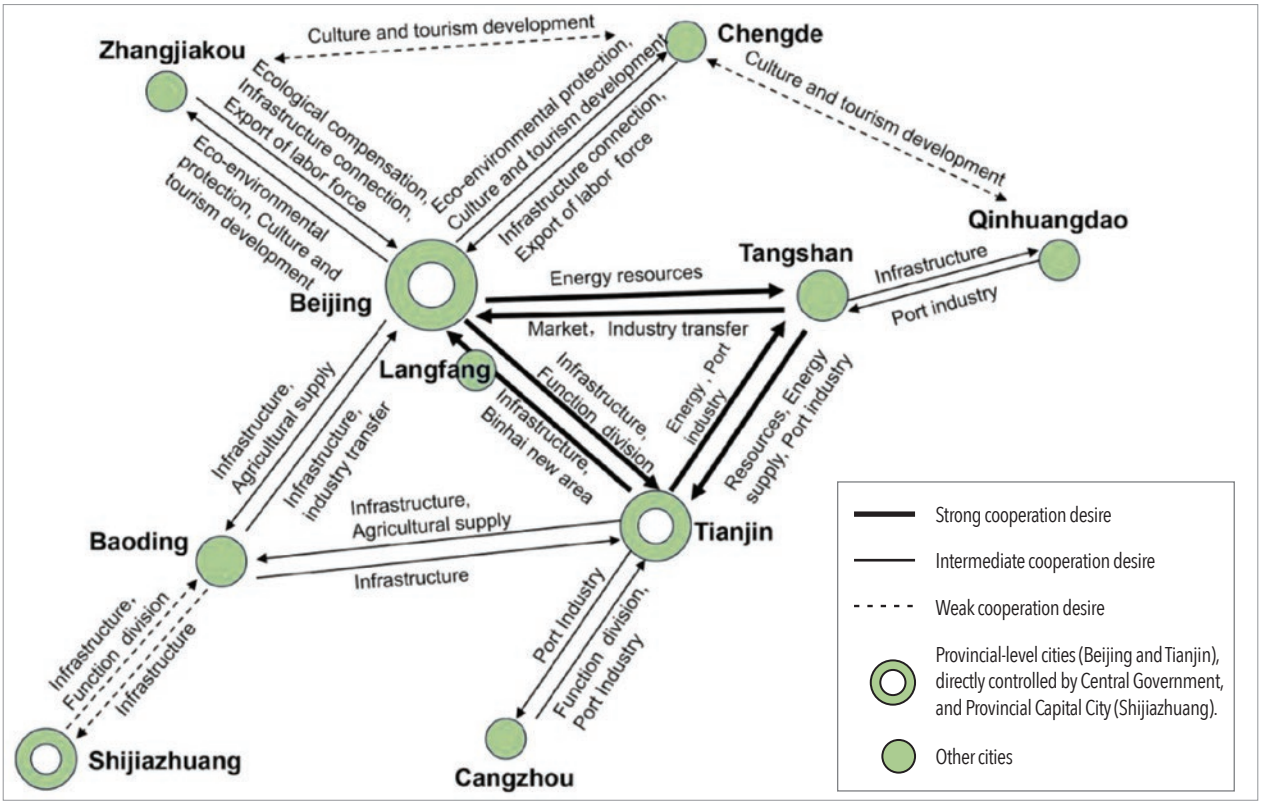
Spatial development strategy of Beijing. The great achievement of the economic, culture, and political development of Beijing, the capital city, has caught global attention. The successful hosting of the 2008 Summer Olympic Games followed by a winning bid for the 2022 Winter Olympic Games (Beijing-Zhangjiakou) has much enhanced the Chinese people's self-confidence and refreshed the world's understanding of China. Thus, Beijing proposed its development goal in 2010 to be a significant world city/global city, which will be better achieved by collective efforts from the entire BTH region.

Spatial development strategy of Tianjin. To make full use of the benefits of its seaport, Tianjin launched a reform program to construct a national pilot coastal area in 2006 with the support of the central government-Tianjin Binhai New Area. This program could gain more support through collaboration with the other four important seaports in Hebei and increasing interaction with Beijing. Unfortunately, the unexpected warehouse explosion in Tianjin Binhai in August 2015 cast a big shadow over the future development of Tianjin.

Spatial development strategy of Hebei. The provincial development strategies of Hebei always focus on Beijing and Tianjin to benefit from a regional division of labor and market. Attempting to attract more population and industries from Beijing and Tianjin to Hebei, Hebei has put forward a strategy of building a New Urban Cluster around Beijing. An initiative to strengthen Hebei coastal cities has

also been proposed. Now, due to the significant gap in housing price between Hebei and Beijing-Tianjin, the New Urban Cluster has become a vast mono-residential area, which houses thousands of people working in Beijing and is owned by numerous real estate speculators.

Figure 3. Reasons for Collaboration between Cities in BTH



Source: Tang, 2008.

Governance Dilemmas Undermining Transformation of BTH

To transform the area from an isolated archipelago to an integrated region, BTH is in great need of effective regional governance and collaboration. However, the following dilemmas have made regional integration across the administration boundary in BTH very difficult.

Dilemma 1: Fragmentation caused by administrative divisions. The free flow of information, human resources, and production in most mega-regions is highly restricted by China's unique institutional environment and traditional administration mode, which combines features of a planned and market economy. The traditional vertical bureaucracy mechanism formed during the planned economy period is still the main administrative approach in China. This ensures that almost all the cities in the BTH region prefer to lobby and contact upper-level government instead of their neighbors. As a result, horizontal and vertical collaboration between different local authorities and government departments has been inadequate in BTH. Moreover, the governments, instead of drawing on market mechanisms, are still playing a large role in allocating important primary resources and production factors in BTH. As there is no necessary market-based coordination and compensation mechanism between local authorities, cross-boundary exchange of social, economic, and natural resources is always difficult to realize.

Dilemma 2: Vicious competition caused by the allocation of tax revenue. The decentralization of power triggered by political and economic reforms in the 1990s in China reinforced the status of local authorities. According to the Chinese system of tax distribution, a large proportion of tax revenue goes to the central government, while the local governments can only gain a small amount of funds. Therefore, it is unsurprising that disputes over resources and vicious competition between local governments have become increasingly serious and a significant obstacle to coordination in the BTH region.

Dilemma 3: Inefficiency in mobilizing multi-role participation. Lack of effective regional planning and public participation has also contributed to the difficulty of regional collaboration in BTH. Citizens do not have enough enthusiasm or knowledge to participate in public activities, non-governmental organizations do not have access to involvement in public affairs, and the private sector pays inadequate attention to public interests. The region's collaboration is rendered even more sensitive and difficult under such particularities as, for example, the central government's location in Beijing. This has given central government the privilege of intervening in local BTH affairs, especially in Beijing, and interfering in Beijing's priority rights to absorb and transfer regional resources.

Efforts at Regional Governance and Collaboration

Entering the 20st century, new trends in regional collaboration (formal and informal) are emerging in BTH, such as regional dialogue, regional infrastructure construction, urban forums, regional collaboration agreements, regional planning research, and regional working meetings. These suggest a new stage, leading toward more harmonious regional governance in BTH. Mitchell-Weaver, Miller, and Deal Jr. (2000) summarized the main approaches of regional governance and collaboration in detail. They highlighted the relatively easy areas of collaboration, including informal collaboration, inter-local service agreements, regional councils of government, and contracting from private vendors, which are precisely the most common approaches emerging in BTH's governance system. Whether a water use and compensation mechanism agreed to between Beijing and Hebei, a 9+10 regional tourism collaboration agreement, or the economic collaboration and development forum of the Bohai economic circle, all help cities achieve trust and consensus on the basis of mutual benefits.

Regional communications first occurred in transport infrastructure development, economic collaboration, water resource use and compensation, joint development of tourism, and urban planning and construction. The regional dialogue platforms are not confined to the scope of the BTH region, but also extend to the Bohai economic circle, including the provinces of Inner Mongolia, Shanxi, and Shandong. Participating actors include government departments, relevant experts and scholars, enterprises, and foreign representatives, among others In terms of impact, many regional transportation links has been developed, including a large number of intercity highways and high-speed railways, which help create a half hour economic circle around Beijing and Tianjin and a one to three-hour traffic circle across the entire BTH region. A reasonable industrial division is starting to take shape in BTH, as follows (Planning Office of Beijing Social Science, 2009):

- Beijing's economy is oriented to the service, knowledge, and headquarters economies.
- Tianjin is becoming the high-level modern manufacturing and research and development base, as well as a northern international shipping and logistics center.
- Hebei province aims to grow as the important national base for the heavy chemical industry, advanced manufacturing, and agricultural production and processing.

As a result, the traditional manufacturing industries in Beijing, such as the Capital Steel Plant, the First Machine-Tool Plant, and the Coking Plant, have been gradually moved into Hebei province.

Regional Policies and Actions in BTH from 2014

2014 marked an important turning point in the history of BTH's regional governance and integrated development. Since 2012, when President Xi Jinping took office, the central government has paid an unprecedented level of attention to the BTH region's development. During his visits to the region in May 2013 and February 2014, President Xi identified BTH integrated development as an important national strategy.

Theoretical studies on regional governance and its mechanisms have presented three main trends (Hong Shijian, 2009):

1. **Traditional regionalism** advocates want to establish a centralized regional government to deal with regional issues.
2. **Public choice** advocates want to use market mechanisms to solve the problems of metropolitan areas.
3. **Neo-regionalism** advocates argue for comprehensive networks to promote regional collaboration in metropolitan areas.

Based on analyses of the latest regional policies and actions launched by the central government, regional governance in BTH is still at an early stage and represents a pattern of traditional regionalism. The central government has acted as a regional government to resolve regional issues through a highly centralized, top-down approach since 2014. With the central government's forceful promotion, a number of new actions have taken place in BTH, for instance, relieving heavy smog, building a Beijing sub-central city, and transferring non-capital functions from Beijing to surrounding areas. Such changes will have far-reaching influences on the region's integrated development.

Setting Up a Central Steering Group for Regional Collaboration

In August 2014, the State Council established a Steering Group for BTH Coordinated Development as well as a special office, of which Zhang Gaoli (Vice Premier and member of the Standing Committee of the Political Bureau of the CPC Central Committee) acts as Director. Following that, Beijing, Tianjin, and Hebei each set up a steering committee to advance the coordinated development of BTH and came out with regional governance policies.

In April 2015, the Political Bureau of the CPC Central Committee reviewed and approved the Beijing-Tianjin-Hebei Coordinated Development Plan to support policy formulation on various areas such as environmental protection, transportation, tourism, culture, and agriculture. Academic researchers also published a large number of related papers and reports, including the *Report on Beijing-Tianjin-Hebei Regional Development* (Li Guoping, 2014) jointly released by Peking University and research departments of the three regions.

Joint Smog Treatment

In January 2013, the BTH region suffered from extreme heavy smog, which drew widespread attention from domestic and international sources. The heavy smog lasted for 22 days, with average atmospheric visibility of only 9.7 kilometers (Meng, Yu, Zhang, et al., 2014). An analysis on PM2.5 (fine particles) in Beijing showed that coal and motor vehicles were the main pollutants, with coal accounting for 34 percent, motor vehicles for 16 percent, and industries for 15 percent (Wang, Yao, Liu, et al., 2013). Due to the region's bowl-shaped terrain, adverse weather conditions can easily lead to heavy smog (Xu, Chen, and Shi, 2006; Peng, 2012).

Under the central government's mandatory control and unified requirements, three regions have taken joint measures to cope with the extreme smog to gradually achieve targets assigned by the central government to local governments. Since 2013, Hebei has implemented a "6643" program (Ministry of Industry and Information Technology of China, 2014), aiming to resolve the productivity dilemmas of iron, steel, cement, coal, and glass. Specifically, it is expecting to

reduce 60 million tons of iron and steel output, 60 million tons of cement, 40 million tons of coal, and 30 million weight cases of glass.

During the APEC conference in 2014, Beijing had many APEC blue days, in which the three locations, for the first time ever, simultaneously employed traffic control, with construction projects halted in Beijing and production prohibited in surrounding cities, to improve Beijing's air quality. This is an outcome directly attributable to regional governance under a centralized power system. APEC blue demonstrated the positive role that regional collaboration and joint governance can play in improving regional air conditions.

Transfer of Non-capital Functions

To promote the upgrading of Beijing's urban functions and to facilitate the development of underdeveloped regions within BTH, the central government formulated a new strategy to disperse Beijing's non-capital functions. The plan consisted of two parts: control and dispersion. First, industries that do not fit with capital functions will be strictly controlled. According to the Catalogue for Prohibited and Controlled New-Developed Industries in Beijing (2015), 55 percent of industries in Beijing will be prohibited from creating new additions. Second, existing industries that do not serve capital functions will be dispersed. According to the Plan for Coordinated Development in Beijing-Tianjin-Hebei Region, by 2017, 1,200 polluting enterprises will leave Beijing, including regional professional markets for clothing, petty commodities, and building materials. Beijing's resources in education and healthcare will be encouraged to develop outside of Beijing. Some administrative agencies, public utilities and institutions, and corporate headquarters will also be relocated. The aim is to cap Beijing's population at 23 million, which means a shift of 2 million people from Beijing to other areas.

To facilitate the smooth control of non-capital functions, the three regions are working together to build a 4+N industrial collaboration platform, where "4" refers to the Chaofeidian Demonstration Zone for Coordinated Development, Zhangjiakou-Chengde Ecological Functional District, Tianjin Binhai New District, and New Airport Economic Zone, and "N" designates numerous platforms for industry takeover. The BTH region is encouraging and guiding the transfer of general manufacturing industries and regional wholesale markets to well-established industrial parks in Hebei (e.g., Cangzhou, Yongqing, Shijiazhuang, Baigou, and Gu'an). Overall, 392 polluting enterprises left Beijing in 2014, and 326 in 2015. Since 2014, over 80 industry projects have been transferred from Beijing to Hebei, involving an investment of 136.8 billion Yuan. Further, 80 commodity markets in the central city of Beijing were demolished in 2015, and another 70 were transformed and upgraded.

Construction of Beijing's Sub-central City

Beijing has long been the location of both the central and municipal governments. Following the plan of the central government, Beijing announced the decision to construct a sub-central city in 2015, which means that a large number of municipal administrative departments will be transferred from the central city of Beijing into Tongzhou New Town. Construction of the new administrative office area in Tongzhou is now in full swing, with some buildings completed or put into operation. Additionally, at least four railways will connect Beijing central city to Tongzhou according to the agreed-on plan; the Universal Studios project will be started soon in Tongzhou; and several university branches will open (e.g., the east campus of Renmin University) and affiliated schools will be launched. By 2017, all municipal administrative agencies in Beijing will move into Tongzhou sub-central city either in whole or in part.

The strategy to build Tongzhou as Beijing's sub-central city aims to eventually ease the pressure on the central city and to respond to Beijing's megacity disease. However, it is worth noting that, after the news was announced, Tongzhou and the surrounding towns in Hebei (e.g., Yanjiao) experienced a surge in house prices. In addition, the creation of

the sub-central city project means that hundreds of thousands of people may flow from Tongzhou to the central city of Beijing every day. How to solve these concurrent problems remains a major concern.

Conclusion

In such a centralized state like China, any top-down approach launched by the central government to promote regional collaboration can significantly affect the overall development of the BTH region. "Although the coordinated development of the BTH region has gone from 'theoretical exploration' to 'practice', the success of practice cannot take place overnight" (Wu, 2004, 49–53). Obviously, there is still a long way to go before resolving the traditional governance dilemmas and promoting more effective regional collaboration in BTH. The following paragraphs elaborate three important fields for future study.

First, move toward a long-term regional governance mechanism integrating government intervention and market regulation. Though the cross-border collaboration has generated certain results under the promotion of the central government, it does not guarantee long-term, stable, regional collaborative actions in the future. A formal sustainable mechanism that integrates both government and market institutions is required. By combining top-down planning and horizontal collaboration driven by common interests, institutional innovations can be more appropriately achieved within China's special institutional environment. On the other hand, the power of markets should be fully used to establish a reasonable regional compensation mechanism, a fiscal transfer mechanism, and an external benefit internalization mechanism, among other things. This will contribute significantly to stimulating collaboration, reshaping the image of the region, and strengthening local areas' senses of belonging within BTH from the perspectives of cost–profit, win–win, and free market principles.

Second, establish multi-actor regional networks. The participation of social actors in regional issues is now mainly through academic research and discussions or economic symposiums. These actors do not have the power to get involved in the regional policy and decision-making process, which means the regional collaboration of BTH is still based on government instead of governance. Thus it is very important to increase dialogue between multiple social actors in various fields and gradually build long-term organization, regular consultations, and exchange and collaboration mechanisms to improve regional governance. The central government could initiate a regional committee or regional forum as a starting point, and thus encourage local authorities, experts, scholars, entrepreneurs, the public, and so on to join in. Meanwhile, other bottom-up joint operations can become important additions and external motivations for government approaches to promoting regional collaboration.

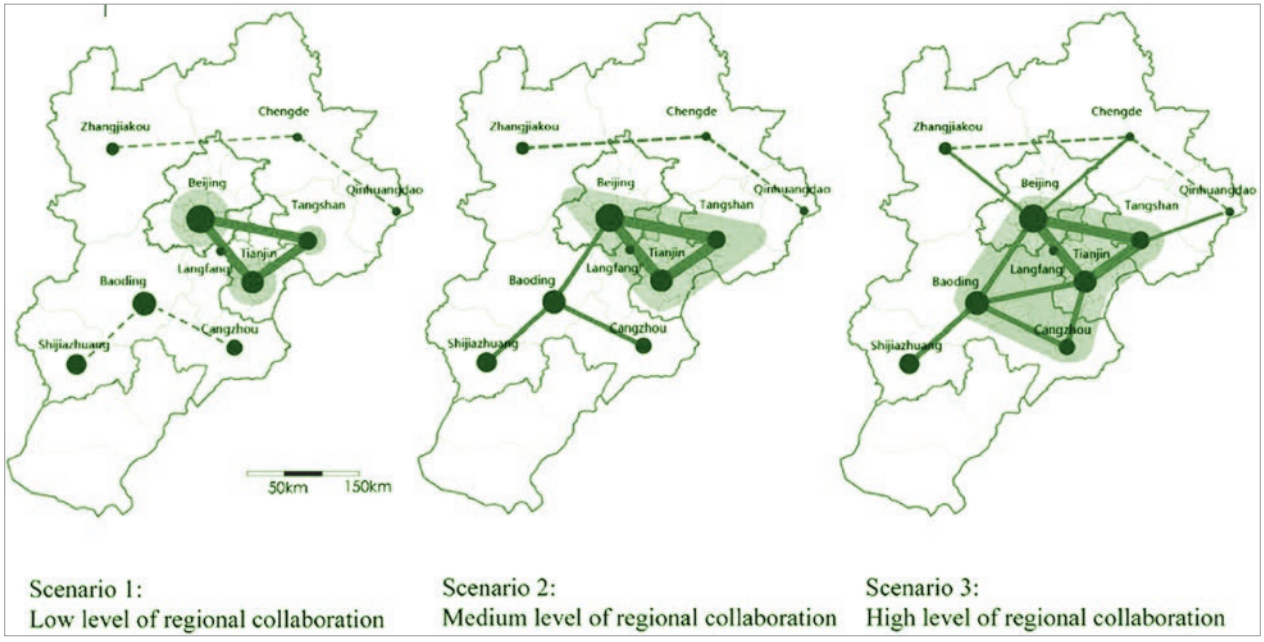
Third, cultivate regional interaction from the key fields. Research indicates that regional collaboration within BTH is easier to obtain in the areas of ecological and environmental protection, traffic infrastructure construction, joint development of tourism, and unified market development. These fields could be used as catalysts to trigger additional regional interaction in other areas. In particular, the social and economic development of Hebei province should be continuously strengthened with the support of central government. Further, there should be mutual exchange between cities, which can comprehensively enhance the overall competitiveness of the BTH region and lead to more balanced regional development while contributing to communication and collaboration in BTH.

Based on the different development paths, process, and speed, the future of regional collaboration in BTH may show the following three scenarios (Figure 4):

1. **Low level of regional collaboration.** The entire metropolitan area would remain relatively weakly connected. The core triangle region formed by Beijing, Tianjin, and Tangshan would maintain a certain degree of dialogue and collaboration. Shijiazhuang, Baoding, and Cangzhou in middle of Hebei could form another loose triangle with economic development potential. Three ecological tourism cities in the north, Zhangjiakou, Chengde, and Qinhuangdao, would be greatly marginalized.

2. **Medium level of regional collaboration.** The entire metropolitan area would realize a degree of stable connection and collaboration between cities. The northern mountainous area of Zhangjiakou, Chengde, and Qinhuangdao would maintain good regional exchange in order to promote their joint tourism industry. The area between Beijing, Tianjin, Tangshan, and Langfang would communicate well and become the development core of the BTH region. Other cities (e.g., Shijiazhuang, Baoding, and Cangzhou) would actively create conditions for future integration into the core area.
3. **High level of regional collaboration.** The region would reach strong, close intra-regional connection and collaboration. Beijing-Tangshan-Baoding-Cangzhou would form a quadrilateral area and become the core of regional growth. Building from common goals regarding tourism and ecological protection, Zhangjiakou, Chengde, and Qinhuangdao would establish a close partnership.

Figure 4. Scenario Analysis of Future Regional Collaboration in the BTH Region



Source: Authors.

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3.13 Governance in Indian Metropolises: Delhi

Debolina Kundu (National Institute of Urban Affairs, India)

Abstract

India's 52 metropolises are the economic and commercial engines of the modern nation. These complex entities with multiple municipal and non-municipal institutional arrangements are working essentially as creatures of state governments with very little strategic flexibility. The metropolis of Delhi is no exception, although it enjoys the special status of National Capital Territory (NCT). This is partly because the 74th Constitutional Amendment (CAA) of 1992 failed to visualize the dynamics of emerging large complex urban formations. With 16 million inhabitants, the NCT is the second most populous metropolis in India. Metropolitan governance in Delhi, like any other metropolis, is characterized by fragmentation of responsibility; incomplete devolution of funds, functions, and functionaries; parallel existence of parastatals and resident welfare associations; and low recovery of user charges and property tax. The 74th CAA and the National Urban Renewal Mission attempted to empower the urban local bodies, including metropolises, to improve governance and efficiency in civic administration. By contrast, the Smart Cities Mission has mandated special purpose vehicles that redefine city governance and financing, in the process disengaging metropolises and other big cities from these functions. This chapter argues for both a need to comply with the 74th CAA for long-term solutions, as well as better coordination among the municipal and non-municipal entities to achieve effective urban governance.

Metropolitan governance in India has long been characterized by a fragmentation of responsibility, incomplete devolution of functions to the elected urban local bodies, lack of adequate financial resources, and indecision on the role of parastatals in delivering services. However, recent decades have witnessed a move toward greater municipal autonomy and accountability, improved property taxation methods and user charge levies, and greater private sector participation in financing and delivering functions.

Indian metropolitan cities, which are complex entities with multiple municipal and non-municipal institutional arrangements, are subordinate bodies of the state governments with neither the necessary strategic flexibility nor political legitimacy. This can partly be attributed to the failure of the 74th Constitutional Amendment Act (CAA) of 1992 to visualize the dynamics of large complex urban formations. Also, Indian policymakers have been slow in responding to changing metropolitan forms and have largely viewed urbanization as city expansion (Sivaramakrishnan, 2013).

As urban India comprises 31 percent of the national population and contributes over 63 percent of the GDP, with metropolitan cities accounting for the bulk, the capacity of the nation to pursue its economic goals becomes contingent on its ability to govern its cities. Urban governance has, therefore, increasingly assumed importance as a means to ensure that economic growth is equitable, sustainable, and improves living conditions. Apart from the government, the private sector, resident welfare associations, and civil society all have critical roles to play in local governance. The 74th CAA tried to empower urban local bodies in India to improve governance and efficiency in city administration. The Jawaharlal Nehru National Urban Renewal Mission (JNNURM) focused on governance improvement by implementing reforms (Kundu, 2014). Other ongoing initiatives, in particular the Smart City Mission, the Swachh Bharat Mission,

and the Atal Mission for Rejuvenation and Urban Transformation also have reform components to improve the standard of governance and municipal services as preconditions for fund disbursal.

In light of the above, this chapter overviews the urban governance structure in the Delhi, the National Capital Territory (NCT); traces Delhi's demographic growth relative to other Indian metropolises; and studies the current status in terms of their economic potential, poverty, employment structure, access to basic amenities, and ownership of assets. It also analyzes the devolution of power with regard to the reform measures initiated under the Renewal Mission. Finally, it looks at the current urban development schemes and examines metropolitan governance under the new reform agenda.

Urban Governance in Delhi

Delhi's national significance as a metropolitan region is evident, although the arrangements for its governance are slightly different from other such areas because of its status as a Union Territory (UT). It is not a full-fledged state on par with the other states in the country, though it has been granted a legislature. Importantly, two critical functions, land and law and order, are not within the domain of the government of Delhi; instead, those powers are exercised by the Government of India and the lieutenant governor. The city of Delhi is characterized by multiple layers of formal governance. India is a federal system, with powers constitutionally divided between the central and state governments. After the enactment of the 74th CAA, urban local bodies were granted constitutional status as the third tier of government. Under this arrangement, the first municipal elections were held in Delhi in 1997.

With regard to local self-government, the Delhi UT was nearly coterminous with the Delhi Municipal Corporation until it was split into three separate municipal corporations in 2011. Supervision and control of these three bodies is more in the hands of the central government. In other states of India, the urban local bodies are under the respective state governments. The provisions of the 74th CAA do not apply to the New Delhi area itself. In terms of population and economy, the Delhi UT is now a part of the National Capital Region. The boundaries are almost seamless between the UT and the adjoining towns of Gurgaon, Chandigarh, Noida, and Ghaziabad. Any inter-metropolitan comparison of governance issues in Delhi will be akin to the National Capital Region and not merely to the Delhi UT (Shivaramakrishnan, 2015).

The Municipal Corporation of Delhi (MCD) was in existence even before a separate state government was established. Delhi is unique in India in that Delhi state is coterminous with Delhi City, which has resulted in a two-tier elected governance structure—a state legislature and a municipal corporation—each of which controls a different set of public services (Shivaramakrishnan, 2015). The state legislature has power and control over all the matters in the State List or in the Concurrent List of the Constitution of India except entries 1 (Public Order), 2 (Police), and 18 (Land). Some domains also remain under the control of the central (Union) government, such as police, land, and law and order. In addition, there are the Delhi Cantonment Board and the New Delhi Municipal Council (NDMC) that cater to urban services like water supply, sanitation, solid waste management, street lighting, and granting building permissions and trade licenses in their respective jurisdictions. Similar functions are performed by the Delhi Municipal Corporation as well. The Delhi state government has an elected assembly of 70 members of the legislative assembly and is headed by a Chief Minister. There are important areas of responsibility that are shared with the central government that differ from all other states. Moreover, the two municipal corporations report directly to the central government, as opposed to the state. The central government appoints the municipal commissioner of MCD, who reports to the Lieutenant Governor of Delhi (also appointed by the central government). The municipal commissioner is a powerful administrative position held by a bureaucrat.

The MCD is divided into 272 electoral wards, from which councillors are elected. A mayor is elected

from among the ward councillors for a one-year term. Elections are held at different times for the central, state, and municipal governments. In December 2011, as per the notification of the *Delhi Municipal Corporation Amendment Act* (2011), MCD has been trifurcated into the North, South, and the East Delhi Municipal Corporations. As per the legislation, the total number of seats in each corporation cannot be more than 272 or as decided by the government. The 14th schedule of the act divides the number of zones and wards in the three corporations. The operationalization of the three corporations has begun, and the MCD's budget was split accordingly in 2012–13.

In addition to the bureaucracy at various levels of government, there are a number of parastatal agencies that have major responsibilities within the city governance structure. The Delhi Development Authority is a central government parastatal agency responsible for planning and developing land in Delhi. Generating and distributing electricity was handed to the Delhi Vidyut Board in 1996. This board was unbundled and privatized in 2002, and distribution was divided between three private companies in different geographic locations within Delhi.

Water supply is the responsibility of the Delhi Jal Board (DJB), which was formed in 1998 as a state agency, when responsibilities for these areas were transferred from the MCD. Formally, the DJB is only allowed to make private, in-house water connections in legal settlements, though the board is required to provide communal supplies (from public taps) to all citizens.

In recent years, there has been a sea change in urban governance in the country. Economic liberalization in India, followed by decentralization measures adopted by all tiers of government as an aftermath of the 74th CAA has resulted in gradual withdrawal of the state and increased private sector participation in capital investment and the operation and maintenance of urban services. The institutional vacuum thus created has been occupied by non-governmental organizations. The inability of the ward committees, institutionalized by 74th CAA, to usher in decentralized governance has also led to the growth of middle class activism through resident welfare associations (RWAs). Their involvement has broadly been in areas related to operating and managing civic services, capital investment in infrastructural projects, planning and participatory budgeting, and maintaining neighborhood security. In fact, efforts have been made to institutionalize RWAs as partners in the development process through government-led programs like the Bhagidari (or Citizen-Government Partnership Scheme) in Delhi. The RWAs have been supported not only by the government but also by private agencies and civil society. Importantly, their functioning has been restricted largely to the middle income and wealthy areas. Correspondingly, the informal settlements, which house the urban poor, are unable to exercise their voice through the same form of activism (Kundu, 2011).The opening by state government of new spaces for RWAs meant that the elected members of the legislative assembly and of the municipal government were bypassed (Lama-Rewal, 2011).

In the NCT, a majority of the RWAs are registered with the Delhi government as their Bhagidars (partners) in the Bhagidari. The RWAs are required to coordinate with a number of government departments and parastatal and civic agencies to address their day-to-day problems. As an illustration, the RWAs in Delhi need to coordinate with the DJB to resolve their problems related to drinking water and sanitation. The RWAs also help the DJB collect water bills, distribute water through tankers, replace old or leaking pipelines, and harvest water, among other services. Importantly, in Delhi, the Delhi Development Authority has been brought under the participatory framework, as the RWAs have joined with the authority to prevent encroachment and maintain community parks, common areas, and parking facilities inside the district (Kundu, 2009).

Demographic Growth of Delhi

Delhi was a fast growing urban agglomeration until 1991. The unique feature of the Delhi urban agglomeration is that it has grown by over 4 percent per annum in every decade since 1931, unlike any other metropolis. Delhi (NCT) experienced population

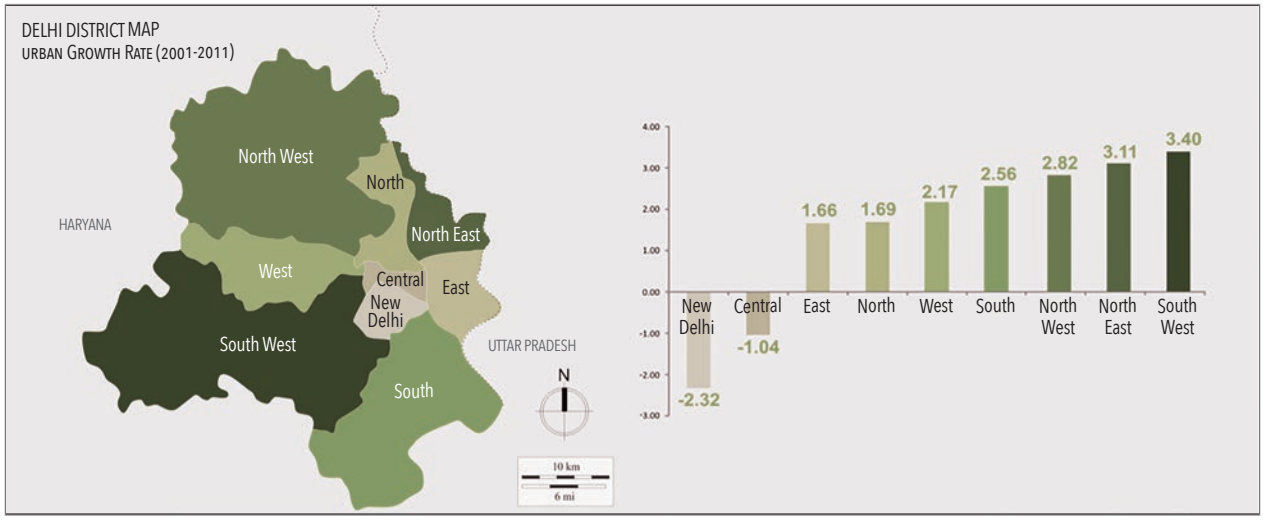
growth over 6 percent per annum during the 1941–51 period, which can be explained in terms of the influx of migrants from across the national boundaries at the time the country was partitioned. During the 1950s and 1960s, Delhi also registered high demographic growth as a result of several development projects, including residential and commercial establishments, which in turn attracted large numbers of people from across the country. The 1970s saw further acceleration in the growth of the urban population, which was maintained during the 1980s and 1990s. However, in the decade 2001–11, there was a substantial decline in annual growth rates (Kundu, 2015). Interestingly, both the NDMC and the Delhi Cantonment registered negative growth rates, indicating depopulation (Table 1).

Table 1. Demographic Growth of Urban Local Bodies in Delhi Urban Agglomeration

	Annual Exponential Growth Rates				
	1961–71	1971–81	1981–91	1991–2001	2001–11
Urban India	3.24	3.79	3.11	2.74	2.76
Delhi Urban Agglomeration	4.36	4.57	3.84	4.2	2.39
Delhi Municipal Council	4.67	4.39	3.75	2.86	1.11
New Delhi Municipal Council	1.43	-1	0.98	0.04	-1.59
Delhi Cantonment	4.63	3.96	1.03	2.8	-1.24

Source: Census of India, various decades.

Figure 1. District Population Growth Rate in Delhi, 2001–11



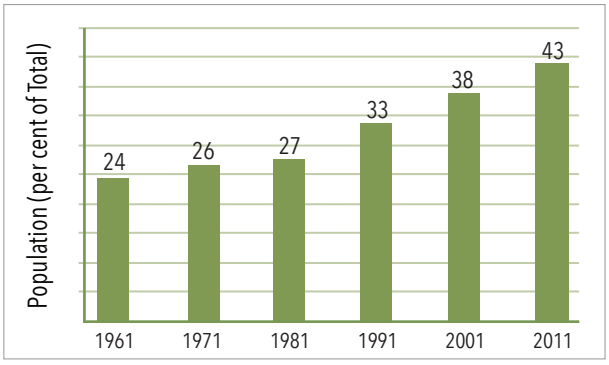
Source: Census of India, 2001 and 2011.

Understandably, this spatially differentiated growth has increased the inequality in density within the urban segment. The rapid population growth in many of the wards in the MCD, on the other hand, would have an adverse effect on the quality of the microenvironment as the already high density levels put pressure on the limited amenities. The same is true for a large number of peripheral urban and rural settlements where a dearth of basic amenities is leading to degenerated peripheralization (Kundu, 2014). Industrial dispersal, particularly of non-conforming and hazardous industries in the peri-urban area around the metropolis, has significantly altered population composition, employment, and housing conditions in the city and its hinterland (Ghani, Goswami, and Kerr, 2012).

It is important at this juncture to analyze the macro trends of urbanization in the country. India, with 377 million people living in urban areas, is an integral part of the urban transformation that the world is witnessing, although it is gradually making the shift from rural to urban at a much slower pace than other developed nations. A large number of new census towns emerged in the 2001–11 decade, which, though urban by definition, are rural by governance. There is also clear evidence that points to growing suburbanization and peripheralization.

During 2001–11, the number of metropolitan cities increased sharply in India, to 52 from 35; this is the highest increase in any decade thus far and accounted for around 43 percent of the total urban population in 2011 (Figure 2). A large part of the increase in population share of metropolitan cities is due to the emergence of new metropolitan areas. These metropolises have not been formed through the expansion of existing statutory towns, but through the mushrooming of a large number of census towns in the vicinity of existing statutory towns, resulting in urban agglomerations (NIUA, 2012–13).

Figure 2. Population of Metropolitan Cities



Source: Census of India, 2011.

The urban population grew at the annual exponential growth rate of almost 2.76 percent in the decade 2001–11 compared to 2.74 percent in the previous decade. The growth rate of metropolitan cities as a whole in was 3.95 percent in 2001–11 compared to 4.22 percent in 1991–2001. This is attributed to the reclassification of several existing statutory towns to urban agglomerations with the addition of new census towns in the vicinity of such cities.

Metropolitanization across states experienced a growth spurt during 2001–11, as more people live in metropolitan areas. The highest rise was in Kerala, where over 76 percent of the urban population and 36 percent of the total population lived in metro areas in 2011. Maharashtra, Gujarat, and West Bengal also have very high metropolitanization levels. Leaving out Odisha, which does not yet have a metro area, 11 of the 13 major states have seen a rise in their metropolitanization levels.

Among the 52 metropolitan cities in India, Delhi had the second highest population with over 16 million inhabitants (after Mumbai, 18.4 million) and a growth rate of over 2 percent per annum. The population has increased more in the peripheral areas outside the municipal boundaries of the city where the share rose from 23 percent to almost 33 percent, registering a growth rate of almost 6 percent from 2001 to 2011. By contrast, the population within the city boundary grew at an annual rate of less than 2 percent during the same period (NIUA, 2012–13).

Economic Analysis

The 74 districts that housed the 52 metropolitan cities constituted around 25 percent of the total population of India in 2011, but were estimated to contribute almost 49 percent of the national GDP. This highlights the forces of agglomeration economies and economies of scale inherent in the processes of metropolitanization.[1] The metros could be rightly called engines of growth. The productivity differentials between the metropolitan areas and the rest of urban India and of India as a whole could be gauged from the fact that, while the average monthly per

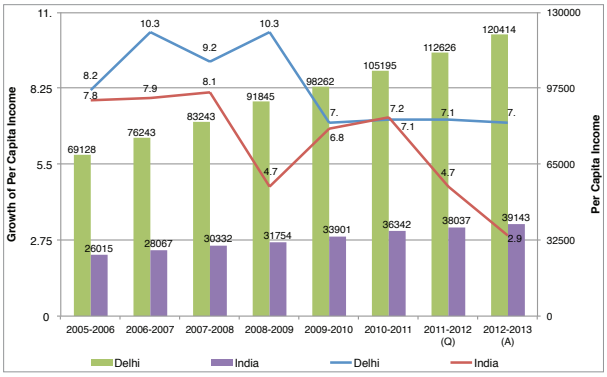
1 As city-level GDP is not available, estimations have been made for metropolitan areas based on gross district domestic product figures available. In most cases, figures for 1999-2000 and 2007-08 were extrapolated to estimate 2011 figures. No GDP figures were available for Gujarat, Jammu, or Kashmir, as such the figures were estimated by first obtaining their share by dividing it with the factor of the population share within the district; and then using the multiplicative factor of 1.774, which is the productivity differential of all other metropolitan districts relative to that of India.

capita income (per estimates of the Central Statistical Organization) at the national level was Rs.5,752 (US$85), the estimated average monthly income of the metropolitan districts was Rs.11,999 (US$176) in 2011 or around double. In sharp contrast, the monthly per capita income in Delhi was Rs.15,457 (US$227), higher than the metropolitan average.

Note that Delhi is among the top three most prosperous states and union territories in India and has emerged as the major focal point for industrial, commercial, and residential activities in the post-independence period. The growth rate in per capita annual income has been higher than that in rural areas, leading to a slight increase in the relative gap between the NCT and national figures of per capita annual income (Figure 3). In 2013–14, Delhi's per capita annual income at current prices (Rs.219,979) was three times that of India (Rs.74,380). Moreover, the income growth rate was much higher in Delhi (14 percent) than in India as a whole (10 percent). Concurrently, the percentage of people living below the poverty line in urban Delhi (which was as high as 52 percent in 1973) had declined systematically over the decades, declining to 28 percent in 1983, 16 percent in 1993–94, and 10 percent in 2011–12 (Planning Commission, 2012). The reduction in poverty was partly due to higher income growth and partly to deceleration in the number of poor moving into the NCT. The declining poverty ratio is also reflected in the lower share of slum households in Delhi, which stands at around 12 percent compared to the national share of 17 percent, according to the Population Census of 2011. The respective shares during the previous decades were 17 percent and 23 percent.

The Gini coefficient (a measure of income inequality) indicates a rising trend in inequality in Delhi (Table 2). The Gini in Delhi rose from 0.34 in 2004–05 to 0.36 in 2009–10. By contrast, the inequality in urban India increased from 0.35 in 2004–05 to 0.37 in 2009–10, while that of the metropolitan cities grew from 0.36 in 2004–05 to 0.39 in 2009–10. The figures demonstrate that inequality is increasing across the country, although levels are highest in metropolitan India.

Figure 3. Per Capita Income and Growth Trend



Source: Directorate of Economics and Statistics, Government of NCT, Delhi.
Note: Q - Quick Estimates, A - Advance Estimates.

An analysis of the workforce structure shows that the share of regular salaried workers declined in Delhi, from 61 percent in 2004–05 to 54 percent in 2009–10. This is in sharp contrast to the average of metropolitan India, where regular salaried jobs increased from 51 percent to 52 percent during the same period. The unemployment rate, which was much higher in Delhi (5.2 percent) compared to metropolitan India (3.8 percent) in 2004–05 experienced a steady decline to 3 percent in 2009–10, whereas the average unemployment rate for all metropolitan cities increased to 4 percent in 2009–10.

Table 2. Gini Coefficient: Metropolitan, Rural, and Urban India

	2004–05	2009–10	Increase
Metropolitan India	0.358	0.389	0.031
Urban India	0.348	0.371	0.023
Rural India	0.266	0.276	0.010
Delhi	0.340	0.364	0.024

Source: National Sample Survey Office (NSSO), 2004–05 and 2009–10.

Basic Infrastructure and Housing

Delhi has better accessibility to basic infrastructure on average than metropolitan India. In Delhi, 67 percent of households receive tap water from a treated source on the premises compared to 60 percent in metropolitan India. Similarly, households with a flush latrine with a piped sewer on the premises are much higher in Delhi (60 percent) compared to the average across metropolitan India (50 percent).

In Delhi, the share of households with a computer or laptop with internet is nearly two times higher than the average across metropolitan India. Similarly, the incidence of owning an asset like a TV, computer or laptop, telephone or mobile phone, or scooter or car is higher in Delhi (28 percent) than in metropolitan India (18 percent). However, the share of good quality houses in 2011 was lower in Delhi at 69 percent than other metropolitan cities in India (72 percent). This may be because a large section of the population resides in slums and informal settlements, where the quality of housing is substandard. Also, housing in the city is tight, with nearly 31 percent of the urban dwellers in Delhi residing in one room or in no exclusive room. The corresponding figure for metropolitan India during the same period was 37 percent (NIUA, 2012–13).

Devolution of Funds, Functionaries, and Functions

All Indian states have initiated the reform process committed to under JNNURM, although the status of implementation varies. Reforms like the 74th CAA, reduction of stamp duty, repeal of the *Urban Land Ceiling and Regulation Act*, rent control laws, enactment of community and public disclosure laws, among others, have been implemented in most states. But there has been slow progress in transferring functionaries and finances, and integrating service delivery functions with urban local bodies.

Additionally, most cities have introduced e-governance modules, double entry accounting systems, and earmarked funds for services to the poor, and instituted property tax reforms. But there has been moderate progress in extending these reforms to all the urban local bodies in the state. Almost all states have amended the Municipal Acts to incorporate the provisions of the 74th CAA and transfer the functions of the 12th Schedule. Eleven states have transferred these functions to urban local bodies. Almost all states devolved functions except fire services. Elections are being held regularly in urban local bodies, including those in Delhi. But, funds and functionaries continue to be a problem and there are limited efforts to transfer them. State Finance Commissions and District Planning Committees have also been constituted in all states. Metropolitan Planning Committees have also been constituted in a few cities, but are yet to become functional in most of them. Their prime responsibility is to prepare draft development plans for the metropolitan area as a whole.

Also, efforts are underway to make parastatals and other service providers accountable to urban local bodies. Parastatals like water boards were established through legislation and there is a reluctance to bring parastatals functioning well under municipal control at the city level, including Delhi.

The Indian experience clearly shows that no state government is willing to give up control of a metropolitan area. In India, the constitutional structure is a carryover from the colonial period of the Union-State-Municipality. This three-tier system based on a hierarchy of authority and responsibility may not be adequate to manage an urban agglomeration or a metropolitan area. In India, almost all of the million plus cities and their agglomerations are multi-district and multi-municipal. The state and central government agencies and departments are active in all. Moreover, all of them also have significant entities of trade, commerce, and service provision in the private sector.

When the *Delhi Municipal Corporation Act* of 1957 was amended in 2003 the unit area method of property tax calculation was introduced, along with the system of self-assessment by the tax payer. Coverage of property tax is restricted substantially due to non-collection from unauthorized colonies and rural areas (CRISIL, 2014). Also, there is significant disparity in property tax collection as the South Delhi Corporation has much higher tax coverage than the East and North Corporations.

It is essential to recognize that a metropolitan area is an intergovernmental entity. A major reason for the reluctance of state governments to devolve control over a metropolitan area is the enormous financial and political clout that urban land and therefore real estate operations carry. In spite of the constitutional amendment's 12th Schedule, which explicitly includes urban and town planning, and "regulation of land use and construction of buildings," in many Indian cities, including Delhi, these powers have not been fully devolved to municipalities.

Governance under the Smart City Mission

The NDMC is one of the urban local bodies that has been selected as a Smart City by the Government of India. The mission is envisioned to be implemented through a special purpose vehicle established as a limited company under the *Companies Act* of 2013 and promoted by the state/UT and the urban local body jointly, both of which have a 50:50 equity shareholding. The private sector or financial institutions could be considered to take an equity stake in the vehicle, provided the state and the urban local body continue to have equal shares, and that the state and urban local body retain a majority shareholding and thus control of the special vehicle. The funds granted by the central government to the vehicle will be in the form of tied grants and kept in a separate grant fund. These funds are to be used only for the purposes as planned in the Smart Cities plans and subject to the conditions laid down by the central government.

The policy guidelines specify that one of the primary reasons to create a special purpose vehicle is to ensure operational independence and autonomy in decision-making and mission implementation. The Smart City Mission encourages delegating the rights and obligations of the NDMC with respect to the Smart City project to the special purpose vehicle in addition to delegating the decision-making powers available to the urban local body under the relevant municipal legislation to the Chief Executive Officer of the vehicle. Also, it is required that decision-making powers available to the Urban Development Department or local self-government department are delegated to the board of directors of the special purpose vehicle (GOI, 2015). The vehicles, among others, are expected to determine and collect user charges as well as collect taxes, surcharges, and other duties as authorized by the urban local bodies. In such instances, there is a high probability of disempowering the urban local bodies.

Conclusion

The 52 metropolitan cities of India comprise a significant proportion of the urban population and generate high economic growth, and Delhi is no exception. Many old metropolises have witnessed decaying cores and growth beyond municipal boundaries. This phenomenon is very evident in Delhi. It is important to note that Delhi has registered a decline in the population growth rate corresponding to the national urban trend. The city has registered a decline in the share of the population below the poverty line and a concomitant increase in the per capita income, reflecting a trend toward exclusionary urbanization. The city is also characterized by high coverage of households to basic amenities and asset ownership, which reflects better delivery of services due to higher affordability and better governance structure.

Like all other metropolitan cities, Delhi also demonstrates that, because the tasks to be performed in a metropolitan area are highly varied, they require different actors and different structures. While some congruous functions like water supply, sanitation, streets, street lighting, and solid waste are grouped as municipal, many other services are inter-municipal and metropolitan wide in coverage, especially transport, electricity, rail, and air connectivity. A minimum organizational set up is necessary to bring these important agencies to a platform that can determine a metropolitan wide strategy, planning, and action. Although the National Capital Region exists as a broader metropolitan area, inter-agency coordination is essential to strengthen the governance of the Delhi metropolitan area. Also, empowerment of urban local bodies is essential to realize fiscal federalism. Finally, new urban initiatives should be implemented with caution so that they do not result in increased vulnerability of the local bodies and accentuation of intra-regional disparities. In fact, the urban development programs should seek to improve the coverage of urban basic services for all and at the same time reduce the existing disparities.

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3.14 Metropolitan Governance as a Strategy to Resolve the Mumbai Conundrum

Abhay Pethe (University of Mumbai), **Sahil Gandhi** (Tata Institute of Social Sciences), and **Vaidehi Tandel** (IDFC Institute, Mumbai)

Abstract

This chapter provides an overview of the Mumbai Metropolitan Region. It describes the various public and private organizations involved in extended public goods provision and the functions they undertake within the context of a three-tier federal system. The chapter further analyzes the major issues faced in providing public goods, including affordable housing within the region. In particular, the analysis focuses on the reasons for the lack of coordination in resolving inter-jurisdictional problems, the conflicts that arise due to political and jurisdictional fragmentation that preclude true polycentricity, and, most importantly, the lack of reform in relevant policies. The chapter then makes relevant policy recommendations and highlights the importance of having a metropolitan level government for Mumbai, delimiting its domain in terms of discharging functions that are best undertaken on a regional scale with the necessary finances and functionaries. The authors argue that such strategies would enable the region to function smoothly as a common labor market, thus reaping agglomeration efficiencies.

Mumbai has always been the financial capital of India. Over the years it has witnessed considerable growth in population and an expanding economy driven first by the textile and manufacturing sectors and later by the financial and commercial services sectors. The growth of cities has been accompanied by the two opposing forces of agglomeration and congestion (Ellis and Roberts, 2016). For sustainable growth and development it is imperative to keep the congestion forces in check while ensuring that growth translates into the creation of livelihoods. In Mumbai, unimaginative and downright bad policies related to planning, housing, and transport have contributed to the rise in congestion. Land markets in the city are unadaptive and restrictive, leading to the proliferation of slums and unauthorized development in the peripheries. As a result, the city has become unattractive to investors and has been gradually losing out to other metropolises in India. Realistically, it is doubtful whether the many issues leading to a conundrum can be resolved within the city limits. Concomitantly, the dispersion of industries, commercial centers, and residential populations outside Mumbai and within the Mumbai Metropolitan Region (MMR) has resulted in strong economic linkages and a unified labor market at the regional level. The region as a whole has become an economic entity. An additional reason to use a regional lens is to effectively deal with environmental issues that have implications at the regional level. Therefore, any long-term strategy to improve Mumbai's competitiveness and ensure sustainable development must focus on the MMR. This requires the coordination of policies and investment plans, and joint or consolidated provision of certain public goods at the metropolitan level. Getting the governance of MMR right is critical for this to happen.

This chapter has six sections including the introduction. The second section provides an overview of the demographics and economy of MMR. The third describes the extant governance structure and the fourth highlights the outcomes of this system. The fifth section outlines some recommendations for reforms and the sixth concludes.

Overview of the Mumbai Metropolitan Region

The MMR was formally recognized in 1973 after the approval of the Government of Maharashtra.

It has a geographic area of 4,354 square kilometers and comprises the districts of Mumbai and Mumbai Suburban—together Greater Mumbai—as well as parts of the Thane, Raigad, and Palghar districts, which contain both urban and rural areas. The region is one of the largest in the country in terms of population and has a thriving economy that contributes significantly to both the state of Maharashtra and India as a whole. According to the 2011 census, the population of MMR was approximately 22 million. Table 1 provides the total population and population growth rate for MMR and the primate city of Greater Mumbai, as well as the share of Greater Mumbai's population in MMR since 1971.

Greater Mumbai's population growth rate has slowed down and was only 4 percent in 2011, indicating population stabilization. In fact, Mumbai city saw a decline in population and the Mumbai suburbs witnessed a deceleration in population growth, both of which contributed to the downward trend in Greater Mumbai's population overall. The growth rate of MMR's population has also declined steadily but is still much higher than that of Greater Mumbai. The share of Greater Mumbai's population in MMR has fallen from around 77 percent in 1971 to 57 percent. These trends indicate that the population growth in MMR is mostly taking place outside of Greater Mumbai.

Table 1. Population Growth in Mumbai and MMR

Geographical Area		Year				
		1971	1981	1991	2001	2011
Greater Mumbai	Population (millions)	5.971	8.243	9.926	11.978	12.478
	Growth Rate (%)	—	38.05	20.42	20.67	4.17
MMR	Population (millions)	7.778	11.078	14.534	18.893	22.0
	Growth Rate (%)	—	42.43	31.2	29.99	16.45
Greater Mumbai population/ MMR population	Percent	76.77	74.41	68.30	63.40	56.72

Source: Adapted from Gandhi, 2014.
Note: Estimates from the 2011 census figures are based on provisional populations of municipal councils and municipal corporations.

Much of the incremental growth has taken place outside Greater Mumbai. There are large areas of land within MMR that have witnessed no development. This is largely because these areas are protected and their development is prohibited. The rise in population over the years has likely been due to strong economic growth that led to in-migration, and the sprawl can be attributed to the changing location of new workplaces within the region.

Until the 1980s, most of the economic activity and employment generation took place within Greater Mumbai. The manufacturing sector thrived in the city. The dominant industry at that time was textiles, which provided employment to thousands of workers in the textile mills. After the decline of the textile industry and the opening up of the economy, the financial sector and businesses prospered in the southernmost area. Over time, commercial and other economic activity expanded northward to the former mill areas in Lower Parel and the Bandra Kurla Complex—a special planning area created by the Mumbai Metropolitan Development Authority designed for businesses and corporate offices—as well as the suburban districts of Andheri. Many businesses later also relocated outside Greater Mumbai to the city of Navi Mumbai and the region as a whole gained economic significance. In 2010-11, MMR's economy comprised 33 percent of Maharashtra's GDP and contributed over 4 percent to India's economy. For the same year, Greater Mumbai's share in MMR's economy was 65 percent. While Greater Mumbai continues to dominate MMR's economy, it has been on the back of the services sector, whereas manufacturing and industrial activity has been growing just outside the city. These activities

are located in areas developed by the Maharashtra Industrial Development Corporation and the City and Industrial Development Corporation, as well as in cities such as Navi Mumbai. With the population increasingly residing in and around the city and economic activities concentrating in diverse locations, the region as a whole can be construed as an integrated labor market.

MMR's Existing Governance System

Enid Slack (2007) describes the governance framework in MMR as a one-tier fragmented structure. A number of public organizations are involved in meeting the public goods and service requirements of the population and infrastructure needs of the private sector within the region. The governance structure is complex and has evolved both as a result of changes in the federal system in India and as a response to the need for public goods and services to meet emerging requirements of the region's population (Pethe, Gandalf, and Tandi, 2011, 2012a, 2012b). At present it comprises organizations at the local, state, and central levels, with overlapping jurisdictions, performing various functions. At the local level, basic public goods and services are provided by urban local bodies and rural local bodies, which carry out functions mandated under the 74th and 73rd Constitutional Amendment Acts, respectively. In MMR, there are 17 urban local bodies, of which eight are municipal corporations and nine are municipal councils. The Municipal Corporation of Greater Mumbai (MCGM) is the oldest and largest of the urban local bodies, with the rest having been created over time by amalgamating villages or smaller towns and urban areas as the population in these places grew (Tandel, 2014). All urban local bodies undertake land use planning within their jurisdictions.

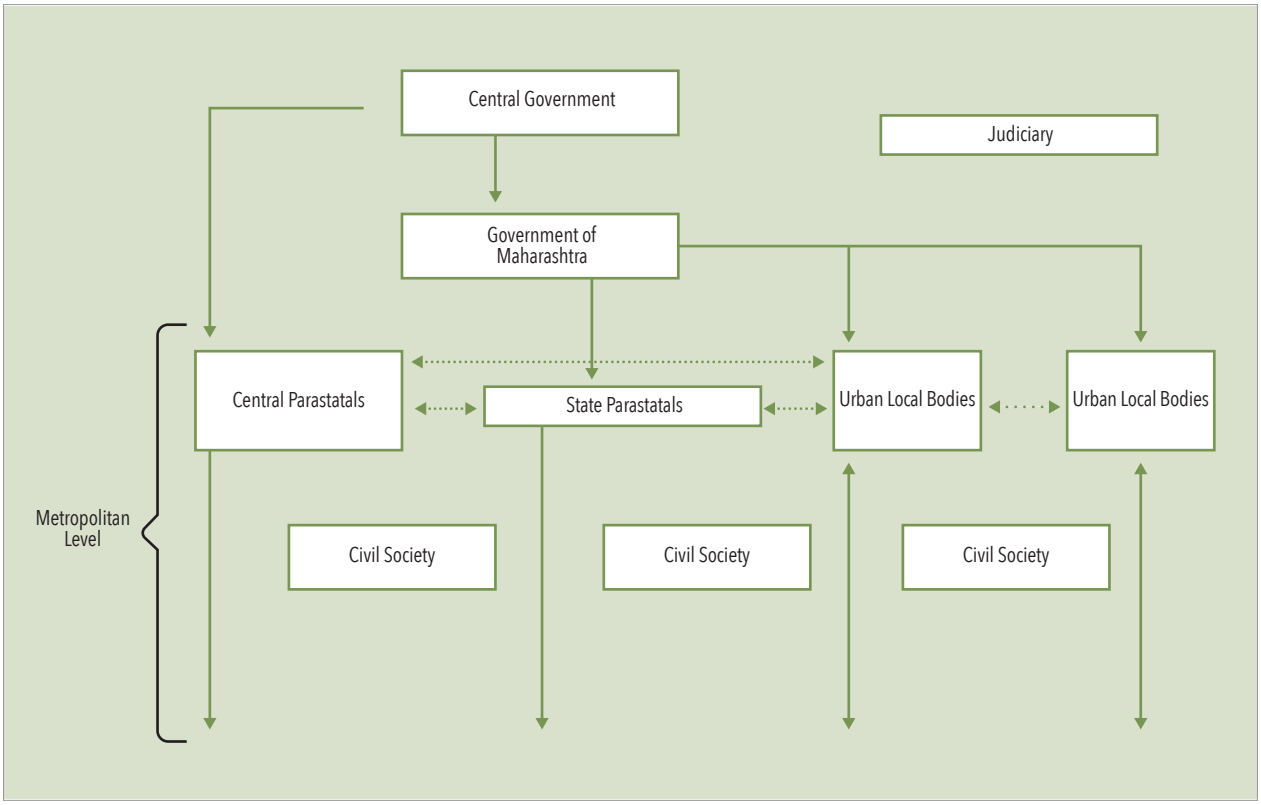
Besides local bodies, a number of state and central government parastatals are also involved in providing infrastructure such as transport and water. These parastatals belong to the respective departments and ministries within the state and central governments. The largest parastatal within MMR is the Mumbai Metropolitan Region Development Authority (MMRDA), created in 1975 to undertake planning for the region. The authority is also involved in developing special planning areas within the region, such as the Bandra Kurla Complex, and in many large infrastructure projects. Other significant parastatal bodies include the City and Industrial Development Corporation (formed in 1970), Maharashtra State Road Development Corporation (founded in 1996), and the Maharashtra Housing and Area Development Authority (established in 1977). These parastatals provide transport infrastructure, affordable housing, planning, water supply, and other goods and services. The Mumbai Port Trust, Mumbai Rail Vikas Corporation, Railway Board, and Zonal Railways are some of the important central parastatals operating within the region and providing transport. These local, state, and central level organizations undertake most of the public investments in the region, for which they raise revenue through a number of mechanisms. Pethe (2013) estimated that public investments by urban local bodies comprised approximately 45 percent of the total between 2005 and 2008. The remainder came from state and parastatal institutions.

The 74th Constitutional Amendment Act (1992) specified the creation of Metropolitan Planning Committees (MPCs) for metropolitan regions within India in order to undertake regional planning and coordinate other functions at the regional level. These MPCs are to comprise ministers from the state government, councillors from urban local bodies, and other officials to undertake regional planning and facilitate coordination of service delivery at the regional level (Pethe, Tandel, and Gandhi, 2014b). Accordingly, an MPC was created for MMR in 2008. Figure 1 illustrates the governance system in the MMR.

The presence of a number of public organizations with overlapping jurisdictions and functions lends a polycentric character to the governance of MMR. Polycentric governance refers to a system where there are "many centers of decision making that are formally independent of each other" (Ostrom, Tiebout, and Warren 1961, p.831). According to Ostrom et al. (1961), the functioning of a polycentric system of governance can be assessed on the basis

of the nature of cooperation, competition, and conflict resolution that exists within the system. In an efficiently functioning system, the complementarity of providing goods and services elicits cooperation among the organizations involved in providing for mutual gain; substitutability of goods or services results in competition, creating a quasi-market situation that benefits citizens; and conflicts among various organizations are resolved through institutionalized mechanisms. In the next section, the authors show that Mumbai's governance system is only ostensibly polycentric.

Figure 1. MMR's Governance System



Source: Pethe, Gandhi, Tandel, et al., 2012a.

Regional Outcomes and Conundrums

In order to evaluate the current system of governance in MMR, it is useful to examine whether cooperation, competition, and conflict resolution exist in delivering goods and services that are best provided at the regional level, namely transport, affordable housing, and planning. Given that the region is an integrated labor market, people tend to commute long distances across cities and towns within the region (Gandhi and Pethe, 2016). As locations of economic activities change with transformation in an economic production structure, so do travel patterns. The inter-jurisdictional nature of transport requires transport strategies to be undertaken on a regional scale. Further, when a metropolitan region is considered a labor market, housing policies need to be formulated at the regional level. Misguided policies governing real estate development result in housing becoming unaffordable within the city. Mumbai is infamous for misguided policies related to land and housing, such as an extremely low floor space index (FSI, Bertaud, 2004), stringent rent control (Tandel, Patel, Gandhi, et al., 2016), and poorly designed slum rehabilitation schemes. This in turn leads

to informal housing and sprawl as new homebuyers find affordable housing in the peripheries. Having affordable housing policies at a regional level allows for the planning of appropriately (spatially) designed transport networks, which would significantly reduce travel times. Plans adopted by urban local bodies within the region often have spillover effects outside their jurisdiction. Peri-urban areas lack proper policies and planning, which results in haphazard development and an under-provision of public goods (Tandel, 2016). Regional planning would mitigate externalities and regulate development in peri-urban areas. In addition, regional planning helps to articulate a vision for the region as a whole and strategies and investment plans for attaining this goal. Such regional planning, when integrated with transport planning and affordable housing, would allow the region as a whole to reap agglomeration economies.

Transport Planning

A plethora of public authorities are involved in providing transport in MMR on different scales. The port trust authorities, highway authorities, airport authorities, and railway authorities, which are all central parastatals, provide connectivity between MMR and the rest of the country as well as the rest of the world. The suburban railway system managed by the regional arm of the Indian railways is perhaps the most important transport network used by people to commute large distances within the region. The Maharashtra State Road Development Corporation and the MMRDA are some of the major state level parastatals involved in developing roads and other large-scale transport projects, including a metro railway system within the region. MCGM, Thane, and the Navi Mumbai Municipal Corporation maintain roads and manage local bus transport within the respective cities.

These organizations invest in transport infrastructure and carry out specific projects unilaterally, without any inter-organizational coordination or consideration of their implications for the sustainability of the region as a whole. In 2008, the government of Maharashtra created the Unified Mumbai Metropolitan Transport Authority (UMMTA) on the recommendation of the National Urban Transport Policy to integrate and coordinate the various transport-related functions being undertaken in the region. However, UMMTA has not been given adequate powers to carry out functions or enforce its decisions and as a result has not been able to fulfill its mandate. Furthermore, the overlap in transport functions has resulted in conflicts between organizations controlled by different agencies within the government. Pethe, Tantel, and Gandhi (2012b) describe how implementing the Mumbai Trans Harbour Link project faced considerable delays and cost escalations because of disagreement between the state parastatals MMRDA and Mumbai State Road Development Corporation for control over the project. In another instance, a road that was being maintained by MMRDA was abruptly given to MCGM to maintain, causing congestion and resulting in officials from MCGM criticizing the state parastatal for its actions (Pethe, Tandel, and Gandhi, 2011).

Urban Planning and Shortage of Affordable Housing

As with transport, there are a number of actors involved in land use planning within MMR. The Special Planning Areas or New Town Development Areas are planned for and developed by parastatals such as MMRDA and the City and Industrial Development Corporation. These areas are located within existing local bodies and cover either small pockets, such as the Bandra Kurla Complex, or the entire district of the local body. Local bodies that lack the capacity, rely on state parastatals for planning. All planning authorities create their own vision plans, land use plans, and development control rules with no dovetailing of plans at a regional level.

As seen earlier in this chapter, population and commercial growth is on the rise within the city of Greater Mumbai as well as the rest of MMR. This has resulted in increasing demand for land and real estate. However, land supply available for sustainable

growth depends on regulatory policies that are in place. Unfortunately, policies governing land supply have been restrictive and uncoordinated.

One of the most important policy instruments used within MMR to regulate supply is the FSI, which is the ratio of the buildable area to the total size of the plot; a higher FSI allows for a more built-up area. Within Greater Mumbai, the allowable FSI is determined by the MCGM and needs to be approved by the state government. The MCGM has capped the FSI at unreasonably low levels uniformly across the city. At the same time, it has created regulations that grant additional FSI at a premium tied to specific purposes or functions but which have little regard for the carrying capacity or infrastructure availability in the area in which it is carried out. The local government has been able to raise substantial revenue using this mechanism, which has resulted in the abusive transformation of what is essentially a planning tool into a fiscal one (Gandhi and Phatak, 2016). This is also true for other cities in MMR, like Vasai Virar. The MMRDA, which is a special planning authority for certain areas within Greater Mumbai, has its own policies that allow an FSI of up to 5 in the Bandra Kurla Complex area (the new business district in Mumbai). These are not in accordance with MCGM's policies.

There is ongoing debate about the effects of reforming the FSI policy on development in Mumbai. Alain Bertaud (2011) argued that, given the high land prices in Mumbai, the city should have a much higher FSI. Bertaud also compared the FSI levels in Mumbai to other cities in the world, showing that Mumbai has among the lowest FSIs in the world. Patel (2013) countered that such a comparison is incorrect and that Mumbai's high level of density and crowding is comparable to cities with higher FSIs. Patel further stated that any upward movement in the FSI (especially in poorer areas) will worsen this situation.

Another important issue is the mismanagement of public lands and the presence of vast tracts of land that have been demarcated as no development zones. A large proportion of MMR territory is owned by public authorities and is inefficiently managed, including being kept vacant (Pethe et al., 2012a). This thwarts attempts to leverage public lands to raise resources using land-based financing mechanisms.

All these factors make land markets unadaptive to regional needs and lead to chaotic regional housing outcomes. The most prominent among these is the distortion in real estate markets resulting in soaring land prices, which in turn means housing is unaffordable for many in the city (Gandhi, 2012). As a result, many households have sought a solution to the housing problem in slums. A second major issue is unauthorized development, meaning real estate construction that violates regulations. These developments differ from slums in that they look formal and presumably meet better construction norms (Pethe, Nallathiga, Gandhi, et al., 2014a). There have been reports of illegal construction in Navi Mumbai within MMR, which puts homebuyers at risk (Chaudhari, 2016). This unauthorized development is carried out not only by private developers but also by public officials. The Adarsh Society Housing Scam brought to light the manner in which bureaucrats, politicians, and other public officials have been involved in grabbing prime real estate property within Mumbai through illegal means (Tandel, Gandhi, Libeiro, et al., 2014).

Over the years, the state government has tried a number of measures to tackle the issue of slums, including creating a Slum Rehabilitation Authority to provide housing to people living in slums and formulating policies to create incentives, such as granting additional FSI to private developers to build affordable housing for the poor and providing public housing for low income groups. However, these measures have had limited success. A housing policy and action plan announced by the state government in 2015 set a target of providing 1.1 million houses within MMR by 2022 to ease the acute shortage in housing. The state government sought to deal with the problem of unauthorized development by proposing a policy that regularized all illegal construction that was built before December 2015. However, the judiciary dismissed the plan on the grounds that no impact assessment of the policy had been carried out and that it was in violation of the law. What is lacking is a strategy to address the housing problem at the regional level.

Metropolitan Public Finances

(This section is based on Pethe, 2013.)

Pethe (2013) argued that the region makes a significant contribution to the state and central governments' exchequers in the form of tax revenue as well as comprising a considerable share of the state's GDP. This ought to create a stake for these governments to make considerable investments in the region and ensure that it grows sustainably.

Urban local bodies and parastatals undertake much of the public investment in infrastructure in the region. However, barring MCGM, the revenue raising capacity of urban local bodies is deficient and capital expenditures are low. Most urban local bodies have been unable to raise revenues through property taxes, or through other tax and non-tax sources, and thus they rely on grants from the state and central governments. Further, they lack the borrowing capacity to finance infrastructure development. As a result, much of the large-scale infrastructure is provided through investments made by the state parastatals. However, funding through centrally sponsored schemes like the Jawaharlal Nehru National Urban Renewal Mission and loans from multilateral agencies to various public organizations also contribute to total public investments. Increasingly, investments in infrastructure are being attempted through public–private partnerships; however, the experience with such partnerships has been disappointing due to a trust deficit between parties, a lack of capacity on the part of the government, and a lack of enabling policy and regulatory framework. Hopefully, the Vijay Kelkar Committee Report that is reviewing public–private partnerships will overcome the current impasse (Government of India, 2015).

The overall picture of public investments reveals a shortfall in finances to meet both the backlog and future infrastructure needs of the region. This situation must be addressed not only through effective decentralization (Pethe, Mishra, and Rakhe, 2009) or by tapping new sources of finance, such as leveraging public land and developing the municipal bond market, but also through better coordination of investment strategies used by different agencies to make the most effective use of limited resources.

Absence of Cooperation, Competition, and Conflict Management

Throughout this chapter the authors have demonstrated that there are a number of public organizations operating within the region with overlapping functions and jurisdictions. One of the major elements of the conundrum has been why organizations do no cooperate with each other when there are clear gains to be made from doing so. By contrast, in São Paulo, Brazil, voluntary cooperation among municipalities to provide services jointly is common (Wetzel, 2013).

There have been almost no joint projects undertaken by multiple authorities cooperatively. One exception is the STEM Water Authority, which was created as a result of a memorandum of understanding between the municipalities served by the Shahad Temgar Water Works. This MPC, which is specifically mandated to ensure coordination at the regional level, was created in 2008 only after the courts directed the state government to form it (Gandhi and Pethe, 2016). However, the MPC has neither the necessary means to raise finances nor the specialized personnel to undertake its functions. As a result, it has remained powerless and has been overshadowed by the MMRDA.

Pethe, Gandhi, and Tandel (2011) showed how having different political parties in power at different organizations is detrimental to cooperation. Further, they demonstrates how organizations at the state level are reluctant to devolve power to local bodies for fear of losing control over the region. These situations create a power struggle that undermines cooperation and leads to conflict. Although such conflicts are common and have costly consequences, there is no institutional mechanism to resolve disputes among various organizations. In other words, instead of competition and healthy checks and balances, the governance system has resulted in increasing disputes. Thus, polycentricity in its true sense is not operational in Mumbai (Pethe, 2012b).

Recommendations for Reform in Governmental Set Up

(This section is based on Gandhi and Pethe, 2016.)

It is evident that polycentricity in its true sense is non-existent in Mumbai region. There are two ways to proceed. The first is to strengthen polycentric governance. Polycentric governance is a system with multiple actors with overlapping functions and jurisdictions existing at multiple levels. Such a system, it is argued, allows for cooperation among public organizations as well as efficiency-enhancing competition that benefits citizens in terms of improved delivery of public goods and services. Strengthening polycentricity requires both improving coordination between organizations and fostering competition. It also requires re-evaluating the role of the MPC. The second option would require a two-tiered system of metropolitan governance, comprising urban and rural local bodies on the lower tier and a metropolitan body on the upper tier. Given the current stage of development, capacities, and political economy realities, the latter would be more suitable for the Mumbai region. This type of restructuring is not uncommon and has a precedent in the metropolitan governance structures of London and Toronto. In recent times, there has been some deliberation on the type of governance structure and governing bodies that metropolitan regions need. One suggestion has been to create Metropolitan Councils as an alternative to MPCs. For such a two-tier metropolitan governance system to succeed—and not be an exercise in replacing one ineffective body with another—it must satisfy the conditions discussed in the next three paragraphs.

Functions such as planning transport and the metropolitan region, and providing infrastructure that enjoy scale economies must be assigned to the governing authority at the metropolitan regional level of Mumbai. Metropolitan planning will involve articulating a vision and specifying goals, such as sustainable growth, inclusivity, improving competitiveness of the region, and formulating policies for investments, the environment, land use, and housing so that these goals are attained.

Political power must be vested with the governing authority. This will be ensured by having directly or indirectly elected members (at least the mayor) constituting the body. Along with political power, it would require a competent bureaucracy that is immune from the influence of state governments.

Finances and executive power must be given to the governing authority. According to Bahl, Linn, and Wetzel (2013), any innovative decisions regarding finances at the metropolitan level must recognize the existing governance structure and forms of public finance. For Mumbai, building on the financing mechanisms currently being used by metropolitan authorities, some of the most important revenue sources for the metropolitan governing body would be land-based financing tools and user charges. The governing authority could also leverage lands that are owned by public bodies to finance infrastructure. Finally, it must be granted sufficient autonomy, albeit with some safeguards, to raise resources to finance infrastructure through borrowings. Operational efficiency will require that metropolitan governments are also assured a certain amount of resources by way of grants that are devolved in a formulaic or predictable manner.

Thus, whereas a polycentric structure of government appears rather attractive, at the current juncture, a two-tier setup with clear mandates and funding mechanisms delineated between both tiers would be more pragmatic.

Conclusion

This chapter critically examines metropolitan governance in Mumbai. It flags some of the conundrums that arise due to the nature of the governance system. It then articulates an agenda to reform the present system of ostensibly polycentric governance to a two-tier setup with functions, financial, and executive powers, and functionaries clearly delineated between the local and metropolitan levels. This is a departure from the ideal of home rule or jurisdictional fragmentation, which advocates for organizing local public goods and service delivery at the lowest possible level (Bahl,

2013). Instead, this system would require some form of limited centralization, albeit at the regional, not the state, level. The case for favoring this set up over polycentricity for Mumbai is made from a transaction costs perspective. Gandhi and Pethe (2016) argued that a transition from the existing system to a polycentric system would involve significant transaction costs (as entrenched systems of bureaucracy and organization of government across various departments along with the institutional setup will have to be replaced) that may outweigh the benefits. But there is no denying that empowerment and strengthening of city governments is absolutely essential, especially because the authors are arguing for metropolitan level government, which may be seen by many as usurping the powers of local governments.

The success of the proposed reforms would depend on its acceptability and passage through the political economy filter. The main contribution of the chapter is to provide potential learning of two kinds. First, resolving the issues—such as the absence of cooperation between different public organizations and the lack of institutional mechanism to resolve disputes among various organizations—by reforming the extant metropolitan governance structure. Second, avoiding making the same mistakes as more metropolises emerge in India.

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3.15 Seoul: Vertical and Horizontal Governance

Myounggu Kang (University of Seoul)

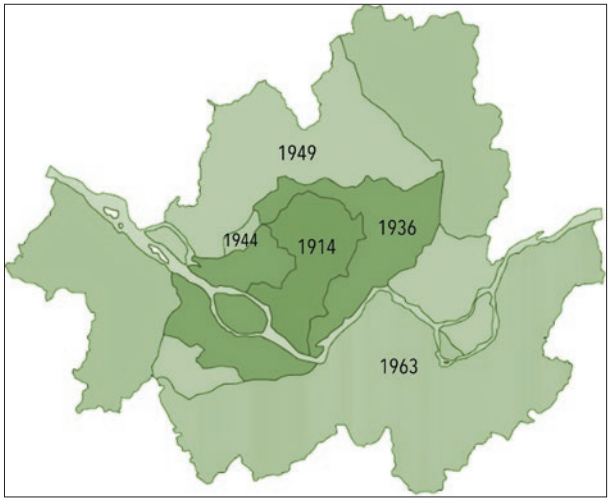
Abstract

As an urban area grows, it expands beyond its formal administrative boundary. This expansion can be seen in many cities around the world, not only in developing regions. "The administrative boundaries of cities no longer reflect the physical, social, economic, cultural or environmental reality of urban development and new forms of flexible governance are needed" (EU, 2011). As Seoul Metropolitan Area (SMA) grew from approximately 2 million inhabitants in 1960 to 20 million in 2000, it confronted various multi-level, multi-city issues that must be solved to achieve sustainable urban development. This chapter discusses SMA's experiences with three multi-level, multi-city metropolitan issues: urban planning, solid waste management, and water management. Especially in the explosive growth of the early urbanization phase, vertical coordination—led mainly by central government working with local and regional governments—was required and effective in solving metropolitan issues. As the urbanization matures, local and regional governments can resolve many metropolitan problems through horizontal coordination, or between governments, instead.

Today, the dwellers of towns and cities and their neighboring rural areas move across administrative boundaries for life, work, and play within a daily urban life system. This large geographic agglomeration forms a functional urban area, or a metropolitan area. The administrative boundaries of cities no longer reflect the physical, social, economic, cultural, or environmental reality of urban development. In order to make life easier for the inhabitants, a type of metropolitan governance is needed that enables neighboring municipalities to collectively organize traffic and transport, spatial planning, housing, green space, environmental substantiality, and the economy on an appropriate scale.

At the same time, as a geographic agglomeration expands, urban environmental health becomes affected more by neighboring people, businesses, and municipalities than before. Environmental issues are threats to human welfare either now or in the future, and include inadequate water and sanitation, air pollution, inadequate waste management, and pollution of rivers, lakes, and coastal areas. They also include ecological disruption and resource depletion, and emissions of harmful chemicals and greenhouse gases. A city's environmental burdens can arise from activities outside its boundaries and affect people living in the city. This is another reason for metropolitan or regional governance on an appropriate scale.

Figure 1. Expansion of the Administrative Boundary of the City of Seoul, 1914–63



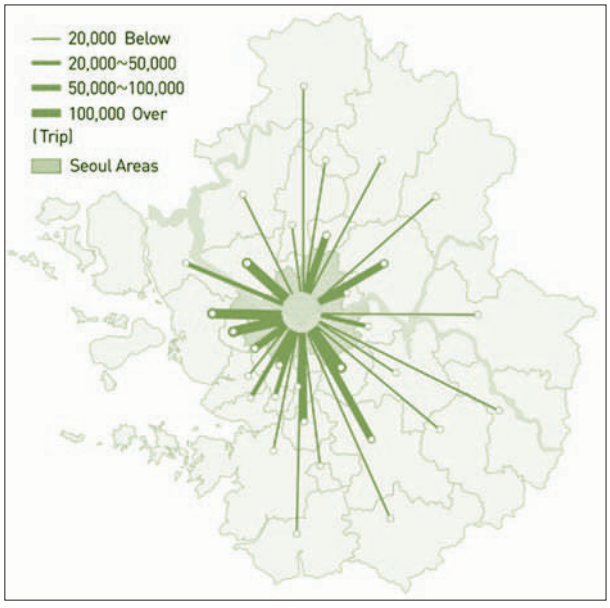
Source: SMG, 2016.

As cities, towns, and rural regions of Seoul Metropolitan Area (SMA) are not free from each

other's planning and development process, there is a need for metropolitan governance for integration and coordination over the metropolitan area. The experience of SMA established two types of metropolitan governance. One is vertical, integrating municipalities' planning under higher or regional planning, even under national planning, and focuses on vertical integration or top to bottom governance. The other is horizontal metropolitan governance, which focuses on coordination and collaboration between municipalities. The former emerged during the rapid urban growth period when the municipalities were not yet established; the latter arose as the urbanization process matured and expansion stabilized.

For example, the traffic volume of all trips to Seoul from the neighboring cities and towns rose from 7 percent in 1980 to 24 percent in 2006. There was a seven-fold increase in people making trips from the neighboring cities and towns to Seoul from 142,000 to 1,057,000, which shows that residential areas have steadily expanded. Seoul and neighboring cities, towns, and rural areas has become one functional urban area.

Figure 2. Commuting Traffic to Seoul, 2006



"Cities are made of stones, rules, and people" (UN-Habitat, 2013). A metropolitan area needs to build a metropolitan infrastructure, including water, energy, transportation, sanitation, waste, and public spaces, all of which were once managed independently by each city. Infrastructure touches the life of every person in a metropolitan area: from turning on the taps, to traveling to work, to turning on the lights, to heating a home in winter, to garbage disposal. Infrastructure also increases the effective functioning of a city to be productive and competitive, and decreases its impact on the environment.

This chapter reports on the practical experience of governance in SMA. Especially with the drastic growth during the last half century, SMA desperately needed to develop and supply urban land and public space to meet the explosive demand, enhance water quality and prevent flood damage, and reduce and manage solid waste.

Territorial Planning System and Seoul Metropolitan Area Planning

Over the last half century, the Republic of Korea (simply called South Korea) experienced explosive population growth and dramatic urbanization. The population of South Korea more than doubled, from approximately 20 million in 1960 to 50 million in 2010, while urbanization rose from 39 percent in 1960 to 88 percent in 2000.

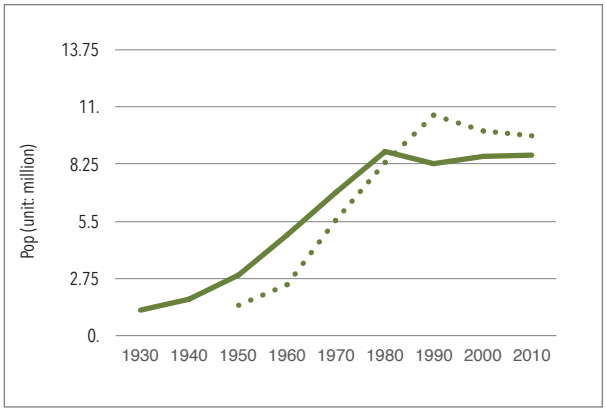
The population of Seoul increased from 1.6 million in 1955 to 2.5 million in 1960. As urbanization and industrialization accelerated, Seoul's population reached 5.4 million in 1970, 8.4 million in 1980, and 10.6 million in 1990. With the continuous influx of people, Seoul had to provide urban land and infrastructure for 270,000 new citizens every year on average for 30 years from 1960 to 1990. Sudokwon's—the Capital Region, which includes Seoul, Incheon, and Gyeonggi provinces—population also increased sharply from around 4 million in 1950 to over 23 million in 2010. Sudokwon's population share reached almost half of the national population although its land share remained at less than 12 percent. The comparison with Mexico City, which experienced similar population growth over the same period, is

illustrative. The two cities look substantially different today, implying that sustainable cities depend on the right planning.

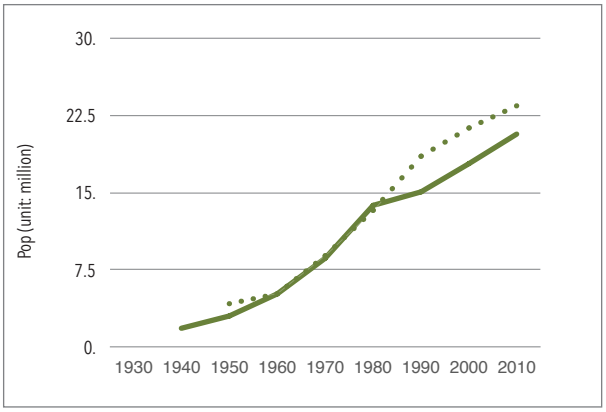
The rapid expansion of Seoul and SMA, as well as national population growth and urbanization, became an agenda for sustainable development in Seoul and South Korea. This was not a single city issue, but rather a regional and national sustainable development concern that required national government planning and implementation.

Figure 3.

Population Growth of Seoul
(compared with Mexico City)



Population Growth of SMA
(compared with Mexico City MA)



Source: Molina, 2002; Seoul Institute, 2014; Author's calculations.

South Korea's vertical territorial planning system from nation level to city level, which was developed together with government-led economic development policies, played a critical role in areas such as land and environmental management, infrastructure supply, urban development and urban land supply, housing supply, and resource management. Territorial plans have responded to the urban, regional, and national issues along the course of South Korea's socioeconomic development. This spatial planning contributed to the sustainable development of cities and South Korea as a whole.

According to the *Comprehensive National Territorial Development Plan Act* (1963), Comprehensive National Territorial Development Plans have been established at an interval of about a decade since the first plan (1972–81), the second (1982–91), and the third (1992–99). The legislation was revised as the *Framework Act on National Territory* (2002) and the name of the plan changed to the Comprehensive National Territorial Plan. The 4th Comprehensive National Territorial Plan extends from 2000 to 2020.

The territorial planning scheme is characterized by a layered structure: the Comprehensive National Territorial Plan, the Comprehensive Provincial Plan, the Comprehensive City level Plan, as well as the Regional Plan for specific regions and the Sector Plan for specific segments of the economy.

The *Sudokwon Readjustment Planning Act* was introduced in 1982 to manage the capital region. It contains regulations regarding constructing universities, factories, public complexes, and other large buildings; developing land for industrial and housing purposes; and locating for specific districts (e.g., those which have measures in place to curb overcrowding, those with measures to manage growth, and nature preserves).

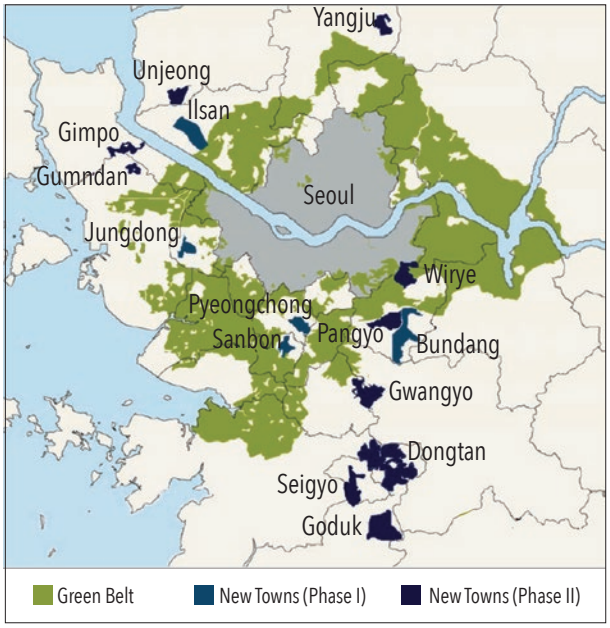
The Sudokwon Development Plan is prepared in accordance with this legislation. The plan is a comprehensive, long-term strategy that sets forth the fundamental principles for the basic direction of development or improvement projects in Sudokwon, the physical distribution of people and industries, and the construction of infrastructure in the area. The Sudokwon Development Plan takes precedent

over other laws and regulations in place in the area, including various land use and development plans. In fact, it forms the basis of those laws and regulations. The Ministry of Land, Infrastructure, and Transport develops a draft plan and submits it to the Sudokwon Development Plan Committee (chaired by the Prime Minister), which deliberates and approves the plan.

As the importance of urban planning was emphasized in the early 1960s, the central government established the urban planning bureau in the City of Seoul in 1961, and then enacted the *Urban Planning Law and Building Codes* in 1962. As the population was expected to grow up to 5 million in 1980, the administrative boundary of Seoul was doubled for new urban land in 1963 by annexing the southern area of the Han River (although the additional 5 million was reached by 1969 and the population continued to grow). This was followed by the central government and Seoul city government's 10-year Urban Development Strategy, announced in May 1965, and the Seoul Metropolitan Area Master Plan in 1966. The plan emphasized sustainable development with increasing population, including a proposed greenbelt that would limit sprawl, and seven new towns located outside of the then Seoul boundary, which would accommodate 3 million additional citizens over the coming decades. Each new town was planned to hold between 300,000 and 800,000 people.

The available land large enough for additional population was nearly exhausted within Seoul, causing the population to expand beyond the greenbelt. Faced with limitations in land supply for urban development within Seoul, the central government planned to build an additional five new towns outside the city. In 1989, the central government began to construct these new towns—Bundang, Ilsan, Pyoungchon, Sanbon, and Jundong—outside of Seoul, where new developments could easily connect to existing urban infrastructure and new residents could commute to Seoul within an hour. The land size of each new town ranged from 4 to 20 square kilometers and the target population size ranged from 170,000 to 390,000 people. The total new land area was 50 square kilometers and the total target population was 1.2 million people.

Figure 4. New Towns Outside of Seoul in 1990



Source: SMG, 2009.

Vertical integration was inevitable, effective, and efficient not only because central government was the appropriate body to address the national scale rapid and massive growth and urbanization, but also because provincial and city governments were then too weak to assume such responsibility in terms of capability and budget. Central government was the driver before decentralization.

As South Korea developed, local voices required decentralization and autonomy. Decentralization took effect in earnest from 1995, and mayors and local assembly members were elected. Later the responsibility and authority for planning were transferred to local governments for them to develop their own master and implementation plans. Now metropolitan-wide issues are governed mainly by collaboration among related municipalities.

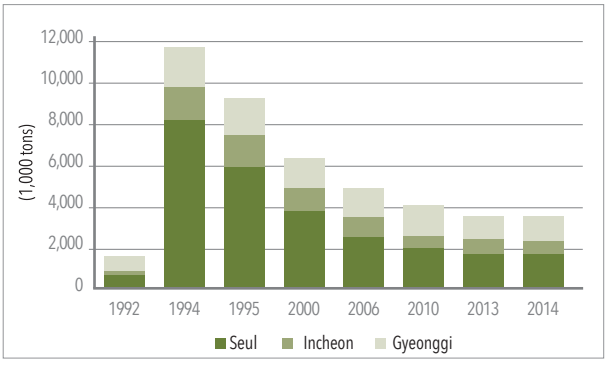
Solid Waste and the Sudokwon Landfill Site

The Sudokwon Landfill Site (SLS) Development Plan was established in 1987, initiated by the central government.

The volume of waste generated in SMA at that time accounted for 58 percent of the waste generated nationwide. This figure was increasing at a rate of 5–6 percent per annum, making it a national problem rather than the concern of any individual municipality. Therefore, the resolution to the problem also required a national-level approach. While 95 percent of waste was buried in the Nanjido landfill in 1986, it was already saturated and unable to accommodate any more waste. As other areas, including Bucheon, Anyang, Gwacheon in Gyeonggi, and Incheon did not have available landfill sites within their jurisdictions, they temporarily resorted to nearby unsanitary landfill sites or reclaimed coastal land.

The Ministry of Environment secured a 16,183,000 square meter coastal site in Incheon (then Gimpo) and mapped out the SLS Acquisition Plan to use the site for a quarter century. Development of the SLS started in 1989. The ministry then clinched a deal with Donga E&C Co., Ltd. to purchase the Gimpo reclaimed land for 45 billion South Korean won (KRW). According to the deal, central government was supposed to pay 15 billion KRW and the remaining balance was to be paid jointly by Seoul, Incheon, and Gyeonggi provinces. However, due to the budget deficits of Incheon and Gyeonggi, Seoul paid the entire remaining balance of 30 billion KRW to acquire the reclaimed land. Accordingly, even though the SLS was located in Incheon, the land was acquired by SMA (two-thirds) and the Ministry of Environment (one-third). Such a disparity between location and land ownership later became a source of tension between the municipalities.

Figure 5. Amount of Incoming Waste from the Municipalities



Source: SLS, 2015b.

The Coordination Committee for Sudokwon Shore Landfill, a government body, discussed and determined the initial stage of landfill site development, the main agenda, including site acquisition, and project development. However, the urgent need for a professional body to efficiently operate and manage the landfill site gave rise to the Sudokwon Landfill Operation and Management Union in 1991. The union was assigned to administrate and to determine tipping fees, while a public company, the Environmental Management Corporation, was assigned operate the treatment facility and to bury the waste.

However, faced with various problems, including delays in decision-making and unclear responsibilities between the Sudokwon Landfill Operation and Management Union and the Environmental Management Corporation, there were mounting requests to integrate the operation of the SLS. An attempt to establish a regional-level corporation failed due to conflicting opinions between municipalities. In the end, the *Law on the Establishment and Operation of Sudokwon Landfill Site Management Corporation* was enacted and a public company, the Sudokwon Landfill Site Management Corporation, was launched as a national body in 2000 (SLC, 2015a).

Conflicts Triggered between Municipalities over SLS

Incheon allowed the SLS to be used until 2016 while approving a detailed design to construct a second landfill area in November 1996. Considering the expected volume of incoming waste and the capacity of the planned landfill, the SLS was expected to be fully saturated by 2016. However, due to the introduction of a volume-based waste fee system, people became sensitive to waste volume and waste generation; food waste in particular decreased drastically. In addition, thanks to the increase in separate disposal for recycling, the incoming volume to the SLS has declined dramatically, enabling its continued use until 2044.

Conflicts between municipalities over the extended use of SLS came to the fore in 2010. Seoul and the

Ministry of Environment insisted on the extended use of the SLS until 2044 due to the available capacity of the site. Incheon, on the other hand, insisted on using it until 2016 according to the original plan as residents living in the vicinity of SLS had suffered the foul odor, dust scatterings from garbage trucks, and other damages, all of which had reached unacceptable levels. The residents of Incheon, elected public officials, and political, community, and civic groups fiercely opposed the extended use of SLS, which eventually escalated into a conflict between municipalities.

If the extended use was not allowed, Seoul did not have any alternative, and it was not easy to secure a site for obnoxious facilities like landfill in Seoul. Therefore, Seoul desperately needed to extend the use of the SLS. In April 2012, when the conflict intensified, Seoul offered to invest a portion of the proceeds from selling part of the site into improving the area around the SLS. However, approval for this investment in Incheon was delayed in the Council of Seoul. Even after approval, Seoul suggested the support fund be provided over several years, intensifying distrust and doubts among the residents of Incheon.

To use the landfill for an extended period, the construction of a third site was critical, but Incheon rejected the construction and public opposition in Incheon worsened. Seoul persisted in its attempt to tip the balance. In a series of such efforts, Seoul held conferences at the national assembly and distributed a monthly community newsletter in the local districts of Seoul, arguing for the extended use of the SLS. In the meantime, Incheon sent letters of complaint, held an open forum for citizens, and fomented public opinion against the extension. Out of urgency, Seoul attempted to host a press conference at the SLS, but it was cancelled as Incheon residents blocked vehicles from entering the site (Yonhap, 2014).

Operation of the SLS based on Consent between Municipalities

In December 2014, the Ministry of Environment, Seoul, Incheon, and Gyeonggi inaugurated a consultative group regarding the SLS. After negotiations that lasted more than six months, the group consented to using the SLS for 10 more years by developing a site covering 103 hectares, a part of the third landfill. It was an inevitable decision in the short term. When none of the three municipalities secured any alternative landfill, it was only natural to see a trash crisis due to the lack of facilities. In addition, Seoul, Incheon, and Gyeonggi also agreed to develop alternative landfill sites in their own jurisdictions during the extended period.

The agreement included (Yonhap, 2015):

1. an offer of economic benefits to Incheon;
2. transfer of the landfill permit and the resulting ownership of the 1,690 hectares of land from Seoul and the Ministry of Environment to Incheon;
3. as much as 50 percent of the additional waste tipping fees collected wired to a special account in Incheon that would be used to improve the vicinity of the SLS starting in January 2016;
4. takeover of SLS Management Corporation, a national corporation affiliated with the ministry, by Incheon as a regional corporation;
5. proactive efforts by the consultative group to advance the extension of Incheon Subway Line No. 1 and Seoul Subway Line No. 7, to construct an environmental theme park, invigorate the environmental industry, develop physical training facilities for local residents, and improve and expand transportation to revitalize the economy and develop the vicinity of the SLS.

Watershed Management and Water Use Surcharge

Water management policies were previously based on administrative districts and focused on restricting behaviors in upstream regions through emission regulation, end-of-pipe treatment, and by designating water source protection areas. This meant upstream residents were subject to regulations for water source protection and were therefore disadvantaged, while downstream regions enjoyed the resulting benefits, creating conflicts between upstream and downstream reaches.

The Han River basin supplies water to more than 20 million people, as well as businesses and agriculture. To maintain high level water quality, the upstream region of the Han River basin was designated as a source water management area in 1985, a nature preservation zone in 1982, and a special counter-pollution area in 1990. This was a series of efforts to improve water quality by blocking polluting facilities and activities, and by expanding environmental infrastructure on the management area. As a result of the rising population and industrial development, South Korea has had a hard time maintaining a high level of water quality.

Moreover, the decentralization trend that came to the fore in the early 1990s aggravated conflicts between municipalities around the river basin. Eased regulation on land use triggered reckless development and a deterioration in water quality. A step closer to democracy caused changes in public attitudes toward regulations on land use and infringement of property rights, leading to increased resistance against the restrictive laws and regulations. Conventional water quality management policy could no longer accommodate these changes, fueling serious social conflicts over water management.

Managing the River Basin for Co-prosperity of Upstream and Downstream

After recognizing the limitations of this approach, water management policies since the 2000s have gone beyond administrative districts and instead focus on river basins to address conflicts between upstream and downstream reaches and between urban and agricultural regions. The key measures for river basin management include the water pollutant load management system, riparian zone designation, land purchase, establishment of a river management fund from water use surcharges, and operation of the River Management Committee.

In an attempt to preserve and improve water quality, the central government instituted the Special Water Quality Management Plan for Paldang Reservoir and the Han River System (the Special Measure for Han River) to push ahead with the designation of riverside area and reserved forest, early implementation of a total pollution load management system, provision of proactive support for residents of the regulated area, intensive management of source pollution, and reduction measures for non-point source pollution. A new basin management policy was formulated based on agreement after over 430 public hearings and debates to overcome the opposition and distrust of the local community.

The new basin management policy proposed to share the costs and benefits with residents of both upstream and downstream regions. First, with the introduction of a water use surcharge system, a watershed management fund financed by the surcharge was used to support residents of the upstream reaches and to improve water quality. Second, the total pollution load management system enabled development activities proportional to the reduced emissions amount, laying a foundation for the harmonious existence of protection and development by achieving water quality improvement and regional development at the same time. Third, in order to block the direct influx of pollution sources into the river, certain parts of the mainstream and tributary of Han River are designated as riverside area to reduce development. The government purchased buildings and land subject to limited development to preserve the water quality. At the same time, the government introduced a system whereby local residents could be compensated for their restricted property rights. Fourth, for efficient operation, a participatory basin management system was established where residents of upstream and downstream reaches, and stakeholders can discuss basin issues together.

The basin management policy aimed to improve the water quality of Paldang Reservoir to the highest level, or level 1. An estimated 2.6 billion KRW was required to work toward this goal between 1999 and 2005. Yet the municipalities in the upstream, which were assigned the project, required financial aid to install and operate environmental infrastructure due to fiscal problems.

Water use charges are imposed on water users according to the user pays principle. In other words, the charges are imposed on end users who are supplied with source water or purified water collected from the public waters of the four major rivers. The charges are proportionate to the amount of water used and included in the water bill. Water use charges take on the properties of a user charge because they are non-tax charges imposed for the purpose of carrying out the specific administrative task of water quality improvement in sources only for the beneficiary groups that use the water.

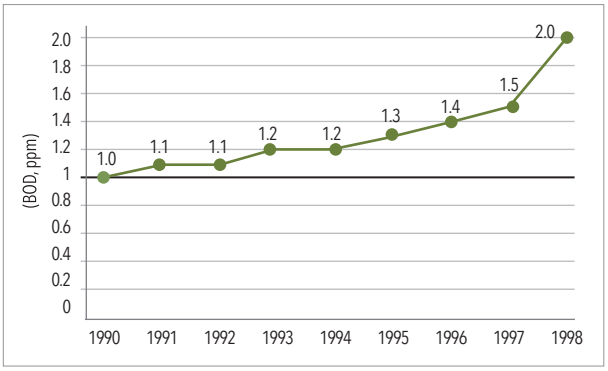
These water use charges are collected to support the Han River Management Fund, which was established in August 1999 and began carrying out water quality improvement projects and resident support projects in 2003. The funds are used for such purposes as:

- Environmental infrastructure installation, operation, and other water quality improvements and water source protection projects carried out by local governments in the upstream areas of water sources;
- Resident support projects in water source management areas that are subject to regulations; and
- Purchase of land in riparian zones that have a significant influence on the quality of water sources.

Resident support projects include income generation, welfare enhancement, education, scholarship assistance, and housing improvement.

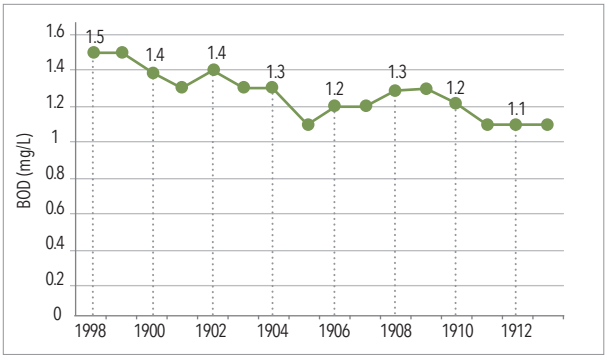
The River Management Committee is a major decision-making body to manage the Han River basin. It deliberates on and coordinates matters such as operating the management fund for the rivers concerned, water use charges, pollutant reduction plans, land purchases to improve water quality, resident support project plans, and assistance for private water quality monitoring. The committee is chaired by the Vice Minister of Environment, and its members consist of the deputy mayors or deputy governors of the local or provincial governments concerned, the CEO of K-water and heads of other associated institutions, and high level public officials of relevant government ministries. In other words, the area-wide local governments participate in the River Management Committee to represent local residents, who are stakeholders in the river basins, and ensure resident opinions are reflected in decision-making (Ministry of Environment, 2015).

Figure 6. Water Pollution of Paldang Lake



Source: Ministry of Environment, 2014.

Figure 7. Improvement in Water Quality of Paldang Lake



Source: Ministry of Environment, 2014.

- The following are several examples of projects financed by the River Management Fund:
- Install and operate environmental infrastructure: Provide the municipalities in charge of managing source water with part of the expenses needed to install and operate environmental facilities, such as public sewage treatment facilities and livestock manure management, thereby relieving the financial burden of the relevant authority. Such timely monetary support to install and operate the essential environmental facilities would make a significant contribution to improving water quality.

- Purchase land and create waterside green space: Improve water quality by blocking pollution sources from operating in protected upstream reservoir areas or source water management areas. Purchase land in the source water management area, demolish buildings on the purchased land, and create riverside green space by planting trees.
- Source water quality improvement project and total water pollution load management system: It assigns the allowable pollutant's load to meet the water quality target, which works toward both securing clean water and regional development. As part of the source water quality improvement project, various forms of assistance are provided to protect source water management areas, ecological river restoration projects, installation of reduction facilities for non-point source pollution management, and water quality improvement activities by private groups.

Table 1. Expenditure of Water Use Surcharge by Project (1 billion KRW)

	1999–2005	2006–10	2011–15	Total	
Resident Support	419.7	359.0	340.9	1,119.5	(19.7%)
Environmental Infrastructure	713.4	834.5	1,097.1	2,645.0	(46.4%)
Water Quality Improvements	155.7	221.6	245.9	623.2	(10.9%)
Purchase of Land	214.5	506.9	459.5	1,180.9	(20.7%)
Pollutant Load Management	—	10.9	26.0	36.9	(0.6%)
Other	19.2	31.9	37.8	88.9	(1.6%)
Total	1,522.4	1,964.7	2,207.3	5,694.4	(100%)

Source: Han River Management Committee, 2016.

Watershed Management Committee and Advisory Committee

The watershed management committee is a forum for active discussion and coordination of basin management policy with the participation of upstream municipalities working on improving source water quality, as well as downstream municipalities using the water, and administrative and public organizations involved with basin management. Chaired by the Vice Minister of Environment, committee members include deputy mayors of metropolitan government or deputy governors of the provincial government, and the secretariat from the River Basin Environmental Office. The watershed management committee deliberates on and determines the main agenda such as:

- Imposing and collecting water use surcharges, and operating and managing the watershed fund
- Maintaining the flow of the river
- Planning for the resident support project
- Purchasing land
- Adjusting the assistance for water quality preservation activities or water quality monitoring activities

An advisory committee is organized and operated to collect the opinions of local residents and experts on basin management policy, and to research, review, and advise on relevant basin policies. The advisory committee comprises 16 to 18 committee members, including one representative from residents, civic groups, industry, and environmental experts.

Outcome of Basin Management Policy

Water use surcharges and river management funds are used as effective financial measures to manage river basins, mediating interests between upstream and downstream reaches to prevent conflicts, and preparing financial resources to improve water

quality. Water use surcharges are collected from downstream users who are supplied with tap water originating from upstream sources. These surcharges are placed into river management funds to carry out water quality improvement projects in upstream areas and to support the upstream residents who are negatively affected by regulations to protect water sources.

The most significant outcome of basin management policy is clean water security. The Gyeongan River flows into the upstream of Han River watershed and has been classified as one of the most polluted. However, since the introduction of the Special Measure for Han River Watershed in 1998, Gyeongan River has been cleaned successfully, with biological oxygen demand having declined from 8.8mg/L in 2002 to 2.2mg/L in 2013.

Secondly, the green growth strategy improved source water quality and regional development. The population of Paldang, the target of the special measure for water quality management in 1998, had increased by 37 percent to 849,000 in 2012 from 538,000 in 1998. The number of businesses discharging industrial waste water had risen by 23 percent to 1,217 in 2012 from 934 in 1998. However, the biological oxygen demand level of Paldang Reservoir declined to 1.1 mg/L in 2013 from 2 mg/L in 1998, suggesting the co-existence of conservation and development.

The third meaningful outcome was the establishment of new governance for basin management. When dealing with the most sensitive issues between municipal governments such as basin management, and the allocation and use of funds, the watershed management committee strived to maximize the value as a group by accommodating all residents living around the basin. The committee also pursued resolution through discussion, negotiation, participation, and cooperation. Water, the common resource, had been the cause of conflicts between municipal governments, but these disputes were resolved through new governance, which allowed policies beneficial to everyone to be developed and implemented.

Conclusion

In order for an urban area to function, it has to create, protect, and enhance common goods (e.g., natural resources, the climate, public health, and safety) and develop adequate urban assets (e.g., public space, infrastructure, the right mix of activities and people, and adequate housing), both of which are needed for individuals to develop and businesses to thrive (UN-Habitat, 2013). As people's everyday living space expands geographically beyond a city's administrative boundary, governance of the metropolitan, or functional urban, area needs to reflect the metropolitan area's social, economic, cultural, and environmental reality.

In South Korea, metropolitan governance started from a vertical and state-led approach and transformed into a horizontal and municipality collaboration approach. The form and transformation of metropolitan area governance must be understood in the following context. The per capita GNP of South Korea in 1960 was around US$80 (in current prices). The economic growth rate in 1960 was very low at 1 percent. The agricultural sector captured about 40 percent of GNP while the manufacturing sector captured less than 15 percent. Social overhead capital or infrastructure was insufficient. Natural resources were also in short supply. There was little possibility of capable local government in the early urbanization period in South Korea.

In the early phase of development, national territorial development and urban development could not be separated. For example, clean water supplied to citizens of a city usually came from outside the city and waste went to neighboring areas. As a result, South Korea began with a central government-led governance system to manage national territory and metropolitan areas, which was the appropriate scale to tackle the challenges of early development and urbanization in South Korea

One of the most important factors in the country's success was implementing its national and regional policies through its Comprehensive National Territorial Plan. This was seen in terms of

the construction infrastructure, urban development, housing supply, land use, and resource management, which corresponds with rapid industrialization and urbanization from government-led economic growth policies. The national territorial policies in South Korea responded to various issues that appeared in the economic and social development process.

However, as South Korea became a middle-income country, state-led development often confronted political, social, and regional conflicts. The state had to consider municipalities and local residents' interest. Metropolitan governance should ensure open communication and the participation of both individuals and municipalities to seek social consensus. It should not only include the appropriate procedures and processes that lead to the decision, but also include the conflicts that occurred during the process of discussion.

The decentralization era in the 1990s resulted in the shift from state-led to municipality-led development. The vertical system between central and local governments has been shifted to a horizontal network system, and local governments' roles and responsibilities have been encouraged. Local governments were encouraged to ensure the fairness and transparency of autonomous administration and planning.

As people's living space expands across boundaries and environmental issues become apparent on a regional scale, governance needs to adapt. The Metropolitan Master Plan and River Basin Management show that metropolitan governance enhances sustainable green growth development. Seamless regional integration can be achieved in two ways: vertical (compulsory from central to local government) and/or horizontal (collaborative among local governments). Rapidly growing and expanding urban areas, especially in developing countries, need vertical integration because of the extent and speed at which issues evolve and because of the lack of capacity at the local level. As discussed above, Seoul's population increased by approximately 300,000 people annually over 30 years, which made it extremely hard to apply collaborative planning. To tackle the urban issues in such a case, measures should be appropriate in scale and timing. Leaders and planners should take on responsibilities and perform their roles.

Vertical and horizontal integration need not be in conflict. Despite tension, the South Korean case confirms that a mixture of the two can result in good performance. Central or regional government can directly intervene in metropolitan governance or it can indirectly foster collaborative integration among local municipalities by setting a regulatory stage. In either case, central or regional government's role is crucial and inevitable, especially as our urban life permeates across administrative boundaries.

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3.16 Changing Governance of Urban Redevelopment in Shanghai

Jie Chen (Shanghai University of Finance and Economics) and **Zhumin Xu** (University of Hong Kong)

Abstract

Driven by the forces of both marketization and globalization, urban governance in Chinese cities has experienced a dramatic restructuring since the economic reforms in the 1980s. Nonetheless, how the redevelopment of urban governance in Chinese cities is related to urban redevelopment is still underexplored; in particular, how the massive-scale urban redevelopment is arguably a key force behind the miracle of the Chinese urban economy. This chapter attempts to bridge the knowledge gap in this respect, using the case of Shanghai. It focuses on the changing governance structure of urban redevelopment in Shanghai, and particularly explores how and to what extent government authorities shape citizen participation in residential relocation and housing expropriation. Such analysis helps us to better understand the importance of the role of residents in decision-making around inner-city redevelopment. This chapter concludes by discussing policy implications of the findings, including how to achieve economic and social sustainability in urban redevelopment.

Driven by the forces of both marketization and globalization, the urban governance in Chinese cities has experienced dramatic restructuring since the economic reforms in the 1980s (He and Wu, 2009; Zielke and Waibel, 2014). The emergence of a liberalized housing market and the related liberalization of land use rights were greatly instrumental in promoting a market-driven urban economy and enabling a growth-first model of urban governance in China (Yang and Chang, 2007). Nonetheless, not much research has examined how the restructuring of urban governance in Chinese cities is related to urban redevelopment, even though massive-scale urban redevelopment is arguably a key force behind the miracle of the Chinese urban economy (Wu, 2016). This chapter attempts to bridge the knowledge gap in this respect, using the case of Shanghai.

This research focuses on the post-economic reform (post-1978) period. During this period, the population of Shanghai increased to 25 million from 11.9 million residents, a 110 percent increase. A major part of the increase (about 70 percent) was in the non-resident or floating population, many of whom are rural migrants who traveled to Shanghai for work in city's the rapidly growing construction sector and service industry. The Shanghai economy took off over this period; economic growth was in the double-digits for most years between 1980 and 2010, and both economic output and per capita income increased dramatically. From 1980 to 2010, the city's economic output increased more than 50-fold in nominal terms, rising to 1.7 trillion RMB (US$0.25 trillion) from 31 billion RMB (US$4.6 billion). Also during that period, the per capita income of the registered population increased over 44-fold, to 121,544 RMB (US$18,095) from 2,720 RMB (US$405) (Shanghai Statistical Yearbook, 2011).

With a total population of 25 million and annual GDP of 2,496 billion RMB (US$385 billion) in 2015, Shanghai is the largest and most globally vibrant city in China (Berube, Trujillo, Parilla, et al., 2015). As evidenced by the literature, Shanghai embraced a state-led development approach and functioned as an entrepreneurial city when paving its way to reclaim its global status (He and Wu, 2005; Wu, 2003; Zheng, 2010). The city used various preferential policies to create its attractive image as an ideal place for industrial development and financial investment (Marton and Wu, 2006; Wu and Barnes, 2008). Creative industry clusters were tossed into a hub to host world famous cultural and artistic events (Zheng, 2010).

It is suggested that Shanghai manifests a complicated relationship between gentrification, globalization, and emerging neo-liberal urbanism, and that the local state has played a leading role in the large-scale restructuring of urban space in Shanghai, mainly through spatial strategic planning (He, 2010).

With diverse motivations of different levels of the entrepreneurial state, as well as the profit-seeking motivations of investors, pro-growth coalitions between local governments, developers, and government enterprises are formed and exert powerful influence over urban redevelopment (He and Wu, 2005). During the so-called property-led regeneration, old dilapidated houses in downtown areas were expropriated, original households were relocated to suburban areas, and residential communities in downtown areas were converted to shopping centers or other more profitable projects (Yang and Chang, 2007). By doing so, local governments obtained substantial revenue and funding sources to invest in developing urban infrastructure and thereby increasing the city's competitiveness.

Despite the significant amount of literature on the topic of urban redevelopment in Shanghai (Chan and Li, in press; He and Wu, 2005, 2009; Yang and Chang, 2007; Zhang 2002a, 2002b), the recent restructuring of governance in the process of urban redevelopment in this city receives insufficient investigation. This research focuses on the changing governance structure of urban redevelopment in Shanghai and particularly explores how and to what extent government authorities shape citizen participation in residential relocation and housing expropriation in the city. Such analysis helps us better understand the importance of the role of residents in the decision-making of inner-city redevelopment. This chapter concludes with a discussion about policy implications of the findings, including how to achieve the economic and social sustainability of urban redevelopment.

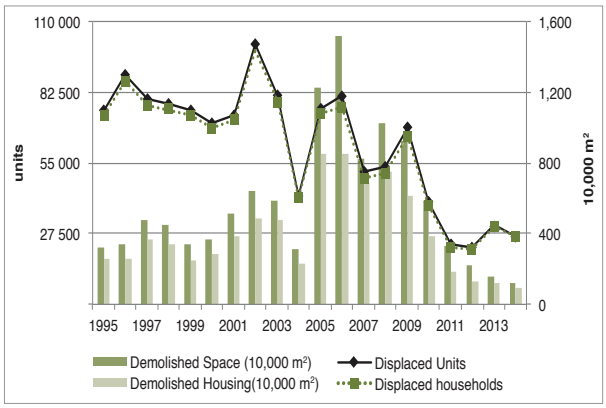
Background of Urban Redevelopment in Shanghai

Much literature has investigated how the Shanghai Municipality, as an entrepreneurial government, uses urban redevelopment as a key fiscal revenue generator (Wu, 2004; He and Wu, 2005; Yang and Chang, 2007). Meanwhile, the Shanghai Municipality has a long history of using public allocation of housing to promote urban redevelopment (Xu, 2015). The following sections provide some basic background on urban redevelopment in Shanghai and then elaborate on the multiple purposes in which the relocation housing program in Shanghai serves the process of inner-city redevelopment and gentrification.

Large-Scale Urban Redevelopment in Shanghai

Figure 1 shows the historical trend of demolished space and displaced households in the downtown area of Shanghai between 1995 and 2014. It is estimated that a total of 1,201,859 households were displaced from the central area in Shanghai during this time. The municipal government also demolished a total area of 80.11 million square meters of residential housing. Including displaced businesses and work units, this figure rises to a total of 1.23 million units resettled and 112.9 million square meters of floor area demolished. This data implies that roughly one in four (permanent) households in Shanghai were forced to relocate. With such large-scale population relocation and land use restructuring, urban redevelopment had a great impact on the city's growth mode and residents' daily life.

Figure 1. Demolished Space and Displaced Households in Shanghai Downtown



Source: Shanghai Statistics Yearbook, 2015.

Note: Data only covers nine central urban districts and Pudong new district in Shanghai.

Cleaning up dilapidated neighborhoods in the downtown area is a key component of urban redevelopment. Obviously, a major part of the motivation is to free up valuable land for productive urban development. The original impoverished neighborhoods are replaced by high-rise commodity housing that mainly accommodates high and middle-upper class. The blighted industry areas are also replaced by shopping centers, offices, and banks.

Table 1 shows that the average quality of residential housing stock in Shanghai improved significantly in the past three decades; the share of modern-style housing (villa condo and apartment) has increased from 33 percent in 1978 to 94 percent in 2014, while the share of low-quality old housing (lanes and shanties) dropped from 65 percent in 1978 to 3 percent in 2014. While most new housing is constructed in suburban areas, the hosing stock in the traditional urban area has also been greatly improved. The stock of old housing, mostly located in the central areas, was 36.18 million square meters in 1995, but declined to 16.34 million square meters in 2014. This implies that 20 million square meters of dilapidated housing were demolished within 20 years.

Table 1. The Structure of Residential Housing Stock in Shanghai (10,000 m^2)

Year	Total	Villa	Condo	Apartment	Improved Lane Houses	Old Lane Houses	Shanties
1949	2,359	224	101		469	1,243	323
1950	2,361	224	101	1	469	1,243	323
1960	3,602	224	101	500	478	1,800	500
1970	3,871	225	101	741	492	1,853	459
1978	4,117	128	90	1,140	433	1,777	464
1990	8,901	158	118	4,884	474	3,067	123
1995	11,906	179	111	7,998	454	3,004	85
1998	18,587	214	191	14,868	445	2,758	49
2000	20,865	250	206	17,939	428	1,896	84
2005	37,997	1,380	491	33,610	541	1,836	37
2010	52,640	2,064	492	47,951	527	1,275	29
2014	61,904	1,790		56,429	311	1,312	11

Source: Shanghai Statistics Yearbook, 1985, 2000, 2011, and 2015.

However, according to Figure 1, more than 80 million square meters of residential housing were demolished in Shanghai between 1995 and 2014, leaving a gap between the two totals that implies a significant number of recently built housing stock was also pulled down. This suggests that demolishing housing stock and resettling households in Shanghai affects both dilapidated neighborhoods and newly built housing. Intensive urban infrastructure projects such as subway construction and elevated roads contributed to the demolition and resettlement. Thus, He and Wu (2009) argued that the "rationale of urban redevelopment in China has changed from the alleviation of dilapidated housing estates as a means of social welfare provision to state-sponsored property development as a means of growth promotion."

Resettlement Housing Program in Shanghai

Rehousing displaced residents is a critical factor in the process of urban redevelopment. Typically, displaced residents are compensated by the local authority through a lump sum of money and discounted housing that is usually located in the suburban area.

Noticeably, the price of new commodity housing in Shanghai began to soar during the market-oriented housing reform in 1998, resulting in the compensation cost for displaced households to increase dramatically (He and Wu, 2005). To reduce displacement costs and facilitate inner-city redevelopment, the municipal government implemented a resettlement housing policy in 2003 (Chen, 2014). According to this new policy, displaced households would receive compensation at least equal to the market value of their demolished housing and have the right to buy the relocation housing at a price usually capped at around 70 percent of nearby comparable free-market housing. High housing prices in the center and the substantial price gap between relocation housing and market housing in the suburbs provided huge incentives for relocated households.

In 2005, the Shanghai Municipality announced a plan to provide 10 million square meters of relocation housing and 10 million square meters of capped priced commodity housing, the so-called two 10 million square meters program. Resettlement housing continued to be built on a large scale: over the course of the 11th Five Year Plan for 2006–10, 29.6 million square meters or roughly 330,000 units of resettlement housing were completed. According to the Shanghai Housing Development Plan for the 12th Five Year Plan (2011–15), 150,000 downtown households would be displaced and 3.5 million shanty housing units in the central area of the city would be demolished. Shanghai's 12th plan highlighted that resettlement housing has become a central tool in promoting urban redevelopment, and that its target of 400,000 units constructed during 2011–15 is decisive to the success of urban development under the plan. Resettlement housing is one of the biggest shares of public housing in Shanghai, and at 450 hectares accounted for 45 percent of the total land supply in the city in 2012.

The resettlement housing program is thus an outcome as well as a tool driving the state-led urban redevelopment approach. There is ample evidence that the resettlement housing program in Shanghai has contributed to alleviating overcrowding in low-income households in dilapidated neighborhoods (He and Wu, 2005; Wang, 2011; Weinstein and Ren, 2009; Yang and Chang, 2007). However, the interests of displaced low-income renters are largely ignored. It must be understood that the owners of overcrowded dwellings do not live there, they rent out to migrant workers.

Governance of Urban Redevelopment in Shanghai: Ongoing Changes

Urban governance includes complicated issues around understanding the urban process. Some researchers conceptualize urban as producing space and spatial temporality, which can be understood as a dialectical relationship between process and thing (Harvey, 1985). As the state is unavoidably a critical agency in the process of urban redevelopment, the role of the state has a major structuring effect on the constitution of urban redevelopment in any region. The omnipotent government's policies in entrepreneurial city building constitute the basic factors behind the governance system of urban redevelopment in Shanghai (Chan and Li, in press).

Decentralized System of Urban Redevelopment in Shanghai

There are two levels of administration: municipal governments and district government. The best known is the Shanghai two-level government and three-level governance system (Wu and Gaubatz, 2013). The three-level governance model allows more powers for district governments and expands the functions of sub-district offices (street offices) in Shanghai.

In the urban redevelopment project, the relocated residents were resettled by municipal housing authorities to peripheral locations, and many of the resettled people moved into affordable housing complexes or new towns planned and developed by the city's municipal housing authority, the Shanghai Municipal Construction and Development Center (SHCDC). One of the SHCDCs major responsibilities has been—and remains—to develop affordable

housing to resettle lower-income Shanghai residents. SHCDC personnel identify available suitable land for low-income or affordable housing developments, supervise subcontractors, bid out portions of the project, and manage construction (SHCDC, 2011). The SHCDC is involved in three general types of affordable housing development: (i) large-scale residential communities along the outer ring road with access to the city center through rail transportation, (ii) affordable housing within each city district through building contracts with district governments, and (iii) lands real estate companies have already leased to construct subsidized housing.

In Shanghai, since implementing the policy of two levels of government, two levels of financing in 1987, the district government has been authorized to sign agreements with foreign investors to lease land and develop real estate.

Leasing land to investors of all kinds, such as overseas Chinese and the domestic real estate investor, has become common practice in generating local revenue. The decentralization of both fiscal and land management authorities enables urban districts to play a key role in shaping community landscapes. Many district governments have not only adopted pro-growth policies, but the public authorities have also themselves become business partners with real estate and other companies (Zhang, 2002a). Over time, a quasi-participatory decision-making structure in urban development has emerged in the form of expert consulting within municipal government, sub-districts' (street offices) active involvement in local development issues, and the participation of owners associations at the neighborhood level (Xu, 2015).

As district governments are the negotiating authorities in the land lease process and retain a significant share of land revenue, they also take responsibility for clearing residential housing and enterprise sites that are displaced by redevelopment (Ye, 2011). Usually, district governments would prefer to resettle residents on land for which they have land use rights so that the resettlement cost can be minimized. However, many districts, especially downtown, lack sufficient vacant land for resettlement. In such situations these district governments will enter into contracts with districts that have ample land, paying them to resettle residents (He and Wu, 2005). In Shanghai, the district government is more likely to have direct dialogue with the municipal government for resettlement housing because the land resources for each district is very limited (Xu, 2015). The municipal government is also in charge of distributing resettlement housing on the municipal level.

New Legal System Governing Urban Redevelopment in Urban China

The growing value of housing assets and the housing market boom in China since the privatization reform in 1998 have given rise to conflicts triggered by urban housing demolition, and now constitute a grave threat to social stability. In response to the legislative demands posed by the mounting tensions in urban redevelopment and to balance public and private interests in this process, on January 21, 2011, China's State Council promulgated the Regulations on Expropriation and Compensation of Housing on State-Owned Land to replace the outdated Administrative Regulations on Urban Housing Demolition and Relocation of 2001.

Compared to the 2001 regulations, the 2011 regulations set forth several new principles regarding the governance process of urban redevelopment. One significant change is that the term "demolition" is replaced by "expropriation." The 2011 regulations also stipulate that the only purpose that justifies housing expropriation is public interest and specify circumstances that qualify as for the sake of the public interest. Meanwhile, for the first time, the 2011 regulations make clear that compensation standards for housing expropriation should not be lower than the market value of properties. The principle of compensation before removal is also affirmed in the 2011 regulations. In addition to compensation, the residents are legally entitled to temporary housing assistance.

The 2011 regulations make great attempts to increase the transparency of the governance structure

of the housing expropriation process. For example, it corrects the overlapping governance by the various levels of government, clarifies the legal role of administrative sanctions, and specifies the government's responsibilities and obligations at different levels in housing expropriation (Yan and Chen, 2011). The 2011 regulations also prohibit the involvement of commercial real estate developers and demolition companies in housing expropriation and compensation (Xu, 2015). Instead, housing expropriation can now only be implemented by the local government's expropriation departments or legally authorized implementing entities.

Formally, the 2011 regulations call for democratic decision-making, procedural fairness, and process transparency in the governance structure of the expropriation process. Particularly, they demand that the expropriation compensation plan be made only after meeting all of a series of prerequisites, which include implementing risk evaluation, conducting extensive public opinion solicitation, organizing public hearings, and depositing sufficient expropriation funds in special accounts. In an urban redevelopment project, once the housing expropriation plan is approved by the government and residents through public hearings and voting, the relocated residents can either take cash compensation or exchange their property at the property exchange market with resettlement housing. Thus, the 2011 regulations explicitly require residents' participation in housing expropriation decisions for inner-city redevelopment projects.

The 2011 regulations also establish a mechanism to strengthen supervision of the housing expropriation process by the People's Congress. Although compulsory expropriation through judicial procedures was retained in the 2011 regulations, the government's ability to conduct compulsory demolition through administrative orders, as provided for in the 2001 regulations, was abolished. This signals a great legislative advancement and reflects the triumph of the new legislative principle in China that administrative regulations cannot provide legal basis for administrative enforcement (Yan and Chen, 2011). The 2011 regulations encourage independent judicial review of government decisions in the housing expropriation process and those who refuse to accept an expropriation decision are entitled to apply for administrative reconsideration or to bring an administrative lawsuit. The judicial remedies for administrative expropriation, the appeal mechanism to solve conflicts through the legal system, and the legal principles that govern such administration are also established in the 2011 regulations.

Overall, despite some loopholes to be clarified, the promulgation of the 2011 regulations significantly restructures the governance process of urban redevelopment in China. It is a brave attempt to reconcile the interests of economic growth, urban prosperity, and the legitimate interests of owners of expropriated homes. It thus marks considerable progress in regulating public rights and protecting private rights in urban China (Yan and Chen, 2011).

Expanding Citizen Participation in Urban Redevelopment in Shanghai

It has been widely suggested that citizen participation in urban redevelopment and housing expropriation can prevent urban regimes from displacing residents involuntarily and make local decision-making more transparent (Fainstein, 2000). Nonetheless, because urban redevelopment often results in improved housing conditions and better quality of life for local residents, urban redevelopment projects have been highly claimed by the state and local governments as projects for the public interest.

Before the 2011 regulations, residents were largely excluded from decisions related to large-scale urban redevelopment projects in Chinese cities (He and Wu, 2005; Shin, 2013; Zhang, 2002a). Residents in China often lack effective means with which to counter the pro-growth coalitions involved in urban redevelopment projects. As a result, governments and businesses leverage power imbalances to their interest, at the cost of local communities and residents (Chan and Li, in press).

Instead, individual residents were only involved in an informal process to negotiate with the district

government for better relocation compensation (Ren, 2014). The negotiation was carried out on a one-to-one basis, thus incentive-driven behaviors and competition among residents for better compensation made many residents choose the strategy of deliberately not moving, or acting as a "nail household" (Ding Zi Hu), to postpone the relocation process in order to seek the best offer in the best interests of their families (Shin, 2013). Nonetheless, it is this informal participation that results in both inefficiency and inequity.

The Shanghai municipal government started a few pilot projects in 2007 to solicit residents' opinions on redevelopment and relocation (Xu, 2015). The 2011 regulations allowed a new collective framework to be created for urban redevelopment and housing expropriation schemes in China. The expanding role of residents in housing expropriation decision-making and the power dynamics in urban redevelopment projects opens the discourse of the definition of public interest in today's China.

After the State Council of China promulgated the 2011 regulations in January 2011, the Shanghai municipal government issued a corresponding bylaw in October 2011. The Shanghai bylaw added detailed provisions regarding allowance and reward plans to compensate those whose homes were expropriated and affirmed that they had the right to choose the mode of compensation. The bylaw also established compensation for the losses from closing business operations caused by expropriation.

While the 2011 regulations mandate general citizen participation in various forms, it entrusts local governments to develop detailed plans in order to address differences across Chinese cities (Ye, 2011). The 2011 Shanghai bylaw developed a two-round procedure to seek public opinions in housing expropriation cases. For the first round public hearing, at least 90 percent of affected residents need to vote in favor of the projects. For the second round hearing for a detailed relocation plan, the approval rate needs to be above 80 percent to move forward with the relocation project. Families with either financial constraints or special needs receive additional compensation, and their compensation packages are disclosed to the public where other residents are able to monitor them. The two-round participation procedure helps pursue collective benefits for the majority of residents, with special attention paid to families with difficulties. The participation procedure also generates a mechanism to force the minority, unwilling-to-move residents to comply with the majority decision, leading to a more "efficient" relocation process.

Under the 2011 regulations, the major stakeholders in housing requisition for urban redevelopment in Shanghai include the municipal government that establishes the regulations, the district government that develops the property taking plan, the quasi-governmental center that manages the property taking process, and the Shanghai Municipal Development and Reform Commissions and the Shanghai Urban Construction and Communications Commission that supervise all inner-city renewal projects. The stakeholders also include private developers, investors, and utilities companies, as well as neighborhood resident committees and street offices, which often represent the community (Table 2).

Table 2. Key Stakeholders in the Urban Development Process in Shanghai

Stakeholders	Duties
Shanghai Municipal Government	Establish the regulations
District government, land reserve authorities	Make plans, manage, implement, organize
Responsible municipal authorities	Supervise
Developers, investors, and utilities companies	Coordinate, implement, participate
Street offices, resident committee	Mobilize, organize
Residents	Participate, advise

Source: Xu, 2015

Mechanisms of Resident Participation in Urban Redevelopment in Shanghai

Contemporary inner-city redevelopment projects in Shanghai uphold the principle of community participation. The district government first identifies potential sites for redevelopment. To assess the feasibility of redevelopment of a potential site, a two-stage consultation is then held with an attempt to obtain consensus from residents affected by the renewal project. The first-stage consultation aims to explain the redevelopment and housing expropriation proposal and lobby for the support of more than 90 percent of the residents. The second-stage consultation aims to solicit opinions on the arrangement of property acquisition and compensation. A door-to-door household survey is subsequently conducted by the street office with the results made publicly accessible. The project will only progress to the next phase when majority consensus is obtained (Xu, 2015).

The redevelopment project proceeds to the administrative stage after receiving approval from the affected residents. Once the construction and land development permit is granted to the land reserve authorities, the district government will draft a compensation and resettlement plan. The proposed plan comprises a compensation and incentive package, project construction period, a list of certified appraisal agents, the standard procedures to resume apartments, and the criteria to identify households with hardship (Xu, 2015). Residents generally have 15 days to submit their written opinions on the compensation and resettlement plan. The district government will revise and finalize the plan in accordance with residents' feedback.

The final phase involves establishing an agreement between the authorities and the affected residents. Following the application of property taking and relocation permit by the land reserve authorities, residents will be given a period of two to three months to decide whether they approve the finalized compensation and resettlement plan and sign the formal agreement for sale and purchase. The authority has to obtain agreements from the majority of affected residents (usually around 80 to 85 percent of the residents) in order to implement the renewal project; the project will be terminated if support does not reach the threshold.

Outcomes of the New Governance System of Urban Redevelopment in Shanghai

Zhang (2002a) underscored that citizen participation in China is outcome-oriented. It is thus essential to assess to what extent the participation process as promulgated in the 2011 regulations could serve the public interest and lead to equitable outcomes, particularly benefiting disadvantaged groups of people.

Not all residents were happy with the redevelopment projects, particularly when they were not satisfied with their own compensation package. In Shanghai, the compensation package differed for each project and each district. Residents usually understood and accepted that compensation could depend on location and unit prices. When local governments with better financial capacity offered better compensation packages to their residents (Xu, 2015), however, those in other jurisdictions often felt they were being treated unequally. Some became activists and protested against their own district leaders. Some believed in the traditional no-move negotiation strategy—those who stay to the last will get the most, which could affect the voting result (Xu, 2015).

According to the 2011 regulations, once residents voted down a project, the neighborhood had to wait for another two to five years before a new redevelopment project could be proposed. In one case, residents hung a banner in the neighborhood, stating "we do not want to wait for another five years to move" during the public hearing and voting period in order to persuade neighbors to approve.

Discussion and Conclusion

This chapter explores how the 2011 Regulations on Expropriation and Compensation of Housing on State-Owned Land shaped citizen participation in housing expropriation and changed the governance structure of urban redevelopment in Shanghai. Even when the

majority of the residents are willing partners of the city in promoting economic development and improving housing conditions, it remains unclear whether the two-round public hearing procedures can assure equitable decision-making from the participation process.

The 2011 regulations provide a more transparent, open, and interactive process for residents who are directly affected by the housing expropriation projects. Residents can participate in making the resettlement plan and decide the fate of the housing expropriation project. So far in Shanghai, three housing expropriation cases have been rejected by the residents since the government set up the two-round public hearing schemes between 2011 and 2014 (Xu, 2015).

The new policy provides a channel for resident participation, which affects the power dynamics during the decision-making process for housing expropriation. It is a positive move. However, there are major factors that may make resident participation less meaningful and disempower certain groups of residents or vulnerable groups, such as low-income residents and senior citizens. Factors such as the compensation package, housing condition, and place attachment affect the decision-making of residents living in older, traditional lilong housing. Those residents are willing to move in order to improve their housing condition but resettlement housing would destroy their existing network and may lack adequate community service, giving rise to a dilemma. Policymakers should care about the disadvantaged groups and develop appropriate equitable compensation, relocation, and redevelopment policies. The agency of informal actors (residents with no ownership) overstate the climate of equal opportunity that would prevail among people who live outside of state's reach. By the end of 2015, the number of migrants in Shanghai from other parts of China decreased for the first time, dropping by 147,700. Housing prices have skyrocketed in Shanghai, making it even harder for new migrants to afford to live in the city. More informal low-income housing disappeared under the massive housing requisition, which partly explains why migrants from rural areas left Shanghai. The municipal government should provide some affordable housing to renters who contribute to the city but are not registered with the city.

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3.17 The Negotiated City: London Governance for a Sustainable World City

Greg Clark (Specialist), **Tim Moonen** (The Business of Cities), and **Jonathan Couturier** (The Business of Cities)

Abstract

London is a negotiated city that has undertaken multiple, incremental reforms over the past 25 years. London is an example of a city whose metropolitan governance has gone through several important cycles over three decades, from a structure largely determined by the national government toward a more negotiated and distributed system. In that time, the city has experienced the abolition of citywide government, the creation of a national office for London, the increasing self-organization of business and civic communities, and eventually the creation of a two-tier metropolitan government. Twenty first century London has developed robust strategies to sustainably develop transport, infrastructure, spatial growth, the economy, and the environment. This has been aided by incremental accrual of powers to its mayor, actively engaged central government ministries, positive collaboration across the 33 boroughs, and responsible leadership from business and civil society leadership networks. Although challenges to sustainable growth remain, in many respects London has emerged as an archetypal negotiated city whose hallmarks of pragmatism and compromise are critical ingredients as Europe's largest city grows toward 10 million people.

London's Governance in the 1980s

When London's population returned to growth in the 1980s, after more than 40 years of decline, the city's governance was entering a crisis. The city had been one of the first to experience large-scale de-industrialization, which had seen entire neighborhoods go into physical and social decline, particularly in the east. Conflict over how to manage the fall-out led to entrenched political division between Labour and Conservative representatives not only in national politics, but also among London's 33 local boroughs and the young institution the Greater London Council. Service delivery and decision-making became effectively paralyzed (Clark, 2015). The central government had set up the London Docklands Development Corporation (LDDC) to bypass local authorities in regenerating a large section of inner East London, and this new entity had poor relations with the boroughs it operated in.

At the same time, London's economy was growing rapidly once again as service industries, in particular the financial and media sectors, were deregulated and younger populations were drawn back into London. This coincided with a drop in crime and a broader shift in lifestyle and business location choices that produced demand for a clean, liveable, well-designed, high amenity inner city. London's upswing caught the city's governing institutions unaware given that the city had previously been forecast to fall to a population of 6 million. It put pressure on the city's transport infrastructure and public services, which had experienced significant neglect and disinvestment. After decades of high-rise social housing that had concentrated poverty and crime, London also faced the imperative to physically and socially regenerate much of its urban fabric.

It is against this backdrop of new globalized sector growth, urban malaise, and non-compliant local

governments that the U.K. central government took the radical decision in 1986 to abolish the Greater London Council. This decision dissolved the institution best placed to coordinate London's sustainable metropolitan growth. Abolishing the metropolitan tier left London to be governed by 33 weakly coordinated boroughs with their own short-term agendas, alongside the interventions of central government departments and a number of "quangos" (quasi-autonomous non-governmental organizations) set up to the fill the governance vacuum (Clark, 2015; Travers, 2004). London received very occasional strategic guidance from the Secretary of State for the Environment, mainly around land use planning, but this was one of the few areas of intermediation issued by a central government reluctant to permit more robust powers of implementation. Thus in the years after 1986, it was by no means clear if London had the governance capacity to organize and steer the growth generated by its strategic functions in a rapidly reintegrating global economy.

Governance in the 1990s: London Takes Off and Institutions Adapt

London responded to the loss of citywide government and the detachment of a laissez-faire central government with a new attitude of pragmatism and informal partnership. Inner-city boroughs controlled by the Labour Party recognized the opportunities to leverage business growth and private sector investment for social objectives and new public goods (e.g., housing, amenities, jobs, and transport) (Clark, 2015). The LDDC also became more multi-lateralist in its approach to engaging with boroughs and citizen objectives. In this less ideological context, London saw the emergence of a new growth coalition based on business and civic leadership. A sequence of reports was then released by public bodies that recommended major reforms to London's infrastructure and governance model. Among the first was the 1989 Central London Rail Study, which highlighted the collapse in infrastructure spending in the face of growing demand and raised awareness about the need for central government to take London's requirements as a growing city seriously. Shortly afterward, the London Planning Advisory Committee, set up to advise central government, produced a seminal report: *London—World City Moving into the 21st Century*. It articulated the needs of London as a city with global functions and that requires improved quality of living, support for cultural sectors, and stronger international promotion (Travers, 2004; Clark, 2015).

This report was purely advisory and had no implementation power, but it influenced central government to provide more targeted support for its capital. It encouraged the Conservative Party to feature London in its manifesto for the 1992 election and, since the 1992 election, London has featured in all winning manifestos (Table 1). From 1991 to 1994, a Cabinet Committee for London was established to improve central government coordination across the city, followed by a Government Office for London, and a Minister for Transport for London. While the Government Office for London had a limited budget of around £1 billion and rarely made policy initiatives, it helped to redistribute regeneration funds and capital expenditures, especially for housing. It also provided some preliminary strategic planning guidance and its *Four World Cities* study was influential in comparing London's performance to New York, Paris, and Tokyo as a financial center and cultural destination. The Government Office for London acted as a key point of contact for private and public actors in London and encouraged the boroughs to embrace economic opportunities and to cooperate on policies targeted at the inner city. It was described as akin to a "prefect" similar to the French model, providing central control over a locality, although with fewer powers at its disposal. Although by no means filling the citywide governance vacuum, the Office did help galvanize the new mode of public–private regeneration initiatives stimulated by London's ongoing economic growth and international immigration (Travers, 2004; Clark, 2015).

Table 1. Key Metropolitan Infrastructure Projects in London over the Past 25 Years

Project	Cost	Completion	Revenue Sources	Impact
London City Airport	~£50m (1987 prices)	1987	Private developer financing, LDDC, and some public support	New airport capacity in GSE, improved business flights, east end regeneration
Docklands Light Railway	~£1bn for all extensions	1987, extensions up to 2012	Mainly private finance with some government backing	New light railway network in East End, supporting regeneration; capacity relief on local road, bus, and rail network
Heathrow Express	£350m	1998	Mainly private finance (from project owner BAA)	Improved connections to Heathrow Airport, capacity relief on Piccadilly line
Millennium Projects*	£1bn	1999–2000	Mostly national lottery, national Single Regeneration Budget, the Arts Council, and local authorities	Unlocked private funds for redevelopment; new cultural infrastructure for London; New office space beyond traditional CBD
Jubilee Line Extension	£3.5bn	1999	£2bn Central Government, £1.3bn London Underground, remainder from private sector contributions	Congestion relief on other rail lines and interchanges; connected Canary Wharf, riverside neighborhoods, and Stratford to Central London
HS1/Channel Tunnel Rail Link	£5.7bn	2007	Private finance, with government debt financing	Reduced travel times to Paris and Brussels by 40%; unlocked regeneration in St Pancras, Stratford, and regional centers of Ebbsfleet and Ashford
London Overground	£1.4bn first phase (route extension) £320m second phase (capacity extension)	2007–12 first phase, second phase ongoing	Mainly Department for Transport grants + £450m loan from the European Investment Bank	Orbital connection to encourage polycentric growth; redevelopment in multiple "second ring" locations
Olympic Regeneration	£10bn on Games and post-Games investment	2012 first stage, continuous investment since	-67% central govt, 23% national lottery, 10% GLA -LLDC budget: GLA borrowing, central govt grants and capital receipts	Much improved transport links, upgraded town center, new housing, and high-quality public amenities, economic regeneration of the lower Lea Valley
Crossrail	£14.8bn	2019	£5.2bn private sector (community infrastructure levies, business rates) £4.8bn central govt £2.8bn Network Rail £1.9bn TfL £100m voluntary funding from businesses	10% extra rail capacity in London; major new stations and station regeneration; expanding east–west regional rail network in the GSE
Thameslink	£6.5bn	2019	Department for Transport Grant	Improved regional north–south rail travel; relief on national rail and London Underground services
Kings Cross	£3bn	2020	Mainly private sector contributions to real estate, infrastructure	New dense mixed-use urban quarter, with housing capacity and cultural institutions
Tube Upgrade	£13bn +	2025	Mainly central govt grants, as well as borrowing to fund capital expenditures	50%+ reduction in delays since 2007; 10–30% capacity upgrade on most lines

Project	Cost	Completion	Revenue Sources	Impact
Cycling upgrades	£913m from 2015 to 2025	2025	Funded through TfL's capital expenditure, derived mainly from capital grants	Major east–west and north–south dedicated cycle routes; reorganization of road and junction network
Crossrail 2	£33bn–£47bn (projected)	2033	Funding arrangements not yet finalized	New regional North East—South West rail line in GSE through central London; capacity relief on suburban and inner-city transport
High Speed 2	£55bn	2033 (final stage)	Funding arrangements not yet finalized, but mostly central government with some private contribution	High speed rail link to North of England to catalyze growth in northern cities, enhance agglomeration

Note: *The Millennium Projects are the Millennium Dome, Tate Modern, Millennium Bridge, and London Eye. GSE = Greater South East; CBD = central business district; TfL = Transport for London; LLDC = London Legacy Development Corporation.

The 1990s also saw business and civic leaders organize themselves more effectively in the absence of a citywide government. London First emerged in 1992 as a business membership organization that advocated solutions to capitalize on London's growing potential. Backed by central government, it was invited to produce a strategic vision for London in partnership with other private actors and the boroughs: this resulted in the prospectus of the London Pride Partnership. While non-binding, the vision heavily influenced government thinking on London and inspired a policy agenda focused on place-based regeneration. These years were widely regarded as a key moment during which the self-organization of business and local authorities aligned in London and laid the foundations for its strong networked governance structure today.

London First took the London Planning Advisory Committee's recommendations to heart and created an inward investment promotion subsidiary in 1994, the London First Centre, acting on the view that London did not have a message that sustained interest in what it had to offer. Led by a number of large corporations, the agency received both public and private funds and acted very effectively as the city's first vehicle for promotion, intelligence, and investor support. By 1997, it had attracted 100 firms to London. The London Tourist Board also became more active in promoting the city as a destination to Europeans and North Americans, focusing on its emerging cultural and culinary scenes and improved quality of life. For the first time in its history, London had dedicated local-level promotional agencies despite the absence of metropolitan government (London First, 2016; London Price Partnership, 1995).

Throughout the 1990s, a new policy consensus that had been building since the LDDC's actions in the East End was finally crystalized. Local councils were becoming more supportive of London's new role and attracting professional talent. They themselves lobbied for many necessary changes such as more placemaking, education, and infrastructure investments, hoping to leverage them to fulfill social goals such as regeneration and joblessness. During the 1990s, the boroughs also began to cooperate again and articulate common positions, leaving behind the partisanship of the 1980s.

The negotiation of local boroughs, central government, new agencies, and investors helped to deliver important projects that improved the management of the city's growth. One of the most important was the Jubilee Line Extension to revive Canary Wharf. In the early 1990s, the isolated Docklands project had gone bankrupt and many of the first office developments were viewed as sterile and mono-functional. Key to its revival was the ability of local actors and businesses to convince central government to support investment in public infrastructure, notably expanding the rail network through the site to East London. As a result, public investment flowed into the Docklands Light Railway

and the Jubilee Line extension, which convinced the private sector to contribute £400 million to the latter. At the same time, the LDDC became more receptive to calls for mixed land uses in the development, with more of the residential, cultural, and service amenities sought after by the local boroughs. As a result the project took off once again. This experience taught private and public actors to work together, especially around advocacy and assembly of investment (Clark, 2015).

London's growth coalition successfully lobbied central government to fund high-profile projects to support the city's growth, albeit on an ad hoc, standalone basis. These were funded partly through the national Single Regeneration Budget introduced in the 1990s to support neighborhood regeneration, as well as lottery funds, and the national City Challenge Programme. From 1991 onward, central finance supported a cultural industry cluster on London's South Bank as part of wider neighborhood regeneration schemes along the Thames. Although not fully anchored to a wider strategy, the model of using public infrastructure investment to unlock private finance continued to work successfully. This helped secure a sequence of Millennium projects, including the Tate Modern, Millennium Bridge, Millennium Dome, Millennium Wheel (London Eye), as well as new riverside housing in East London. Areas of the city fringe were refurbished with public funding to support the cultural sector, paving the way for the revival of Hoxton and Shoreditch into fashionable, technologically oriented districts. Other initiatives included rail connections to airports, airport terminal expansions, station redevelopments, new shopping districts, market places, and high street revitalization schemes. Put together, these projects secured much needed infrastructure and liveability improvements, and enabled London's new job clusters to spill over into surrounding areas beyond the central business district (Moonen and Clark, 2016; Clark, 2015).

When the Labour Party won a landslide election in 1997, it responded to the call for increased coordination in London by promising to restore metropolitan government. This decision reflected the fact that London was viewed to have moved on from its era of political hostility and brinkmanship and was therefore trusted to manage its relationships and its finances prudently (Travers, 2004, 2015). The government's 1997 Green Paper confirmed that a directly elected mayor would feature in the capital's new governance arrangements. Preparations involving input from the boroughs and higher tiers of government highlighted the need for an integrated planning approach that would prioritize inclusion, diversity, greenery, and knowledge exchange. London was set to gain a new kind of governance system that had never been seen in a British city.

A New Metropolitan Government for London

The Greater London Authority (GLA) was established in 2000, with a mayor at its head, overseeing and coordinating the work of the 33 boroughs. Importantly, the mayor gained powers over transport through the new subsidiary agency, Transport for London (TfL), as well as strategic planning and economic development powers via the London Development Agency. Policing and fire services were also transferred. From 2002, a Sustainable Development Commission was established, advising the mayor on environmental strategies and priorities (Mayor of London, 2016a).

The Mayor-Assembly model of the GLA initially had a fairly modest staff (around 400), and its powers were fairly minimal. Although the GLA and mayor developed transport, spatial, economic, and housing strategies to give direction to London's growth management, the institution's self-governing and self-financing autonomy was extremely limited. This is one reason the system is sometimes called a "weak mayor" model. One of the key roles of the mayor and the GLA has been to win support from central government and the private sector for investment and policy support. The mayor's role revolved

around "promoting London internationally, coordinating activities within London, and making the case for London to central government" (Sir Peter Hall, quoted in Clark, 2015, p.55).

London Boroughs

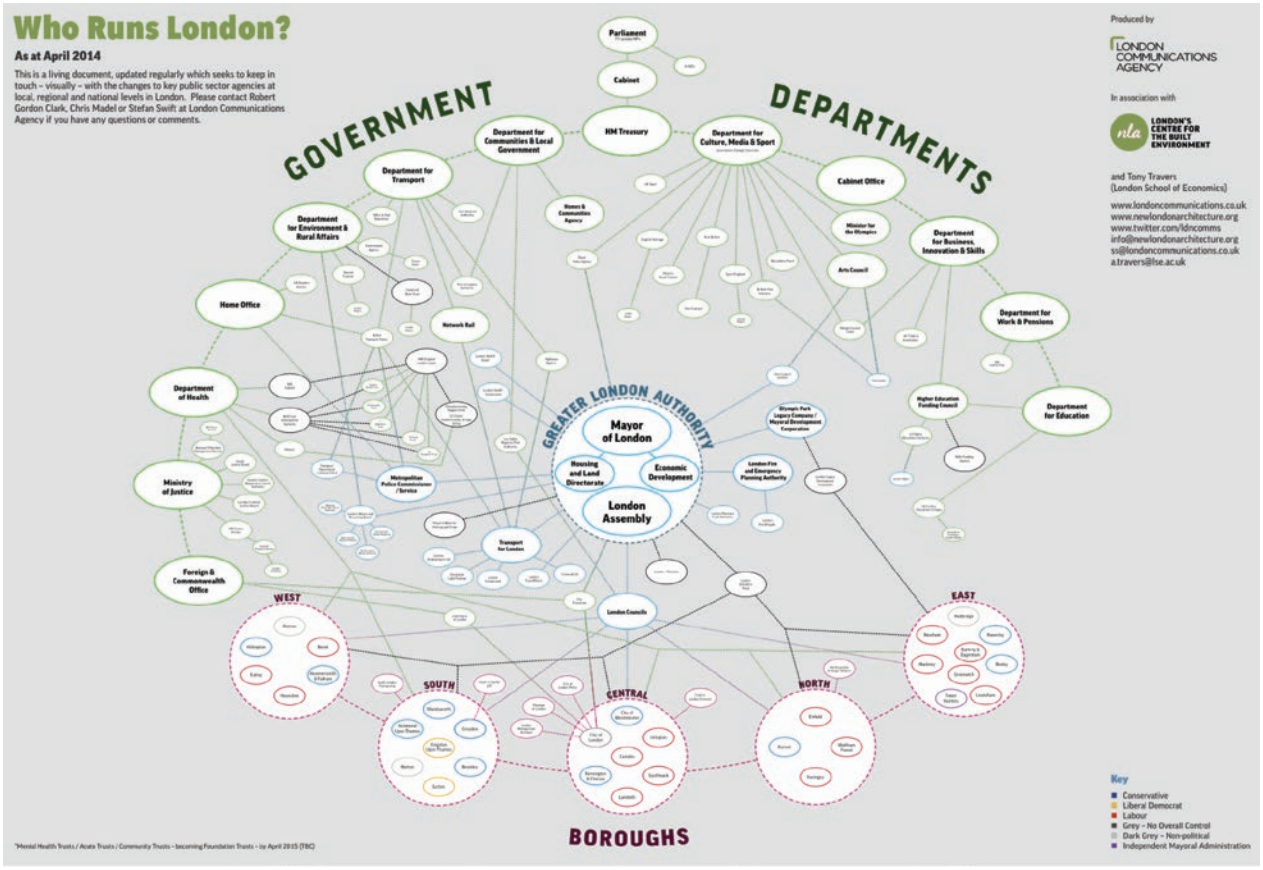
The new system also had implications for London's 33 boroughs, as the mayor of London soon recognized that he could negotiate directly with central government without their endorsement or support. Although the boroughs are responsible for the lion's share of local expenditures in London, they were not given the flexibility to adapt spending priorities according to local needs. The 2003 *Local Government Act* provided the boroughs a little more flexibility in their capital spending and some developed capital reserves and the capacity to borrow money for local infrastructure projects. But the New Labour Government chose not to reform the centralized system of grants, business rates, and council tax, and retained substantial central control over local authority revenues and expenditures. By keeping national non-domestic or business rates at the national level, the boroughs witnessed a disconnect between the growing amount of economic activity they hosted and the revenue they were able to generate. Instead the boroughs have continued to partner with the private sector, sometimes on unfavorable terms or with uncertain outcomes. A cap on council housing debt also restricted their ability to borrow against core assets and build affordable homes.

In response to this situation, the boroughs have tried to network and collaborate more effectively. A new Association of London Government (now London Councils) was created to represent the boroughs, but suffered after much of its leadership left to join the London Assembly or other higher tier government organizations. At the same time, the mayor and the GLA have slowly gained the power to overrule local decisions for strategic reasons that might benefit London as a whole. Rulings by the mayor or the relevant secretary of state to reverse or impose decisions are not uncommon. Although the Community Infrastructure Levy and New Homes Bonus gave boroughs the opportunity to innovate locally, tensions have surfaced between some boroughs and the GLA as to what extent London should densify and pursue more development. The future capacity of London's lower government tier, and the balance of powers between them and the metropolitan government, have not been fully mapped out (Travers, 2015).

Meanwhile, incremental adjustments to the GLA's powers in 2007 and 2011 gave more powers to the mayor and the GLA in climate change policy, planning, and housing. London's business-led promotion initiatives were placed under GLA control, which eventually integrated them into a single organization in 2011 (London and Partners). Housing powers were also transferred in 2012 as London took on the local role of the Homes and Communities Agency. By 2012, the London Local Enterprise Panel was created under the supervision of the GLA. Today it brings together business and borough leaders as advisors to the mayor's economic strategy, providing intelligence, forecasting, and advice—and managing some of the GLA's economic policies (Travers, 2004, 2015; Clark, 2015). London has been able to prepare the most ambitious set of strategic plans of any British city, from economic development to spatial to environment and cultural strategies. The city has shown the central state that city governments and local authorities in the United Kingdom can be trusted to assume new responsibilities.

Financially, as much of 63 percent of borough and GLA revenue still comes from central government. London's leadership still has to bid for funding at the national level, often for highly visible trophy projects, as opposed to funding its own development. This is compounded by severe borrowing and tax raising restrictions at the borough and GLA levels, which are a legacy of the era when national confidence in local authorities collapsed in the 1980s. As little as 7 percent of GLA funds and 4 percent of borough funds are raised through borrowing (Moonen and Clark, 2016).

Figure 1. London governance map



Source: London Communications Agency, New London Architecture, and Travers (2015).

The GLA's Key Achievements

For the first decade of its existence, the GLA-Mayor model was successful in at least five areas.

Securing central government's backing for London's global roles. For instance, the London Project Report, developed by the Offices of the Prime Minister and Deputy Prime Minister in the early 2000s, offered targeted intervention from central government in key areas where the GLA was unable to act, specifically over social inclusion, skills, and upgrading public services.

Skills and education. The GLA's economic development strategies have focused on skills and mobilizing central government investment in education and re-skilling at the city level and London has achieved a major turnaround in the quality of its schools. Even with changes in mayor and government, the GLA and the mayor's team have consistently secured central government's backing in these key areas (Moonen and Clark, 2016).

Transport. A transport strategy was published in 2001, with a follow up in 2010, that helped secure much needed cycles of investment for TfL to improve the transport network. A congestion charge was introduced to alleviate traffic in the center, while TfL's fare structure allowed it to cover most of its operational costs independently, with central government co-funding large capital projects. Central government was convinced to fund one-third of Crossrail, with the rest coming from community infrastructure levies, business contributions, TfL, and the GLA. TfL's early successes have seen car traffic drop by 20 percent in London, and London Underground delays drop by 40 percent between 2007 and 2014 and by a further 38 percent in 2015 based on the 2011 baseline (Moonen and Clark, 2016; TfL, 2014).

Spatial management. In 2004, London published its first comprehensive spatial strategy since 1945, the London Plan. With a strong focus on managing population growth, it is in a sense a strategy of strategies. It has identified key zones for redevelopment in London to increase housing supply, notably through targeted densification around transport nodes. These so-called opportunity areas are unlocked by the GLA and boroughs, with development and amenities led by the private sector in negotiation with local authorities (Mayor of London, 2015a; Clark, 2015). At peak capacity, these 38 opportunity areas may ultimately provide an extra 300,000 homes to London. Successful intervention sites to date include Kings Cross (where a mixed-use neighborhood has reclaimed defunct railway yards), White City around the BBC's former headquarters, the Paddington Basin, and of course the Olympic site at Stratford. More recent areas have been identified in east and outer London, often around suburban town centers next to transport nodes. The London Plan has enabled a dramatic increase in housing densities in London and has enshrined the principle of sustainable transport-oriented development (Mayor of London, 2016b; Clark and Moonen, 2015).

Not all systems have fallen under the purview of the London Plan as implementation powers are retained by the boroughs, although the GLA has been gaining capacity to overrule local decisions for strategic purposes. Despite its constraints, the plan is a critical tool to integrate spatial planning and transport-led development for sustainable growth in London. It has also successfully mobilized the Department of Communities and Local Government, the Department of Transport, the Department of Energy, and the Department of Environment, as well as the GLA and TfL, to focus on integrated objectives for London.

Promotion. London's global reputation improved substantially in the 2000s and has contributed to the city's growth. When the GLA was founded, it took under its wing the activities of the London First Centre and other promotional agencies, and spent £30 million a year from 2002 to 2010 on the city's brand. The architecture of the promotional organizations of the 1990s evolved into three agencies: Think London (as the London First Centre was renamed), Visit London (tourism), and Study London to promote its higher education offering. The private sector expertise amassed by London First in the previous years and the tight collaboration with business made London's new promotional agencies indispensable in securing the Olympic bid in 2005—something largely unthinkable in 1990. At first these agencies did not always deliver a coordinated message. That said, campaigns such as "Totally London" and "Only in London" very successfully raised the city's profile in North America and Europe. By 2009, in response to the financial crisis, a Promote London Council was created to improve integration between the promotional agencies, culminating in their fusion into one organization in 2011: London and Partners. Today, it continues to secure private and public funding with the help of over 300 public and private partners, and offers tailored intelligence packages as well as an integrated brand message focusing on London's contemporary strengths. It helps to dispel misconceptions surrounding visas and costs, although it still lacks more integrated promotional tools such as tax incentives, direct investor support, or its own events and promotion infrastructure, such as conference centers (Mayor of London, 2016b; Clark and Moonen, 2015).

The effectiveness of these strategies was greatly amplified by London securing the 2012 Olympic Games. The then Mayor Ken Livingstone made no secret that securing the bid was a way to convince central government to disburse more funds for London, while achieving key regeneration targets in the East End (especially around Stratford and the so-called Thames Gateway). Full government support was successfully realized by presenting a case for the Games that combined the objectives of the London Plan with the value of promoting London and Britain internationally. The sequence of public and private investment projects in transport and housing triggered substantial regeneration around Stratford and the Lower Lea Valley, with stronger social inclusion and jobs than in London's first cycle of regeneration during 1985–95. The post-games investment is managed by a mayoral corporation, the London Legacy Development Corporation, which is charged with housing and infrastructure development in the Olympic Opportunity

Areas and receives direct financial backing from the central government (Clark, 2015).

The new era of metropolitan government in London consolidated the city's nascent system of negotiated consensus. Rather than the private sector negotiating with fragmented local bodies and central government departments, the GLA and the mayor negotiate on London's behalf with all tiers of government and businesses to secure the resources to manage London's continued growth.

Attempts to Build Sustainable Regional Growth in London

Managing growth in London has also meant finding ways to manage population and infrastructure change through relationships beyond the capital's core boundaries. London effectively became a regionalized economy in the early 20th century, and its green belt encouraged "leapfrog" development into settlements across the surrounding region, known as the Greater South East (GSE). This puts London at the center of a functionally polycentric region that has strengths in research and development, innovation, and high-end services, notably in the M4 corridor from London to south Wales and the London Stansted Cambridge corridor (Thompson, 2007; LSCC Growth Commission, 2016).

In 1994, the central government created government offices for the regions, including the south east and east of England surrounding London, which together formed the GSE region. However, they were merely branches of central government in the regions. With New Labour's accession to power in 1997, regional development agencies were created, including for the east and south east of England, and the London Development Agency was embedded in the GLA. Their purpose was to formulate economic development plans, and later, spatial planning strategies with a view to coordinating growth in by far the United Kingdom's biggest regional economy. Made up of business representatives, civil society, and local authority representatives, they were scrutinized by regional assemblies of local politicians (Kantor, Lefèvre, Saito, et al., 2012; Gordon, 2004).

The division of the GSE into three agencies, however, had only limited success in forming a coherent growth management strategy for London's city-region. Early on, the London Plan had the capital containing its growth within its own boundaries in the medium term, and surrounding local authorities showed limited interest in wider regional cooperation. The south east and east regional agencies were themselves concerned with creating regional identities and fostering their own competitiveness, which often meant introspective rather than cooperative policies across the wider functional region. Attempts at creating a single authority were deemed implausible as such a region would have disproportionate weight in the British economy. Nonetheless, they did manage to form a pan-regional forum to liaise on key issues. Notable successes included gaining strategic government investments in rail, port, and airport improvements; coordinated urban regeneration and environmental policies; and successful bids for European funds. But in 2010, the regional development agencies were disbanded, preventing them from making a more significant impact (Kantor et al., 2012; Gordon, 2004).

2010—: Sustainable Development and the Price of London's Success

The two generations of maturing negotiated governance of the 1990s and 2000s empowered London to enhance its public realm and street life, internationalize its economy, and upgrade its transport, all with considerable success. However, the return of metropolitan government in London did not solve all of the growth management issues that had arisen over time.

While London's public–private collaboration to regenerate under-optimized sites has become even more proficient, it did not adequately address housing demand. London's population surprised most by surpassing its pre-war peak of 8.6 million and will probably reach 10 million within 10 to 15 years. But house building has fallen significantly behind demand. Key obstacles include difficulties and opposition to assembling sites, limited borough finance and capacity, and skilled construction

labor shortages. Currently around 50,000 completions are needed a year to keep up with demand, a figure that has not been achieved in living memory (Clark and Moonen, 2015; Mayor of London, 2014). As the opportunity areas identified for densification are built out in the 2020s, London will need to find new sites to settle population. Yet London has no formal mechanism to coordinate land use and transport planning with the GSE. Already, 900,000 people from the region commute in to London, and businesses in the area depend on the supply of good connections, services, and housing beyond London's boundaries (Clark, 2015).

With the shortfall in housing supply has come affordability issues, with many low-income groups locked out of the housing and labor markets in London. While previous cycles of growth saw relatively little displacement of low-income populations thanks to mixed-use densification, the shortfall in supply today is having more detrimental social effects. This adds to the fact that physical regeneration in London was more successful than social interventions, compounding the need to address exclusion in more systematic and creative ways in future.

Today, as transport accounts for 65 percent of total GLA expenditures and funding has been secured until at least 2021, London is seeing a much needed increase in capacity with new orbital routes (the Overground), more light rail (the DLR extension), a new regional east–west route (Crossrail), and upgrades to others (e.g., Thameslink and the Underground network). But transport will also need further ongoing investment as the city grows, with major projects coming online in the next few years only helping to catch up with existing demand, not addressing future growth. New lines (e.g. Crossrail 2 and a larger Orbital system) and extensions (e.g. Bakerloo Line and Crossrail) will be needed. TfL estimates an 80% increase in capacity is required to tackle crowding on Central London services and meet growth between now and 2041. The schemes in the Mayor's Transport Strategy alone are thought to require an average capital investment of around £3.3bn a year over the long term, just under 1 percent of London's gross value added (GVA). Recent estimates suggest that across all infrastructure classes, London will need to increase its level of spending relative to GVA output by about 1.5 percent to meet its growing needs. At the same time, London faces many obstacles to agree solutions around future airport capacity and sustainability targets (Mayor of London, 2014, 2017). Despite the substantial overall progress, the demands of London's growth creates continual pressure to invest and innovate.

New Solutions for a More Sustainable Growth Settlement

London's governance in much of the last decade has unfolded in a context of deep fiscal austerity. Like other British local authorities, London boroughs have borne the brunt of cuts in government expenditures. Granting community infrastructure levies and other, smaller levy schemes have not changed the fact that the boroughs are highly dependent on central government largesse for their development plans (council tax represented just under 12 percent of their income in 2015). Today, they act increasingly as partners to developers to bring in more housing and raise revenue for capital investments, particularly through the New Homes Bonus, which offers central government grants to boroughs making progress on housing. London boroughs have been caught in between the surge in demand for services and investment and limited resources to meet them.

Financial challenges have been an important spur to London's leadership, developing and advocating for new tools to enhance its growth management abilities and reduce pressures on key systems. The mayor and the London Local Enterprise Panel have pressed hard for greater fiscal devolution to help London finance its own projects and not depend on the central government. A London Finance Commission was set up by the panel in 2013 to put forward suggestions for fiscal devolution in London. It recommended that London should be allowed to keep 12–13 percent of the revenues it generated, instead of the current 7 percent, and argued for a greater devolution of business rates and other local taxes. Central government made partial concessions in 2015–16 and, as part of a wider national effort, declared that all local authorities in England will be able to retain 100

percent of their business rates by 2020 (currently business rates account for 9 percent of GLA and borough revenue). For London, business rates revenue—which is currently split approximately 60 percent:40 percent in favor of the boroughs—will increase the predictability of the funding stream and provide a firmer foundation for large infrastructure projects. At the same time, central reforms have unlocked funding for a Local Growth Fund for London, delivering almost £300 million in funding for housing, skills, and infrastructure. Other, larger fiscal concessions have not been forthcoming (London Finance Commission, 2013; HM Government, 2014, 2015; London LEP, 2016; BBC, 2015).

At the same time, various GLA agencies are experimenting with innovative financing mechanisms to fill the gaps. TfL is developing its property portfolio around its stations with private partners in the hope of raising £1 billion to reinvest in its services while providing 9,000 new homes. In the meantime, the Northern Line extension to Battersea, to support new housing developments, is being financed through a Tax Increment Financing scheme. The GLA is borrowing £1 billion, which will be repaid by future uplifts in the business rate revenue resulting from the new development (Sell, 2014).

In terms of housing, the GLA and the mayor have commenced several initiatives with support from central government to facilitate land acquisition. The Housing Strategy of 2013, building on London's newly acquired powers, provides for the creation of housing zones to meet a 42,000 unit a year target. These zones are to be nominated by boroughs and fast tracked for planning, land assembly, funding, and taxation relief through GLA–government collaboration. Central government initially made £200 million in loans available for the boroughs, with the rest matched by the GLA, to prepare sites. It also granted local councils the power to issue Development Orders to remove obstacles to development. Around the same time, a London Housing Commission was created to identify public sector brownfield land suitable for development. An interim report in 2016 identified enough land for 130,000 extra homes, which itself concedes is likely a conservative estimate (Clark, 2015; Mayor of London, 2015b; GLA, 2015c).

In addition, in a bid to secure infrastructure investments that are less dependent on negotiations with central government and one-off trophy projects, London has set up an Infrastructure Delivery Board. Made up of key city and business representatives, it identifies the city's long-term infrastructure needs through evidence-based scenarios, and published the London Infrastructure Plan 2050. More than a wish list of projects, it provides clear evidence of London's future needs, and potential routes to achieve them, to signal to central government what must be done to manage London's growth. Among other things, it forecasts the need for a 70 percent increase in transport capacity, 20 percent more energy capacity, and 10 percent more green space, as well as extra water and waste facilities. In 2016, as a first sign of movement, it was announced that TfL would assume control of all suburban rail routes as their franchising arrangements expired (Mayor of London, 2014).

A Smart London Board has also been established to identify and coordinate developments in smart infrastructure as an emerging means to improve the functionality of infrastructure systems in London. The Smart London Plan aims to leverage London's tech sector as a key source of innovation to deal with its growth and infrastructure challenges in the coming cycle (Mayor of London, 2016c).

The London Local Enterprise Panel has also developed its own economic strategy—not to compete with the GLA's, but rather to provide a longer timeframe through which key growth management issues for business and competitiveness can be identified and brought to the central government's attention (Clark, 2015).

These innovations are small, incremental steps toward a more integrated and fiscally independent system of governance in London. They represent continuity in the city's tradition of negotiating the resources it needs to manage its growth with central government and businesses. In recent years, it has gained further momentum on the back of political devolution and decentralization in the United Kingdom, as regions (such as Scotland) and cities (such as Manchester) are experimenting with greater devolved powers.

Table 2. Summary of London's Four Cycles of Metropolitan Governance

	1st cycle	2nd cycle	3rd cycle	4th cycle
Governance context	Abolition of Greater London Council	No citywide government, national Government Office for London	Creation of Mayor of London and GLA, Transport for London	Mature two-tier system, local government austerity
Key developments	Stand-alone physical renewal projects	New business leadership organizations and business-led initiatives	Metropolitan spatial development, transport, and environmental plan	Negative externalities of growth and success
	Experiment with development corporations	More regeneration funding from central government	Engagement of universities and institutions as sources of leadership	Case for more fiscal autonomy
	Inner-city boroughs more opportunist about private sector development capital	Improved marketing and promotion	Collaboration across Greater South East	Long-term infrastructure planning
	Gradual emergence of second CBD	Internationalization of population	National support for major projects (e.g., Crossrail, Olympics)	More strategic use of public land
		Rapid growth in finance and business services	Fully integrated city brand	Smart system management

The Future of Metropolitan Governance in London

Beyond the recent suite of innovations, it is clear London still faces dilemmas related to growth management in terms of housing, transport, and wider regional collaboration. The likely priorities in the next cycle, for Mayor Sadiq Khan and the other leaders in London's distributed leadership system, include the following.

Agreeing to tactics and priorities for housing growth. London needs clarity on which sites will be developed once the opportunity areas and other existing sites have been optimized. London's reservoir of brownfield land will probably be exhausted around 2020, which raises the politically fraught question of whether future housing should be directed to the currently protected green belt or to new towns and regional cities or using other solutions in Greater London (Clark and Moonen, 2015).

Achieving the right level of fiscal autonomy for London and other U.K. cities. The recent growth deals and devolution of business rates provides a limited source of self-financing capacity. But London remains in one of the most centralized financial arrangements in the world and cogent cases for bigger reform have not yet been implemented.

Developing the right size and competences of the local tier of government. Although the two-tier system is widely viewed as working well, there is debate about whether 33 boroughs is the right number to give them the scale, knowledge, and incentives to collaborate in larger units and with the citywide system.

The relationship between the London Assembly and the mayor. At present, the Assembly has been primarily a scrutiny body for the mayor. It has limited powers and in 16 years has yet to vote down a mayor's budget, giving rise to concerns about whether it can provide the right degree of accountability. There is active discussion in London about whether the Assembly should be given its own law-making and spending oversight powers, or whether reform is needed to absorb its functions into another body.

Organization and coordination for London's city-region. TfL has gained the right to manage suburban rail services as their current franchises expire because of its excellent record in London itself. This will facilitate the integrated management of and investment in regional rail routes leading into London. Beyond the services it will acquire direct control over in London, TfL is working with the Department for Transport to deliver a joint vision and management framework for rail in the GSE. This effectively grants London a greater say in the management of its transport needs in the wider region. Although local authorities in the region do not fully collaborate on the key issues of housing, green space, and sustainable growth, since 2014, voluntary cooperation is re-emerging through regional summits that bring together the 156 local authorities and the 11 Local Enterprise Panels. Posts have been created within local governments to facilitate collaboration around transport corridors and housing, and are underpinned by an effort at shared data collection and analysis by all the relevant local authorities. Although a more empowered regional entity is unlikely in the near future, this new period of debate and knowledge exchange promises a more positive cycle of regional collaboration (Sandford, 2013; Mayor of London, 2016f, 2016g; Wider South East Summit, 2015a, 2015b; TfL, 2016b).

London's transformation as a global city over the past 30 years has been enabled by increased awareness of its metropolitan governance needs and the increased maturity and pragmatism of the public and private actors within it. A new phase of institutional development in and with U.K. cities has been underway since 2010, meaning the national system is also evolving into a more negotiated structure. The momentum for further devolution in other "secondary" cities creates a more favorable political environment for London to extract genuine reforms for its own growth needs. In the next cycle, given political concern in the United Kingdom that London's contribution to national economic growth no longer outweighs the negative effects of its tendency to "suck in" talent, jobs, and investment, a shared national urban strategy may be needed. Given the scale and complexity of London's challenges, national policy will also need to review the future of the city's green belt and of the metropolitan infrastructure and institutions in order to organize the capital's real economy and quality of life in an integrated and sustainable way.

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3.18 Grand Paris, Metropolitan Governance by Design?

Nicholas Buchoud (Grand Paris Alliance for Metropolitan Development)

Abstract

Since the turn of the millennium, Paris has become metropolitan. The process culminated in the establishment of a new institution in 2016, the Métropole du Grand Paris. Institutional competition has nevertheless tempered the remarkable rebirth of the Paris agglomeration since the turn of the millennium. "Conflicting cooperation" has been a dominant pattern of the Grand Paris model. Additionally, long-term big investments and the establishment of new institutions are being questioned by digital, social, and environmental changes, which are reshaping the metropolitan landscapes at a rapid pace. This chapter provides unique insight into one the world's most epic contemporary metropolitan journeys.

Governance of the Paris agglomeration has been dramatically reshaped since the turn of the millennium. The path toward a metropolitan organization has not been straightforward. It is a blend of bold policy innovations and disruptions, opportunistic alliances, and conflicting visions of decentralization under the combined pressure of local and global trends. Turning Paris into Grand Paris stands out as a mix of formal, top-down decision-making processes and informal, bottom-up initiatives.

Starting over a decade ago, the Grand Paris momentum turned a notoriously complex territorial organization into a cradle of game changing initiatives. It transformed the ailing regional system inherited from the 1960s into a metropolitan project of global significance. Grand Paris offers a number of original and valuable lessons on metropolitan governance in a global context. It shows the need to find the right balance between formal metropolitan integration by the law and project-led metropolitan development by design. It further highlights that metropolis governance is about understanding and managing complex urban ecosystems more than about delineating new boundaries and forcing the creation of new institutions.

Complex, Multi-layered Territorial Governance Framework

Grand Paris

Grand Paris primarily designates a comprehensive, large-scale transformative project turning the Paris agglomeration into a leading 21st century global city, formally launched in 2007. The first legal step was taken three years later in 2010 with the *Greater Paris Act* (June 3, 2010), which gave birth to a new public company, the Société du Grand Paris, meant to finance and build a new metropolitan transit network, the Grand Paris Express, an investment of €24 billion over 20 years. The *Greater Paris Act* also introduced new housing construction goals for the Paris agglomeration and defined a number of local development contracts between municipal governments of the Paris agglomeration and the national government. The Act did not create any new levels of government.

Métropole du Grand Paris

The Métropole du Grand Paris (MGP) was created in 2016. It is composed of 131 municipal governments,

regrouped within 12 inter-municipal entities, including Paris. The MGP covers the area of the four central districts of the Ile de France region and has 7 million inhabitants over a total area of 814 square kilometers.

A metropolitan assembly of 208 members elects the president of the metropolitan authority. The members of the metropolitan assembly are not elected but selected at municipal and inter-municipal levels by the municipal and inter-municipal assemblies. The MGP was established as a legal entity after a complex legislative process that lasted from 2013 to 2015. It is the outcome of two rounds of national administrative reforms: the *Metropolitan Act* of 2013 and the *Regional Act* of 2015. The metropolitan area has an estimated GDP of €475 billion, accounting for more than 75 percent of the total regional GDP (DRIEA, 2015). Many observers expect the current organization of the MGP to evolve in the near future.

Paris

Paris is composed of 20 boroughs. It has the dual status of municipal government and district. The Council of Paris, the city's deliberative assembly, has 163 members. An administrative reform aimed at regrouping Paris' four central boroughs was approved in 2016 but is still being discussed. Paris has 2.2 million inhabitants over a total area of 105 square kilometers.

Ile de France

The territorial administration of the Paris region, or Ile de France, is composed of 1,278 municipal governments, 82 inter-municipal governments, and eight districts. The region counts over 12 million inhabitants over a total area of 12,000 square kilometers. The Ile de France also has a regional level of government based on an elected regional assembly of 209 members that elects the president of the regional assembly. The president of Ile de France is elected by indirect universal suffrage. The region accounts for over 6 million jobs and 30 percent of the French GDP or over €640 billion (CCI, 2016).

Metropolitan by Design

Grand Paris did not emerge overnight. Before the term was coined in 2007, years of growing cooperation between Paris City Hall and the cities of the core of the agglomeration paved the way for significant change in the local political culture. Bertrand Delanoë, the mayor of Paris between 2001 and 2014, was an advocate of pragmatic inter-municipal cooperation. In the past 15 years, metropolitan governance emerged as a pattern of conflicting cooperation, with a continuous trend toward more integration, if at times challenging and erratic. The metropolitan glue that held the pieces of the jigsaw together came from professionals and politicians who, regardless of their affiliations and backgrounds, championed metropolitan integration.

In the early 2000s, while Britain's Greater London Authority was thriving, the Paris agglomeration seemed stranded and plagued by its legendary administrative complexity blended with the localism of political elites. Few decision-makers were measuring the impact of emerging mega-trends such as rapid urbanization around the world and the rise of cities on the global agenda. The balance of power in the agglomeration continued as in previous decades. Paris remained isolated behind its ring road. The Ile de France regional government was fighting for greater devolution of power from the central government.

In the fall of 2005, France was plagued by severe urban riots that spread throughout the country after the death of two youths chased by the police in a low-income social housing suburban area north of Paris. Despite the launch of a national regeneration program of post-World War II social housing stock, Parisian suburbia suffered weeks of serious unrest that revealed how social and territorial fragmentation deeply affected the entire agglomeration.

In June 2006, an informal forum of Paris agglomeration city mayors, La Conférence Métropolitaine, was launched as the result of a series of initiatives led by Paris City Hall since 2001. This forum opened a new era of cross-boundary and cross-sectorial cooperation among voluntary participants. The initiative successfully

brought together city mayors from different political affiliations and the metropolitan conference became a permanent structure. The conference was transformed in 2009 into a cooperation body known as the Syndicat Mixte d'Etudes Paris Métropole, with 212 local government members as of January 2015.

A year later, in 2007, the newly elected French President Nicolas Sarkozy coined the phrase Grand Paris during a speech he delivered for the inauguration of a new terminal at the Roissy Charles de Gaulle international airport. By Grand Paris, he meant the Paris agglomeration should regain its status among leading global cities in a changing world. He also meant metropolitan issues should be a top priority on the national agenda.

In those days, the Ile de France regional government was the institution legally in charge of planning the future of the Paris agglomeration, with the help of a number of technical agencies, such as the Regional Planning Agency. The regional government and the Regional Planning Agency of Ile de France were proudly leading the revision of the regional master plan. A massive process involving months of public hearings and mobilizing dozens of experts, the new regional master plan aimed to revive the regional planning heyday of the 1960s while also responding to contemporary concerns, such as climate change and the social costs of urban sprawl. While the plan developed a comprehensive vision of the region's spatial transformations, numerous critics pointed out that it failed to address the real economic and infrastructure issues of the French capital region in an era of global capitalism.

The presidential announcement of June 2007 created much discontent within the regional government but this did not prevent the Grand Paris process from advancing and opening new horizons.

A New Metropolitan World of Opportunities

In 2008, the French Ministry of Culture organized an international consultation out of which 10 international multidisciplinary teams were selected to design a greener and more active future for the Paris agglomeration. This would be the first step of a deeply transformative process connecting sustainable and climate friendly visions with investments in housing, landscape, research, and infrastructure at the metropolitan level. It would also be about inventing 21st century forms of urbanization. Led by architects and planners, over 500 urban development professionals from all disciplines worked tirelessly for about a year, bringing in guest experts, students, academics, investors…and local politicians. The consultation nurtured an in-depth reassessment of the agglomeration system. Countless field visits developed a comprehensive understanding of the real spatial impact of local, regional, and global social, environmental, and economic trends. The team leaders were invited several times by the French president to the Palais de l'Elysée to share their assessment and draw future design proposals, bypassing the traditional French technical expertise production controlled by competing national engineering corps.

In the early Grand Paris years, new ideas, concepts, and projects flourished. Though not all have survived, it opened a new era for large-scale planning and urban design. The Grand Paris international consultation and its aftermath served as a stepping stone for many of the architects and planners involved. It reconnected the Paris agglomeration with world class built environment practitioners. Meanwhile, the French president did not lose sight of more institutional politics, as he appointed a deputy minister, Christian Blanc, in charge of developing the capital region and turning the intellectual momentum into more concrete plans. The deputy minister's roadmap envisioned a new metropolitan economic strategy to develop a number of world class hubs (such as business and research and development) and connect them with a new suburban transit network. He was assisted by a dedicated taskforce of 40 experts.

Despite conflicting visions between most of the leading architects involved in the international consultation and the new deputy minister, Grand Paris as a transformative process triggered unprecedented renewal and an update of data, information, visions,

and projects around the Paris agglomeration and its transformations (as opposed to Grand Paris as the result of a pre-existing institutional reform). Countless official reports, white papers, articles, books, journals, studies, plans, and reviews have been released over the past 10 years. Even more roundtables and conferences have been organized, affirming Paris as a global city bursting with energy to guide its future.

In 2013, the scientific advisory body that arose from the 2008 Grand Paris international consultation, the Atelier International du Grand Paris, issued a map showcasing more than 650 major development and construction projects within the Paris agglomeration and even beyond. In a 2014 study (Buchoud, 2014; Buchoud and Rouvet, 2014), the Grand Paris Alliance for Metropolitan Development, a Paris-based, not-for-profit think tank, estimated that about 50 initiatives and networks had emerged within civil society, including businesses, as a result of the Grand Paris process connecting placemaking, sustainability, and mobility. This means about 400 professionals and citizens from different backgrounds believed in the virtue of metropolitan opportunities and turned them into action. In a new survey conducted in 2016, the think tank estimated the number of such initiatives at about 100, which is all the more remarkable since, during the same time, several clumsy institutional attempts to organize or coordinate civil society have failed.

Momentum for Grand Paris has paved the way for an overall reset of strategic investments in the Paris agglomeration and beyond. This includes the redevelopment of the Seine Valley, a 200 kilometer long industrial and environmental corridor between Paris, Rouen, and Le Havre. Among other concrete outcomes, the formerly competing port authorities from Paris, Rouen, and Le Havre have established a single coordination and investment planning body. The creation of a new canal connecting the Paris agglomeration with the global port of Rotterdam was also launched. Canal Seine Nord Europe is a 100 kilometer long, €5 billion project creating a new water connection between Paris and the port and waterways system of Northern Europe in Belgium and the Netherlands. New, very long-term infrastructure visions were conceived, connecting the national and European high-speed rail network with a revamped regional transit system.

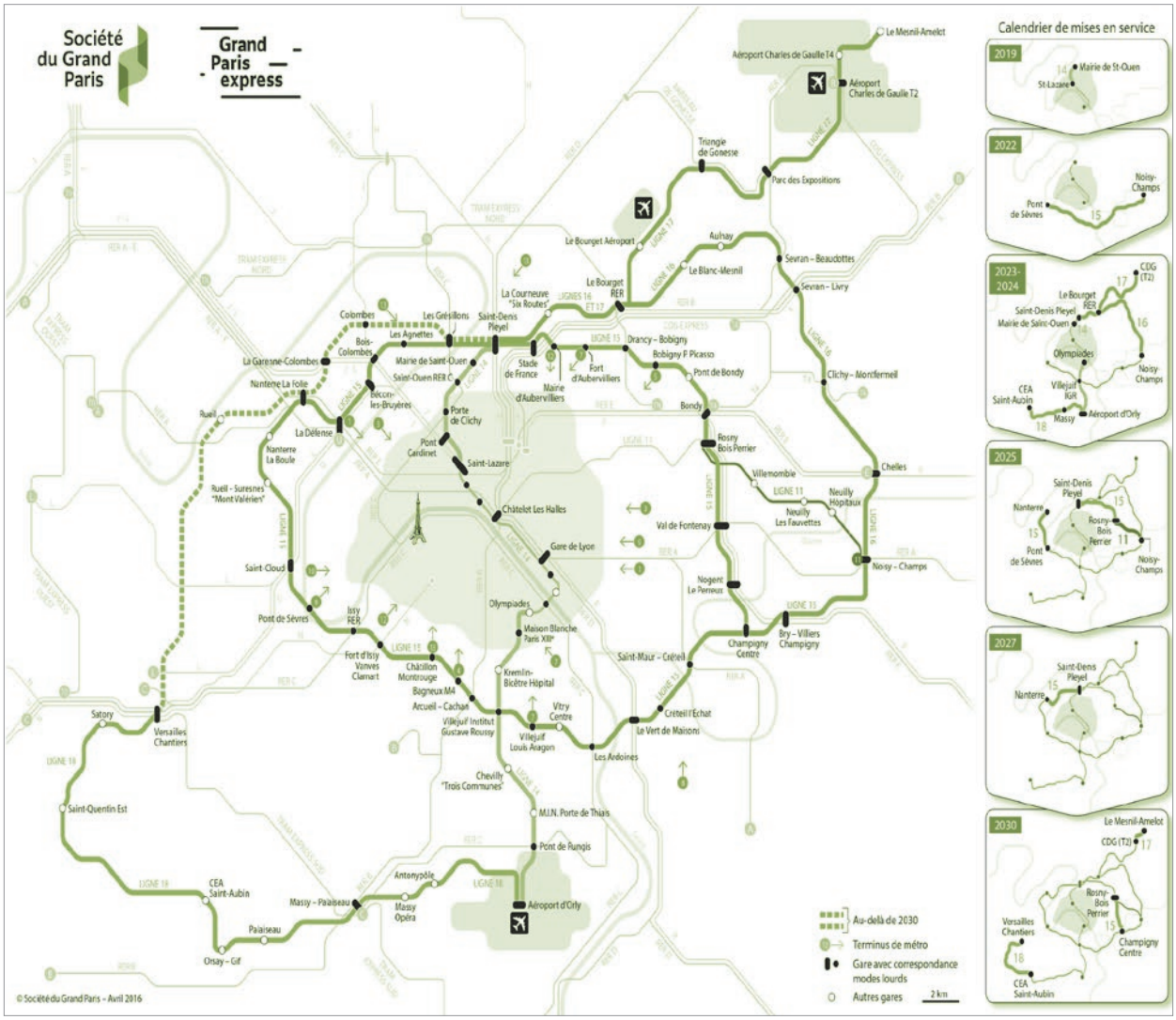
The Grand Paris metropolitan process has affected entire sectors of the economy, such as the real estate industry, with more than 50 million square meters of office space at regional level and more than 30 million within the core metropolitan area. Grand Paris has become an important location for major global accounting firms, brokers, and investor networks. The energy sector, though highly centralized and state controlled, has also undergone significant metropolitan changes. Many companies have created dedicated Grand Paris business units and programs, be it about energy distribution, supply, or consumption. In the fields of water and waste management, lobbying is now carried out under a Grand Paris label, which sounds more attractive to customers and users.

Conflicting Cooperation as a Governance Pattern?

Next to Grand Paris as a large-scale urban design transformation, the creation of a new metropolitan transport framework has become a metropolitan cornerstone.

Mobility and transportation emerged as key issues in the work of all the teams of the 2008 international consultation. It was also the core of the mission of the Grand Paris deputy minister. The regional government, legally in charge of public transportation in the Paris agglomeration, was anxiously witnessing the changes. One afternoon in spring 2009, a small delegation of top regional government executives piled into a car that stopped outside a back door. Minutes later, they were led into a room and met by two aides of the Grand Paris deputy minister. It was the turning point of months of tensions and media controversy between the central and the regional government, as the regional government representatives were presented for the very first time the concept and sketches for a new Grand Paris metro system.

Figure 1. Grand Paris Express Plan for 2030



Source: Société du Gran Paris, 2014.

Turning competing visions and strategies into a new public transit network involving tens of billions of euros in investment has been no easy task. The regional government strongly resisted the initiative but the national government nevertheless passed a *Grand Paris Act* in June 2010 and forced its way through. It imposed the vision of Grand Paris as a world class capital region based on the development of a series of world class economic hubs and science clusters, connected by a brand new metropolitan transit system of more than 200 kilometers and 70 new metro stations. Despite the *Grand Paris Act* being voted on, and many city mayors viewing it favorably, the national government's decision to bypass regional government generated resistance. The architects who competed during the Grand Paris consultation joined forces and vocally disclosed their own vision of a Grand Système Métropolitain. In the fall of 2010, Grand Paris was on fire. The entire decision-making system was blocked and the quest for a consensus looked hopeless.

In order to move on and reach an agreement between all parties, a superlative public debate was established so that the national and the regional governments, as well as the architects could submit their

plans. During the fall and winter of 2010–11, massive public hearings brought tens of thousands of metropolitan dwellers together to discuss the different options. A frenzy of activity seized all administrations as well as the French railways and the Paris metro public company where engineers were called to the various sides. The Grand Paris deputy minister created an informal club of key public and private decision-makers, including a representative for the architects. More than 200 written contributions were submitted by businesses and civil society organizations.

At the beginning of 2011, all parties reached an historic agreement. As of today, the corresponding version of the Grand Paris Express metropolitan transit system still stands as the main Grand Paris driving force.

Metropolitan Integration or Metropolitan Federation?

After 2011, the Grand Paris metropolitan equation was apparently simplified. It consisted of two pillars, a new metropolitan transit system on one hand and contract-based development projects of state-local governments on the other. Building on that momentum, there were attempts to deepen the transformational process. One idea was be to turn the public company created to construct the Grand Paris metro system into a metropolitan public developer. The company would build on the development and investment opportunities near the future metro stations and foster a metropolitan-wide transit-oriented development strategy. The project met resistance from local public development companies and local governments. Another idea, which a number of law firms started to explore, was to use the state-local government development contracts as a vehicle to transform urbanization bylaws and procedures and replace complex regulations with contract-based relationships between investors, developers, and local governments.

Grand Paris became synonymous with a new horizon for regional development. It embodied a chain of projects at all levels, connected by the future Grand Paris Express transit system. This was strong enough to resist the presidential elections of 2012, as the new government was urged by all parties to move ahead with the projects. Grand Paris as a metropolis by design raised hopes beyond expectations. As it proved successful, people started to think about moving one step further to establish a new metropolitan institution that would definitely address these problems.

Turning the Grand Paris momentum into an institution was not a new idea. As early as 2008, the advocates of an integrated metropolitan strategy and the advocates of a more federalist approach engaged in a fierce debate. In a report issued in 2008 (Dallier, 2008), the national senate even urged the government to move toward a new and powerful Grand Paris institution that would correspond with the Paris agglomeration. The French president had already raised the idea in his speech from 2007 in Roissy but did not elaborate, as the issue was too controversial. The same debate arose again a couple of years later as metropolitan champions in local governments and business argued that the Grand Paris Express transit network plus the forum of mayors were insufficient to respond to long-term metropolitan challenges. They advocated for integrated fiscal, housing, or environmental planning at a metropolitan level and for the bold construction of a large metropolitan institution replacing the existing multilayer territorial organization. By contrast, their opponents strongly advocated for creating a much looser coordination body with limited power. They argued that a new metropolitan governance framework should focus on reinforcing the role of existing inter-municipal organizations and that interconnected entities of about 500,000 to 600,000 inhabitants would perform far better than a behemoth administration in charge of managing an area of about 10 million urban dwellers.

The Slow Path toward Institutionalized Metropolitan Governance

While all major public and private stakeholders agreed about strengthening metropolitan governance, citizens

were barely involved or consulted. This limited the scope of the discussions about the most relevant and well performing governance structures. The debates that took place in the national assembly in 2013 as part of the discussions about a national metropolitan act failed to nurture in-depth discussion. As soon as the act was approved, the articles dealing with the Grand Paris governance system had to be reviewed. It took a new round of long and painful negotiations throughout 2014 to reach a fragile agreement regarding the creation of the Grand Paris new metropolitan authority. It was as if the conflicting cooperation pattern of metropolitan political decision-making had reached its limits during the winter of 2010–11. The country had no choice but to find an agreement regarding the financing of the future metropolitan transit system. Regardless of political affiliations and individual tactics, it was about launching a strategic investment project for the nation's future. Reaching or not an agreement became a choice between a collective win–win or a collective failure and blame. The situation was different a few years later as establishing the new institution, however important, was not seen to be as critical as the metro network.

Since 2007, Grand Paris has emerged from the political drama and tension to have positive effects. At first, it was the drama of France losing its status as a global leader. Grand Paris was poised to reboot the country's capital and to meet the 21st century urban and economic challenges. Finding a state–region agreement on the organization, finance, and management of the future metropolitan transit system was a further challenge. A major investment project, it would also become the cornerstone of the Paris agglomeration in the future. The whole country was involved in the debate. It was impossible not to find an agreement. On the contrary, setting up a new metropolitan institution was also getting back to more local issues and this process did not consume the same energy. Part of the drama had vanished and the final outcome was only halfway solid metropolitan governance.

The Grand Paris new metropolitan authority was created in 2016. The MGP does not replace any other sub-regional government level but does not have a real federalist structure either. The metropolitan authority is focused on the core of the agglomeration, leaving the question of its coordination with the regional government open. Key competences such as economic development are divided between the new metropolitan authority, the regional government, and other inter-municipality districts. There is an urgent need to tackle rising poverty levels in the agglomeration (Secours Catholique, 2016), but it will take time to establish fully functional metropolitan policies addressing prosperity, inclusiveness, and competitiveness.

The organizational structure of the MGP reflects its complex birth. On one hand, it stands out as a real institution, with a deliberating assembly of 208 members, a president, and an executive board of 28 members. On the other hand, the organization has a limited number of staff and it works more as a taskforce than as a comprehensive institution. In fact, the MGP has the same number of staff as the former Mission pour l'Aménagement de la Region Capitale back in 2008 and barely the same number as the temporary Mission de Prefiguration de la MGP, which in 2014–15 assisted with the debate surrounding Grand Paris metropolitan governance in the parliament. Grand Paris governance is still in the making and it will be interesting to monitor the next steps, as the new institution follows a roadmap of progressive reinforcement of its competences between 2016 and 2020.

An Endless Appetite for Innovation

Metropolitan making in the Paris agglomeration has always been about innovation. The launch of the metropolitan conference of mayors in 2006 was innovative and at odds with decades of local politics. The 2008 Grand Paris international consultation was different from the visioning strategies that many cities in the world had engaged in, as it raised both local and global urban development issues. The whole process of Grand Paris is innovative as it was not primarily about designing new institutions but unlocking and supporting the French capital region potential, at odds with decades of regional politics and master planning.

Grand Paris is a territorial transformation process on a large scale, mixing visions with actual investments. It is based on public and private engagement and part of its success comes from the strong and durable involvement of the civil society within. Grand Paris has been a successful attempt to overcome institutional barriers. Such ingredients have been extensively reused in other contexts in recent years.

Paris City Hall has launched an international competition for the regeneration of over two dozen development sites in Paris. The Reinventing Paris process attracted over 800 competitors from around the globe in 2014–15. The final round of selection among the 75 finalists has been extremely challenging. Despite criticism regarding the cost of the process and the stringent requirements the teams had to fulfill before even knowing if they would be selected for the next step, the competition is considered a success by city hall. It also illustrates a new trend for public procurement in times of rising scarcity of public funding, allowing for more public–private co-production of projects than before. Similarly, another competition is now currently taking place along the Seine river, known as Réinventer la Seine et ses Canaux.

In a bold move to overcome the current institutional weaknesses of the MGP, its president launched an innovative call for proposals in the spring of 2016, barely weeks after he was elected. Known as Inventing the Metropolis, the process is meant to attract investments in over 60 urban redevelopment sites, accounting for a total of 225 hectares. More than 1,600 professionals attended the plenary meeting in the fall of 2016 to learn the details of the competition.

Grand Paris was the first of a series of collaborative urban development processes on a large scale. This has nurtured new public–private ways to deal with urban transformations. It has also paved the way for more cooperation among local governments in the Paris agglomeration. The successful application for the 2024 Summer Olympics in Paris and the application for the 2025 World Expo illustrate a renewed ability of local political leaders to work together with the business sector in order to achieve common goals.

Conclusion: What about Metropolitan Human Capital?

Over the course of the past decade, Grand Paris metropolitan governance has been shaped by a blend of formal, informal, networked, individual, and collective habits and initiatives. As long as Grand Paris meant bolder ambitions and enhanced abilities to cope with urban change, it worked remarkably well. As long as it allowed for better inclusion processes of the civil society and the business sector in the definition of long-term visions, it was a success.

Turning the momentum into a lasting institution has been more challenging. Grand Paris was built on the assumption that bigger meant stronger, but several big stakeholders, namely the Paris City Hall, Ile de France regional government, the national government, and the newly created MGP, compete for the metropolitan lead. As a consequence, the metropolitan institution has paradoxically been left with the smallest room to maneuver.

On a daily basis, a growing number of pressing issues, such as air pollution and traffic congestion, nevertheless highlight the need for more metropolitan cooperation. Besides, the competition between cities is changing. Smaller but more integrated metropolitan areas are increasingly attractive. They do not suffer the same structural problems as very large conurbations. They provide many relevant illustrations of successful social innovation, powering a new generation of urban transformations. The next big thing on the Grand Paris metropolitan agenda might be to get smarter about human capital.

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3.19 Efficiency as a Prerequisite for Sustainable Regional Governance: "Joining Forces" in Stuttgart Region

Thomas Kiwitt (Verband Region Stuttgart) and **Dorothee Lang** (Verband Region Stuttgart)

Abstract

The Stuttgart Region in Germany is among Europe's most prosperous areas, characterized by a thriving industry and growing immigration. To maintain quality of life and competitiveness, providing building land and adequate infrastructure, protecting open spaces, and adapting to climate change have become high-priority issues. As none of these challenges can be tackled within the boundaries of one municipality, intensified cooperation between cities and their metropolitan hinterland is crucial. Stuttgart Region's "joining forces" approach is designed to coordinate the activities of 179 confident municipalities in the field of urban and economic development. The Verband Region Stuttgart functions as a public body at a supra-municipal level and is responsible for regional public transport, economic development, comprehensive regional planning, development of open spaces, and marketing. The members of the Regional Assembly are elected in a direct ballot, which underlines the political dimension of regional governance.

Urban space in Germany is not so much a matter of megacities but of urban landscapes where large cities and smaller local authorities are functionally linked across administrative boundaries. Despite specific challenges, most of these urban areas are facing the same tasks for the future. First, to master the challenges of demographic change, with a major shift in infrastructural requirements ("fewer nursery schools—more nursing homes") and sustained migration into attractive centers. Second, to secure global competitiveness by increasing the region's attractiveness for investors and experts. Third, to promote climate friendly energy production and adapt to the effects of climate change

In order to meet these challenges, local authorities must, among other things, provide sufficient space for residential and commercial use, adapt the infrastructure, particularly with regard to mobility, and permit important open-space functions. This requires certain planning, decision-making, and enforcement mechanisms that must be geared to the specific administrative realities in each place.

One major principle of German administration is its far-reaching autonomy of local government that is guaranteed under the country's constitution. In particular, local authorities must provide basic public services and important social infrastructure facilities (such as nurseries), ensure land-use planning, identify specific areas for construction, and promote economic development. Coordination across different municipalities within a metropolitan area is therefore particularly important in conurbations with functional interrelationships that exist irrespective of administrative borders (e.g., commuting and shopping patterns or environmental circumstances).

Numerous examples have shown that it is almost impossible to ensure sustainable development unless there is coordination within this overall structure. It is highly unlikely that the sum total of various local isolated solutions will add up to allow for the decisions for specific locations and infrastructural activities required for efficient and resilient housing structures.

Stuttgart Region: Overview

Stuttgart Region has a population of approximately 2.7 million and occupies an area of 3,500 square kilometers. Although this density is relatively high for Germany, the region has over 75 percent open space, including high-quality recreational space as well as wine growing areas and other special crops on soil that is superbly suited for agricultural purposes.

Where administration is concerned, the region is structured into very small units. Apart from the City of Stuttgart (the capital of the federal state of Baden-Württemberg), there are five administrative districts comprising 178 local authorities. Two-thirds of them have populations of less than 10,000 yet are essentially self-governing. Local authorities are partly funded through income from trade tax, generated by local businesses, as well as a share of the population's income tax. This means that local authorities are benefiting greatly from today's generally good economic climate.

Economically, Stuttgart Region is seen as among the most powerful in Europe. The output it generates is approximately €180 billion, which is roughly the gross domestic product of some of the smaller member states of the European Union.

Unlike in most German conurbations, this output comes largely from the manufacturing industry. Two of the key sectors are the automotive industry (Daimler and Porsche and their many suppliers) and the mechanical engineering industry. Another important role is played by high levels of investment in research and development—a forward-looking field that is attracting more private funds than the budgets of public research institutions.

The special constellation of companies also has an impact on demand for land, focusing on sites that are suitable for production and logistics because of their location, size, and transport links. In a region that is already fairly densely populated and that has certain restrictions in terms of topography and conservation, such space is only available to a limited extent. The main focus is therefore on meeting the spatial requirements of existing businesses and of companies that form part of the region's value chain.

The region's economic performance is also reflected in the evolution of population figures. Its natural demographic development—the ratio between births and deaths—has been negative for many years. If there were no influx from outside, Stuttgart Region would lose about 3 percent of its population by 2030. Set against this background, the steady flow of immigration since 2010 has been beneficial to the region. Particularly in the 18 to 30 year age group, the influx has been well above average compared to other German regions. People's major motivation for settling in the Stuttgart Region, especially from this age group, has been to start vocational training, to embark on a career, or to study at university.

Immigrants' countries of origin include, in particular, the more recent EU member states and the Mediterranean countries. The Stuttgart Region is therefore benefiting from the free movement of workers within the EU.

In view of the general demographic development that can be expected through the retirement of large numbers in the relevant age groups, immigration is an important prerequisite for sustaining economic performance and the high level of prosperity. But it also involves special challenges as it means providing sufficient high-quality housing and commercial space, while continually developing an infrastructure that meets people's needs, ensuring a high recreational value, and adapting to the anticipated effects of climate change.

Both the impetus and the dimension of the resulting requirements are comparable to the situation just over 20 years ago, which led to fundamental reforms in the Stuttgart Region's administrative structures.

The "Joining Forces" Approach of the Stuttgart Region

A 1993 newspaper article pointed out, "in and around Stuttgart there are increasing signs of a serious crisis. Unemployment is rising steadily. (…) The housing shortage is getting worse, partly because there is a lack of suitable construction space. Start-ups wanting to settle in the region are meeting with ever new obstacles. (…) The Stuttgart Region, its five administrative

districts and its 179 local authorities urgently need new ideas" (Borgmann, 1993).

This description aptly defined the starting point in the early 1990s. The core region of the federal state of Baden-Württemberg had no time to lose. Several business representatives and the Chamber of Industry and Commerce began to make their voices heard. It was vital that the future of the region should not be sacrificed to the specific interests of local authorities. It was felt that the time of small-scale parochialism had come to an end, especially in view of major economic challenges. The Stuttgart Region had to be repositioned as a community of locations that could act efficiently by joining forces.

These substantial demands from industry met with a positive response from the Baden-Württemberg state government when a grand coalition was formed in 1992, comprising the Christian Democrats and the Social Democrats. Soon after, in the summer of 1992, the state government set up a regional conference with workshops on different issues. Local authorities, administrative districts, and interest groups were called on to contribute ideas that would create a new political entity. The debate—which was quite heated at times—covered everything, including structures, functions, and funding. In February 1994, the State Parliament passed an *Act to Strengthen Collaboration within the Stuttgart Region*, which also included an *Act Establishing the Verband Region Stuttgart*. The brief for the newly created regional level was clear and did not lack ambition—strengthen the Stuttgart Region as a competitor both in Europe and internationally.

The Verband Region Stuttgart was set up as a public body. It was created as a greater metropolitan region that comprises the surrounding area and was expressly given powers as a funding and implementation body (Till, 2015). This solution met with very vocal criticism, above all among local councils who were concerned that their local autonomy might be compromised.

Compared to the other regions of Baden-Württemberg, the Verband Region Stuttgart was given special status with regard to its organization, its far-reaching functions, and its funding. The majority felt that this was more than adequate as the state capital region played a central role, which contributed to the positive development of the entire state.

The reorganization centered on the direct democratic legitimization of regional activities. Creating a Regional Assembly meant that the Verband Region Stuttgart was also given a regional parliament, albeit without legislative powers. Elections are held at five-year intervals when all eligible residents (16+) are called on to cast their votes. Yet, unlike in local council elections, EU citizens are not permitted to vote in such regional elections. The Regional Assembly has a minimum of 80 and a maximum of 96 members who are elected under proportional representation (proportional system of party lists). Until recently, regional elections were held at the same time as local elections and elections to the EU Parliament. The turnout at the last regional election in 2014 was 52.6 percent. The honorary regional politicians are organized into factions and groups. Professionally, the regional councillors represent the full spectrum. Nevertheless, the proportion of mayors has increased quite substantially in recent years.

As the main body, the Regional Assembly makes decisions on all the functions that are assigned by law to the Verband Region Stuttgart. Other positions are the honorary chairman and the full-time regional director, who are both elected by the Regional Assembly.

One crucial element in ensuring that the Verband Region Stuttgart can do its work is of course the availability of funds. The basic idea behind the funding model was that the Stuttgart Region should be self-sustaining (Kürtz, 1994). The essential funding of the ongoing work takes the form of an administrative levy, determined with due regard to each local authority's tax income. It is payable annually by all local authorities. Another levy is charged to fund local transport, which is vital to the region. This levy, however, is only charged to Stuttgart (the state capital) and to the five administrative districts. Funding for local S-Bahn commuter trains in the Stuttgart Region has been within its portfolio since 1996 and mainly comes from the railway subsidy that is provided by the German federal government and which is given to the Verband Region Stuttgart by the state of Baden-Württemberg on a pro-rata basis. On a smaller scale, the state of Baden-Württemberg provides funds for regional planning. The

total annual budget is around €350 million, of which nearly 90 percent is for public transport.

The founding fathers decided not to let the region have its own source of funding. They were aware that this would involve a fundamental reorganization of local council finances and, along with it, some tough debates on allocation.

Verband Region Stuttgart: Powers and Responsibilities

The Verband's catalogue of functions is defined by law. They cover regional planning, regional transport planning, the Stuttgart Region Landscape Park, regional traffic and transport management, funding of S-Bahn local trains and regional Express buses, funding of additional local transport (fare integration), promotion of industry and tourism, elements of waste management, tradeshows, culture, and sports (voluntary).

The Verband Region Stuttgart thus has several central functions "which, in practice, go beyond the boundaries of local authorities and districts and their specific responsibilities. By controlling and funding these functions at the (new) political/regional level, it has been possible to ensure regional consolidation and thus closer regional collaboration" (Till, 2015, p.490). Specifically, these functions concern land-use planning, mobility, and economic development. The Verband Region Stuttgart looks after the technical (gray) infrastructure just as much as it endeavors to upgrade the region's open space as green infrastructure, particularly the Stuttgart Region Landscape Park. It has powers over control, implementation, and funding. Moreover, it uses its political weight to ensure that the Stuttgart Region continues to be livable, economically powerful, and environmentally conscientious.

The powers of the Verband Region Stuttgart have been expanded substantially in three areas. In 1996, it took on commissioning powers for local S-Bahn trains; in 2004, it became responsible for the Stuttgart Region Landscape Park; and in 2015, it added regional transport management and regional Express buses. All this served to strengthen the region's function in terms of funding. The important and exemplary role of the Stuttgart Region in overcoming major challenges, especially in mobility, has also been underlined in the government program of Baden-Württemberg, currently under a coalition between the Green Party and Christian Democrats. The agreement states: "Working together with the Verband Region Stuttgart, we want to continue developing the Stuttgart Region as a model of a functioning and sustainable mobility region. It is an area with particularly high levels of traffic and transport. This makes it all the more important to have a functioning infrastructure that meets the mobility needs of the population and of the industry within a confined space" (Coalition Agreement, 2016, p.114).

The various approaches to improve the quality of Stuttgart Region as a whole can best be explained using the following examples.

The New Trade Fair Center

To a certain extent, building a new trade fair center was a statutory commitment of Verband Region Stuttgart. The old site in northern Stuttgart had been bursting at the seams and, the city was now chock-a-block with trade fair traffic—neither residents nor visitors could be expected to put up with it any more. There were no sites large enough in Stuttgart for a new trade fair center. So immediately after it was founded, the Verband Region Stuttgart started looking for a site throughout the region. The Regional Plan identified the best place as right next to Stuttgart Airport, just outside the city. By doing so, the region's designated new trade fair location was beyond the municipal planning supremacy of the site's municipality. This gave rise to protest in the location's municipality but the highest German administrative court confirmed the lawfulness of this procedure. The Verband Region Stuttgart not only launched the planning stage of trade fair center, it also contributed more than €50 million to the construction costs. The trade fair center, opened in 2007, has been economically successful and extensions are underway.

The new trade fair center has given a considerable economic boost to the southern part of the region. It perfectly complements the airport as both are located alongside the motorway, are accessible with the S-Bahn, and soon will be accessible by the city light rail

system. A long-distance and a regional railway station are also in the pipeline as part of the new high-speed trans-European railway corridor.

In this context, the reorganization of the rail network (Stuttgart 21) is another infrastructure project that the Verband Region Stuttgart is involved in, along with the federal state of Baden-Württemberg, state capital Stuttgart, and Deutsche Bahn AG. Albeit as junior partner, the region has championed the project from the outset, and raised €100 million. Despite some opposition to the initiative and a resulting referendum in November 2011, a clear majority of regional politicians backed the project. For them the benefits outweigh the drawbacks: lowering the Stuttgart Central Station tracks opens up major city planning opportunities on almost 100 hectares of land. It also entails improvements for the S-Bahn rail network.

A Boost to Regional Development

Successful regional planning control coupled with successful regional business promotion is regarded as a prototype for the southwest of the region. With the construction of a new S-Bahn tangent line, the Verband Region Stuttgart connected the town of Sindelfingen (population: 62,000) and its Daimler factory (workforce: approximately 40,000) to the S-Bahn. New housing and commercial areas along this line have been included in the Regional Plan to maximize the use of the metropolitan infrastructure.

The Stuttgart Region Landscape Park

The Stuttgart Region competes for skilled workers, which is why leisure and recreation are integral to the quality of the location.

It never takes more than 15 minutes to reach a green space on foot. The vineyards along the valleys of the Neckar and Rems rivers typify the region. Maintaining this unique landscape and making it even more attractive for recreation is the aim of the Stuttgart Region Landscape Park. Together with municipalities, local authorities, and nature conservation organizations, the Verband develops ideas and plans for concrete projects to turn this vision into reality.

For the past 10 years, the Verband Region Stuttgart has had the opportunity to finance up to 50 percent of the costs of these projects. This strategy has helped to create a network of cycle paths and hiking trails, implement lookout points, restore river courses, and develop leisure areas. An annual competition decides which project is funded. By now, around 160 projects have been funded to the tune of approximately €15 million and has generated total investments of about €45 million. In addition, the region has succeeded in obtaining sizeable financing from third parties. The Landscape Park has become an important instrument of regional development.

Shared Visions

This approach gave rise to the idea of an inter-municipal garden show along the river Rems. In 2019, 16 towns from the source to the estuary will exhibit over an area of some 80 kilometers. The aim of this innovative project is to sustainably upgrade a habitat for nature and humankind. It will accentuate special landscape features and highlight aspects of urban planning. The project was initiated by the Verband Region Stuttgart, for which it has set aside a special budget of €2 million.

For such a regional idea to result in a concrete inter-municipal initiative is undoubtedly a major success story. The Stuttgart Region has just completed the process of preparing for an International Building Exhibition to take place in 2027. One hundred years after Stuttgart's well-known Weißenhofsiedlung, new visions of housing, living, and working should be developed, and the added value of coordinated and committed cooperation on a regional level demonstrated.

Politics: Programming, Participating, and Decision-Making

Functional interconnections have long since crossed administrative borders: 75 percent of those gainfully employed do not work in the municipality of their residence, and municipal borders are regularly traversed for many other activities, such as education, culture, recreation, and shopping. People now live regionally. Accordingly,

the transportation infrastructure has to meet the mobility needs of these commuters. Moreover, it cannot be planned from a municipal perspective but must be coordinated on a supra-local level. The same goes for land-intensive locations or the use of renewable energy sources. Open-space functions, the linking of living spaces, and retaining fresh-air corridors in the face of climate change must all be coordinated independently of local responsibilities if they are to function in the long run.

This calls for priorities and priority functions to be defined. Which open spaces can be used for a building development? And where must the focus be on to ensure important open-space functions? The complex considerations of differing public and private interests cannot become binding solely on the basis of decisions made by authorities.

Just as core issues of urban planning are the subject of a (more or less) intensive social debate, the preceding, underlying stipulations also require due consideration and ultimately political evaluation as well.

The introduction of a regional parliament in the form of a directly elected Regional Assembly put Stuttgart Region on such a level of political action. The direct election necessitates a political plan of action from the parties that specifies the objectives for the future development of the region. Unlike the usual delegation of regional decision-makers from district assemblies, this creates an autonomous regional agenda that is manifestly more complex than the sum of individual rural district perspectives.

By being elected directly to the Regional Assembly, the members acquire a strong democratic mandate. In practice this is the only way to consistently represent regional interests in relation to the invariably directly elected municipal councils and mayors and also legitimize them democratically.

The Regional Assembly thus has become a forum for assessing core issues from a regional perspective. Even though this enables a majority to be reached in non-consensual matters, in practice after exhaustive discussion, decisions are overwhelmingly reached by a large majority or even unanimously.

Altogether, this system increases the political relevance of regional decisions and consequently their perception by the public. In this process, the members of the Regional Assembly attach particular importance to informing the general public and public participation. Hence every planning procedure entails early stage and comprehensive public information on the intended content of the plan and the procedure envisaged. Taken together, the participation activities go well beyond the legally prescribed scope and also contain special measures, such as involving young people.

The large volume of comments customarily received as a result are given extensive consideration during the decision-making process and ultimately play a part in markedly improving the quality of the planning. However, the final decision-making—and thus the final decision—is the sole responsibility of the regional councillors.

Lessons Learned

It is precisely in prospering metropolitan areas that efficiency is adversely affected by the fragmentation caused by administrative borders, especially when no sufficiently binding coordination can be achieved in key tasks. Non-binding agreements regularly turn out to be too weak to reconcile conflicting local interests effectively and to establish a long-term development strategy. Although in these cases incorporation can represent a solution, it does entail new losses in terms of subsidiarity, public participation, engagement of civil society, and identification.

In contrast, the Stuttgart Region model allows local identification to be maintained and creates healthy competition between municipalities. Regardless, the Regional Assembly functions as an authoritative decision-making body in all matters of supra-municipal relevance. Hence an economic area's contribution is still guaranteed, even if no consensus can be found in the plethora of local interests.

What is equally important is that, in addition to decision-making being regulated, implementing and enforcing decisions are as well. In the Stuttgart Region there are binding stipulations on procedure and participation, legal options, and also financial incentives. Regional requirements thus become an element of an effective executive.

The Regional Assembly makes systematic use of these options to improve the prevailing conditions for quality of life, economic development, international competitiveness, adjustment to climate change, innovation, and integration in such a way that takes advantage of the added value of regional collaboration.

The results achieved so far can be broken down into the following categories: residents, civil society, companies, business promotion, transport infrastructure, collaboration, and innovation.

The people in the Region Stuttgart live regionally. The collaboration coordinated by the Verband Region Stuttgart ensures that this radius of action—particularly with regard to mobility and recreation—is geared specifically to needs. With every major development issue, the people are given opportunities at an early stage to have their say and can ultimately elect their decision-makers directly.

Besides the people already living in the region, it is important to attract new residents and organize their integration. Recruitment campaigns for specific skilled workers, such as greeting immigrants at Welcome Centers, are an important regional task. Taken together, the result of these joint efforts is that this region is a shining example of integration and conflict-free co-existence.

Civil society shapes the region in different ways. For instance, the collaboration also extends to sport and culture. The two large churches have a special liaison office, major media report on the region as a whole, and the chambers of industry and commerce and the chambers of trade operate in the same spatial perimeter.

Companies in the Stuttgart Region (large, globally operating groups as well as the numerous small- and medium-sized firms) are incorporated in a close-knit network of regional cooperation. The Verband Region Stuttgart's responsibilities include providing sites for firms established there, their further development, and operating the requisite transport infrastructure. It is also important, though, to support the sustainability of key industry, for example by developing the charging infrastructure for electromobility.

Business promotion and location marketing can be put into practice in a clearly visible and more successful way on a regional level. Even the municipalities agree that advertising a location is only expedient in the regional association. In this respect, a professional, joint presence is manifestly more effective than 179 local activities.

Key elements of the transport infrastructure are the responsibility of the state and federal governments. As such, it is vitally important to lobby them and obtain a reasonable proportion of the investment funds that are often too scarce.

Ecology is also crucial to quality of life and security. Also, for a great portion of the population, the landscape is the key feature of the region, which underlines how important attractive open spaces are. Besides binding statements on protecting important open spaces, the Verband Region Stuttgart's annual investments in the Landscape Park are acknowledged as a means of further upgrading this important location factor.

The support for and cooperation with the municipalities is important. In addition to supplying basic data (e.g., climate issues and traffic development) this includes carrying out pilot and research projects jointly. It is precisely these smaller municipalities that can likewise benefit from funding innovation and research in this way.

The Verband Region Stuttgart sees itself as a body that stimulates innovation and ongoing development. Besides political promotion and financial assistance for corresponding approaches, the systematic collaboration in national and international networks, and the close cooperation with its partner region, North Virginia in the United States, also serve as an important basis for preparing and implementing new approaches.

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Steering the Metropolis

Metropolitan Governance for Sustainable Urban Development

Final Remarks

Metropolitanism: Final Remarks on Steering the Metropolis

By **David Gómez-Álvarez** and **Gabriel Lanfranchi**

Let's begin by stating what this chapter is not: it is not a summary of the book nor it is a conclusion as such. Indeed, we cannot conclude on a topic that is history in the making—an agenda under construction. The century in which we are living is prophesied to be the century of metropolises, so we are both players and observers. We are reflexive practitioners and researchers, both learning from and trying to influence the development of the metropolitan agenda.

Most authors who contributed to this book coincided in emphasizing multi-stakeholder involvement in metropolitan governance. It is certain that steering the metropolis includes co(re)creating the metropolis: a process that involves different actors in the (re)making of the city. One proponent of such an approach is Joan Subirats (Chapter 1.4), who argued that co-creating with the city is a key concept as much of the space is already urbanized, with actors already in the territory. The metropolis has to be rebuilt (in line with "open source urbanism" and similar concepts) within the given built environment and public space. We are not drawing on a blank canvas and metropolises are perennially incomplete projects, with the power to reinvent themselves (Sassen, 2013).

The art of steering and co-creating a metropolis is not reserved for disciplinarian specialists, scientists, or engineers. There is no formula, but experiences, practices, and lessons. As several authors argued, steering a metropolis is a political and institutional practice that has to be carried out using participatory processes, has to be iterative and reflective, has to be informed by both technical and cultural knowledge, and has to balance inclusion, efficiency, and sustainability.

In the next two decades, humankind will build as much urbanized area as during the entire history of humanity. The existing built up area and the additional urbanized land will face issues that occur despite and beyond political parties' differences, ideological cleavages that do not respect jurisdictional boundaries or disciplinary silos. Flooding, heat waves, pollution, drought, crime, poverty, congestion, migration, slums… are just some of the phenomena local governments are incapable of facing individually. As Bruce Katz argued in the prologue of this book, the kind of problems we face demand new models of governance and "a fundamental reframing and re-focusing of the (multi-sectoral) leadership class in cities." In other words, metropolitan challenges have to be reconsidered in a completely different fashion. It is not only a matter of scale, but of nature of the city. It is not a difference of degree, but of essence when dealing with metropolitan problems.

The book strongly argued in favor of metropolitan coordination. In doing so, we deliberately avoided picking winning models and defending them. It is now for communities to debate and decide which metropolitan governance tools best suit them. We deliberately avoided highlighting best practices because we believe each practice is the result of the particularities of each metropolis.

In the context of rapid urbanization, rising inequality and urban poverty, and climate change, metropolitan governance should focus on concrete issues, such as how to produce urban land (Goytia, Chapter 2.2), how to achieve resilience (Bulkeley and Luque-Ayala, Chapter 2.6, and Dinshaw, Lane, and Elias-Trostmann, Chapter 2.7), and how to manage complex systems. As those issues exceed both sectoral divisions and jurisdictional boundaries, it is necessary to revise governmental schemes and foster an integral institutional approach that can address the metropolis transversally, rather than by territorial zones or thematic sectors.

In addition to the aforementioned, we strongly believe metropolitan issues in the 21st century go beyond territorial organization and multi-sectoral (or technical) coordination challenges. It is of the utmost importance to develop metropolitan culture and identity as a project

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per se. For that, the role of education and communication efforts in creating awareness and behavioral change is crucial within the group of decision-makers, public opinion, and the general population. Ahrend, Kim, Lembcke, et al., Chapter 1.1, provided a related key point with remarkable clarity. On one hand, they demonstrated that metropolitan governance matters for the daily lives of urban dwellers and has measurable impacts on both wellbeing and productivity. On the other hand, in a complementary way, they showed that measuring the impacts can lead to metropolitan governance: "Communicating the long-term gains of reforms and the costs of non-reform is critical. Stakeholders need to be made aware and convinced of the negative effects of maintaining the status quo on their interests in the short and long term. There must be a clear strategy to identify and manage the expectations of different constituencies" (Ahrend et al).

Developing a metropolitan identity implies pushing forward an upward spiral of what can be called metropolitanism. On one hand, we must strive to have a metropolitan discipline, to develop a metropolitan field of theory and practice. In that context, the figure of metropolitanist (or metropolitan specialist) emerges as a professional with certain standardized background—that is, tools, methods, and theories—to back his or her practice. On the other hand, there is a need to focus on systematizing metropolitan governance, as a way to accelerate processes already taking place all over the world. *Steering the Metropolis* has been a significant effort in that regard, as the following Section 1ntegrating ideas from all chapters of the book shows.

Metropolises and Nation-states: The Ongoing Discussion

Many authors mentioned a central conundrum of metropolitan governance: power (in)balances between large cities and nation-states. From the election of representatives to financing projects, from coercive power to diplomacy, the tensions between metropolitan and national governments are far from solved. With no intention of repeating everything that has been said in previous chapters, we consider it important to highlight some of these tensions.

First, most modern democracies have regular elections of local, regional, and national representatives, but it is rare to find publicly voted metropolitan representatives. Chapter 3.9 about the metropolitan area of Portland (Liberty) and Chapter 3.19 about Stuttgart Region (Kiwitt and Lang) presented interesting schemes to elect metropolitan authorities. For many other cases, considering that most metropolises lack mechanisms to elect public officials, it remains unclear how to achieve democratic outcomes in metropolitan governance. Metropolitan governance should not only involve a committee of local governments, but also urban and peri-urban inhabitants. Citizen participation needs to be re-invented within metropolitan governance schemes. New information and communication technologies present an opportunity to improve citizen engagement and participation in these "meso" or intermediate governance instances that are emerging between local and regional authorities.

"There is a growing contradiction between spaces that concentrate the greatest capacity for innovation, creativity, and value generation, and the remarkable inequality that exists both in the territory and in the opportunities to participate in decision-making and democratic representation systems," claimed Subirats in Chapter 1.4. In Section 3, cases ranging from Shanghai to Mexico City argued for not only the ethical imperative of increasing public participation, but also for the economic efficiencies that might be achieved if projects involve the community from the beginning. Future research could focus on systematizing concrete ways to promote public participation in metropolises, a challenge that is different from doing so at the local level. Again, the metropolitan scale implies the need to rethink civic engagement.

Second, many national constitutions do not recognize metropolitan layers of governance (as highlighted in in Chapter 3.6 by Gómez-Álvarez, Blanco-Ochoa and Osorio-Lara, Chapter 3.7 by Iracheta, and Chapter 3.11 by Eidelman, Horak, and Stren). In other words, the challenge of finding the adequate (or tailored) model of metropolitan governance for each area is hindered by old rules, political inertia, and traps in path dependency. Most national constitutions, created hand-in-hand with nation-states, do not consider

metropolitan governments because they organize governance schemes only in local (municipalities and counties), regional (provinces, states, or departments), and national layers. Changing the rules of the game includes modifying constitutions and rethinking the institutional arrangements.

Third, in the field of international relations, networked metropolises are rising, as explained by Xu and Yeh in Chapter 1.8 in the context of mega-city regions in China. We are witnessing a shift in how the agenda of subnational governments influences nation-state organizations and even international relations. The networked metropolis is by no means a recent phenomenon. All cities, past and present, are somehow networked. In fact, cities have been connected with other cities through trade and migration for centuries. But today, metropolises are linked to each other beyond their hinterlands or territories through exchange of capital, information, and ideas (Xu and Yeh, Chapter 1.8). In the present, relations among metropolises tend to be more horizontal than vertical. This process of "city-ness" or "metropolitan-ness" is more about networks, as opposed to "town-ness", which refers to hierarchical and traditional structures.

Though the concept of the global metropolis tends to refer to economic capacity or wealth, the notion of global cities has been used by Saskia Sassen since 1991 in reference to large metropolises characterized by transnational relations, beyond national frontiers and traditional geopolitical boundaries (see Chapter 1.5 by Ortiz and Kamiya). Manuel Castells (2002) added to the concept of global cities with the idea of a "networked society" based on a "world city network" in which the global scope of a metropolis in the knowledge era is almost independent of countries or regimes. His post-industrial idea of a large metropolis based on global connectivity and infrastructure (hubs), led to the idea of "global networks of corporations." None of these complex and overlapping networks are being entirely regulated by local authorities or city governments. The context of globalization and inter-scalar relations even questions the role of states in regulating activities, which leads to a whole "new scale (of) governing uncertainty and planning for prosperity" (Xu and Yeh, Chapter 1.8).

The global role of metropolises that are richer than entire countries (in terms of GDP) is changing rapidly (Cohen, Chapter 2.1) and the issue of para-diplomacy (the relations established among subnational governments) is gaining momentum. Some chapters mentioned the existence of networks of metropolises within a country, a region, or worldwide. Bulkeley and Luque-Ayala (Chapter 2.6), for instance, highlighted that transnational networks are one of the three ways cities are addressing climate change challenges and those could be the foundation for future climate governance. Chapters in Section 3 also referred to cities trying to become or making efforts to remain in a position of global reference: such as London (Chapter 3.17 by Clark, Moonen, and Couturier) and Paris (Chapter 3.18 by Buchoud). Thus, the logic behind the networks goes from sharing knowledge to exercising power (see Bulkeley and Luque-Ayala, Chapter 2.6, for examples). Some mayors and governors are seeking to extend their political and economic influence globally and/or to attract more investment to their cities. A number of metropolitan areas are also sending temporal or permanent representations to foreign countries to protect and advance their specific interests (Tavares, 2016). Additionally, in some countries there is a metropolitan revolution going on (Katz and Bradley, 2013): mayors are rising up in the face of national governments trying to contain their growing influence. Self-declared sanctuary cities in the United States are an example of this rebellion by local authorities against national powers.

Another interesting interplay between metropolises and nation-states is related to taxonomies and categorizations. Though there have been many attempts to create a taxonomy of metropolises and global cities, the world's largest metro areas do not easily fall into the nation-state binary division between first world/third world countries, later redefined as developed/developing, or Global North and Global South. Is Shanghai developing in the same way as São Paulo is? Do London and Detroit belong to the same first world? Are Mumbai and Delhi developing similarly being both in the same country? It sometimes seems that each metropolis is a family of its own, a unique category.

In terms of finance, many authors pointed out the tension for funding between national and local governments, and the problem of not having a secure source of finance for metropolitan issues. What might seem a simple question, such as who pays for a new train within a metropolis, does not have a simple answer (examples of such a debate are found in Chapter 3.8 by Wright, Chapter 2.8 by Zegras, and Chapter 3.15 by Kang). It tends to be the case that central government reluctance to devolve adequate revenue powers to metropolitan and/or local governments hinders their ability to perform (see Chapter 2.3 by Smoke and Chapter 1.5 by Ortiz and Kamiya). There are ways for metropolitan governments to generate new revenues (e.g., increasing land value with local infrastructure); however, this has to be done with strategic incrementalism in conjunction with enhanced transparency and community engagement in order for revenue creation and implementation to work (Chapter 2.3 by Smoke). The case of Stuttgart Region is worth noting: the region has strived for and achieved self-sustainability through a combination of administrative levies, special funds for transport, and state funds supporting regional planning (see Chapter 3.19 by Kiwitt and Lang).

For future research and practice, some neglected analytical and practical considerations for assessing metropolitan finance need to be kept in mind. As Paul Smoke stated in Chapter 2.3, more attention should be paid to historical trajectories and national political economy, central government bureaucratic dynamics, subnational dynamics, and implementation strategy. Metropolises cannot be isolated from their regional and national institutional context, which in most cases still highly determine their performance.

There is no consensus among the authors of the book on whether national governments or metropolitan governments should apply schemes of "carrots and sticks" (incentives, rewards, and punishments). Xu and Yeh, in Chapter 1.8, and Goytia, in Chapter 2.2, for instance, highlighted the importance of national policies and central funding to provide incentives for metropolitan coordination. The fact is there should be more comparative research on incentives and particularly on coercive power or the capacity to penalize. For example, what government entity can penalize private or public institutions that harm public goods within a certain metropolitan territory? Who has to internalize the costs of a determined intervention that benefits some actors or communities more than others? Cohen, in Chapter 2.1, argued that urban finance can and should play a regulating function in encouraging behaviors by firms to seek positive externalities and multipliers while avoiding negative externalities.

As for decision-making in the creation of projects with a metropolitan scale, cases in Section 3 provide a range of options. Some present projects born out of the decisions of national governments, while others are the result of public and private cooperation at the local level. Maybe more than the government level that originates the project, it is the nature of the project that leads to metropolitan coordination. Most examples of metropolitan projects in the book are joint transit or green/blue infrastructure projects. It is important to remember here the project-to-policy approach explained by Rojas in Chapter 3.5. In those metropolitan areas where metropolitan governance schemes and policies are insufficient or inexistent, the project-to-policy approach consists of motivating local actors to collaborate on tangible projects to solve well-defined problems as a first step to building trust, and later on pushing for more stable collaborative arrangements (in governance schemes and policies).

We believe metropolitan governance schemes must align their desired capacity to influence the territory with their incentive creation and coercive capacities, as well as their budgets. If those are not aligned, metropolitan institutions will not be able to influence territorial and economic development. However, aligning incentives is not always a linear process: incentives are often inconsistent and even contradictory, so that in certain sectors incentives work in one direction whereas in others they work in the opposite way. Hence, harmonization of incentives is one of the key elements for metropolitan coordination and therefore for metropolitan governance. This is perhaps one of the most complex tasks of authorities, which plays out different strategies according to different rules of the game.

The tension and power struggles between national and subnational governments within a country has been a rich topic of discussion for several authors. Despite the strength and size of some metropolitan economies, nation-states are expected to remain a predominant force over the next few decades (Ortiz and Kamiya, Chapter 1.5) and to withhold devolution of financial resources. Many metropolitan areas around the world will continue to lack stable revenue sources, being chronically poor, and have limited or inexistent legal recognition in the respective constitutions.

Those of us who are convinced of the need to strengthen metropolitan governance must also understand the dimension of the threat that strong metropolitan government entities pose for national governments. Metropolitan politics is an emerging field of discussion where metropolitan mayors are the new political players in both the domestic and international political arena. The key lies in a paradigm shift, that is, in turning the conversation, in each and every case, from a tension perspective (strong metropolises versus nation-states) to a collaboration perspective.

Some cases around the world show that while metropolises are evolving, their respective nation-states are either declining or not developing at the same pace. These asymmetries are intensifying pre-existing tensions and creating new ones. However, if we seek to change the paradigm, it is important to focus on quantitative and qualitative evidence that strongly links the efficiency of metropolises to the wealth of nation-states.

National governments should more actively participate in organizing metropolitan governance schemes, as they are crucial actors in the development of their respective countries. In the words of Cohen (Chapter 2.1), "There is growing, if reluctant, official acknowledgment that cities are the engines of growth in most economies in both industrialized and developing countries." According to the World Bank (2015), cities generate over 80 percent of global GDP and over 60 percent of national GDP in most countries. However, the urban economy has been largely ignored by the G20 governments over the past decade, and housing and infrastructure dominate urban discussions—including Habitat III—rather than economic performance, productivity, and job creation (see Chapter 2.1 by Cohen).

Metropolitan governance is a crucial variable in GDP figures. A 2015 OECD study (mentioned in the Introduction of the book, in Chapter 2.2 by Goytia, and in other chapters) showed that fragmentation in metropolitan decision-making translates to losing points in regional GDP, while the existence of metropolitan coordination institutions reduces those inefficiencies by half. The UN-Habitat City Prosperity Initiative also shows a moderate correlation between productivity and city size in Colombia and Mexico, with larger agglomerations being more productive than smaller ones (see López-Moreno and Orvañanos Murguía, Chapter 2.5, and Córdoba and González, Chapter 3.4). Therefore, if national governments do not actively participate in formulating metropolitan policy, the competitiveness of a whole nation could suffer as a consequence.

In Chapter 2.1, Cohen stated that, within a metropolis, the definition of productivity itself must change toward a broader evaluation of the impacts of an urban area. New definitions and new research on metropolitan productivity should include positive and negative externalities that firms and other sectors generate, from pollution to health. The rich field of study of urban metabolism can be useful to understand metropolitan metabolisms. It is also interesting to study the interplay between collaborative economy models and metropolitan areas. From transportation to sharing resources, from education to energy, collaborative economies facilitated through digital platforms are game changers and will continue to be so.

The Metropolitan Scale: Approaching the Urban Future

"Urbanism is no longer enough to tackle urban problems," claims Subirats in Chapter 1.4. The "metropolitan imperative" of two decades ago is still unrealized, meaning that the adoption of metropolitan frameworks (Cohen, Chapter 2.1) is a work in progress. As Ortiz showed (see Chapter 1.6 by Lanfranchi and Contin), the scales and scopes of professionals working with urban

issues are not always the same. The architect deals with a 1:50 scale, an urban designer with a 1:500 scale (neighborhood, public space), the urban planner works at a 1:5000 scale (i.e., a municipal master plan), while in the metropolis, the natural scale is 1:50000. The implication of that 1:50000 scale is not only significant infrastructure and flows of materials and people, it is a scale at which power is fragmented but there is still a profound bond with the territory and, to a certain extent, culture. For metropolitan governance, the scale and scope is expanded, not only in geographical terms, but also in complexity. Metropolitanism is therefore understood as a knowledge capability: the ability to give a comprehensive, transversal response (and not a sectoral one) to the problems related to managing large metropolitan areas (Chapter 1.6 by Lanfranchi and Contin).

However, some intellectuals question the clarity of the metropolitan scale. The theoretical concern is that once we go beyond the city and try to elucidate the metropolis, is there an upper limit in scale for our discipline? Can we stop before reaching the scale of mega urban regions? Is there a specific territorial form and process that we can call metropolitan? (…and simply stop there, draw a line there). If the answer to the last question is "no", as Federico Bervejillo (2017) argued, then the metro discipline has to embrace a multi-scalar definition of its object and explore moving toward a radical post-city paradigm that perhaps is also post-metropolis. Though we do not have answers to these questions, it is important to pose them in the final remarks of the book and keep them in mind as we move forward with other agenda topics.

Metropolitanism, both in theory and in practice, is not starting from scratch. Most cities have some sort of metropolitan governance experience to build on, even if it is not referred as such. Institutions like water bodies, waste collection companies, or regional transport systems can be the foundation to start rethinking metropolitanism in each particular metropolis. In addition, history has lessons for us regarding comprehensive planning. Modern urban planning, for instance, was created as a topic of theory and practice in close relation to public health in large industrial cities around late 19th century (Corburn, 2004). Now, the two fields are being reunited under the emergence of pressing issues such as food security, pollution, public health, and climate change.

We believe it is urgent to train people to think, plan, and act with a metropolitan scope in mind. On one hand, it should be a priority to educate current city leaders to help them become aware of both the fragility of the territory and the potential inherent in metropolitan governance to deal with the complexities of cities (Lanfranchi and Contin, Chapter 1.6). On the other hand, it is necessary to continue changing undergraduate and graduate studies all over the world. It could even begin in elementary and secondary education, with an approach based on metropolitan problems that teachers can use to create engagement and critical creative thinking in students. We cannot expect people to become engaged metropolitan citizens with holistic mindsets out of the blue, though we can begin to imagine a different kind of city building on existing revolutionary urban social movements, as Harvey (2012) suggested. Furthermore, it no longer makes sense to train disciplinarians to later expect them to work in a transversal or interdisciplinary way, embrace conflict, and look at the world from the complexity paradigm.

Based on Chapter 1.1 by Ahrend et al. and reinforced by most metropolitan cases in Section 3, we know there are clear priorities for most metropolitan authorities: regional economic development (dealt with by more than 80 percent of metropolitan authorities), transport (over 70 percent), and spatial/land-use planning (over 60 percent). The training of metropolitanists could therefore begin with an emphasis placed in those more sectoral approaches and move toward holistic theories and practices, such as resilience thinking. In Chapter 2.7, Dinshaw, Lane, and Elias-Trostmann, for instance, highlighted that present and future resilience planning need to occur on a metropolitan scale.

Let us take, for instance, the central questions posed by Zegras in relation to mobility (Chapter 2.8) and expand them to metropolitan governance as a whole: In whose ultimate interest are metropolitan continuous and discontinuous structures (e.g., mobility networks, housing, social facilities, public space, and green infrastructure) and who should pay for them? How related are the form of governance with the

quality of the governance outcome? By what outcomes can we compare metropolitan performance? Which outcomes matter? Can these be meaningfully compared across metropolises? Metropolitanists should be able to start finding answers to those questions and ways to navigate the complexities of metropolises. In addition, metropolitanists should be able to constantly perform a balancing act due to the multi-stakeholder political nature of metropolitan governance (particularly see Birch, Chapter 1.2).

The importance of metropolitanism as a scope and scale, and as a field of theory and practice, can be complemented with the study of metropolitan culture or metropolitan sense of place, as well as issues of integration and exclusion. The following paragraphs propose to look at metropolitan issues from the field of cultural studies and political economy.

The Introduction of the book highlighted the fact that there is no unique working definition of metropolis and that some metropolitan areas are not merely the aggregation of local governments' polygons while others lack integration. A rich field of study, still untapped, is the topic of metropolitan "sense of place" and that of building metropolitan ownership among key stakeholders (see Chapter 1.1 by Ahrend et al). Another topic is that of meta-narratives. In modern times, the creation of most nation-states was accompanied by the creation of national identity; the same could emerge in metropolises, where the identity with the city can be central.

It is also possible to look at what happens when individuals raised with those national meta-narratives co-exist in the same city. Some metropolises have become "transnational cities" or places where people, cultures, and ideas from different countries converge and collide, producing innovation and social tensions. Also called multi-cultural cities, these metropolises are cosmopolitan and they might be more connected (in terms of everyday life experiences) to other transnational cities in different countries than small cities within the same country. In this context of cosmopolitanism, transnationalism, and universalism, the idea of metropolitanism becomes critical to understanding the identity of these metropolises and of the people living in them. Chapter 3.11 (Eidelman, Horak, and Stren) offered a glimpse of the kind of issues transnational cities like Toronto present. How to govern plural cities, with multiple identities and diverse senses of identity is another dimension of metropolitan governance to be further explored.

For David Harvey (2012), the right to the city must operate as a constant question, just like the crucial interrogation of political economy: who benefits. While clusters of globalized industries, businesses, and corporations are interconnected in major cities, resulting in highly specialized and divided labor markets and economic growth, it is also true that inequality has been rising, producing social exclusion and urban poverty, affecting metropolitan governance.

A central topic for future research and practice should be how to reduce public and private corruption practices. One way forward is a path toward transparency, accountability, and open governance, with city and metropolitan data becoming accessible, as highlighted by a number of authors, such as McCarney (Chapter 2.4), Subirats (Chapter 1.4), Ortiz and Kamiya (Chapter 1.5), Smoke (Chapter 2.3), Reddy (Chapter 3.2), Roberts and Abbott (Chapter 1.7), Chen and Xu (Chapter 3.16), and Andersson (Chapter 1.3). Accountability requires unambiguous government structures, with established channels for complaints and participation.

As part of the global trend toward open government, a movement of open cities has emerged, which combines the principles of open government and urban participatory interventions or tactical urbanism. This global movement across cities implies not only the openness of local governments, but also the renovation and innovation of cities through different urban policies and local participatory mechanisms.

Open government and tactical urbanism overlap to some extent, but these trends come from different origins. On one hand, according to the Open Government Partnership, open government refers to the applicable principles of transparency, accountability, citizen participation, information technologies, and public–private co-creation. On the other hand, tactical urbanism refers to concrete interventions to renew urban and public spaces responding to citizens' demands and local priorities.

On the metropolitan scale, where different local or city governments have to cohabit and coordinate, the open metropolis will become part of the metropolitan debate and urban agenda because it is key for metropolitan governance. Citizens' demands for access to public information and spaces for participation are increasing in every city around the globe. To govern metropolitan cities, the different local governments—or the integrated metropolitan government, in cases where it exists—will have to make metropolitan administration more transparent and involve citizen participation in urban policies.

Open metropolis is not only a matter of scaling up the movement of open cities, but a matter of harmonizing the process of openness and participatory engagement in a transversal fashion that enhances metropolitan governance. This process imposes new and different challenges on metropolitan cities, which have to act as one authority instead of different, separate governments. It also poses the challenge of creating intermediate or "meso" mechanisms that are neither local nor regional or national, but metropolitan, which may become capable of including citizen participation.

Tools to monitor and evaluate metropolises around the globe are emerging, contributing to open data and transparency in metropolitan governance. There are two main initiatives that have been reviewed. The City Prosperity Index, by UN-Habitat, is explained by López-Moreno and Orvañanos Murguía in Chapter 2.5. ISO 37120 "Sustainable Development of Communities: Indicators for City Services and Quality of Life", the first international standard for cities, is outlined in Chapter 2.4 by McCarney. Thorough data is necessary to devise accessible and sustainable transport, adequate and affordable housing, and inclusive urbanization, plus open and reliable data has been shown to lower borrowing costs, lead to higher credit and bond ratings, and help cities attract business and investment (Xu, 2012, cited in McCarney, Chapter 2.4).

It is important to note that the online project *Steering the Metropolis* will continue expanding the chapters of Section 3, which at the moment lacks cases from South East, Northern, and Central Asia; Oceania; Central America; and Eastern Europe. More cases should be added from represented regions as well, particularly the Middle East and Africa. To continue with comparative analysis of metropolitan regions is important considering that 12 of the 17 Sustainable Development Goals adopted by the United Nations in September 2015 are to be implemented in urban areas (Cohen, Chapter 2.1). That is, metropolitan areas need to learn from one another if fulfilling sustainable development is a commitment taken seriously.

Through these final remarks we wanted to reflect on the editorial project of *Steering the Metropolis* itself, to highlight and integrate some of the most pressing issues and provocative ideas to acknowledge what the book is missing. Finally, we hope to contribute to setting the agenda for future metropolitan governance theory and practice.

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Steering the Metropolis

Metropolitan Governance for Sustainable Urban Development

List of Contributors

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John Abbott is a metropolitan planner and researcher and the Principal of John Abbott Planning in Brisbane, Australia. He has worked for national, state, and local governments in Australia and the United Kingdom, and has extensive practical experience in collaborative governance and regional planning projects in South East Queensland (SEQ) and Victoria. He has a PhD in urban and regional planning from the University of Queensland and an MSc (Econ) in social planning from the University of Wales. His doctoral research was on "Understanding and managing uncertainty in metropolitan planning" and reviewed metropolitan governance and regional planning processes in SEQ and Greater Vancouver, Canada. He has taught planning theory, strategic metropolitan planning, governance, and infrastructure planning at the University of Queensland and has published in these areas.

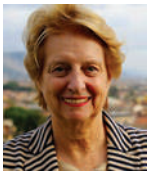
Rudiger Ahrend is head of the Urban Programme in the OECD Centre for Entrepreneurship, SMEs, Local Development, and Tourism. In this capacity, he has supervised various studies on metropolitan governance, urban productivity, land use, housing, urban transport, and national urban policies. In addition, he has overseen numerous reports on major metropolitan agglomerations and is the main author of *The Metropolitan Century: Understanding Urbanisation and its Consequences* (2015). He has published widely in both academic journals and newspapers.

Melissa Amezcua Yépiz is a PhD candidate in Sociology and History at the New School for Social Research. She is a professor of Politics at the Universidad de Guadalajara where she currently directs the master program in political science. From 2010 to 2015, she taught Social Theory and Urban Studies at Eugene Lang College and she was program coordinator for the Janey Program in Latin American Studies in New York City. As a UN-Habitat consultant, she was part of the organizing team for the International Forum on Innovation and Metropolitan Governance, held in Guadalajara in November 2015. Melissa has acted as managing editor for *Steering the Metropolis*.

Mats Andersson specializes in urban, metropolitan, and city-regional development as an independent consultant. Between 1994 and 2007 he was municipal finance and urban management specialist at the World Bank and was its country coordinator in China for urban development for 2000–03. Since 2008, his main clients have been the World Bank, the Asian Development Bank, GIZ, and USAid. He has published on metropolitan governance and finance, and worked on the subject in China, Eastern Europe, Central Asia, and Africa. Prior to joining the World Bank, Mats was with PriceWaterhouseCoopers, the Bank of Montreal, and his own consulting firm in Canada, with numerous assignments in Latin America. He is a Swedish national residing in San Francisco. He holds MBA degrees from Sweden and the United States and is a Certified Management Consultant by the Canadian Association of Management Consultants.

Alexis Arthur is an international policy analyst and writer currently working with the UN-REDD Secretariat in Geneva, Switzerland. Previously, she worked on energy policy for the Institute of the Americas in San Diego, CA. She has also worked on a range of socio-economic policy issues for the Inter-American Dialogue, Y Care International, UN Women, Oxfam GB, and the International Crisis Group, among other non-governmental organizations and think tanks in Australia, the United Kingdom, the United States, and Latin America. She has extensive experience as a freelance writer and editor. A native of Australia, Alexis is currently based in France and is fluent in Spanish and French.

Alfonso Avalos Juárez specializes in multimedia technology and applications for communication and advertisement. He has worked on strategic projects for the University of Guadalajara, such as the University Network, as well as in university-related businesses (Mexplaza mall and Proulex, a center for foreign language study). He currently works for the Administration and Finance Secretary of Jalisco State Government, where he contributes by creating a visual identity for the MIDE Lab and Evalúa Jalisco as well as for the Jalisco State Development Plan 2013–33. He has acted as graphic designer for *Steering the Metropolis*.



Eugénie L. Birch is co-director of the Penn Institute for Urban Research and president of the General Assembly of Partners of the World Urban Campaign. She is Lawrence C. Nussdorf Professor of Urban Research and Education, chair of the Graduate Group in City and Regional Planning, and co-director of Penn Institute for Urban Research. She has been active in the field of city planning's professional organizations and in academia in the United States and abroad. In 2000, she was elected to the College of Fellows of the American Institute of Certified Planners and made an honorary member of the Royal Town Planning Institute. She has been a member of the Planning Accreditation Board, serving as its chair from 2004 to 2006. She has been president of the Association of Collegiate Schools of Planning, president of the Society of American City and Regional Planning History, and co-editor of the *Journal of the American Planning Association*. Eugénie was recently appointed president of the General Assembly of Partners for Habitat III of the World Urban Campaign.

Karina Blanco Ochoa is currently studying a master's degree in development studies at the London School of Economics and Political Science in the United Kingdom. Previously, she worked at the Under-Secretariat of Planning and Evaluation of Jalisco State Government, where she coordinated Guadalajara's metropolitan agenda along with technical cooperation with international organizations such as the World Council on City Data and the Inter-American Development Bank. Her international experience includes being selected as a member of the Mexican Delegation to the G20 Youth Summit, held in Turkey in 2015; an internship at the Permanent Mexican Delegation to the OECD in Paris; and an academic exchange at the Universitat Autonoma of Barcelona. Karina holds a BA in international relations from the Instituto Tecnológico y de Estudios Superiores de Monterrey in Guadalajara, Mexico.

Nicolas Buchoud is the president and co-founder of the Grand Paris Alliance for Metropolitan Development, a not-for-profit awarded think tank established in Paris in 2011. A former senior advisor to the president of Paris Ile de France region and deputy chief of staff of a city mayor in the Paris region, he is an active civil society leader and a trusted metropolitan entrepreneur. The co-inventor of the Metropolitan Compact framework (2017), he released *The Smart Cities We Need Manifest* in 2016 and edited over 100 reports, articles, books, and papers on local and global urban innovation and change in the past decade. Nicolas is the co-owner of Renaissance Urbaine, a strategic advisory consultancy established in 2006, that specializes in complex urban ecosystems from Vancouver to Vladivostok. In addition, Nicolas is a member of the Deutsche Akademie für Städtebau und Landesplanung, an expert at the Siberian Institute for Future, and the director of the Center for Urban Research and Regional Development at the Tomsk State University. He holds an MSc in 17th Century Chinese History (Paris La Sorbonne) and an MSc in urban and regional planning (Sciences Po Paris) and is a graduate from Sciences Po Paris in Public administration. Nicolas was elected in 2017 as co-chair of the UN General Assembly of Partners Professionals constituent group and as a member of its Executive Committee.

Harriet Bulkeley is a professor in the Department of Geography at Durham University where her research is concerned with environmental governance. She currently holds an ESRC Climate Change Leadership Fellowship, titled Urban Transitions: Climate Change, Global Cities, and the Transformation of Socio-technical Systems, through which she is developing this work. She is author of the recent report commissioned by the World Bank, "Cities and Climate Change: The Role of Institutions, Governance, and Urban Planning." Harriet leads the Leverhulme Transnational Climate Change Governance research network and, through her Philip Leverhulme Prize, is examining the politics of climate change emerging beyond the nation-state in the United Kingdom. She is an editor of *Environment and Planning C: Government and Policy* and domain editor of *Policy and Governance* for Wiley Interdisciplinary Reviews Climate Change.

Jie Chen is a professor at Shanghai University of Finance and Economics (SHUFE). He holds University Chair Professorship and is a member of University's Academic Committee, assistant dean of the Institute of Advanced Research, and director of the Real Estate Research Institute at SHUFE. He earned a bachelor's degree from Fudan University (1997), master's degree from the University of Oslo (2001), and a doctorate in economics from Uppsala University (2005). His research covers various fields in regional, urban, and housing-related economic issues. He has published more than 20 SSCI-listed international peer-reviewed journals. He is also author of five books and has published extensively in Chinese academic journals. He works as a policy advisor for Chinese central and local government agencies, as well as a senior consulting expert for international organizations, including the World Bank and Asia Development Bank. He is on the trustee board of the Urban Studies Foundation, a board member of the Global Chinese Real Estate Congress, a steering member of Asia Pacific Network of Housing Research, and a member of the Advisory Committee of ULI Chinese Mainland.

Kai Chen is a master's degree student in urban planning and design at the School of Architecture, Tsinghua University. His research interests are urban land use planning, urban design, and application of geographic information system and remote sensing. He won second prize in the 2014 meili-international landscape and urban planning design competition, and selected awards in the 2013 Architects in Mission (AIM) competition and the 2014 Think-Space competition. During his undergraduate study, he was awarded the Xuzhong scholarship, Xibang scholarship, and Top 10 on the youth honor roll in the School of Architecture at Tianjin University.

Greg Clark is an international cities expert and advisor to several global cities, including London, São Paulo, Singapore, New York, and Hong Kong. His portfolio includes work as senior fellow at the Urban Land Institute (Europe), chief advisor and chairman of the OECD's Forum on Local Development and Investment, lead advisor on the World Bank Urbanisation Knowledge Forum, a global fellow of the Brookings Institution in Washington, associate of LSE Cities, chairman of British BIDs, and a visiting professor at Cass Business School. He is author of more than 10 books and several major reports on city development. From 1989 to 2004, he held a number of key roles in organizations leading London's development agenda. He is presently researching and writing The Honor Chapman Report on London's Competitiveness, 1992 to 2022.

Michael A. Cohen is a professor of International Affairs at the Milano School of International Affairs, Management, and Urban Policy. He is the founding director of the Studley graduate program in international affairs at the New School and director of The New School's Observatory on Latin America. He holds a PhD in political economy from the University of Chicago and is an urban and development policy specialist. He worked at the World Bank from 1972 to 1999 and was responsible for much of the bank's urban policy development during that period. He has worked in 55 countries and was heavily involved in the World Bank's work on infrastructure, environment, and sustainable development. He has advised governments, non-governmental organizations, and academic institutions around the world, including in preparing the "UN-Habitat Global Report on Human Settlements (2005-2012)."

Antonella Contin is a research associate at the Department of Architecture and Urban Studies (DAStU), within the School of Architecture, Urban Planning, Construction, and Engineering at the University of Politecnico di Milano. She is currently the coordinator of MSLab at DAStU and a member of the Doctoral Board for Architectural and Urban Composition. Antonella has lectured at many international universities, including Colombia, Cooper, NYIT, ITU, Azad, Greenwich University, Guadalajara de Guadalajara, Universidad Autonoma Metropolitana, Cairo University, and IBERO Torreon, among the others. Her research focuses on metropolitan architecture, new sustainable models of urban growth, smart sensitive cities, new technologies, and urban design mapping. Her latest publication is "Qualitative Metropolis: A New Culturally Encoded Concept for a Qualitative Regeneration of Formal and Informal Settlements" (co-authored with Pedro B. Ortiz, 2015). She has published extensively in international journals. Antonella holds a PhD in architecture from the Politecnico di Milano.

Carlos Córdoba is the director of the Central Region of Colombia, which links Bogotá to the departments of Boyacá, Cundinamarca, Meta, and Tolima. He was previously the national planning contract manager and

coordinator of land synergy within the National Department for Planning. He has also coordinated the program Bogotá Cómo Vamos. Within the Government Secretariat of Bogotá, he was the citizenship participation director. He is a public administrator, with specializations in public economy and a master's degree in philosophy.

Jonathan Couturier is a research fellow at The Business of Cities in London. He specializes in urban data, benchmarking, and metropolitan governance, and has co-authored work for the Urban Land Institute and Overseas Development Institute. He holds degrees from the London School of Economics and Political Science and University College London.

Samuel Danjuma Wapwera has worked as an environmental consultant for the University of Jos since 2014. He was involved in the data collection and preparation of the report on the National Urban Water Sector Reform Project for Plateau State, Nigeria (2014/2015), which was commissioned by the federal government of Nigeria and the World Bank. Danjuma was an ETF-TetFUND scholar from 2011 to 2013 and a PhD visiting scholar at the Northeastern University in Boston and San Diego State University in California. He holds a PhD in built environment from the University of Salford in Greater Manchester, United Kingdom, a specialty in spatial planning framework for urban development and management, is a registered town planner, and is also a member of the Nigerian Institute of Town Planners.

Ayesha Dinshaw is an associate with the Climate Resilience Practice at the World Resources Institute (WRI), which aims to build adaptive capacity in developing countries. Ayesha has been with WRI since 2011. Within the Climate Resilience Practice, she focuses on urban resilience and tracking, and enabling adaptation success at the project, portfolio, and national levels. In the past, she provided research and support for the 2013-2014 World Resources Report on creating a sustainable food future. Before joining WRI, Ayesha worked at a renewable energy organization called NativeEnergy and interned with HSBC India's corporate sustainability department in Mumbai and the Centre for Science and Environment in Delhi. While earning her graduate degree, she provided analysis to the Somerville Community Corporation on program evaluation and worked with the Tufts Institute of the Environment.

Gabriel Eidelman is assistant professor at the University of Toronto's School of Public Policy and Governance. His research and teaching focus on cities and urban governance in North America. His work has been published in *Cities*, the *Journal of Urban Affairs*, the *Canadian Journal of Political Science*, and *Politics & Policy*.

Sahil Gandhi is assistant professor at the Tata Institute of Social Sciences. His research interests are in the areas of urbanization in India, land and housing markets, and metropolitan governance. His research has been published as chapters in edited books and in peer-reviewed journals. He has worked on projects with government agencies and think tanks. He has a PhD in economics from the University of Mumbai.

Brittany Giroux Lane is the program manager for the Subnational Pilot Program at the Open Government Partnership (OGP). Her primary focus is to support the OGP pilot of 15 subnational governments and other local level reformers and civil society organizations to develop and implement ambitious OGP action plans. Prior to joining OGP, Brittany worked at the World Resources Institute and the Urban Institute on issues of local governance, urban planning, and urban service delivery. She holds an MSc in urban development planning from the Development Planning Unit at University College London and a BA in urban studies and politics, philosophy and economics from the University of Pennsylvania.

David Gómez-Álvarez is currently a visiting scholar at the Massachusetts Institute of Technology and executive president of Transversal Think Tank. He has been a consultant for UNDP, UN-Habitat, and the World Bank. He is author of the book *Education in Federalism: Decentralization of Educational Policy in Mexico* and editor of *Institutional Capacities of Local Governments in Mexico*, among other publications. He has held high level positions in the public sector and has actively participated in civil society organizations and civic initiatives in his country. He holds a PhD in public administration from New York University and an MSc in public policy from the London School of Economics.

Deborah Gonzalez Canada is a knowledge broker and editor from Argentina. She holds a master of environment from the University of Melbourne (Australia) and a double major in communication and education from the University of Buenos Aires (Argentina). She specializes in multi-stakeholder participation in socio-environmental issues and has done research in science communication, institutional analysis, and metropolitan planning for food security. She is currently a consultant at CIPPEC's Cities Program, where she has worked for the CIPPEC/BID-FOMIN Collaborative Economy Project, as well as other initiatives for smart, resilient, and inclusive cities in Argentina. Previously, she worked for SOS Children's Village, Idealist.org, Austral Education Group, Matador Network, and CISV. She has acted as assistant editor for *Steering the Metropolis*.

Jorge Iván González is a professor in the Faculty of Economics at the National University of Colombia. Previously, he was a researcher for the Centro de Investigación y Educación Popular, consultant to the United Nations Study on Human Development and Social Mission, and director of the Centro de Investigaciones de Desarrollo. He has also held positions as the director of finance, director of the master in economics program, vice-dean, and dean of the Faculty of Economics at the National University of Colombia. His teaching focuses on macroeconomics, tax theory, state theory and fiscal policy, and public finance spending. With a long and distinguished career as a researcher and consultant on social policy and public finance, he is currently working on aspects related to different dimensions of urban spatial segregation and urban social indicators.

Cynthia Goytia is head of the master in urban economics program at Torcuato Di Tella University in Buenos Aires, Argentina, where she also chairs the Urban Policy and Housing Research Center, a leading research institution in Latin America specializing in urban policies. She holds an MSc in urban economics and a PhD from the London School of Economics and Political Science in the United Kingdom. She lectures at University of Cambridge, the London School of Economics, and the Institute of Housing Studies, and is David Rockefeller Visiting Scholar at Harvard University 2016–17. She is a senior consultant to Argentina and to Latin American governments, as well as the World Bank, the United Nations, the Inter-American Development Bank, and CAF (Banca de Desarrollo de America Latina). She is fellow to the Lincoln Institute of Land Policy in the United States. Cynthia develops a relevant body of academic research focused on the evaluation of the causal impacts of urban policies published in specialized publications and books, some of them recently released in Chinese. She is interested in the rigorous assessment of effects to urban policies, which besides its territorial effects have significant economic and social consequences. Her research includes innovative tools, such as big data analytics, and a persistent aim to develop interactive web tools to increase the public's understanding of research results, which could improve and contribute to more informed government policy decisions.

Martin Horak is associate professor of political science and director of the local government program at the University of Western Ontario. His books include *Governing the Post-Communist City: Institutions and Democratic Development in Prague* (2008); *Sites of Governance: Multilevel Governance and Policy-Making in Canada's Cities* (2012, co-edited with Robert Young); and *Urban Neighborhoods in a New Era: Revitalization Politics in the Post-Industrial City* (2015, with multiple co-authors).

Alfonso Iracheta is coordinator of the program for urban and environmental studies at the Colegio Mexiquense. He holds a master's degree in regional planning from the University of Edinburgh and a PhD in geography and regional studies from the University of Varsovia. He is currently director of the interdisciplinary program of urban and environmental studies at the Colegio Mexiquense, the national coordinator of the Mexican Network of Cities towards Sustainability, and coordinator of the Permanent Committee of the National Congress of Urban Land. Alfonso is a level II researcher of the National System of Researchers, focused on issues of national and international metropolitan development, land, and urban and environmental development. He was previously president of the Colegio Mexiquense and founding coordinator of the UN-Habitat office in Mexico.

Marco Kamiya, a national of Japan and Peru, works globally on urban economy and municipal finance implementing policy studies and field projects for local governments. Based at the UN-Habitat headquarters in Nairobi, Marco has been a senior expert on urban economy, public policies, and competitiveness at CAF (Development Bank

of Latin America in Caracas); senior Japan Trust Fund consultant at the Inter-American Development Bank in Washington, DC; and director of Development Projects at PADECO Co., Ltd., in Tokyo. He studied economics and international development in Lima, Boston, and Tokyo, and speaks Spanish, English, Portuguese, and Japanese. He works extensively in Asia, Africa, and Latin America.

Myounggu Kang is professor of urban and regional planning and vice president for international affairs at the University of Seoul. He was senior urban specialist at the World Bank, director general of International Urban Development Collaboration for the Seoul Metropolitan Government, and acting dean of the International School of Urban Sciences at the University of Seoul. He is a co-author of the chapter "Seoul: Downtown Regeneration through Restoration of the Cheonggyecheon Stream" in the recent World Bank publication *Regenerating Urban Land: A Practitioner's Guide to Leveraging Private Investment* (2016). He also authored the article, "Smart City: A Case of Seoul" (2015). He is currently leading the International Capacity Development Programs of Seoul on smart and sustainable urban development. Myounggu holds a PhD in urban and regional planning from the Massachusetts Institute of Technology.

Bruce J. Katz is the inaugural Centennial Scholar at the Brookings Institution, where he focuses on the challenges and opportunities of global urbanization. Bruce assumed this cross-institutional role in January 2016 after 20 years as the vice president and co-director of the Brookings Metropolitan Policy Program, which he founded in 1996. He is also a co-author of *The Metropolitan Revolution* (Brookings Press, 2013), which argues that cities have become the vanguard of policy innovation and problem-solving in the United States and the world.

Soo-Jin Kim is a policy analyst at the OECD Centre for Entrepreneurship, SMEs, Local Development, and Tourism. She is the main author of the recent OECD publication *Governing the City* (2015) and has led a large series of OECD Territorial Reviews on metropolitan regions. She has also worked extensively on analyzing governance arrangements that help promote quality of life and inclusive growth in cities and is a co-author of *How's Life in Your Region? Measuring Regional and Local Well-Being for Policy Making* (2014) and *Making Cities Work for All* (2016).

Thomas Kiwitt has an engineering diploma in environmental and spatial planning and is the director of the Planning Department of the Verband Region Stuttgart (Stuttgart Regional Association). He is on the Managing Committee of the Network of European Metropolitan Regions (Metrex) and a lecturer at the University of Applied Sciences, Stuttgart.

Jeroen Klink is a Dutch economist with a PhD in urban planning from the University of São Paulo and is currently professor of urban economics and planning at the Universidade Federal do ABC, in Greater São Paulo. Previously he served as secretary for economic development in the city of Santo Andre (Greater São Paulo) and worked at the Institute for Housing and Urban Development Studies (Rotterdam), among others. He has provided national and international consultancy services and published extensively in areas related to economic restructuring, planning, and governance in urban metropolitan areas.

Debolina Kundu is an associate professor at the National Institute of Urban Affairs in India and has over 20 years of professional experience in the field of development studies. She has been a doctoral fellow with the Indian Council for Social Science Research and holds a PhD in municipal finance and governance from the Jawaharlal Nehru University in New Delhi. Debolina has worked as a consultant with LSE, IIDS, UNDP, UNESCAP, KfW Germany, GIZ, Urban Institute, Washington, among others, on issues of urban development, governance, and exclusion. She is currently editing the book *Developing National Urban Policies: Ways Forward to Green and Smart Cities* with UN-Habitat. She is the editor of the journal *Environment and Urbanisation, Asia* (SAGE) and has published a large number of articles in books and journals.

Gabriel Lanfranchi is an architect and urban planner from Argentina. He holds a master's degree in urban economics from Torcuato Di Tella University and a fellowship with the Massachusetts Institute of Technology Special Program for Urban and Regional Studies. Currently he is the director of the Cities Programme at CIPPEC, Argentina, and also works as a consultant for the Inter-American Development Bank,

Grupo Edisur, and AySA. At MIT, he founded the MIT Metro Lab, an initiative that promotes metropolitan governance awareness and helps governments create better tools for city management. He was the director of the Metropolitan Office that coordinated the Strategic Guidelines Plan for the Buenos Aires Metropolitan Region. He also led suburban poverty alleviation development projects at Fundacion Pro Vivienda Social and worked on the Verona Mobility Plan and the Green Plan for Barcelona.

Dorothee Lang graduated in history and political science. After a career as a journalist, she worked in press and public relations for various local councils. She heads the policy and public relations division of the Verband Region Stuttgart.

Alexander C. Lembcke is an economist and policy analyst at the OECD Centre for Entrepreneurship, SMEs, Local Development, and Tourism. His work considers economic and social development in regions and urban areas. He is a co-author of the OECD publication *The Metropolitan Century: Understanding Urbanisation and its Consequences* (2015) and he has contributed to several OECD Territorial Reviews. He has co-authored numerous OECD working papers and regularly publishes his work in peer-reviewed journals.

Robert Liberty is director of the Urban Sustainability Accelerator. He has worked for more than 30 years at all levels of government to promote liveable and sustainable cities and regions. Robert was staff attorney and then executive director of 1000 Friends of Oregon, a non-profit organization dedicated to implementing, defending, and improving Oregon's comprehensive land use planning program. He has worked as a land use hearings officer, a planning consultant, and a speaker on planning topics in the United States and other countries. He served as senior counsel to Congressman Earl Blumenauer of Oregon, and in 2004 he was elected to the Metro Council, the metropolitan government in the Portland, Oregon region and re-elected in 2008. On the Metro Council he chaired and co-chaired committees considering rail transit investments, regional housing policy, and other matters.

Eduardo López-Moreno is the director of research and capacity development at UN-Habitat, the United Nations Human Settlements Programme headquartered in Nairobi. He has over 25 years of academic and professional experience in housing and urban development policies, institutional analysis, global monitoring, and equity and urban poverty issues. He holds a PhD in urban geography and a master's degree in urban sociology from the University of Paris III, Sorbonne in France. He has published extensively, including five books on topics related to social housing, land policies, equity, and urban development. Eduardo is the task manager and principal author of the UN-Habitat "State of the World's Cities Report."

Andrés Luque-Ayala is lecturer in the Department of Geography at Durham University. His research revolves around three interrelated topics and their implications for cities, particularly in the Global South: the development of a critical geography of energy; a socio-technical examination of "smart" forms of urbanization and the coupling of digital and material infrastructures as a new security apparatus in the city; and a critical evaluation of urban responses to climate change and the disruption of the relationship between climate mitigation and adaptation in cities. Andrés has over 12 years of practitioner experience in the interface between urban infrastructures and environmental issues. Currently he coordinates the ESRC-funded International Network on Comparative Urban Low Carbon Transitions, a global network of researchers examining how cities around the world are responding to climate change. He is also a co-investigator for the RCUK-CONFAP International Network (UK-Brazil)'s Augmented Urbanity and Smart Technologies project.

Sheila M. Mahoney is a Certified Copy Editor, certified by the Editors' Association of Canada. She has worked as a freelance editor for almost three decades, including copy editing and proofreading books, monographs, and technical and discussion papers for the Inter-American Development Bank since 2009. She also specializes in healthcare (e.g., practice guidelines, research reports, and environmental scans), self-published books, and financial research. Sheila was the copy editor for *Steering the Metropolis.*

Patricia McCarney is professor of political science and director of the Global Cities Institute at the University of Toronto, Canada, and president and CEO of the World Council on City Data. Patricia received her PhD in international development and planning from MIT. She has served as associate vice president for international research and development at the University of Toronto. Before joining the University of Toronto, she worked as a professional staff member in a number of international agencies, including the World Bank in Washington and UN-Habitat in Nairobi. In addition to seven books, she is the author of numerous articles and papers on cities, governance, and urbanism. She heads the work at ISO on city metrics, developing the first ISO standards for city indicators on sustainable cities (ISO 37120) as well as two new standards on resilient and smart cities.

Tim Moonen is the director of intelligence at The Business of Cities Ltd., an advisory firm based in London. He specializes in the governance, leadership, and comparative performance of cities. Project clients and content partners include the Brookings Institution, Future Cities Catapult, OECD LEED, and the Oslo Region. He also manages the bi-annual review of over 200 city benchmarks and indexes in partnership with Jones Lang LaSalle. Tim has a PhD in politics and international studies from the University of Bristol. He also holds degrees from the University of Cambridge and the Universidad Europea de Madrid.

Femi Olokesusi is a fellow of the Nigerian Institute of Town Planning and professor of urban and regional planning at the College of Social and Management Sciences, Afe Babalola University. Previously, he was director of the physical development department and director general and CEO of the Nigerian Institute of Social and Economic Research. Femi conducted or participated in several national and international studies while a 1994/95 Fulbright African Senior Scholar. He also participated in preparing the Nigeria Vision 20:2020, the National Infrastructure Master Plan, the Abeokuta Master Plan (1987), and the City Structure Plans for Lokoja and Dekina in Nigeria. He is currently a member of the Independent Advisory Group of the World Bank-assisted Ibadan Urban Flood Management Project. He holds a PhD in geography from the University of Ibadan, with a specialization in environmental planning and management.

Pedro B. Ortiz is currently a senior urban planner at the World Bank in Washington, DC. Previously, he was deputy director of the Council of Architects of Madrid and director of the Institute for Urban Renewal, a joint venture between the public and private sectors in Madrid. He was also the founder and director of the master's program of town planning of the University King Juan Carlos of Madrid. Pedro was a partner in the planning consultancy firm Arop & As. He previously served as mayor for Madrid's Central District (Distrito de Salamanca) (1989–91) and has also been a member of Madrid City Council (1987–95), where he was responsible for the Urban Prospective (1993–95) and Culture (1991–93) programs. He has further served as director of the Strategic Plan for Madrid (1991–94) and was director general for town and regional planning for the Government of Madrid Region where he authored the Regional Development Plan (1996) and the Land Planning Law (1997).

Regina Orvañanos Murguía is the coordinator of the City Prosperity Initiative at UN-Habitat. She is an architect and has an MSc in international cooperation and urban development with work experience in Kenya, Switzerland, Venezuela, and Mexico in the fields of global urban monitoring, inequality, spatial planning, sustainable urban mobility, and public space rehabilitation. Prior to UN-Habitat, Regina worked with the United Nations Environment Programme and the United Nations Refugee Agency, as well as with non-profit organizations on the advocacy of policies for more sustainable cities.

Efrén Osorio Lara is national consultant and projects coordinator for the UN-Habitat Programme Office in Jalisco. As a public servant, he served as electoral district advisor during local elections, advisor to the president of the General Council of the Electoral Institute and Citizen Participation of Jalisco, and head of Sister Cities and International Affairs of the Municipal Government of Zapopan. He also has authored several publications related to transparency, public policies, globalization, and democracy. Efrén has also worked in the UN-Habitat office in Colombia. He holds a BA in international relations from ITESO University and an MA in public policy from the Hertie School of Governance in Berlin. He also studied development and civic organizations' professionalization at INDESOL, and project management, protocol, and public relations at ITESO University.

Abhay Pethe is a senior academic who currently holds the Dr. Vibhooti Shukla Chair Professorship in the Centre for Urban Economics & Regional Development in the Department of Economics at University of Mumbai. Apart from being involved in extensive teaching and research activities, he has been a member of various expert committees of the Indian Government at central, state, and local levels. He has also worked as a consultant to private, governmental, and multilateral organizations such as the World Bank and UNDP-UNCHS, among others.

Robin Rajack is currently lead specialist for housing and urban development at the Inter-American Development Bank in Washington, DC. Previously, he spent more than a decade at the World Bank headquarters working on land, housing, and urban development through a variety of operations, research, and technical assistance programs in multiple world regions. He was formerly a founding director and manager at the Land Settlement Agency in the Government of Trinidad and Tobago, where he helped design and implement policy, legislation, and programs to address informal settlement between 1997 and 2003. He holds a PhD and a master's degree in land economics from the University of Cambridge.

Purshottama Sivanarain Reddy has been in academia since 1980 and is currently senior professor in the School of Management, IT, and Governance at the University of Kwazulu in Durban, South Africa. He previously held a study fellowship at the former School of Public Policy of the University of Birmingham, where he researched local government systems and comparative local government. He is a local government specialist and is currently the project director of the Working Group on Local Governance and Development of the International Association of Schools and Institutes of Administration in Brussels. He also serves on the Board of Management representing the African Region. He is also an alternate associate board member of the Commonwealth Local Government Forum. Purshottama has been the editor or co-editor of 10 books focusing on local governance and development. He is a recognized researcher and currently serves on the editorial and advisory committees of six journals in South Africa, India, Australia, the United Kingdom, and the United States.

Brian Roberts is an emeritus professor and international urban management expert. He holds qualifications in land surveying, urban and regional planning, urban design, and business management, as well as a PhD in urban and regional economic development. He has held senior positions with the United Nations Centre for Human Settlements, Queensland state government, two academic institutions, and within the consulting industry. Brian has managed large and complex multidiscipline projects, and overseen national and regional institutional reform programs, national and international urban management policy, higher education and training, and ministerial advice in several countries. He has co-authored more than 100 publications and conference papers, including 10 books with contributions to the UN-Habitat World Cities Development Report in 2011 and 2015.

Francisca M. Rojas is an urban development and housing specialist at the Inter-American Development Bank. Her areas of expertise include sustainable urban development, metropolitan urban governance, and the role of information and communications technologies in urban management, transparency, and accountability. Previously she was research director and post-doctoral fellow with the Transparency Policy Project at the Harvard Kennedy School of Government. She was also a researcher at the MIT Senseable City Lab. In the public sector, Francisca has been an urban planner with the Washington, DC, Office of Planning and an advisor to the Minister of Housing and Urban Development in Chile. Francisca has a PhD in urban and regional planning from MIT, a master's degree in city planning from MIT, and an undergraduate degree from the University of Michigan. She is currently based in the IDB Argentina country office and lives in Buenos Aires.

Abel Schumann works as an economist in the OECD Centre for Entrepreneurship, SMEs, Local Development, and Tourism. He is a co-author of the OECD publication *The Metropolitan Century: Understanding Urbanisation and its Consequences* (2015) and he has worked extensively on the determinants of regional growth. He is currently leading an OECD research program on land use governance that analyses the relationship between planning systems, land use patterns, and economic outcomes.

David Sims specializes in aspects of urban development, economics, and housing in Africa, Asia, and the Middle East. Since 1971, he has worked for a wide range of multilateral and bilateral development agencies, as well as host countries. Half of his experience has been in Egypt, and he has written extensively about Greater Cairo's development and, in particular, the growing dominance of informal settlements. His books include *Understanding Cairo: The Logic of a City out of Control* (Cairo: AUC Press, 2012.) He was educated at Yale and Harvard. For four decades he has been based in Cairo.

Paul Smoke is professor of public finance and planning and director of international programs at the New York University Wagner Graduate School of Public Service, where he teaches courses on public finance, development planning, governance, and development assistance in developing countries. His research and policy interests include urban and regional development and the political economy of fiscal reform and public sector decentralization. He previously taught in the international development program and chaired the master in city planning program at MIT, and he worked as a resident policy advisor with the Harvard Institute for International Development in Kenya and Indonesia. Paul is an affiliated scholar with the Center on International Development and Governance at the Urban Institute in Washington, DC, and a senior research associate at the Overseas Development Institute in London.

Richard Stren is emeritus professor of political science and public policy at the University of Toronto and senior fellow at the Global Cities Institute in Toronto. He is the author or editor of 18 books and numerous scholarly articles on subjects relating to cities and urban governance. He has served as chair of the HS-Net Committee of UN-Habitat and has worked as consultant to many international agencies, including Cities Alliance, the World Bank, CIDA, and USAID.

Joan Subirats is professor of government and public administration at the Autonomous University of Barcelona (UAB). He previously held the Prince of Asturias Chair at Georgetown University from 2002–03. Joan was founder and director of the Institute of Government and Public Policy at UAB and is director of the PhD program at the same institution. His research focuses mainly on the field of governance, public administration, social exclusion, democratic innovation, civil society, multilevel government, and public policy analysis. He holds a PhD in economic sciences from the University of Barcelona.

Vaidehi Tandel is senior associate at IDFC Institute, Mumbai. She has published in peer-reviewed journals and has co-authored a chapter on the Indian economy. Vaidehi has worked on projects commissioned by the Lincoln Institute of Land Policy, the World Bank, the Ministry of Urban Development, NITI Aayog Government of India, and Municipal Corporation of Greater Mumbai. She has a PhD in economics from the Department of Economics at the University of Mumbai.

Yan Tang is associate professor in the Urban Design and Planning Department at the school of architecture at Tsinghua University, China. Her research, practice, and teaching span the intersection between architectural design and urban planning, and focus on large-scale urban design projects, spatial strategies for metropolitan regions, regional governance, and creative city development. She holds a PhD in engineering in urban planning and design from Tsinghua University, China. At MIT, she will undertake research on urban governance and urban design strategies for responding to climate change.

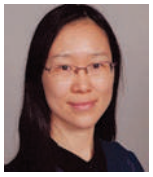
Katerina Elias-Trostmann is a research analyst at World Resources Institute Brazil and is based in São Paulo. She works closely with the Climate Resilience Practice. She focuses on urban climate resilience and community response, and has experience working closely with cities to enhance community resilience in municipal resilience plans and city strategies. She led the research and development of Individual Resilience Indicators, which are being adopted by cities in Brazil. Katerina previously worked for the UK Green Building Council before relocating to Brazil. She has experience working for the UK Green Building Council and NACUE in London, for a communications technology company in Geneva, and for Ashoka in Paris.

Victor Vergara is the coordinator for the Social, Urban, Resilience and Rural practice in the Independent Evaluation Group of the World Bank. Mr. Vergara began his career in 1985 with the Government of Mexico as manager for community and regional development concentrating

on lagging coastal regions. He joined the World Bank in 1991, contributing to lending operations and policy dialogue on sustainable urban finance and spatial development. In 1994, he started collaborating in the preparation of urban planning and management capacity building operations in Latin America. In 1998, Mr. Vergara joined the World Bank Institute (WBI) as senior urban specialist, where he led global capacity building programs on urban development and municipal finance focusing on sustainable finance and land use. At WBI, Mr. Vergara conceived and applied institutional and technological innovations for distance learning capacity building programs including the use of community and digital radio and eLearning. In 2009, as urban practice leader for East Asia Pacific Region, he led urban lending operations as well as the quality assurance of the operational and analytical portfolio. In 2013, he joined the Global Urban Social Unit of the World Bank where he led - among other tasks, the Metropolitan Lab for Strategic Planning and Management. Mr. Vergara holds Masters Degrees in City Planning (MIT) and in Agriculture (Texas A&M).

Thomas K. Wright is president of Regional Plan Association (RPA), an independent urban planning think tank focused on improving the prosperity, infrastructure, sustainability, and quality of life of the New York-New Jersey-Connecticut metropolitan region. As a leading thinker on urban and regional policy, Thomas is a frequent speaker, lecturer, and commentator on economic growth and development, roads and transit, good governance, and other public policy issues. He has steered many key RPA initiatives, including the historic Civic Alliance to Rebuild Downtown New York following the September 11, 2001, attacks; the campaign to create a mixed-use district at Manhattan's Hudson Yards; the protection of the New Jersey Highlands; and a vision for the revitalization for the City of Newark. He also played a key role in creating A Region at Risk, RPA's influential third plan for the metropolitan region published in 1996 and is guiding the organization's development of a fourth regional plan.

Jiang Xu is associate professor in the Department of Geography and Resource Management at the Chinese University of Hong Kong, and president of the Hong Kong Geographical Association. Her main research areas include intercity competition and cooperation, urban and regional governance, urban planning systems, mega-city development, and changing state spatialities in transitional societies. Previously, Jiang was a planning practitioner in an international consulting firm, working in China and Canada. She has published in top international journals, is co-author of the award-winning book *Urban Development in Post-Reform China: State, Market and Space* (2007), and edited *Governance and Planning of Mega-City Regions: An International Comparative Perspective* (2011). She received the 2008 Research Output Prize of the University of Hong Kong, the 2012 Research Excellence Award of the Chinese University of Hong Kong, and the 2014 Best Paper by the International Development Planning Review (with Calvin King-Lam Chung).



Zhumin Xu is a post-doctoral fellow at the University of Hong Kong. Zhumin completed her doctoral degree in urban studies in 2016 from the University of New Orleans, where she conducted research on citizen participation in housing requisition in Shanghai. She received her master's degree from Michigan State University and a BA in Chinese literature from Fudan University. She has also earned a graduate certificate in hazard policy studies and certificate in historic preservation from the University of New Orleans. Zhumin's research focuses on affordable housing, social governance, and urban planning in China, with a particular focus on issues of housing requisition, urban redevelopment, and participatory governance.

Dong Yang is a master's degree student in urban planning and design at the School of Architecture, Tsinghua University. His research fields are urban design, urban regeneration, and conservation of cultural heritage. He received the National Scholarship and Merit Student in Beijing awards during his undergraduate study. To this point, he has finished three student research projects supported by the national undergraduate program for innovation and entrepreneurship and the scientific research and entrepreneurial program of Beijing for college students.

Anthony Yeh is chair and professor of the Department of Urban Planning and Design at the University of Hong Kong. He has been dean of the graduate school, head of the Department of Urban Planning and Design, director of the Centre of Urban Studies and Urban Planning, director of the Geographic Information Systems (GIS) Research Centre, and director of the Institute of Transport Studies at the University of Hong Kong. Anthony was a member of the Chinese Academy of

Sciences in 2003, fellow of The Academy of Sciences for the Developing World, and member of the Academy of Social Sciences in United Kingdom. He received the 2008 UN-Habitat Lecture Award and the 2012 Dr. Gill-Chin Lim Global Award. His focus is on urban development and planning in Hong Kong, China, and South East Asia, and the applications of GIS as planning supports.

Christopher Zegras is associate professor of transportation and urban planning in the Department of Urban Studies and Planning at MIT, where he teaches classes on integrated land use and transportation planning, quantitative methods, and transportation finance. He is the lead principal investigator for the Future Urban Mobility research group, sponsored by the Singapore MIT Alliance for Research and Technology, and is MIT lead of transportation systems under the MIT Portugal program. He has consulted widely for a diverse range of organizations, including the International Energy Agency, the World Bank, the Inter-American Development Bank, the Canadian, German, U.S., and Peruvian governments, and the World Business Council for Sustainable Development. He serves on the Boston BRT Study Group and the MIT Transportation and Parking Committee. Prior to becoming a professor, he worked for the International Institute for Energy Conservation in Washington, DC, and Santiago de Chile and for MIT's Laboratory for Energy and the Environment. Christopher holds a BA in economics and Spanish from Tufts University, a master's degree in city planning, a master of science in transportation from MIT, and a PhD in urban and regional planning, also from MIT.

He Zhu is a master's degree student in urban planning and design at the School of Architecture, Tsinghua University. His research interests are public policies in urban agglomeration, culture and creative industries, and urban regeneration. He received a progress scholarship and PUBANG scholarship during his undergraduate studies. Currently, he holds the post of senior consultant and independent shareholder in Beijing Shanglianxinye Science and Technology Ltd., an enterprise working in high-tech investments.

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