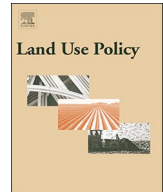




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Capable to govern landscape restoration? Exploring landscape governance capabilities, based on literature and stakeholder perceptions

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ABSTRACT

Scholars, planners and practitioners worldwide are increasingly recognising that landscape governance is a promising approach for restoring forested landscapes and simultaneously achieving ecological, economic and social objectives. Because of its integrative nature, landscape governance involves actors who restore landscapes while operating in different economic and policy sectors and at various scales. Consequently, the governance of landscape restoration is typically associated with multi-stakeholder dialogue and negotiation on the different types and forms of restoration, and what these mean in terms of necessary trade-offs. In this article we consider landscape governance to be an indispensable element of landscape restoration that deserves specific attention in the restoration debate. Despite the growing body of literature on the challenges faced in landscape restoration, literature on the role of landscape governance in overcoming these challenges is scarce. Scholars often refer to the importance of the capabilities of the landscape actors involved, but without specifying the capabilities required, which actors require them and why. This article aims to fill this knowledge gap by analysing landscape restoration from a governance perspective, focusing on the key challenges faced by landscape governance and the key capabilities required by landscape actors to overcome them. To define landscape governance capabilities, and to identify their dimensions and categorisations, we consult the literature on landscape governance and on capability. We complement this literature review with our empirical data on the landscape governance capabilities as perceived by landscape professionals engaged in landscape restoration projects and programmes. Based on both, we develop an analytical framework that specifies some of the typical capabilities required for addressing the challenges faced by landscape governance aiming to achieve well-balanced and long-lasting landscape restoration legitimately. The framework not only helps fill a knowledge gap but can also be used to structure the debate on landscape restoration by elucidating landscape governance in various contexts.

1. Introduction and aim of the article

Over the past decade, forest landscape restoration has gained momentum as a means of jointly addressing climate change and future agricultural demands. Forest landscape restoration aims to restore landscapes from a broader perspective, allowing simultaneous restoration of the ecological and productive functions of forests (GPFLR, 2011; van Oosten, 2013a). The many ways of doing so depend partly on the biophysical characteristics of the landscapes, but mostly on the interests of the stakeholders in the landscape in question. The process of deciding what to restore, where and how is increasingly referred to as landscape governance (van Oosten, 2013b; Kozar et al., 2014; Kusters et al., 2015). This term generally refers to a place-based multi-stakeholder process of negotiation and spatial decision-making within its wider

institutional context, with the aim of maintaining, enhancing or restoring the landscape's functions, goods and services for the long term (van Oosten et al., 2014). Ideally, landscape governance contributes to more sustainably restored landscapes by striking a balance between a landscape's functions of production, consumption and protection. It aims to move towards a state in which social and ecological conditions are improved in the long run, while the benefits are equally distributed among the actors involved. Moreover, 'good' governance is relevant for landscape restoration, as it strives for a process of participatory, inclusive and legitimate decision-making on what to restore, and how to sustainably and equitably implement the decisions taken. We therefore argue that sustainable socio-ecological improvement and legitimacy are important outcomes of the governing of landscape restoration.

Despite being essential to unlock the potential of sustainable and

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inclusive landscape restoration legitimately, 'good' landscape governance is hard to achieve, largely because competing claims and conflicts are frequently encountered within landscapes (Giller et al., 2008); they make it difficult to design a process that leads to restoration outcomes acceptable to all parties involved. In their frequently quoted Ten Principles for an Integrated Landscape Approach¹, Sayer et al. (2013) plead for sustainable and inclusive restoration through a multi-functional approach that works across sectors and scales and enhances stakeholder participation. Yet in practice, operating according to these principles remains challenging, due to the complexity of landscape dynamics, stakeholder processes, power disparities and institutional hurdles that hamper governance at the landscape level (Sayer et al., 2016). Despite the existence of the principles, there is no concrete guidance for landscape actors on how and when to identify and engage key stakeholders in restoration (Mansourian, 2016). In practice, landscape actors draw upon the principles selectively and multiple institutional hindrances prevent them from achieving the desired consensus-based, integrated and enforceable restoration plans (Sayer et al., 2016). Various authors have blamed this selective implementation on the limited capabilities of actors involved, but are unclear about what these capabilities are exactly and where they fall short (Sayer et al., 2014, 2016; Ros-Tonen et al., 2018; Kusters et al., 2015; Kozar et al., 2014; Reed et al., 2016; Deans et al., 2017; Foli et al., 2017).

Following on from the above, this article has two aims: 1) to identify the major challenges hampering landscape governance in relation to landscape restoration, and 2) to identify some of the typical abilities that landscape actors require to overcome these challenges, so they can achieve sustainable and legitimate landscape restoration. In this paper we understand capabilities as being the set of collective abilities of individuals, institutions and systems to perform functions, solve problems and achieve objectives within or outside of these systems (UNDP, 2007; Baser et al., 2008; Keijzer et al., 2011; Baser et al., 2008).

We first provide an overview of the scant literature on landscape governance, defining what it is and what it aims to achieve. Secondly, we draw on additional landscape, governance and institutional literature to identify the generally recognised challenges hampering landscape governance. Thirdly, we draw on geography and international development studies to define capabilities and to identify their different dimensions and categorisations. We then compare the literature with our empirical findings on the challenges encountered by landscape actors themselves. Here, we particularly focus on landscape professionals, i.e. the landscape actors professionally engaged in landscape restoration, and on their ability to overcome these challenges. Based on both the literature and our empirical findings we develop an analytical framework that defines and operationalises landscape governance capabilities in relation to some typical challenges for landscape governance and helps to identify, analyse and enhance landscape governance capabilities within the specific context of landscape restoration.

2. Methodology

This article is built upon two components. The first is a review of the scant literature on landscape governance, its envisaged outcomes and challenges. Although there is no literature on landscape governance capabilities specifically, in order to identify and evaluate landscape governance capabilities we review some papers exploring the concept of capabilities within other scientific domains and try to relate them to

¹ The Ten Principles for an Integrated Landscape Approach according to Sayer et al. (2013) are: 1. learning and adaptive management; 2. building on common concerns; 3. recognition of influences from multiple scales; 4. multi-functionality, requiring choices and trade-offs; 5. strong stakeholder engagement; 6. negotiated and transparent change logic; 7. clarification of rights and responsibilities; 8. Participatory monitoring; 9. building system-wide resilience; 10. strong capabilities of all stakeholders involved.

landscape governance.

The second component is a survey that we carried out among landscape actors to assess how they perceive landscape governance challenges, and the abilities they perceive as needed to overcome them. While acknowledging that all landscape actors play a role in landscape governance, we deliberately focused on landscape professionals, i.e. the landscape actors having to deal professionally with one or more of the challenges mentioned above. They are formally mandated to solve substantive and procedural challenges they have never been trained for. They often have the obligation to make choices and take tough decisions, yet may not have the skills to do so appropriately. The professionals we recruited for the survey had registered for one of seven international workshops organised by Wageningen University and partners. The workshops took place in the Netherlands, Indonesia, Ethiopia, Nepal, Brazil, Rwanda and the Philippines and were attended by a mix of regional public and private actors professionally engaged in landscape restoration or sustainable landscape management, most often from a sectoral perspective (forestry, agriculture, rural/urban planning). In total, 166 landscape professionals took part in the survey. They were a very diverse group: the only thing they had in common was their professional interest in landscape restoration and their willingness to learn more about aspects of its governance. An overview of the respondents, including their professional backgrounds, age, sex, and work experience is provided in the footnote below².

We kept the survey as short, simple and open as possible, and formulated four questions in line with our theoretical framework: would you define landscape governance?; what should be its desired outcomes?; what are the challenges that hamper the achievement of the desired landscape governance outcomes?; and which are the capabilities needed to overcome these challenges? We asked respondents to respond on a personal basis, not as representatives of their organisations. They were a self-selected group of professionals engaged in landscape restoration or sustainable landscape management who had enrolled in one of the workshops. We realise that they may not be representative of all landscape actors, and that farmers/producers are underrepresented. We believe, however, that their professional interest added value to the outcomes, as they were knowledgeable on the topic and familiar with the local issues and capability gaps encountered. All were formally mandated to carry out tasks within the difficult process of landscape governance, hence they have much influence on its outcomes. In order to minimise bias and to avoid influencing the answers, we conducted the surveys prior to the workshops, immediately after arrival.

The survey was carried out in two phases. In the first phase, all 166 respondents were asked to define landscape governance, its desired outcomes and the major challenges to achieving them. The second phase included only a subset of 62 respondents from Rwanda and the Philippines, which was not selected deliberately but solely for practical reasons. In this phase we focused on the capabilities, asking respondents to state the capabilities that would enable them to overcome the challenges encountered. We asked them to identify and rank the capabilities. In both phases, only open questions were asked, in order to elicit a wide variety of challenges and to add to the set of substantive and procedural challenges we derived from the literature. The outcomes of both surveys were entered into a database, clustered, coded per topic and analysed.

We did not carry out any in-depth statistical analysis, as this would

² Of the 166 respondents, 54% were from Africa, 28% from Asia, 14% from Latin America; and 8% from Europe. Their average age was 40.8 years; 63% were male and 37% were female. 49% of the respondents had an MSc or equivalent; 32% had a lower level of education, and 19% had a higher level of education. 60% of the respondents were employed in the natural resources management or environmental sector (including wildlife and ecology), 15% in agriculture and the remaining 25% in other sectors (see annex 1).

exceed the purpose of this article, which was to be a first attempt to identify and categorise landscape governance capabilities. To achieve this aim, we needed a rich group of respondents with a large variety of responses, rather than respondents from different groups or regions. More differentiation between professional background, sex, age and geographical provenance would have been interesting and possible but would not contribute usefully to the aims of the present paper. However, when presenting the survey results below, we have twice noted the influence of geographical provenance for illustrative purposes.

3. Literature review

In our review of landscape governance literature we focus on the challenges landscape governance encounters and the capabilities required to overcome these.

3.1. Landscape governance: a brief introduction

3.1.1. Definition and typical aspirational outcomes of landscape governance

Landscape governance is a relatively new academic concept that aims to address the difficulties of unsustainable and conflictive land use. According to Reed et al. (2015), landscape governance is both an empirical observation and a normative idea based on the principles of place-based multi-stakeholder dialogue, negotiation and spatial decision-making, while aspiring to achieve environmental, economic and social objectives simultaneously. Landscape governance aims at balancing production, consumption and protection (Holmes, 2012; van der Sluis, 2017), leading to long-lasting socio-ecological improvement or restoration that meets the needs and aspirations of most, ideally all, actors involved (Termorshuizen and Opdam, 2009; Westerink et al., 2017a). Important herein is the process leading towards these balanced outcomes and socio-ecological improvement, which needs to be legitimate, i.e. fall within what is generally accepted as authority and justified as political power within or outside of the state (Bernstein, 2005; Behagel and Turnhout, 2011). Legitimacy in general terms has three components: the participation of the actors involved (*input legitimacy*); the effectiveness of the resulting policies (*output legitimacy*); and the efficacy, accountability, openness and inclusiveness of the process in between (*throughput legitimacy*; Scharpf, 1997; Mees et al., 2013). All three components can be directly linked to the Ten Principles (Sayer et al., 2014).

3.1.2. Two dimensions of landscape governance

Following Kooiman (2003, 2008), Westerink et al. (2017b); Görg (2007) and Van Oosten et al. (2014, 2018) there is a distinction between the *substantive* dimension and the *procedural* dimension of landscape governance. The substantive dimension entails the landscape to be governed: the functions, goods and services it provides, and the way in which restoration can be achieved. The procedural dimension entails the process of governance, including the process of multi-stakeholder dialogue and decision-making concerning the types and forms of restoration, as well as the legitimacy of the decisions taken. Both dimensions have a strong institutional component. The institutional component for the substantive dimension involves regulating landscape functions through different policy sectors; most of these are steered independently from outside the landscape by sector-based policy directives, instruments for sectoral restoration management and by planning at higher administrative levels of scale. The procedural dimension is reflected in landscape governance *happening* across sectors, scales and jurisdictions, through a range of formal and informal institutional arrangements, such as formal interactions between policy makers and stakeholders, as well as informal stakeholder networks and policy influences across sectors and scales (van Oosten et al., 2018).

3.1.3. Origins and applications of landscape governance

Landscape governance responds to the global debates on unsustainable use of natural resources, deforestation, loss of biodiversity, climate change and the manifold opportunities for restoration. In these debates, the multi-sectoral and integrative perspective of landscape restoration is increasingly promoted as an alternative to sectoral approaches that focus on one specific policy domain such as forestry, nature conservation or agroforestry (Arts et al., 2017). Scholars have advocated making landscape restoration more sensitive to space and scale, i.e. more specific to the biophysical, social, cultural and spatial conditions of a landscape, and taking account of the multi-scalar nature of spatial decision-making (Görg, 2007; Padt et al., 2014; Reed et al., 2015; Ros-Tonen et al., 2018). Such governance of landscape restoration ultimately fits into the wider discourse on sustainable development, which proposes cross-sectoral and multi-stakeholder collaboration, and restoration policy at the 'appropriate' scale: the landscape. As such, landscape governance is increasingly recognised by international agencies (IUCN, WWF, WRI), governments and private companies. They perceive forest and landscape restoration (FLR) as having the ultimate aim of combating climate change, and landscape governance as a means to meet international political commitment such as the Bonn Challenge, the CBD Aichi Targets, the Paris Agreement on Climate Change, and private sector agreements such as the New York Declaration on Forests and its resulting 'Zero deforestation' movement. These efforts have led to several regional initiatives on FLR that go beyond the classical ecological restoration or industrial reforestation operations by incorporating social, environmental and economic benefits simultaneously. Examples are LA20 × 20 in Latin America and AFR100 in Africa, which are attracting large public and private investments.

3.2. Challenges to landscape governance

Notwithstanding the situation described above, landscape governance is often mistakenly presented as the silver bullet to restore degraded landscapes by facilitating win-win options and minimising trade-offs (Scarlett and McKinney, 2016) through a legitimate (participatory, effective and inclusive) process. However, the literature mentions several challenges that have deeper institutional causes and that hamper landscape governance in terms of substance as well as process.

3.2.1. Challenges associated with substance: how to achieve balanced outcomes

One challenge frequently mentioned in the literature is that of managing restoration that aims at balanced outcomes, as achieving this aim implies consensus on lasting socio-ecological improvement or restoration through a socially acceptable balance between production, consumption and protection. Most landscapes are shaped by vested interests that are opposed and counter-productive, leading to competing claims and conflicts between producer demands, livelihood needs and biodiversity needs, and hence to unavoidable negotiations and trade-offs (Giller et al., 2006; Holmes, 2012; van der Sluis, 2017; Arts et al., 2017). Achieving balanced outcomes is therefore hard, as there is no single way to do so. The frequently suggested restoration proposition of multifunctionality is not always realistic, as the interpretation of multifunctionality greatly depends on scale: a multifunctional forest is different to a multifunctional farm, a concession or a wider landscape. Too much emphasis on multifunctionality may even lead to spatial contradictions and incompatibilities being overlooked, and to trade-offs being resolved on the basis of power relations rather than on consensus (Arts et al., 2017). After all, landscapes are intrinsically subject to plurality, contestation and conflict, which makes it hard to arrive at common visions and consensus on their restoration outcomes (Leibenath and Lintz, 2017). From an institutional perspective, the management towards balanced restoration outcomes is challenging in the sense that various landscape functions are embedded in

externally steered institutional *silos* that often overlap and contradict. Because they lack a shared landscape vision, the different sectors strive for sustainability outcomes simultaneously, without coordination, harmonisation or integration either horizontally or vertically (Runhaar, 2016; van Oosten et al., 2018). This lack of a shared vision leads to policy conflicts that are played out at the landscape level, where they are left for landscape actors to use their individual capabilities to muddle their way through a myriad of competing and contrasting rules and regulations that hardly match their interests (Sayer et al., 2008; van Oosten et al., 2018).

3.2.2. Challenges associated with process: how to shape a legitimate process

Landscape governance is a messy process that cannot be centrally steered. Rather, the process is steered by multiple actors who take on various roles in the landscape; the result is a kaleidoscope of parallel, sometimes partly overlapping bottom-up as well as top-down restoration initiatives that often transcend the boundaries of political-administrative jurisdictions (Termorshuizen and Opdam, 2009; Westerink et al., 2017b; Kuindersma and Boonstra, 2010; Ros-Tonen et al., 2018). Therefore, many of these restoration initiatives remain informal; are not embedded in more formal governance arrangements and so are not very effective. If not based on accepted forms of authority, political power and peoples' rights to vote within constituencies and jurisdictions, landscape governance requires other sources of legitimacy. These could be direct representation, a greater role for non-state actors, and collective action across jurisdictional boundaries – which in turn raises new legitimacy issues (Biermann and Gupta, 2011; Bekkers and Edwards, 2007; Mees, 2014). The proposition of securing legitimacy in landscape governance therefore needs to be redefined as requiring more direct involvement of stakeholders (van Oosten et al., 2014), without threatening the sovereignty of elected governments and blurring public and private interests (Sørensen, 2005; Mees, 2014). In that sense, the new functional spaces or 'new spatialities' suggested by scholars (Hajer, 2007; Görg, 2007; Scarlett and McKinney, 2016; Huitema and Meijerink, 2010) may be hard to achieve, as the decisions taken within such new functional spaces may not have a clear mandate, or the legitimacy to operate as formal and accountable institutions in the process of spatial decision-making (Riggs et al., 2018; Mees, 2014; van Oosten et al., 2014, 2018). Examples are the predominantly informal yet functional institutional landscape arrangements on transboundary spatial planning and social learning in Southwest Amazonia (van Oosten, 2013a), multi-stakeholder platforms and partnerships for landscape restoration in Indonesia (van Oosten et al., 2014), the emergence of multifunctional commodity-scapes in Indonesia (van Oosten et al., 2016), and experimental policy integration at the local level in Rwanda (van Oosten et al., 2018).

3.3. Capabilities to overcome the challenges to landscape governance

As already mentioned, there is no literature on landscape governance capabilities per se, as the concept of landscape governance is still relatively new and the capabilities that it requires remain largely unexplored. But there is literature on capabilities in general, which can help identify what governance capabilities are in a more general sense, at what levels they are defined and how they can be classified. The following overview of geography and international development studies and governance literature sheds light on capabilities and how they contribute to achieving balanced landscape outcomes and legitimate landscape governance arrangements. There is a clear distinction between the collective capabilities of institutions and systems and the individual abilities or competences of landscape professionals: each requires a different approach.

3.3.1. Capabilities in general

The term *capability* has been widely used in literature on international development studies and capacity development mainly focused

on the Global South. It is widely recognised that the best road to development is that of having people develop their own potential in a process by which people, organisations and society as a whole create, strengthen and maintain their capacity over time (UNDP, 2007). Nevertheless, there is no single and generally accepted definition of what *capability* is exactly, and how this could relate to landscape governance. Keijzer et al. (2011) state that capabilities are the collective abilities of individuals, groups or organisations to do something either within or outside their own system; they can be considered a combination of the competencies (knowledge, skills, attitudes, mind-sets and motivations) of individuals or groups of people within the context of their surrounding conditions, in our case, the landscape. Well-known is the *capability approach*, introduced by Nobel laureate Amartya Sen, in which capabilities are attributed not to individuals, but to the deeper development objectives of the society of which they are a part. Capabilities, so Sen argues, refer to the set of abilities that allow all individuals within society to enhance their valuable options – also called *freedoms – to choose their destination* (Sen, 1999, 2000). However, it is the larger societal system that often hampers individuals from enjoying their freedom and keeps individuals entangled in webs of dependence on institutions, politics, markets and their underlying values (ibid.).

So far, this approach has not been applied to landscapes or landscape governance, but looking at its components it seems to be relevant and helpful for identifying and categorising landscape governance capabilities. Although not empirically verified, we can associate Sen's capabilities with the collective abilities of landscape actors to enlarge their access to and control over natural resources and be able to collectively shape the kind of landscape they need and want. This certainly does not relate solely to the inhabitants of a landscape, but instead extends to all actors engaged in spatial decision-making, including governments, private companies and international organisations. It links to the concept of social capital, which is generally defined as the value of social networks and institutionalised relationships, and produces civic engagement, shared interest and consensus (North, 1990; Putnam et al., 1993; Bertin and Sirven, 2006). The capability approach recognises social capital as a central capability, which can be acquired and used in the case of need (Sen, 1999; Nussbaum, 2000; Bertin and Sirven, 2006).

Based on Sen's capability approach, Baser et al. (2008) developed the 'Five Capabilities Framework', which may also be useful for our purpose. They identify the capabilities to 1) commit and engage; 2) to carry out functions and tasks; 3) to relate and attract resources and support; 4) to adapt and self-renew; and 5) to balance coherence and diversity. All five capabilities focus on *interrelationships* between individuals or groups of people and the systems in which they operate, which in our case could be the landscape. Capabilities, so they say, are the collective abilities of a system (landscape) to carry out a particular function or process (Baser et al., 2008). In order for a system (landscape) to do so, it must have competent people committed to achieving. It is people who contribute to the overall functioning of the system (landscape): hence it is their technical knowledge, their social skills and their personal attitudes that make the difference (ibid.).

3.3.2. Capabilities to overcome substantive challenges

The term *landscape capacity* is used in landscape ecology to refer to the landscape's biophysical and ecological capacity to fulfil its functions of production, regulation, habitat and information (Bolliger and Kienast, 2010), as well as the regenerative capacity of component ecosystems to restore degraded functions. Within the context of this article, however, we interpret 'landscape capability' as the capability of actors within the landscape to assess and restore a landscape's functionality and its potential to restore its provision of goods and services to society, within the carrying capacity of the place (Arts et al., 2017). Translated into human capabilities, this comes down to the ability to describe and analyse spatial dynamics, as well as to the possession of practical and technical skills for processing spatial information,

including modelling and scenario planning, assessing and analysing trade-offs, and evaluating and selecting appropriate restoration options through adaptive management (Liu and Opdam, 2014; Willemsen et al., 2010; Burkhard, 2009; Bolliger and Kienast, 2010). Communication skills are also required, in order to involve local land users/managers in striving for a socially acceptable restoration outcome (Inkoom et al., 2017; Burkhard et al., 2009; Van Oudenhoven et al., 2012; Swetnam et al., 2011; Sohel et al., 2014). And landscape capability also refers to the ability to assess a landscape's goods and services, assess the potential for their restoration, and perform an economic valuation of this potential (Arts et al., 2017). Allocating values (whether monetary or non-monetary) to different goods and services also helps to balance restoration options and clarify trade-offs on both monetary and non-monetary grounds (Heal, 2000). In institutional terms, balancing restoration options requires the capability to build bridges between institutional silos and work towards more coordinated and harmonised policies. This is linked to the ability to build institutional congruence, which refers to the ability of institutions and their agents to operate across sectoral hierarchies and administrative scales (Arts and Visseren-Hamakers, 2012; Boonstra, 2006; Görg, 2007). This ability refers not only to creating congruence across formal institutions, which is often challenging (rules, policies, regulations), but also to creating congruence between formal and informal or customary institutions, which are typically place-based and landscape-specific. The ability to creatively combine and stretch rules, policies and regulations through institutional bricolage (a term coined by Cleaver (2002, 2008)), refers to the ability to creatively blend old and new institutions to craft hybrid institutions that are more place-based. It also refers to institutional entrepreneurship, which is a more deliberate process than institutional bricolage, as it refers to a more strategic manoeuvring between sectors and scales, and to building policy networks in between (Wejs, 2014; Van Oosten et al., 2018). Both institutional bricolage and institutional entrepreneurship are important abilities, as they help to overcome substantive as well as procedural challenges.

3.3.3. Capabilities to overcome procedural challenges

The literature on governance capabilities focuses mainly on procedural challenges. Governance capabilities, albeit not specifically related to landscape governance, are defined as the collective abilities of societal actors to work together to solve collective problems (Nelissen, 2002; Arts, 2006; Termeer et al., 2015; Dang et al., 2016). Termeer et al., 2015 defines governance capability as the ability of policy makers (and other actors) to deal with the complexity of multi-actor governance. This includes the ability of individuals to observe issues from different perspectives and the capability of an entire governance system to enable such observing and acting to take place. She identifies five interdependent abilities of a governance system: reflexivity, resilience, responsiveness, revitalisation and rescaling (Termeer et al., 2015; Candel et al., 2015). Nelissen describes governance capability as the ability of public-private or network governance to successfully diminish or solve problems that transcend existing jurisdictional and administrative boundaries (Nelissen, 2002). Arts and Goverde (2006) highlight the role of novel, trans-sectoral or transboundary governance arrangements in the ability of governance to do so. Their analytical policy arrangement framework covers the 'capacity to govern', which depends on the resources available, the key policy actors involved, the rules of the game, and the dominant policy discourses. In institutional terms this goes further than institutional coordination and harmonisation; rather, it is about fundamentally integrating institutions and it demands space for new place-based institutions to emerge. As already briefly mentioned in the previous section, this can be done intuitively through institutional bricolage, by creatively blending old and new institutions to craft hybrid institutions that are more place-based (Cleaver, 2002, 2008). But it can also be done more deliberately, through institutional entrepreneurship, which is more strategic, as it helps to deliberately build policy networks capable of fundamentally transforming institutions

(Wejs, 2014; Van Oosten et al., 2018). Institutional entrepreneurship requires institutions and their agents to have the capability to critically rethink current institutions and then take action to change them (Ochieng, 2017). These institutional capabilities have both a political and administrative dimension; they are related to the capability of institutions and the actors in charge of them to augment the level of participation, reach a shared vision, enhance the effectiveness of the resulting policies and increase the accountability, openness and inclusiveness of the process in between (Ochieng, 2017; Scharpf, 1997; Schmidt, 2013; Chazdon and Laestadius, 2016).

3.4. Overview of challenges and capabilities relevant to landscape governance

Several studies address the substantive challenge of balancing restoration outcomes, highlighting the capability of understanding landscape dynamics and of using tools and techniques for balancing trade-offs to arrive at consensus on a restoration solution. These tools and techniques allow for socio-ecological and economic valuation of landscape functions that is helpful for making informed and negotiated choices to restore landscapes adaptively. Other literature discusses the institutional capability of building congruence to create coherence between different sectoral silos and to stretch or transform sectoral policies into better coordinated, harmonised or integrated spatially defined restoration policies (Arts et al., 2017; Liu and Opdam, 2014; Willemsen et al., 2010; Burkhard et al., 2009; Bollinger, 2010; Boonstra, 2006; Görg, 2007). Procedural challenges include recognising the capabilities of reflexivity, resilience, responsiveness, revitalisation and rescaling (Termeer et al., 2015; Candel et al., 2015), the capability to broker novel governance arrangements, and the institutional capabilities to create legitimate processes through legitimate input, output and throughput (Ochieng, 2017; Scharpf, 1997; Schmidt, 2013; Mees, 2015).

Fig. 1 visualises the major concepts and ideas on capabilities encountered in the literature, which could form the basis for an analytical framework for FLR or for developing other landscape governance capabilities. This visualisation is helpful for systematically analysing the relationship between the landscape, its restoration, its governance, the challenges encountered and the capabilities required to overcome these challenges. However, the theoretically formulated capabilities remain rather abstract, and do not permit identification of the individual abilities and competences of the actors involved. This is a shortcoming, as a better understanding of these individual abilities and competences would elucidate both the role of individuals within the landscape and their abilities, and hence could be used to strengthen landscape governance as a whole.

4. Survey results

The outcome of our survey presented below reveals the challenges and capabilities from the perspectives of landscape actors who experience landscape governance challenges in their day-to-day work. As mentioned before, we have deliberately focused on landscape professionals, as they are formally mandated to solve substantive and procedural challenges they have never been trained for. Here, we define landscape professionals as those actors who are professionally engaged in landscape restoration or sustainable landscape management. They may be employed by governments (local or otherwise), private producers, companies or civil society organisations operating in the area. Our aim is to obtain insight into the specific challenges associated with landscape governance and the individual abilities or competences of these landscape professionals require to overcome them.

4.1. Defining landscape governance and its desired outcomes

The respondents commented that they found it hard to define



Fig. 1. Schematic overview of the relation between landscape governance capabilities, the challenges to overcome and the envisaged outcomes.

landscape governance and its outcomes; they came up with a wide variety of descriptions, ranging from *the collective management of common resources for the benefit of landscape users in a sustainable manner to a structured process of decision-making by multiple stakeholders regarding issues in a spatial context*. They said it was easier to identify three key words characterising landscape governance outcomes. As the key words were highly diverse, we listed and coded them, and then clustered them into 21 key words³ but excluded the words 'landscapes' and 'governance', as these were too obvious. Instead of presenting the key words in a frequency table we present them in an illustrative word cloud, in which the frequency and weight of the words corresponds with the frequency of occurrence.

Although a word cloud does not provide rigorous scientific evidence, it does illustrate the way in which the surveyed landscape professionals from various geographical and sectoral backgrounds conceptualise landscape governance. Based on the cloud we can derive the following description: landscape governance refers to the (ideally inclusive and legitimate) process whereby public and private stakeholders collaboratively manage and restore their landscape and its resources. In the case of competing interests, landscape governance strives for informed and negotiated decisions about the trade-offs and choices to be made. Important words are *sustainable* and *balance*, as well as *inclusive* and *legitimate*. It seems that the landscape professionals envisage landscape governance as aiming to achieve the right balance between people, production and protection through land use planning, while taking into account the rights and responsibilities of all stakeholders involved, including those vulnerable or less vocal groups who may be underrepresented in formal planning processes. Clearly, such a process may be conflictive, as it touches upon the diverging interests and powers of the stakeholders involved. The definition also acknowledges the roles of institutions, policies (spatial or otherwise), and policy integration within and beyond the spatial boundaries of the landscape.

There are striking differences in answers, depending on respondents' geographical backgrounds. Respondents from countries with rather authoritarian governments, such as Rwanda and Ethiopia, highlighted key words like institutions and policies, while respondents from countries with less authoritarian governments, such as Nepal and Brazil, tended to emphasise key words like people, rights and inclusiveness. Collectively, however, the respondents' description of

landscape governance does not differ much from the definitions provided in our overview of theory on landscape governance. The description addresses both *substance* (landscape, resources, balance, restoration, management, sustainability, production/consumption/protection, knowledge) as well as *process* (stakeholders, decision-making, institutions, policies, regulations, conflict, power, collaboration, inclusiveness and legitimacy). However, respondents did not clearly differentiate between substance and process, and considered them to be strongly interrelated. This is not surprising, as in theoretical terms, landscape governance is all about the interaction between people and their environment (Görg, 2007; Buizer et al., 2015; van Oosten et al., 2014). It is noteworthy that respondents mentioned more key words related to substance than to process. It seems that these landscape professionals are more comfortable with the substantive dimension that they have often been trained to cope with, as many of them have a rather technical/ecological background. They seem to find it more challenging to position landscape restoration in the procedural dimension of governance, given the difficulties of stakeholder dynamics, institutional challenges and power relations involved. This hypothesis is further confirmed in section 4.2.

4.2. Challenges to landscape governance

Respondents identified multiple challenges to landscape governance, related to substance as well as to process. We listed, coded and clustered the answers, again, not based geographical differences but on commonalities. In general, the answers corresponded quite well with our distinction between substantive and procedural challenges described in section 3.2. Yet again, the challenges related to process outnumber the challenges related to substance.

The most frequently mentioned challenge is the lack of multi-stakeholder dialogue and collaboration. The respondents find it hard to work with multiple stakeholders at the same time, mentioning in particular the difficulty of *'Bring[ing] all stakeholders together in one understanding and one vision; meeting the expectations of all concerned'*. They mention the challenge of getting stakeholders to meet with them and engage in deliberation and dialogue. Too often, stakeholder conflicts hamper collaboration, and it is hard to mediate in spatial conflicts because of the underlying multiple interests. Failure to involve all parties when setting agendas, unequal power relations and injustice lead to low levels of legitimacy, and a bias towards favouring the interests of elites. Respondents also mentioned the domination of sectoral silos, institutional rigidity or 'stickiness', top-down governance and bureaucracy as challenging. These landscape professionals consider it to be confusing

³'Resources', for instance, includes words such as forest, water and soil, while 'institutions' includes rules, regulations and laws. 'Policy' was mentioned so frequently that we did not include it in 'institutions' but considered it separately.

to manoeuvre between sectoral policies, as they themselves are trapped in institutional silos. They are held accountable for sectoral performance, while in practice, the challenges are inter-sectoral and require policy integration which they often consider to be beyond their remit.

A challenge the respondents mentioned frequently is that posed by competing claims on a landscape's resources and the difficulty of finding the right balance between production, consumption and protection in order to arrive at balanced restoration outcomes. Most of them lack experience with tools and instruments for landscape restoration modelling, scenario planning, decision-support mechanisms, impact assessments and other tools that can help in finding an appropriate balance. Yet because of their geographical provenance, most of the respondents have to deal with landscape inhabitants who cope with poor conditions for earning a livelihood and experience poverty, multiple conflicts relating to resource use, a lack of business opportunities, and an absence of investors. They encounter difficulties in identifying economic opportunities for restoration and in supporting these through appropriate land use planning. They feel they have insufficient knowledge on landscape dynamics and landscape change, as they find it hard to think in an interdisciplinary manner and lack the tools and skills to identify and analyse socio-ecological and spatial processes in depth (Fig. 2).

Finally, the respondents acknowledge a general lack of personal motivation, commitment, engagement and leadership among themselves and among other landscape professionals. This lack of motivation hampers the performance of individual landscape professionals, as often they do not feel personally attached to the landscape in which they work, and do not have the ability to personally commit and engage in its restoration. They expressed this as a lack of leadership of themselves and of landscape professionals in general.

Table 1 in Section 4.3 provides an overview of all the substantive and procedural challenges the respondents encountered. Clearly, the landscape professionals surveyed acknowledge and struggle with the socio-spatial reality in which they operate. They do not feel well equipped to face these challenges and find it hard to react appropriately. More widespread are the challenges related to multi-stakeholder processes such as the facilitation of dialogue, nurturing of collaboration and mediation in conflict. The landscape professionals are aware of the deeper institutional causes underlying substantive and procedural challenges. They understand that institutional fragmentation hampers appropriate landscape restoration as well as stakeholder collaboration, but they feel unequipped to influence and change institutions. They feel they operate in an arena of vested power relations, which makes it hard for them to navigate between personal and collective interests. The leadership that they feel is needed to overcome these challenges requires true commitment and engagement, but too often these are absent.

4.3. Capabilities to overcome these challenges from professionals' personal perspective

In order to elicit responses that could help guide practice, we asked respondents to identify the abilities or competences they would need or considered important for overcoming the challenges they encounter. The responses were often formulated in terms of knowledge, skills and attitudes or a combination of these three.

4.3.1. Capability to deal with substantive challenges

The most important ability that enables the landscape professionals to overcome substantive challenges they encounter is that of being able to deal with resource pressures and competing claims on natural resources through land use planning and more robust restoration plans. In many countries, spatial planning is a new professional domain and few professionals work in this area. Most of the landscape professionals had been trained in sectoral natural resources management, forestry or agriculture. They therefore consider interdisciplinary knowledge about landscape dynamics to be important. They frequently mention the practical skills of scenario planning, impact analysis and other decision-support tools that enable the right restoration options to be found. Strongly related is the ability to deal with the poverty and livelihood constraints of rural communities. Overcoming these challenges requires knowledge on local economic development, and the practical skills of developing livelihood strategies, business models and attracting finance for effective landscape restoration.

4.3.2. Capability to deal with procedural challenges

An important ability mentioned by the landscape professionals was that of creating institutional space for stakeholders to meet, resolve conflict, engage in dialogue and come up with a joint vision. This is closely related to the social abilities to communicate, mediate, negotiate and network, which many technically oriented landscape professionals have never learned. Related abilities which were frequently mentioned were those of understanding and influencing institutional processes, and crafting or strengthening institutional arrangements at the landscape level. Theoretical terms such as institutional bricolage and institutional entrepreneurship were not mentioned, but the respondents recognised the importance of the ability to understand and influence institutional dynamics and broker novel institutional arrangements across sectors and scales. Understanding and addressing political imbalances and power dynamics requires abilities in the areas of stakeholder empowerment, lobby and advocacy. These elements are highly dependent on the personal attitude of the professionals involved, and their individual motivation to personally commit and engage in restoration. This touches upon ethics and moral behaviours related to power and politics and entails the ability to understand the interplay of rights and duties, and the commitment to defend peoples' rights when trampled upon.

Table 1 shows the individual abilities and competences mentioned by landscape professionals in more detail. The abilities that help them to overcome procedural challenges outnumber the abilities related to substantive challenges (63% versus 37%). This emphasis can be explained by the fact that many of the landscape professionals had a technical background, and that abilities in that area (land use planning, scenario planning, technical restoration, economic development, etc.) can be fairly easily acquired within current circuits of professional training. More difficult to acquire are the social and personal skills and attitudes required to facilitate multi-stakeholder dialogue, strengthen and change institutions, deal with political and power dynamics, and gain personal motivation to engage and commit.

5. Synthesis and discussion

Whereas in Section 3 we provided an overview of the way in which capabilities are conceptualised within various strands of literature, in



Fig. 2. Word cloud of key words defining landscape governance (<http://www.wordle.net/>).

Table 1
Abilities that enable landscape professionals to overcome substantive and procedural challenges, as identified by respondents.

Challenge	type	freq.	%	Abilities & competences needed by landscape professionals
Poor land use management & planning, including restoration	substantive	23	9%	Land use management & planning skills ability to prepare & implement good land use & restoration plans ability to use the appropriate planning tools including geo-data management ability to monitor implementation of the plans
Poverty, lack of business opportunities & investment	substantive	32	12%	Economic development, business development skills & finance ability to strengthen local economic development ability to design landscape business models ability to mobilise financial markets to invest
Difficulty of analysing the right balance between production-consumption-protection based on modelling, scenario planning & decision support	substantive	34	13%	Balancing landscape interests & outcomes ability to acquire the right information to build insightful scenarios for restoration ability to make information available to stakeholders through the right channels ability to predict the consequences of the choices made, esp. related to restoration (impact assessment)
Knowledge about local landscape dynamics	substantive	15	6%	Landscape knowledge ability to understand the socio-spatial dynamics of the landscape ability to understand the specific dynamics of landscape governance ability to make 'sense of place', or fully familiarise & 'become part of' the landscape
Lack of multi-stakeholder dialogue & collaboration; lack of vision on a landscape's future	process	57	22%	Facilitation of multi-stakeholder processes ability to facilitate complex multi-stakeholder processes & broker relations, networks & partners ability to co-create common visions & joint restoration plans ability to mitigate conflicts & nurture collaboration
Sectoral policies, weak institutions & poor institutional/policy integration at the landscape level	process	38	15%	Institutional strengthening & institutional entrepreneurship ability to understand institutional dynamics & become engaged ability to broker cross-sectoral & transboundary arrangements, & institutional arrangements (including transboundary ones) ability to adequately institutionalise landscape arrangements within existing or new institutional arrangements which are legitimate in terms of input, output & throughput
Lack of personal motivation, commitment & leadership	process	13	5%	Personal engagement, commitment & leadership skills ability to show leadership & communicate effectively ability to engage & motivate others to become engaged ability to show entrepreneurial behaviour & see & grasp opportunities
Political interests & vested power relations	process	46	18%	Dealing with political imbalances & power dynamics ability to engage in political processes ability to balance power relations through lobby & advocacy ability to empower stakeholders in spatial decision-making
Total		258	100%	

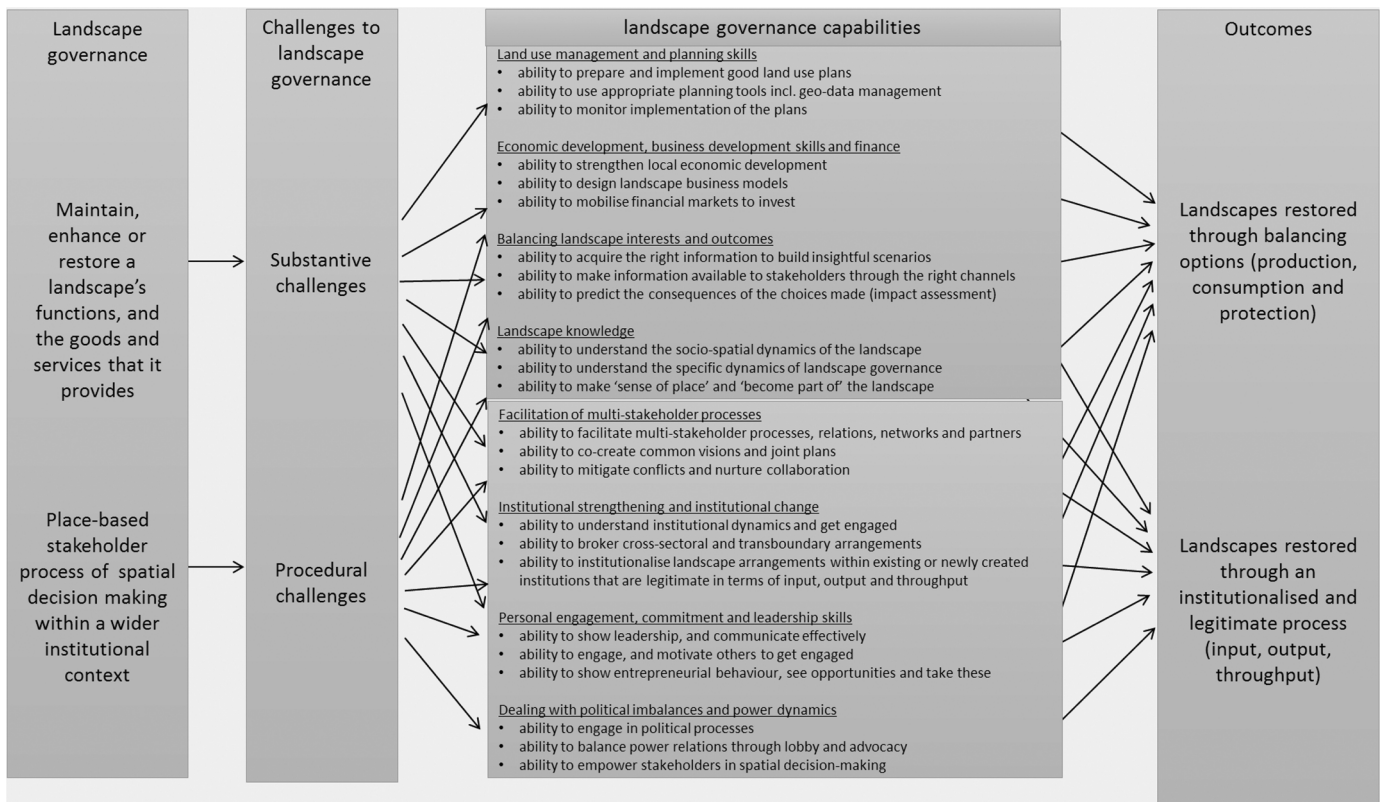


Fig. 3. Landscape governance identified in literature, enriched by the capabilities identified by the landscape professionals surveyed.

Section 4 we provided insight into how landscape professionals perceive the landscape governance capabilities they need to overcome their day-to-day challenges. The perceived capabilities are much more practical than the theoretical conceptualisations and can therefore be considered as an operationalisation of the more general conceptualisations in the literature. Within this operationalisation, the focus moves from the collective capabilities of landscape or governance systems to the more practically formulated abilities and competences of individual professionals operating on the ground. Both are important, as we have learned from Baser et al. (2008) that it is people who contribute to the overall functioning of the system (landscape), hence it is their technical knowledge, their social skills and their personal attitudes that make the system work.

Combining the more conceptual challenges, outcomes and capabilities with the abilities perceived by landscape professions we arrive at Fig. 3, which is much more detailed and practically oriented than Fig. 1. We therefore believe that the capabilities mentioned by the landscape professionals are a valuable addition to the literature and enrich the content and enhance the quality of governing FLR.

As shown in Fig. 3, most of the landscape governance capabilities are related to tackling substantive and procedural landscape challenges simultaneously. The differentiation between substance and process may therefore not be as strict as the literature suggests, as landscape professionals look at the challenges in a much more integrated way. It is also hard to link each of the abilities directly to one of the envisaged outcomes of landscape governance, as these too are more integrated than the literature suggests.

Although substantive and procedural challenges are highly inter-related, professionals tend to emphasise the importance of the abilities related to procedural challenges. In practice, many landscape professionals have state-of-the-art technical knowledge on restoration, as they have been trained as a forester, agricultural expert or planner, but they lack the interdisciplinary and transdisciplinary knowledge to look beyond their own sectoral interests and expertise. They may not have

been trained to address the procedural challenges they encounter. They may not have the ability to reflect, commit and engage and they may not have the skills to facilitate multi-stakeholder dialogue and institutional change (Bodegom et al., 2008; Ameyaw, 2018). The ability of actors to deal with the complexity of multi-stakeholder governance requires the social skills to facilitate dialogue, mitigate conflict, build mutual understanding and negotiate compromises (Klaver, 2009; Ameyaw et al., 2015; Ameyaw, 2018). The ability to navigate across institutional levels and scales, and to broker legitimate institutional arrangements is not something that professionals learn in college. It requires the personal ability of institutional *bricolage* (Cleaver, 2002, 2012) and institutional entrepreneurship (Bulkeley, 2010; Wejs, 2014) to stretch and transform existing institutions and thereby achieve the desirable 'new spatiality' or new functional space for governance arrangements to emerge (Hajer, 2003; Huitema et al., 2016; van Oosten et al., 2018). This transformation is achieved through strategic networking, and an entrepreneurial attitude to action, engagement and commitment. Such initiatives require courage, the ability to deal with political imbalances, and the personal motivation to lobby and advocate in favour of those needing empowerment vis-à-vis the established status quo. They also require the ability to acquire and use social capital, which produces civic engagement, shared interest and consensus (North, 1990; Putnam et al., 1993; Bertin et al., 2014). All these depend on the ability to be critical, think spatially and behave in an ethical and moral manner, to be able to change political cultures, elite capture, corruption and poor enforcement of laws (Bodegom et al., 2008; Ameyaw, 2018).

Based on the foregoing, can we say that landscape professionalism is a newly emerging disciplinary domain that requires a new generation of interdisciplinary professionals whose niche is landscape governance? Or would it be better for professionals to remain in their own sectoral domain, but with the additional ability to cross boundaries and integrate knowledge, skills and attitudes from other domains? Arts et al. (2018) plead for the latter, arguing that the differences (and,

sometimes, incompatibilities) in scientific epistemologies hamper a true integration of disciplines. They therefore plead for professionals who are well trained in a single discipline but at the same time able to integrate – or at least combine – this discipline with different knowledge domains. Key to this is inter- and transdisciplinary communication and collaboration between professionals who have a strong disciplinary basis (Arts et al., 2018).

The value of defining landscape governance from a professional's perspective is that it makes the existing and the desired learning needs explicit. It sketches a clear picture of the knowledge, skills and attitudes that professionals have or need to acquire in order to enhance the governance of landscape restoration. This helps in the operationalisation of the theories and in the design of capacity development products based on the principles of competence-based learning. The value of the theoretical concepts is that they make it easier to put practical knowledge, skills and attitudes into a more systematic context. This is in line with Baser et al. (2008), who advocate taking a systemic approach to capabilities, in which the capabilities of a system are comprised of the individual abilities and competences of the people, in our case, the professionals within a landscape. Collectively, able and competent professionals will stimulate inter- and transdisciplinary collaboration or meta-capability that will help achieve small wins, thereby taking small steps of continuous change and new learnings (Weick, 1984; Termeer et al., 2015). Such meta-capability for landscape governance entails the capability to balance stakeholder interests and engage stakeholders in a legitimate process of collaborative landscape restoration. Moreover, it entails the capability to alleviate poverty, to attract landscape business and finance, and balance power relations, so that landscape restoration favours all actors involved, while remaining within the carrying capacity of place. The development of landscape governance capabilities towards achieving better FLR practices should therefore not be a mechanical process of training individuals to gain specific know-how, best practices or skills, but a systemic process of societal learning: to understand patterns of societal behaviour, to alter power and authority, and redistribute access to and control over a landscape's resources.

6. Conclusion

Within the debate on landscape restoration, landscape governance is a relatively new concept that addresses the difficulties of unsustainable and conflictive land use that hamper effective landscape restoration. Landscape governance is both an empirical observation and a normative idea that aspires to achieve environmental, economic and social objectives simultaneously through multi-stakeholder dialogue, negotiation and spatial decision-making. The scant literature on landscape governance focuses mainly on the challenges encountered in relation to the substance and process of landscape restoration. Although there is no literature on the capabilities required to overcome these challenges, there is general literature on capabilities, which has relevance to the issue of landscape governance. Combining landscape capabilities, institutional capabilities and governance capabilities gives us a good insight into the capabilities of landscapes and governance systems and their institutional dynamics. During our survey we identified these landscape governance capabilities as perceived by landscape professionals (i.e. the landscape actors who have to deal with these challenges professionally in their day-to-day work). The outcomes show that landscape professionals tend to identify the individual abilities that they need to overcome the practical challenges they encounter in their daily reality. These abilities are much more practical and may serve to operationalise the more general conceptualisations from the literature. Translating these abilities into competences helps in the design of capacity development processes based on the principles of competence-based learning. The advantage of this is that landscape

governance can be enhanced through developing the abilities of landscape professionals. However, this risks reducing landscape governance to a rather mechanical process of capacity development and training of individuals in terms of know-how, best practices and practical skills, without addressing the bigger system to which they belong. Linking the individual abilities of landscape professionals to the theoretical capabilities that address the larger landscape governance system leads to a more realistic approach to the enhancement of landscape restoration through landscape governance. Such an approach would lead to a more systematic process of societal learning, which addresses drivers of degradation, patterns of societal behaviour, issues of power and authority, and (re)distribution of access to and control over a landscape's resources. This helps to unlock the potential of landscape professionals and other landscape actors to shape the landscape they need and want, and to spatialise existing governance systems to effectively restore their landscapes.

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