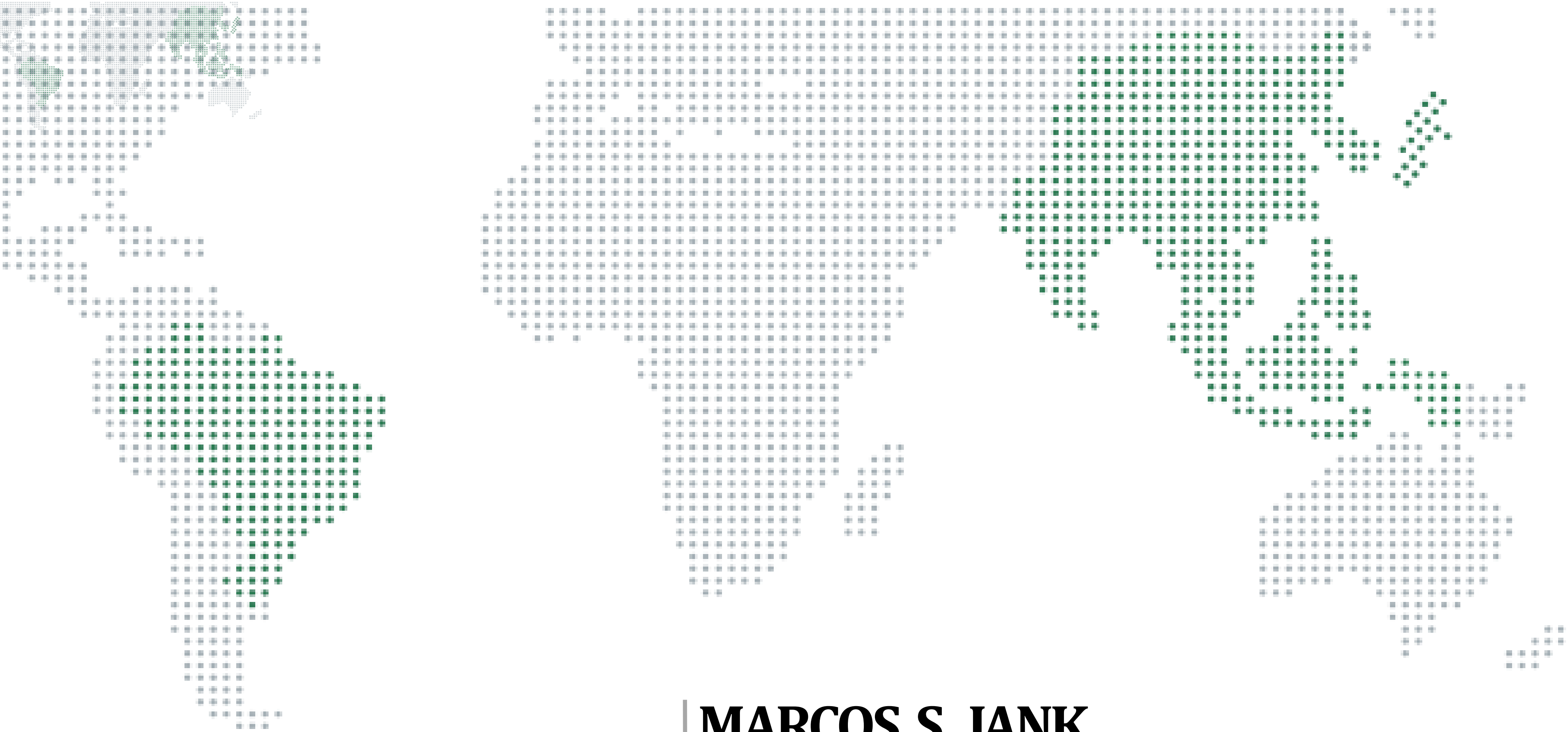

ASIA BRAZIL
AGRO ALLIANCE

MARCOS S. JANK

Brazilian Agribusiness Overview and Global Dynamics

ESALQ-USP Summer School – July 2019

4th Special Program on Tropical Ag Production Systems

Piracicaba, Brazil | 15st July 2019

BRAZILIAN BEEF EXPORTERS ASSOCIATION ABIEC

ABPA BRAZILIAN ASSOCIATION OF ANIMAL PROTEIN

UNICA BRAZILIAN SUGARCANE INDUSTRY ASSOCIATION

Resume (Marcos Jank)

- ✓ Chair Professor of the **Luiz de Queiroz Chair** on Integrated Agri-Food Systems at ESALQ-USP
- ✓ Senior Professor of **Global Agribusiness** at **INSPER**
- ✓ President of the **Asia-Brazil Agro Alliance (ABAA)**, an initiative to enhance the profile of Brazilian agribusiness in Asian economies, located in Singapore (2017-19)
- ✓ Vice-President of Corporate Affairs and Business Development of **BRF Asia-Pacific** (2013-16)
- ✓ CEO of the **Brazilian Sugarcane Industry Association (UNICA)** – (2007-12)
- ✓ President of the **Brazilian Institute for International Trade Negotiations (ICONE)** - 2002-07
- ✓ Expert in Integration and Trade at the **Inter-American Development Bank (IDB)** - 2001-02
- ✓ **Associate Professor** at the University of São Paulo's (USP) Colleges of Economics (FEA), Agricultural Sciences (ESALQ) and International Relations (IRI) – 1989-2007
- ✓ **Board Member** of RUMO Logistics, COMERC Energy, and at the International Food Policy Research Institute (IFPRI) in Washington DC
- ✓ **Education:** Tenure in Agricultural Economics at ESALQ-USP, Doctorate in Business Economics at USP College of Economics and Business (FEA), M.Sc. in ag policy at IAM Montpellier-France, B.Sc. degree in Agronomy at ESALQ

What made Brazil one of the top and most competitive agrifood exporters?

ASIA BRAZIL AGRO ALLIANCE

1960-1980

- **Massive government interventions**
  - Purchases and storage
  - Subsidized rural credit
  - Price controls
  - Commodity price support mechanisms
- **High tariffs**
- **Export taxes**
- **Net imports** (cotton, dairy, wheat, etc.)

INNOVATION
Investments in tropical R&D

DEREGULATION
Significant reductions in government interventions and trade barriers

LIBERALISATION
Market-oriented policies, competition against global protectionism (US, EU, Asia)

MIGRATION
Skilled farmers move to new areas
SOUTH → MS, MT, GO → MATOPIBA

2000-2020

- **3rd world exporter**
  > 200 destinations
- **Top tropical ag tech**
  Transformation of acidic and poor soils into fertile land; "tropicalization" of crops and animal production systems (soy, grasses, zebu), crop-livestock integration, double cropping, no-till, integrated supply chains
- **Economies of scale**
- **High productivity**
  TFP: 3,5% p.y.
- **Bioenergy**
  Food + Fuel + Energy

Land Potential and Water Availability

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Note: LAND: available, non-protected and non cultivated, include pastures that could be converted into agriculture. WATER: all sources of renewable water.
Sources: Fischer e Shah (2010), mentioned in World Bank, 2010 (Rising Global Interest in Farmland: Can it Yield Sustainable and Equitable Benefits?), ICONE, FAO.

Expansion of the Brazilian agricultural frontier

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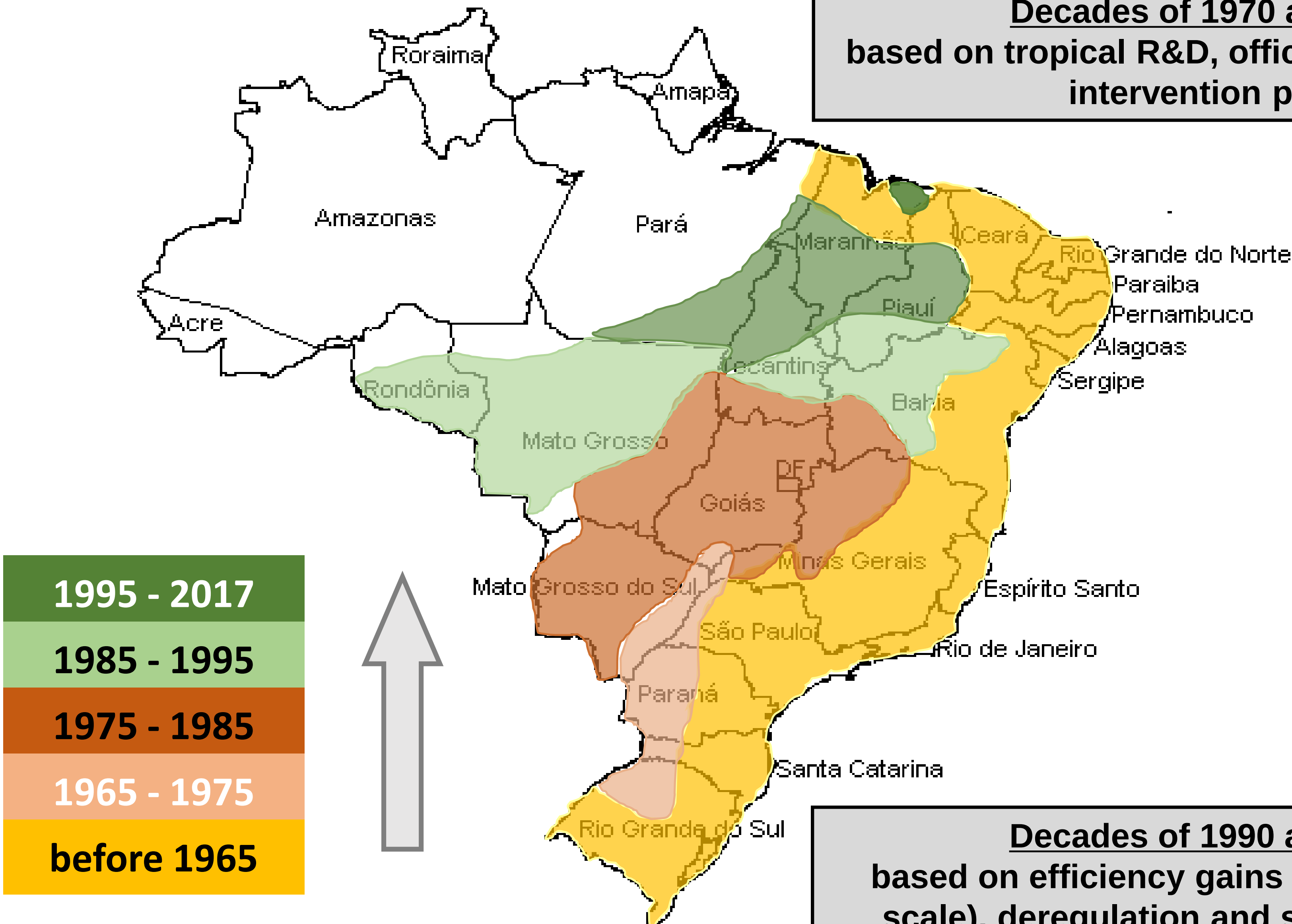
Decades of 1970 and 1980
based on tropical R&D, official rural credit and intervention prices



Decades of 1990 and 2000
based on efficiency gains (productivity and scale), deregulation and stronger demand

SLC Agrícola

Total Factor Productivity (TFP) growth in agriculture

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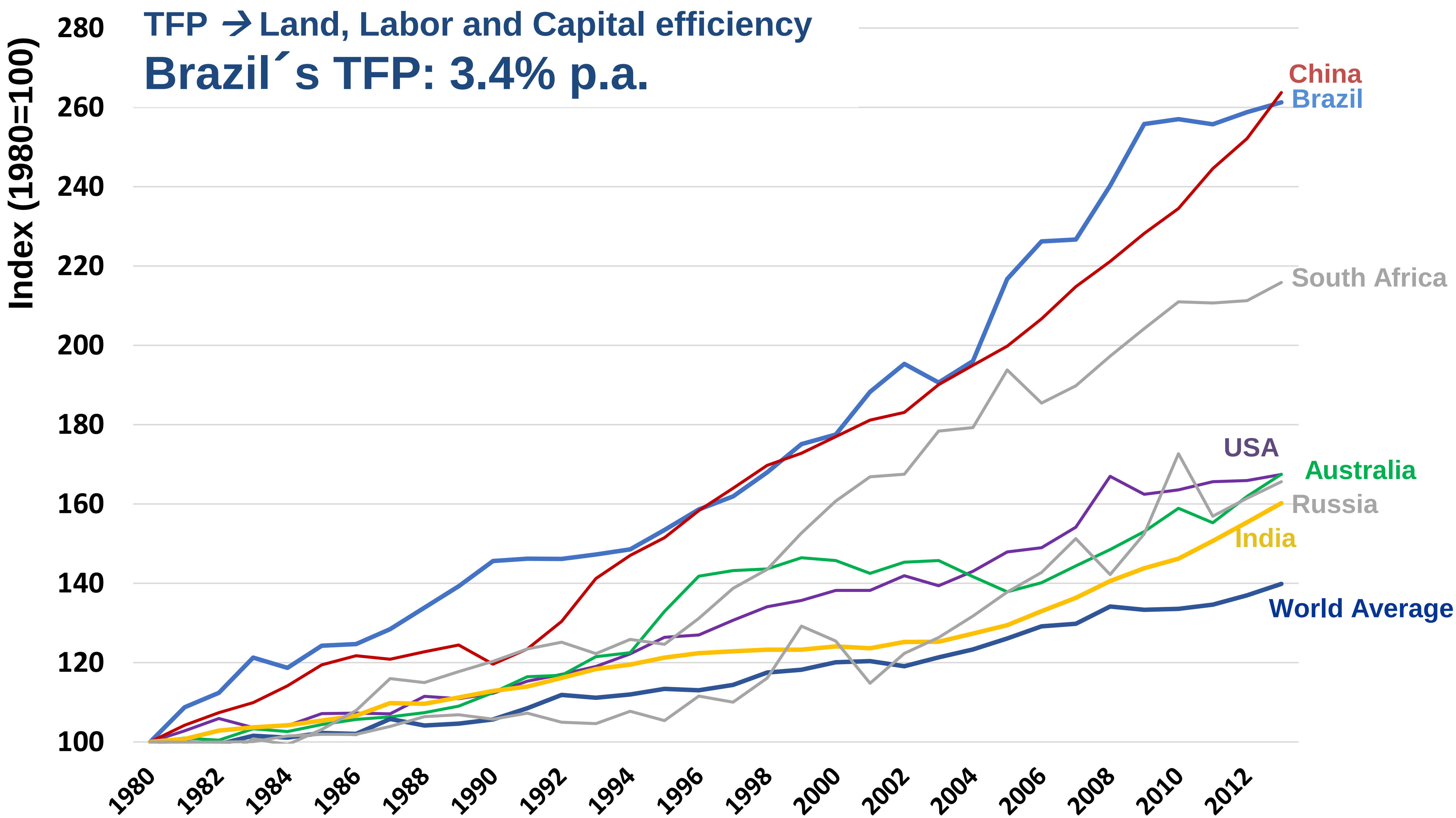
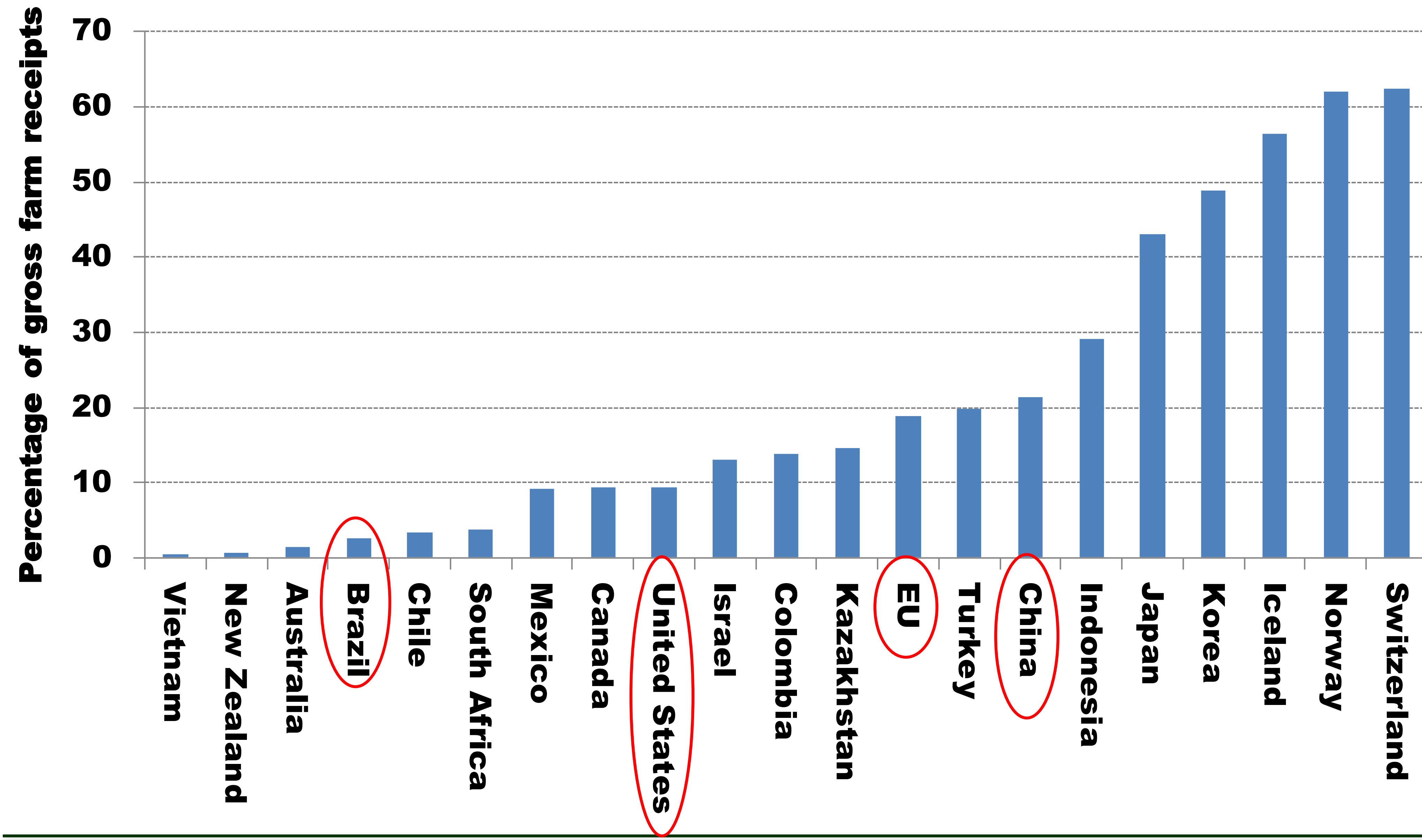


Source: USDA/ERS, International Agricultural Productivity data product
Note: The TFP (Total Factor Productivity) representes the aggregate efficiency of land, labor and capital resources. Higher TFP means more efficient the production outcomes.

BRAZILIAN AGRIBUSINESS

Lower Levels of Subsidies to Farmers

ASIA BRAZIL AGRO ALLIANCE

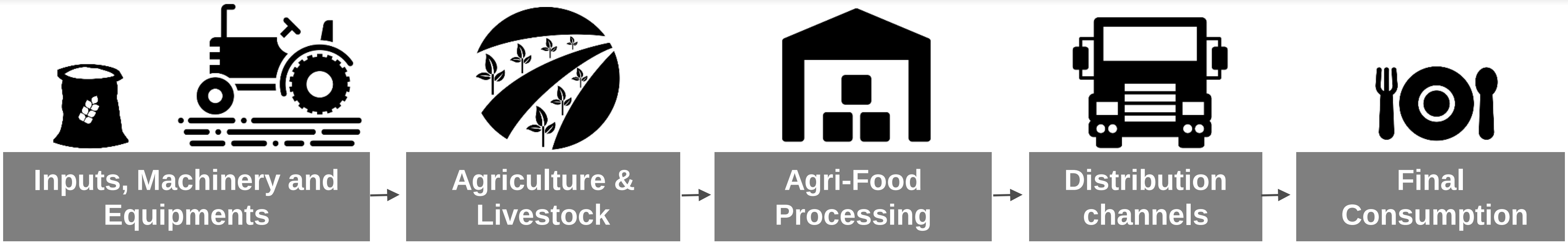


OECD Producer Support Estimate (PSE): total transfers from consumers and taxpayers to farmers

Source: OECD (2015)

Embrapa MINISTRY OF AGRICULTURE, LIVESTOCK AND FOOD SUPPLY BRASIL BRAZILIAN GOVERNMENT

Overview of the Brazilian Agri-Food sector



- **Agribusiness share** (Brazil 2019): GDP (25%),Total exports (44%), Labor (20%)
- 3rd world ag **exporter** (> 200 destinations) and 5th in total **area.**
- Availability of **natural resources**: land, water, climate conditions.
- **Tropical Agriculture**: transformation of acidic and poor soils into fertile land; genetic improvement of crops and animal production (soy, grasses, zebu), crop-livestock integration, double cropping, no-till, large scale systems, integrated supply chains
- Benchmark in **biofuels** (ethanol, biodiesel and bioelectricity).
- Intensive **Food Chain coordination.**
- **Commodity based** exports: volumes and low costs, value-added still a challenge.
- **Farmers**: young, motivated, risk takers, intense internal migrations.
- New **agricultural frontiers**, especially pasture conversions.

TROPICAL AGRICULTURE
Productivity + Sustainability

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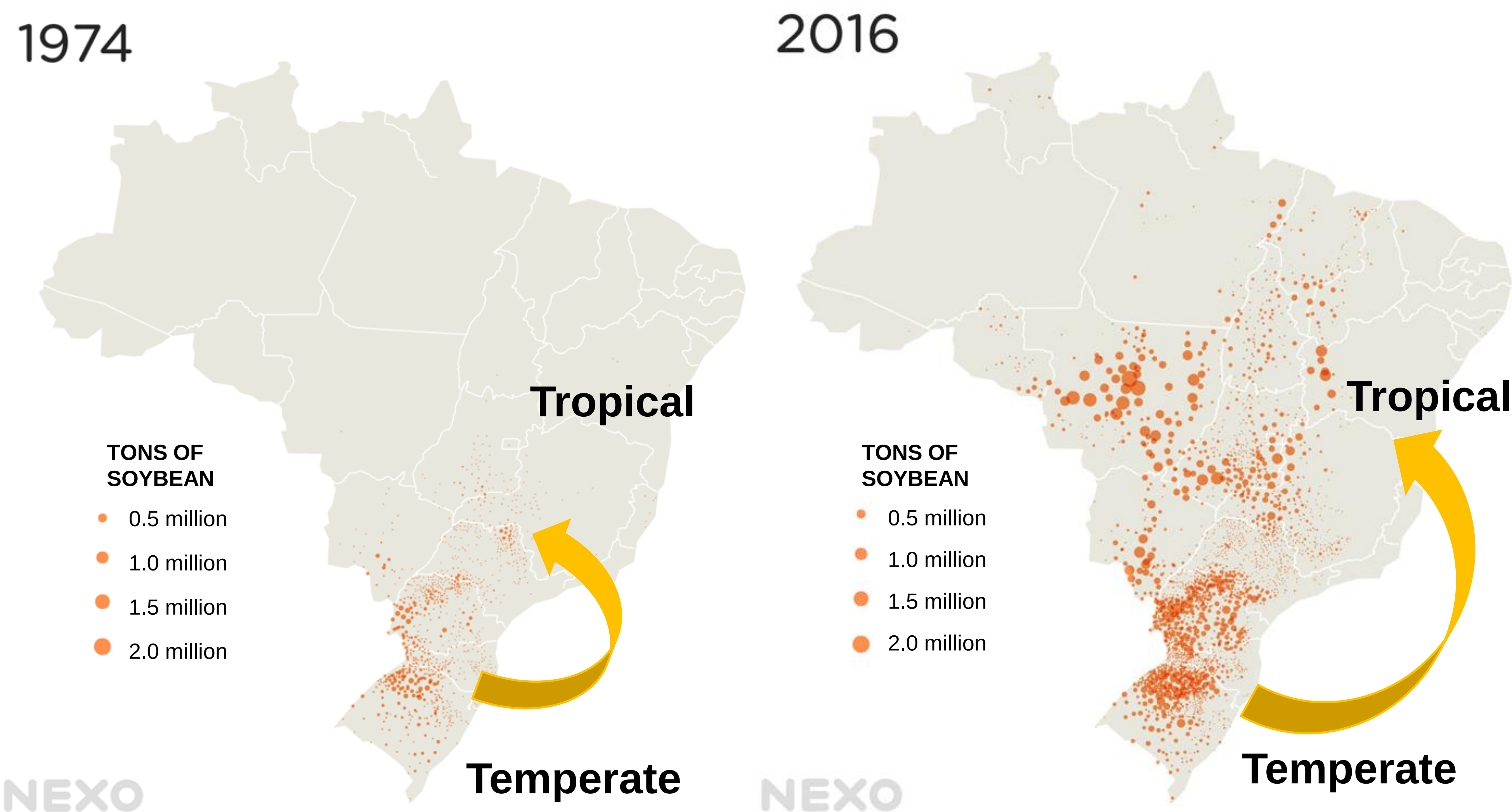
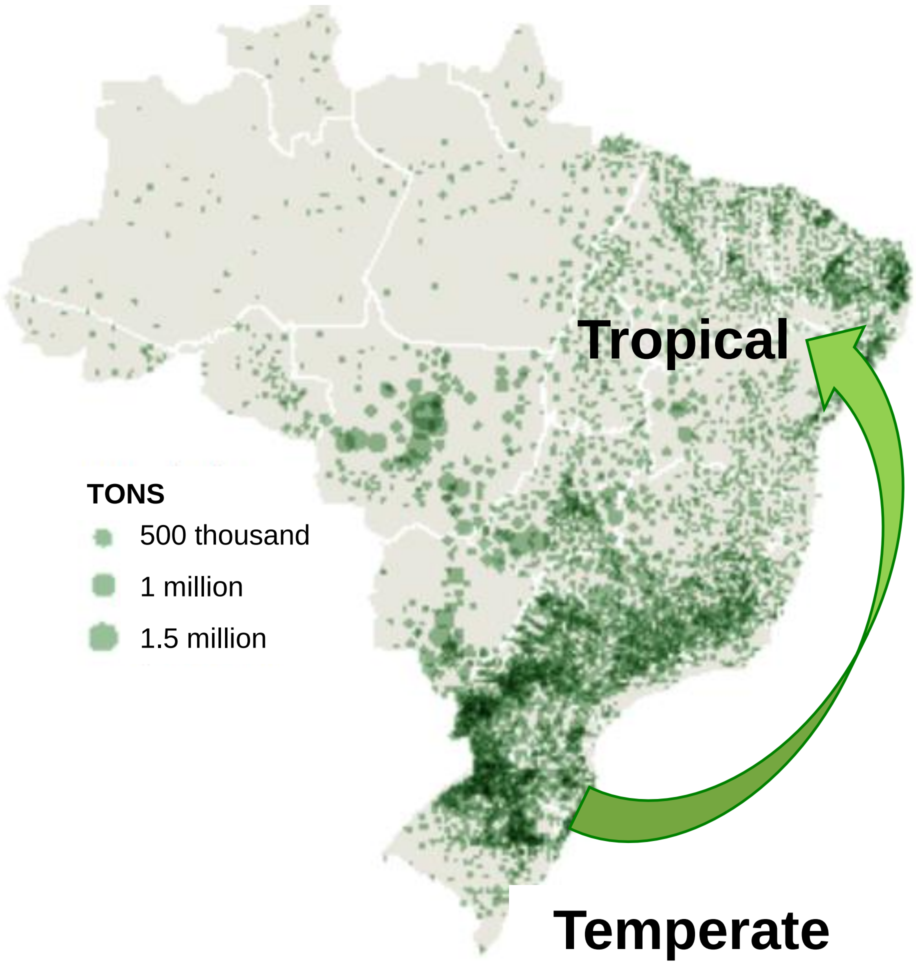
Tropicalization of the Soybean Crop



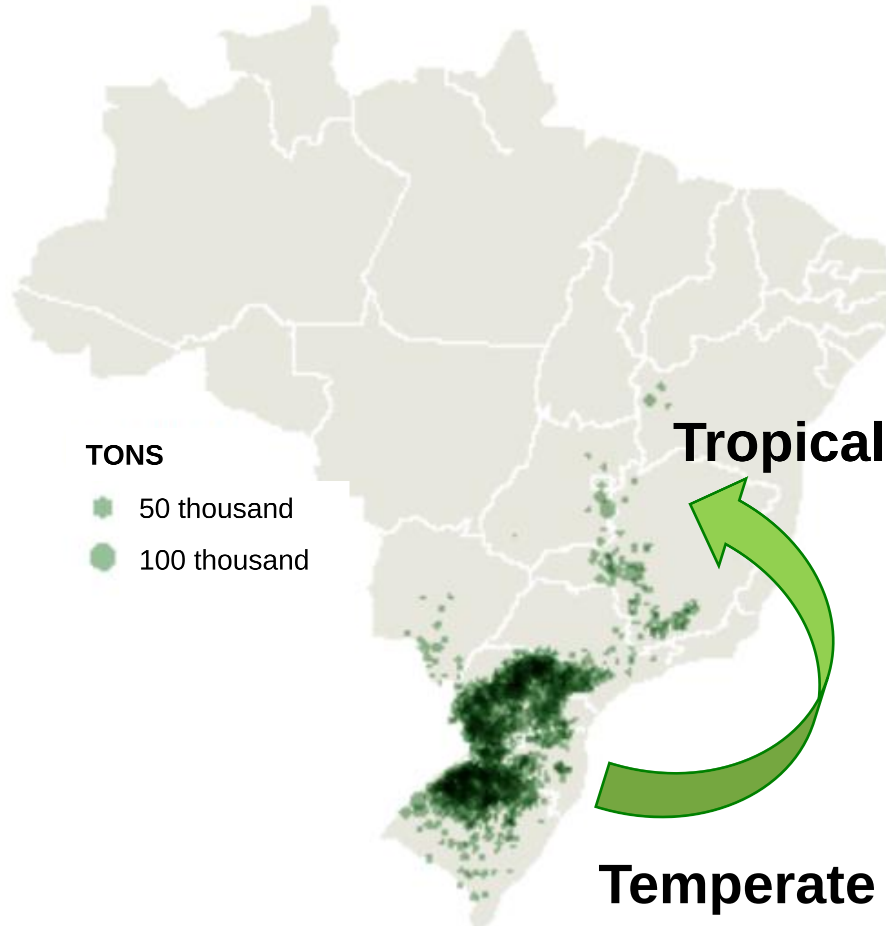
Source: https://www.nexojornal.com.br

Tropicalization of Cropping Systems

Corn



Wheat



Source: https://www.nexojornal.com.br

Integrated Crop-Livestock Systems
(365 days a year)

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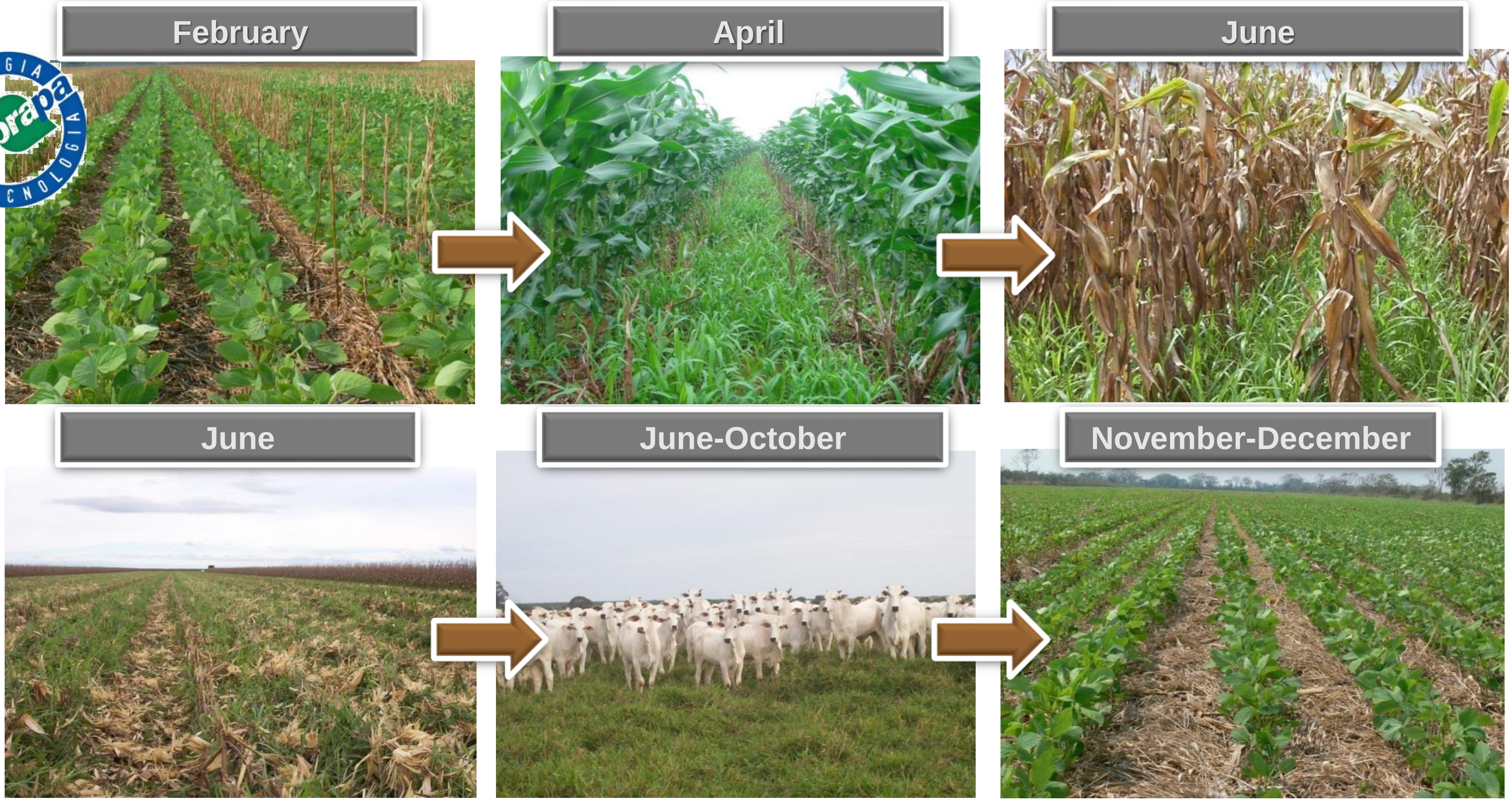


INTEGRATED SYSTEMS ARE BECOMING A NORM FOR RECOVERY OF DEGRADED LAND

14 MILLION HA OF INTEGRATED SYSTEMS, AND GROWING...

Embrapa

Photos: J.C.M Sá

Systemic, Integrated Production Systems

Cycling crops and livestock – and adding trees…

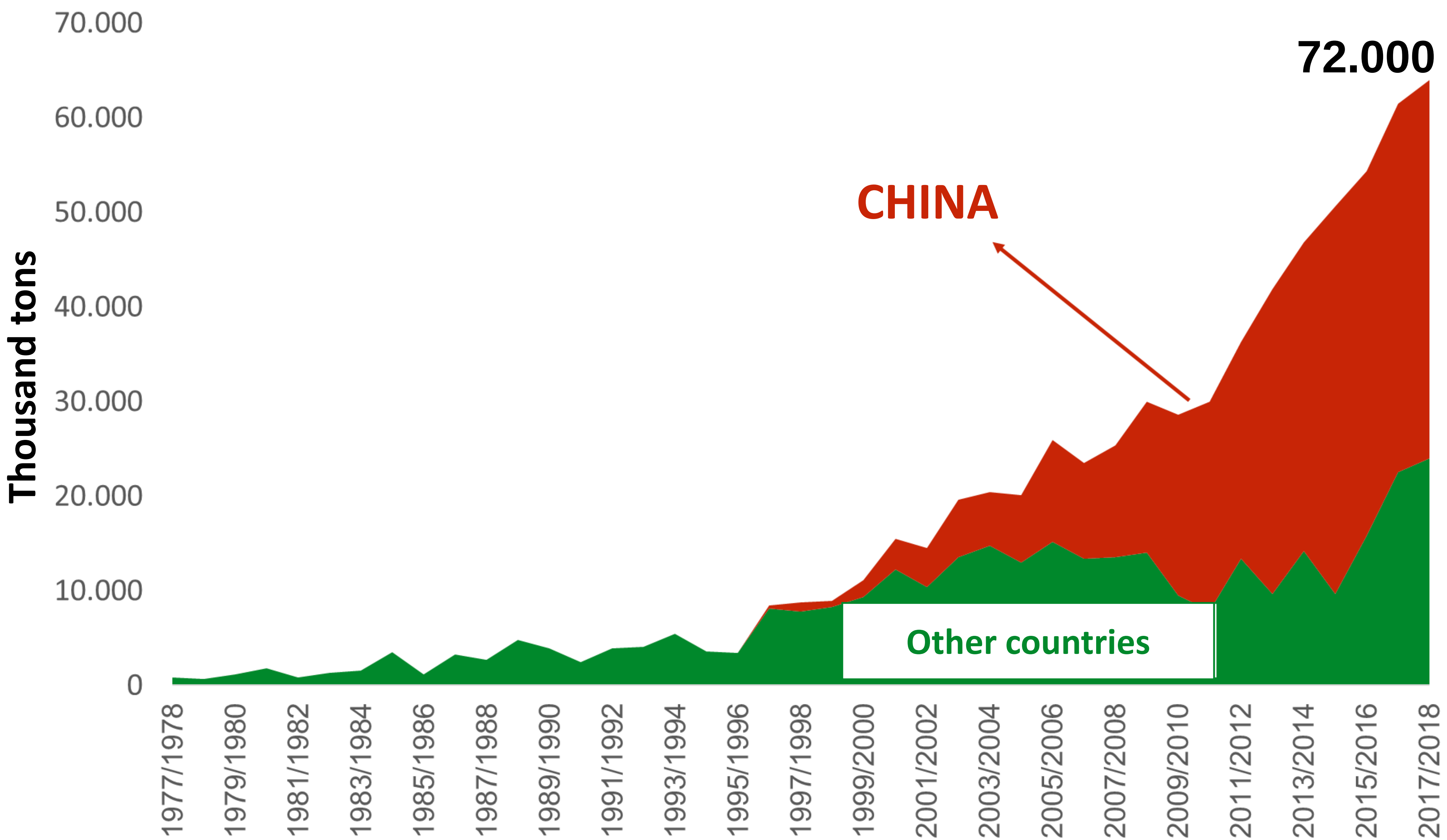
INTEGRATED SYSTEMS ARE BECOMING A NORM FOR RECOVERY OF DEGRADED LAND

14 MILLION HA OF INTEGRATED SYSTEMS, AND GROWING...

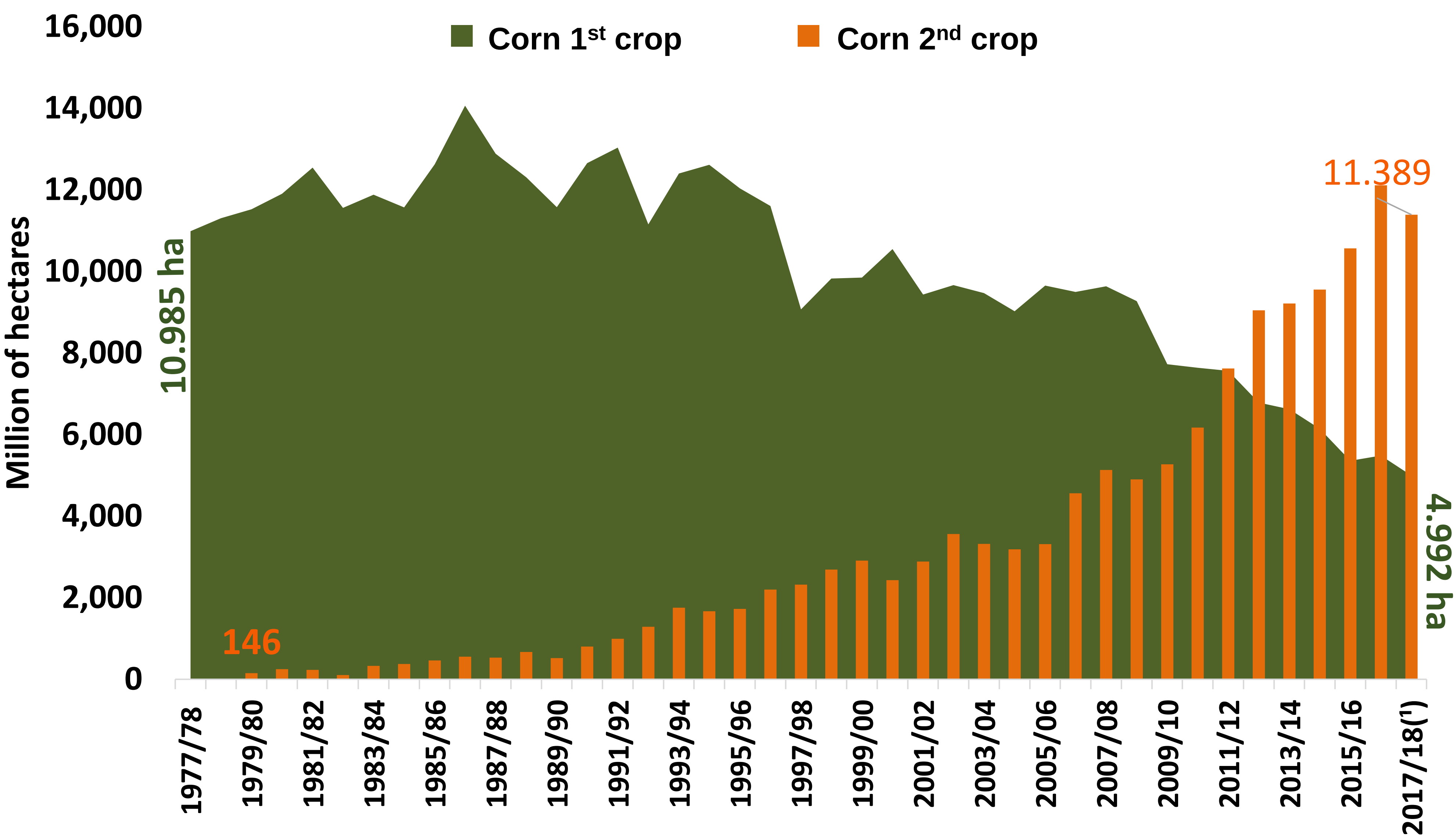
Low Emission, Sustainable Systems

TREES INCORPORATED IN THE AGRICULTURAL SYSTEMS
CROP – LIVESTOCK – FORESTRY

Evolution of Brazilian soy exports



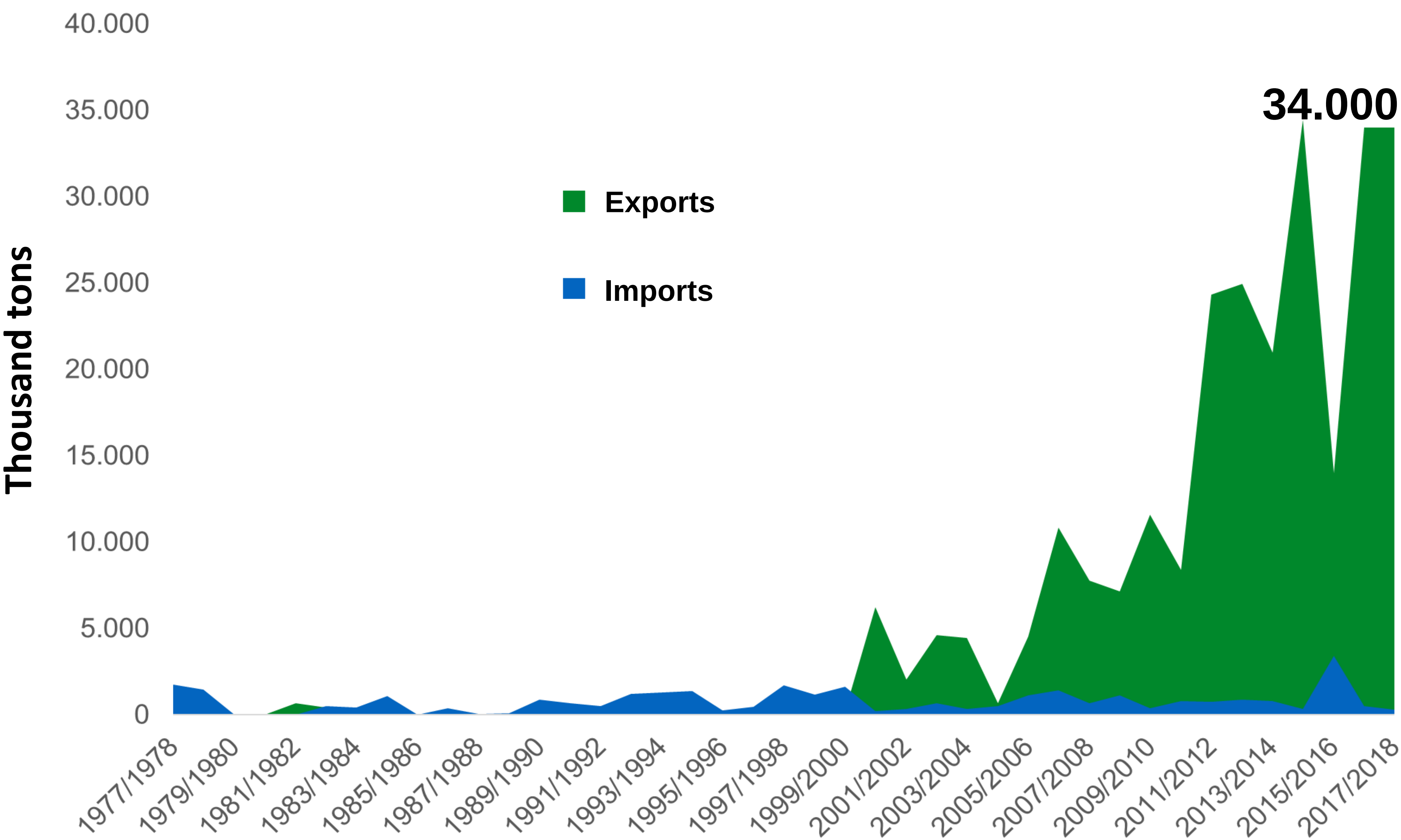
CORN planted area in Brazil



Source: CONAB
**Prediction*

Brazilian CORN exports

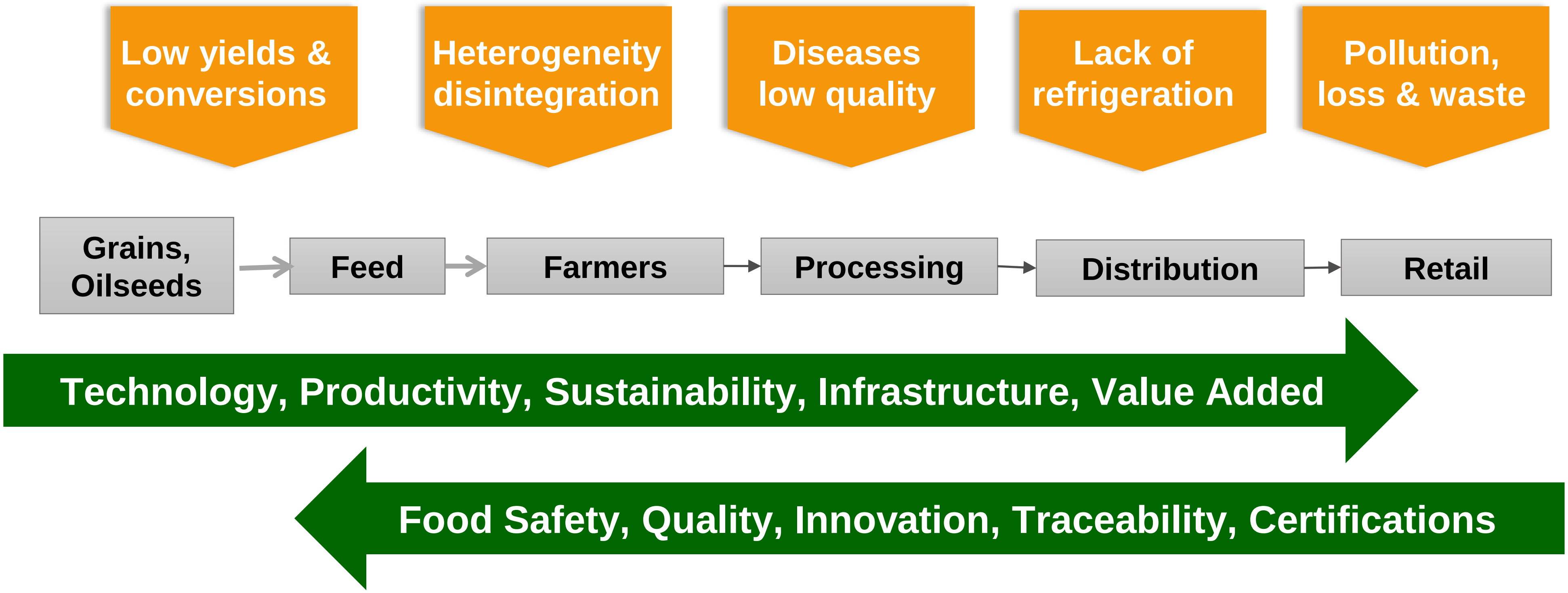
ASIA BRAZIL
AGRO ALLIANCE



SLC Agrícola

From Vertical Coordination to Globally Integrated Supply Chains

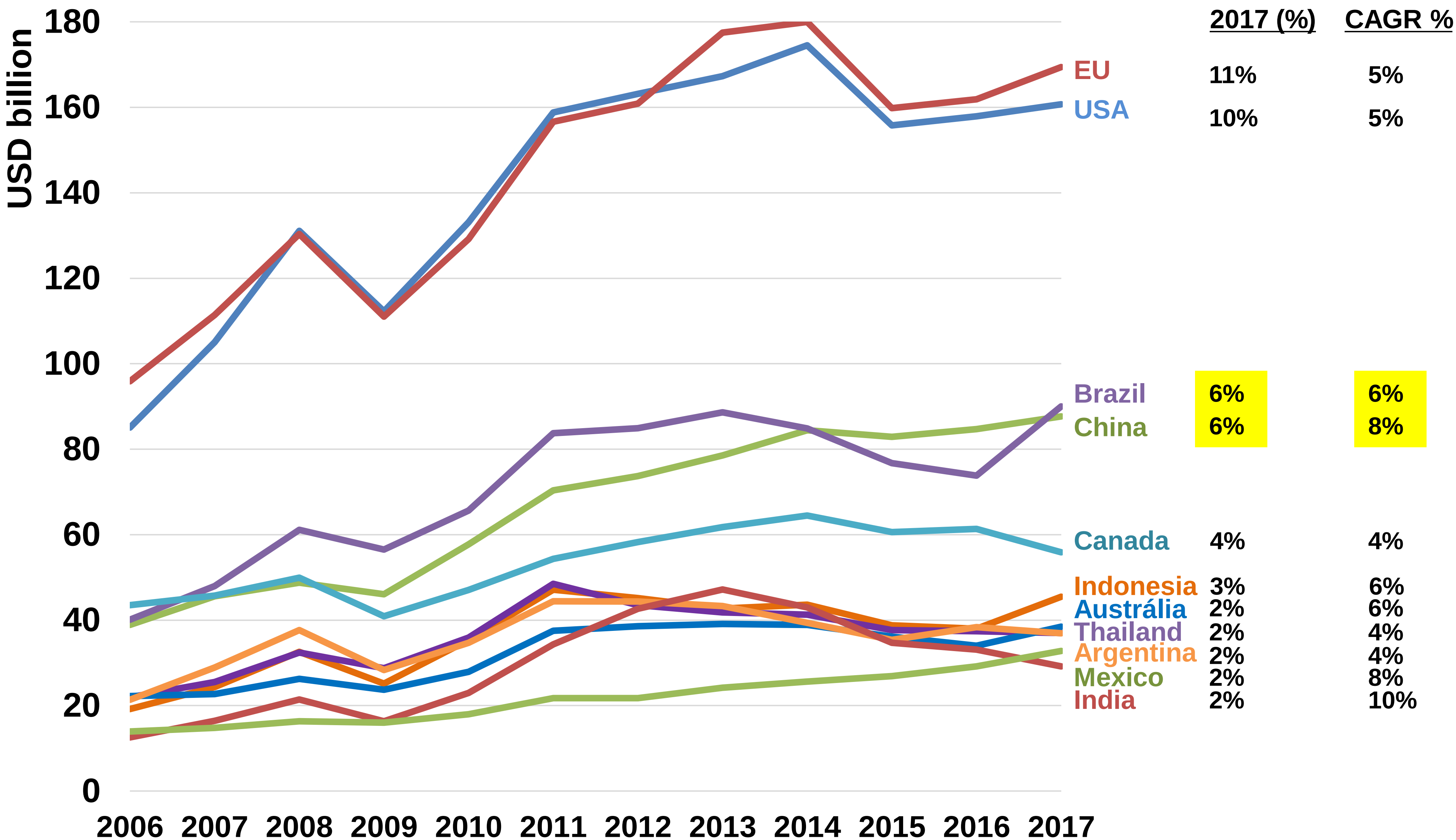
ASIA BRAZIL AGRO ALLIANCE



INTEGRATED FOOD SUPPLY CHAINS	
Vertical	input industries ←→ farmers ←→ processors
Horizontal	crop/livestock/planted forests integration
Across the board	PTAs and strategic partnerships

Top Agri-Food EXPORTERS in the World
(value in US dollars)

ASIA BRAZIL
AGRO ALLIANCE

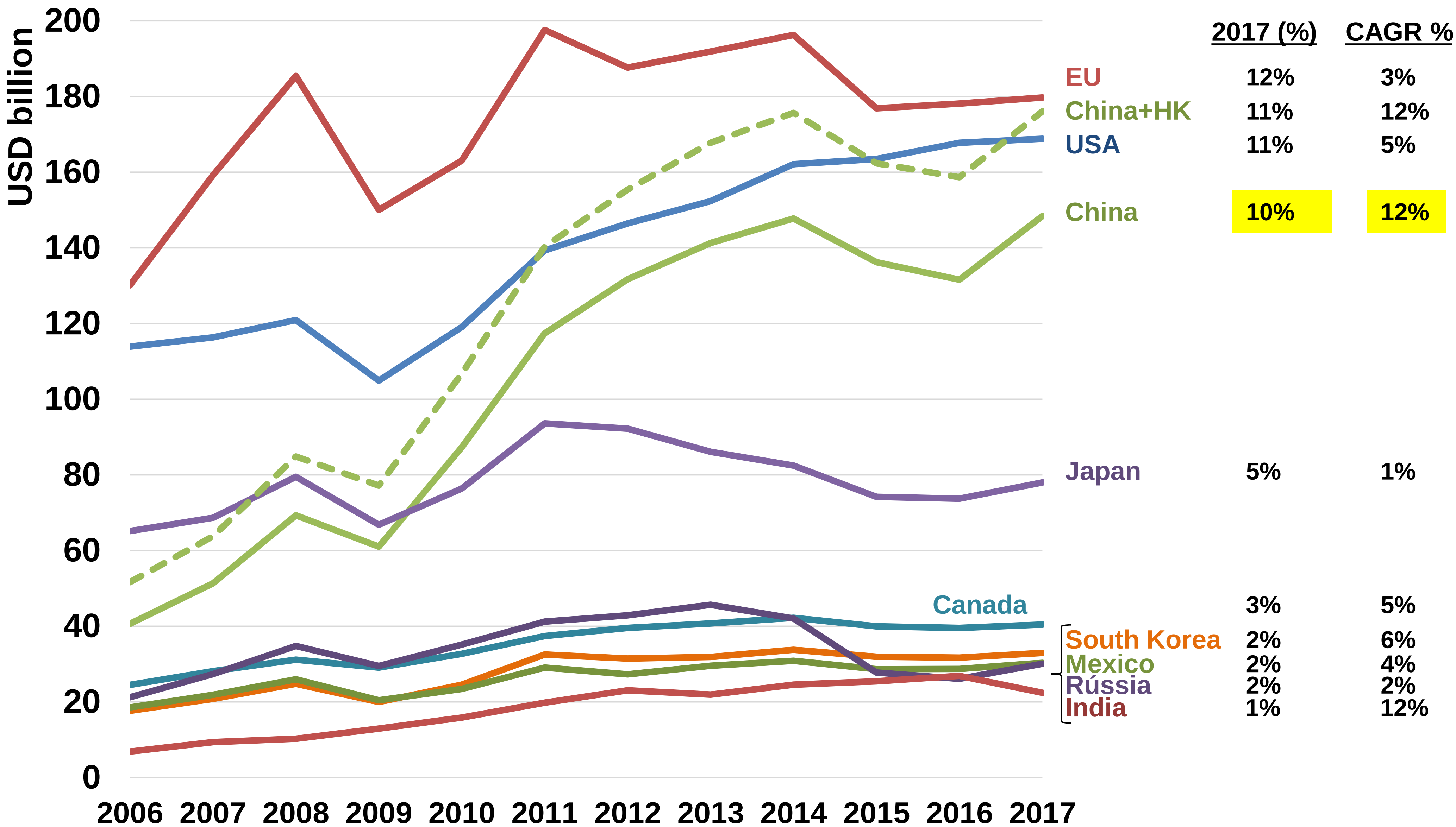


Source: USDA and UN Comtrade Data

Brazil and China rank 3rd and 4th on world ag exports → high growth rates and strong competitiveness

Top world agri-food IMPORTERS
(value in US dollars)

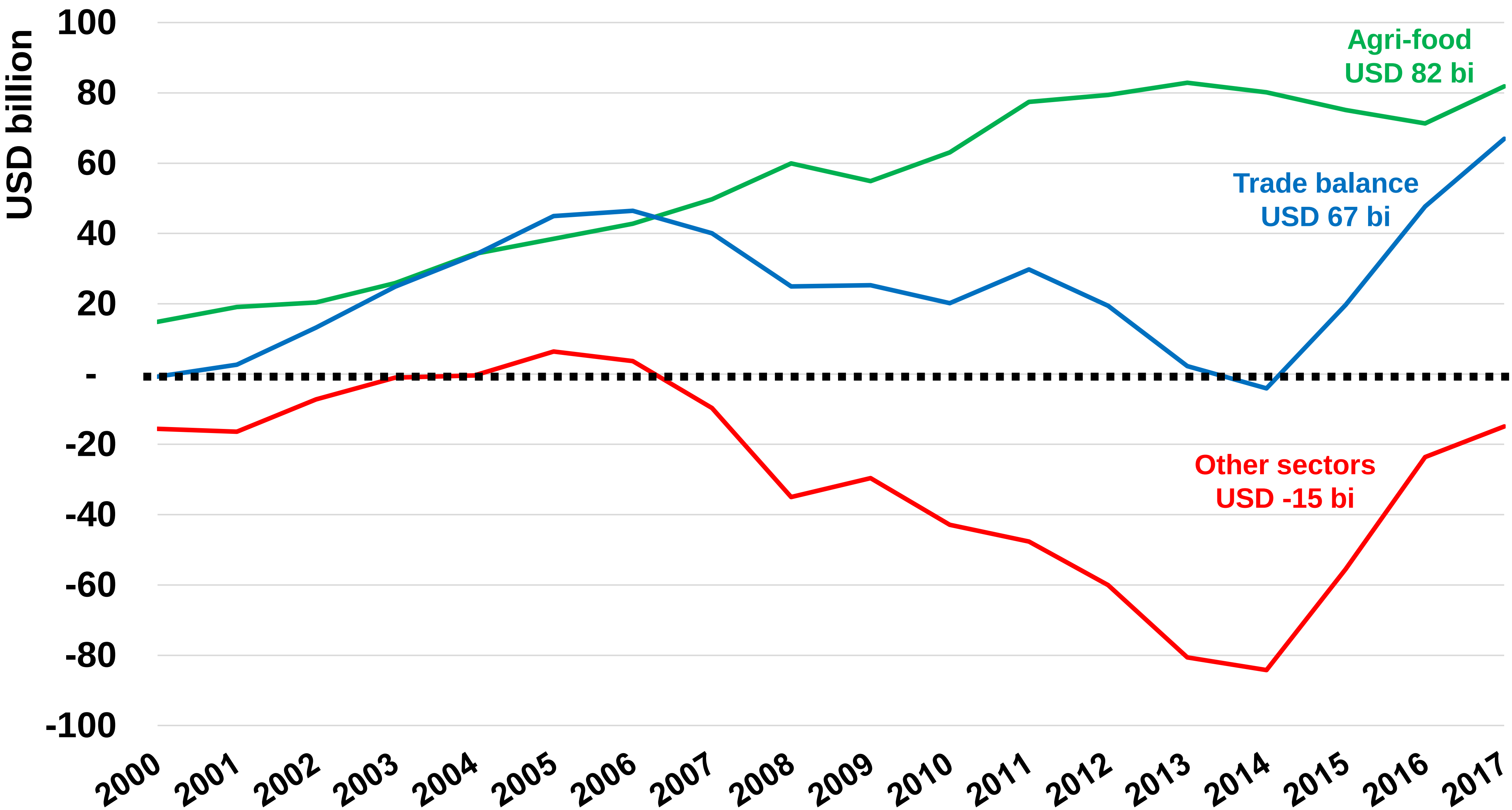
ASIA BRAZIL
AGRO ALLIANCE



Source: USDA and UN Comtrade Data.
Note: China + Hong Kong may occur double counting

JAPAN is the 4th top importer, responding for 5% of the world total import value (~US$ 80 billion).

Brazilian Trade Balance
(2000-2017)



Source: MAPA (Agrostat) and Sistema Alice.
Note: Definition of agri-food as per MAPA

Agribusiness is responsible for the positive results of the Brazilian trade balance throughout the period, avoiding a crisis in the external accounts.

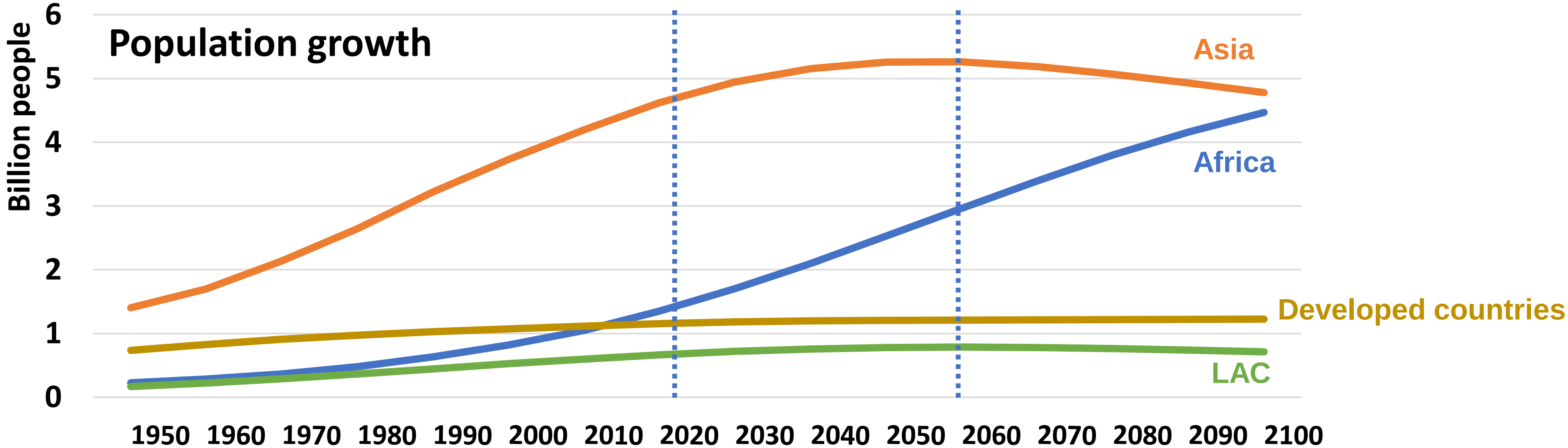
Brazil's Ranking
World Agricultural Trade (2017)

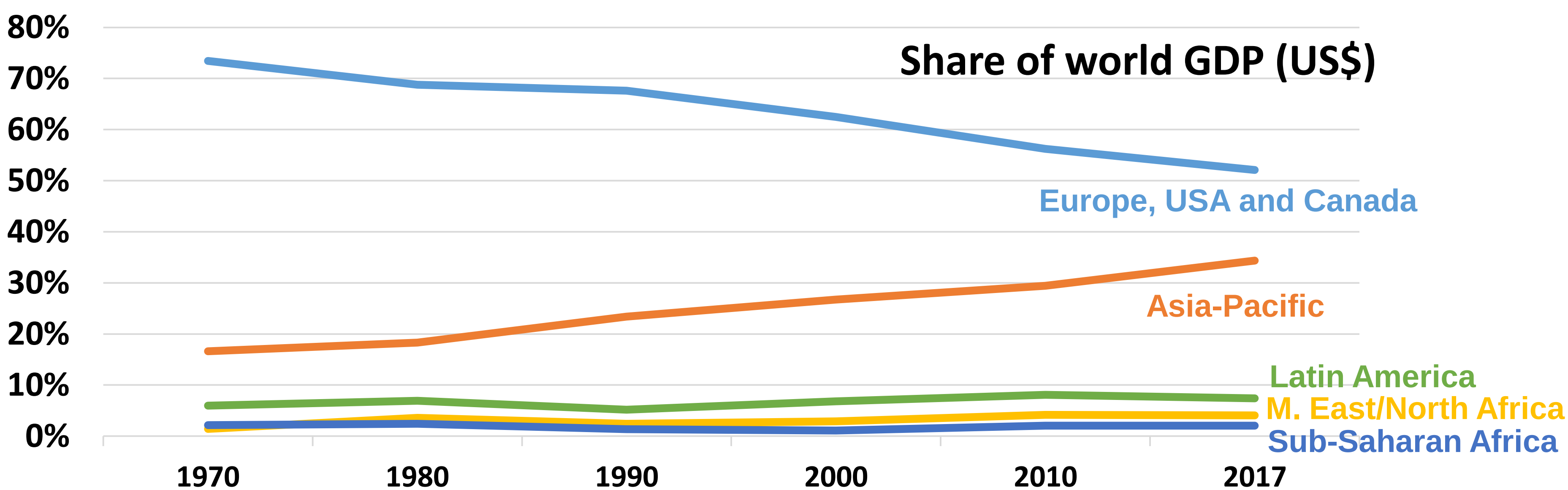
ASIA BRAZIL AGRO ALLIANCE

MAIN PRODUCTS	PRODUCTION	EXPORTS	DESTINATIONS (Nº COUNTRIES)
Sugar [1]	1st	1st	81
Coffee [2]	1st	1st	88
Orange Juice	1st	1st	64
Soybean grain	2nd	1st	34
Chicken meat	2nd	1st	141
Bovine meat	2nd	2nd	135
Corn	3rd	2nd	66
Soybean meal	4th	2nd	59
Soybean Oil[3]	4th	2nd	23
Pork meat	4th	4th	72
Cotton[4]	5th	4th	31

Source: USDA, Agrostat (MAPA)
Notes: production and exports ranking in volume. 1 – Raw sugarcane; 2- Coffee not rosted; 3 – Soybean Oil crude; 4 – Cotton not carded or combed

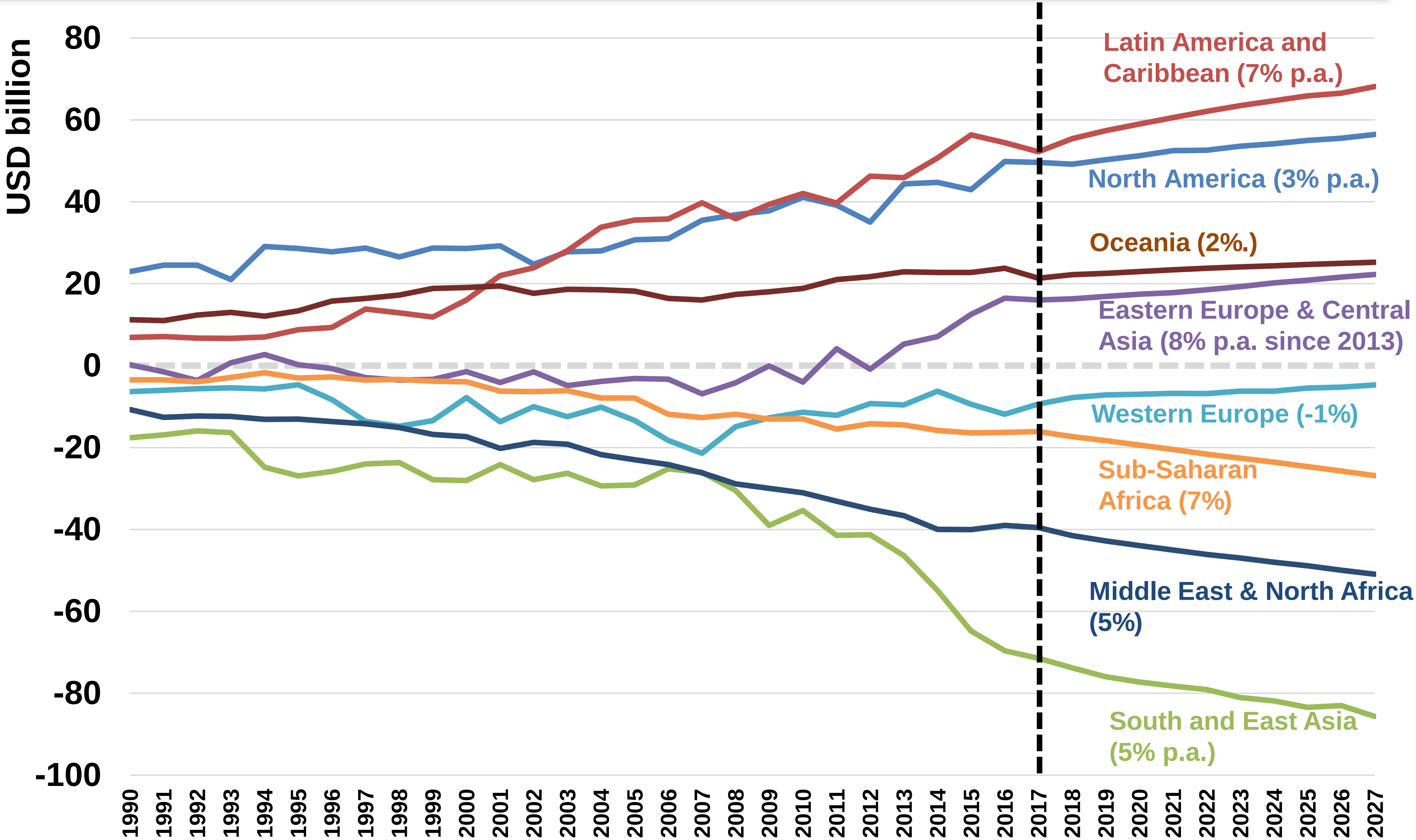
Population and GDP across the World





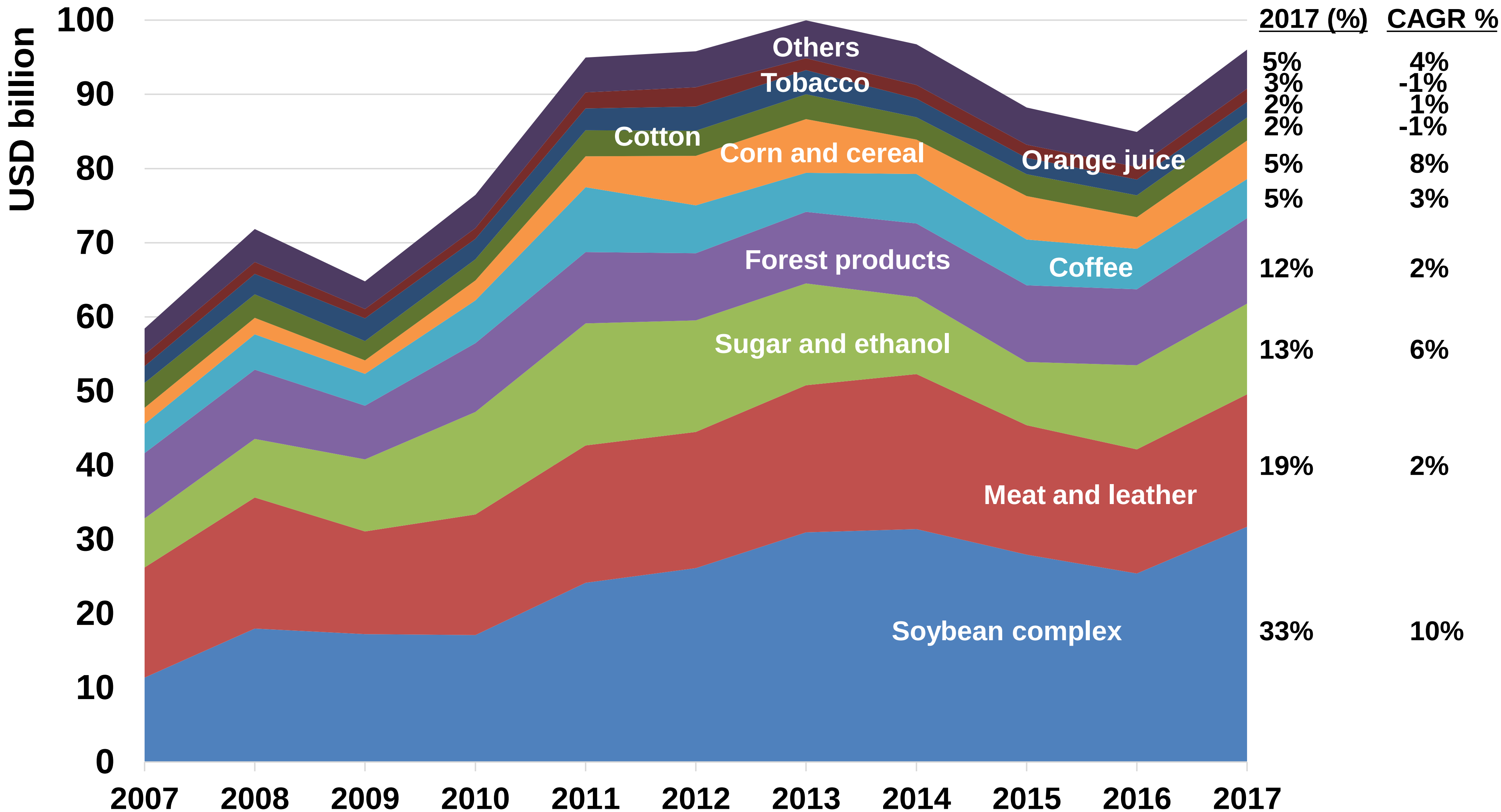
Source: World Population Prospects: The 2017 Revision, UM; World Bank Data
Note: For data on population, Asia includes Central Asia and Middle East; and Western World includes Europe, North America and Oceania.

Agricultural trade balances
by region (constant value)



Source: OECD-FAO Agricultural Outlook 2018-2027, OECD and FAO. Constant values for 2004-2006.

BRAZIL
Agri-food EXPORTS by products

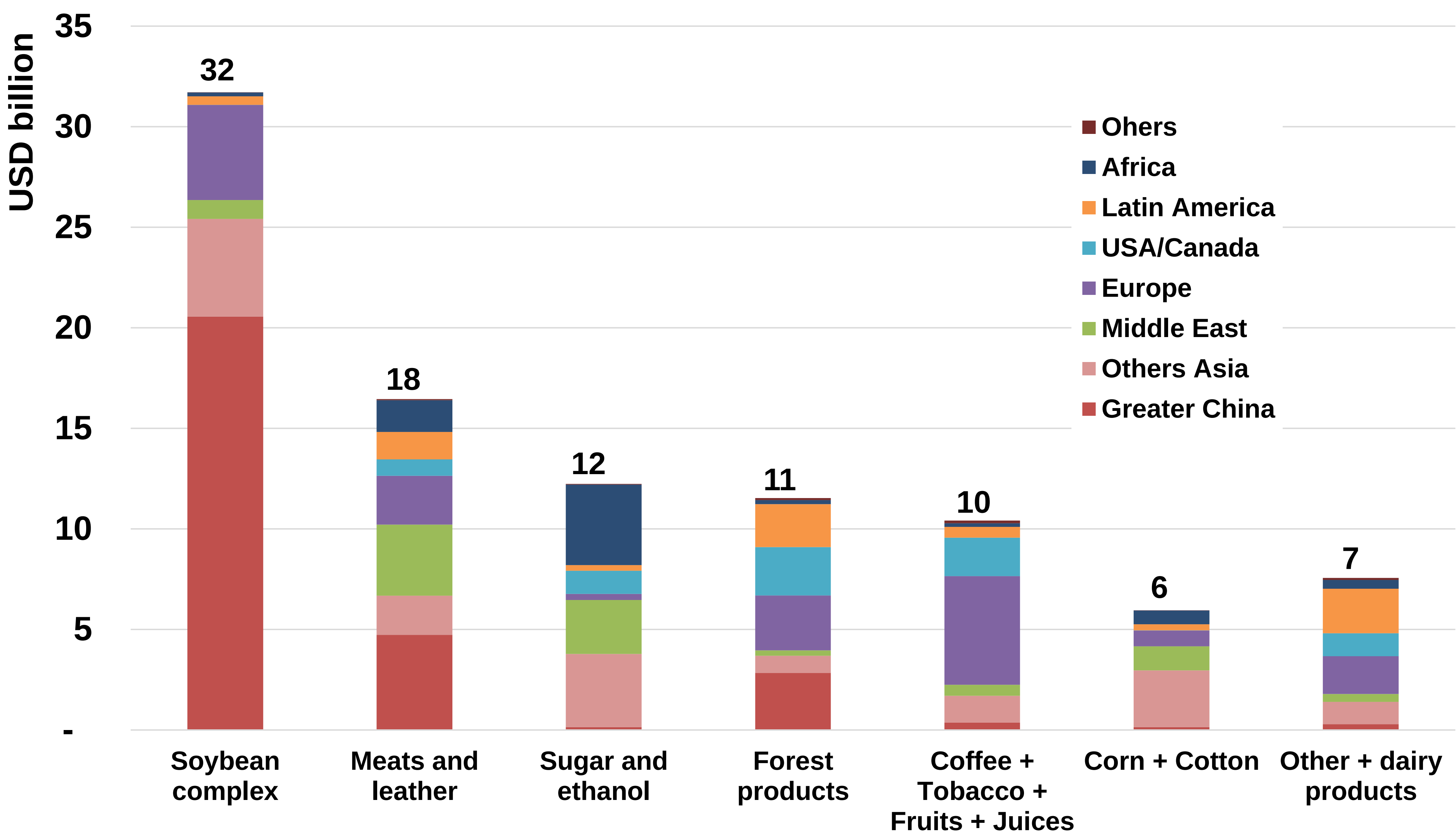


Source: MAPA (Agrostat).
Note: Soybean complex = grains + oil + meal. Definition of agri-food as per MAPA, which takes into account 2949 products.

Top 4 agri-food chains → 77%

BRAZIL

Destination of Brazilian Agri-Food Exports by Product (2017)

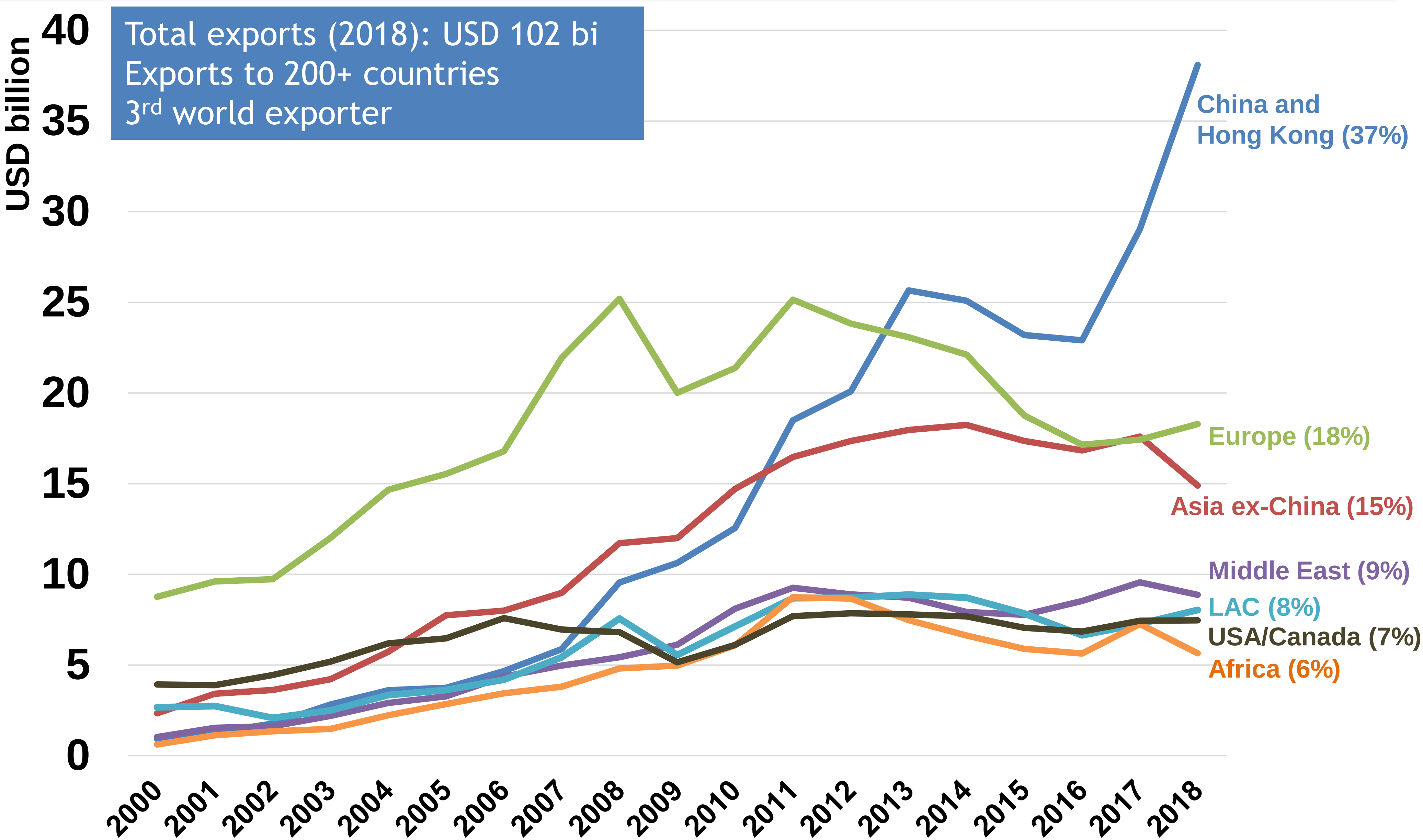


Source: MAPA (Agrostat).

Note: Greater China: Continental China + Hong Kong + Macau; Asia Ex-China includes Eastern Asia (ex. China), South Asia, Southeast Asia, Russia and Central Asia; Europe includes European Union, EFTA e Eastern Europe. MAPA's definition of agri-food used, which takes into account 2949 products.

BRAZIL

Agri-Food Exports by Destination (value)



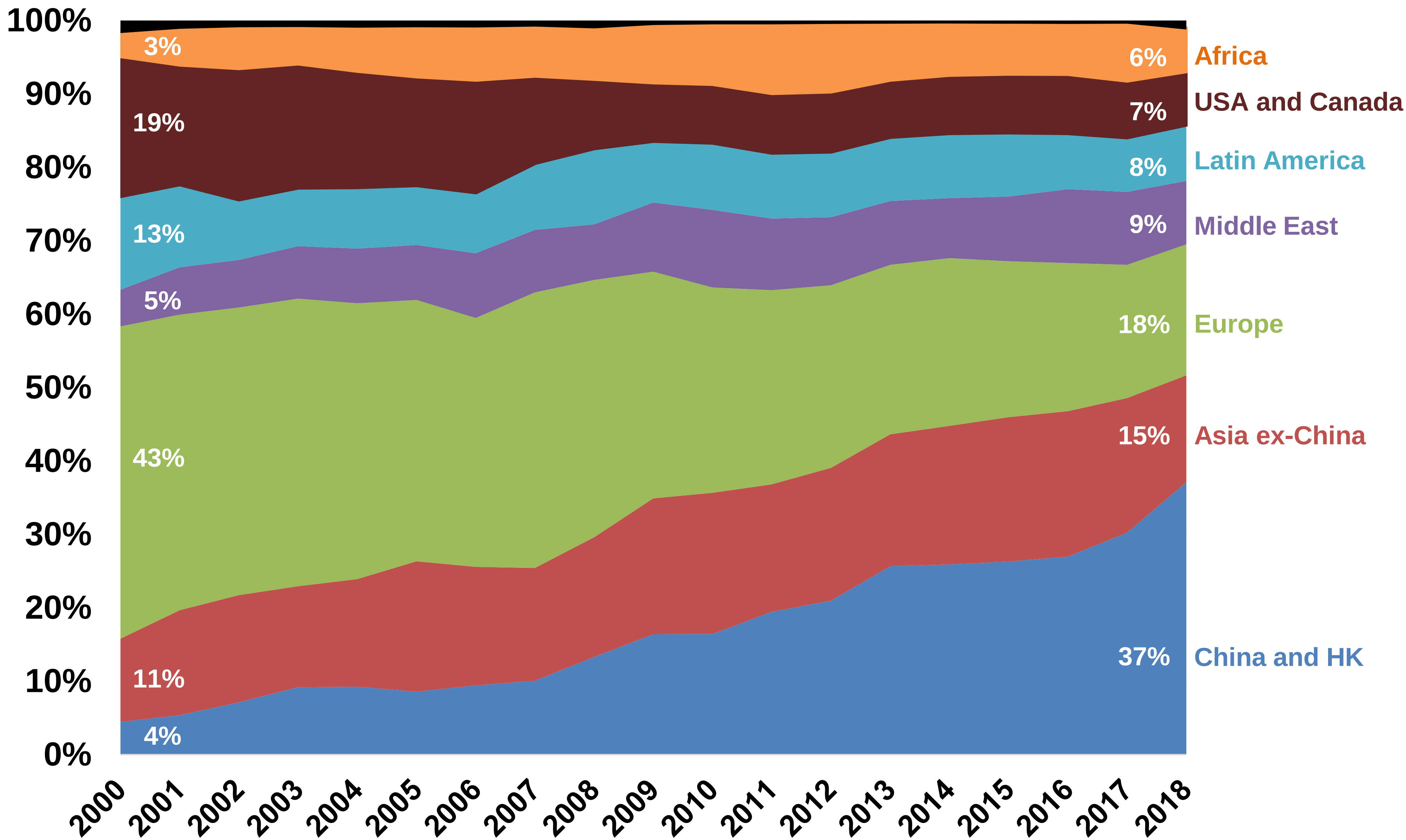
Source: MAPA (Agrostat).

Note: Asia Ex-China includes Eastern Asia (ex. China), South Asia, Southeast Asia, Russia and Central Asia; Europe includes European Union, EFTA e Eastern Europe. MAPA's definition of agri-food used, which takes into account 2949 agri-food products.

BRAZIL

Agri-Food Exports by Destination

Asia receives 53% of Brazilian Agri-Food exports

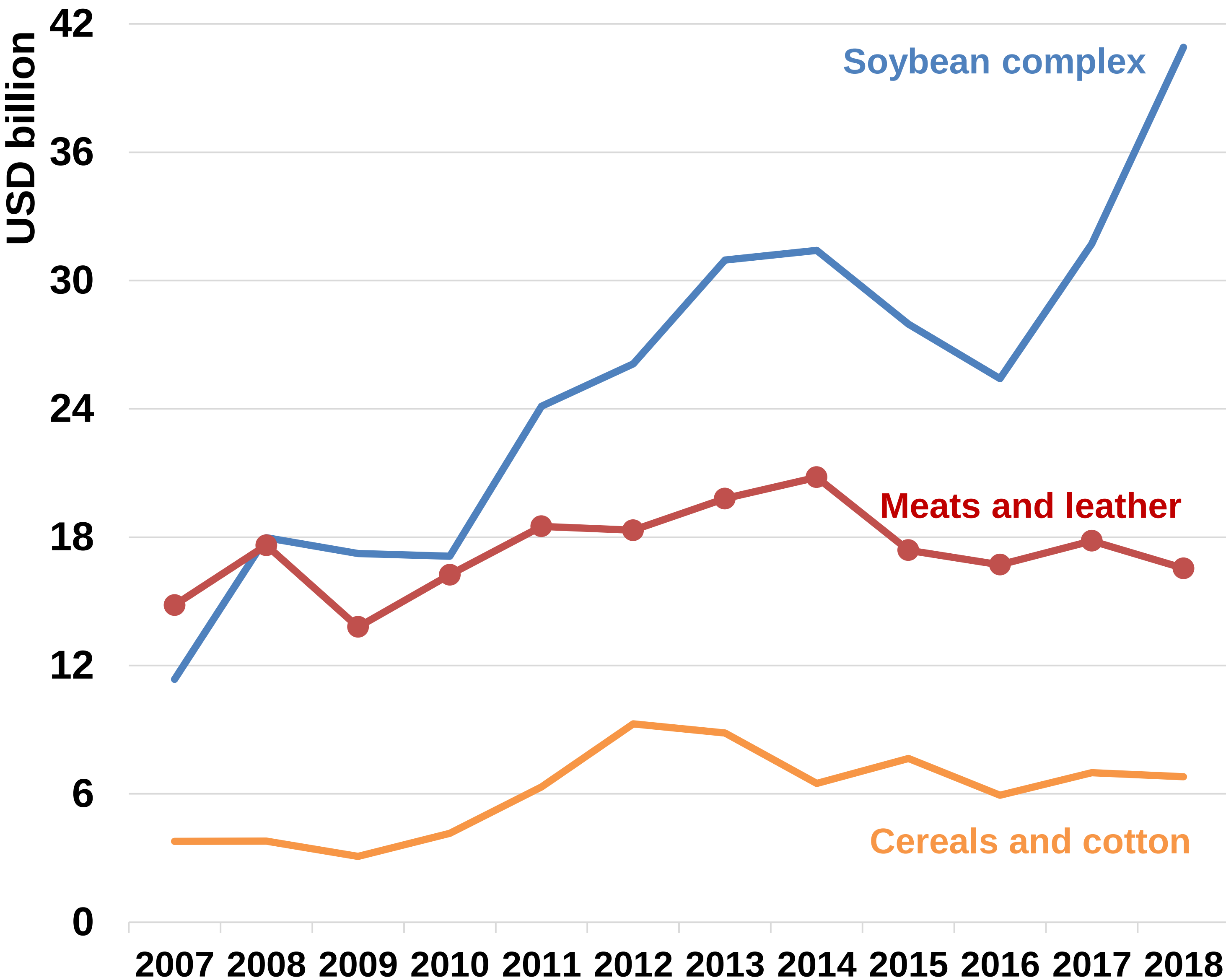


Source: MAPA (Agrostat).

Note: "Asia ex- China"' includes East, South and Southeast Asia, Russia, and Central Asia, but excludes China; "Europe"' includes the European Union, the European Free Trade Association (EFTA), and Eastern Europe. Definition of Brazilian agribusiness according to MAPA, which includes 2,949 products.

BRAZIL
Agricultural exports by product (value)

ASIA BRAZIL AGRO ALLIANCE



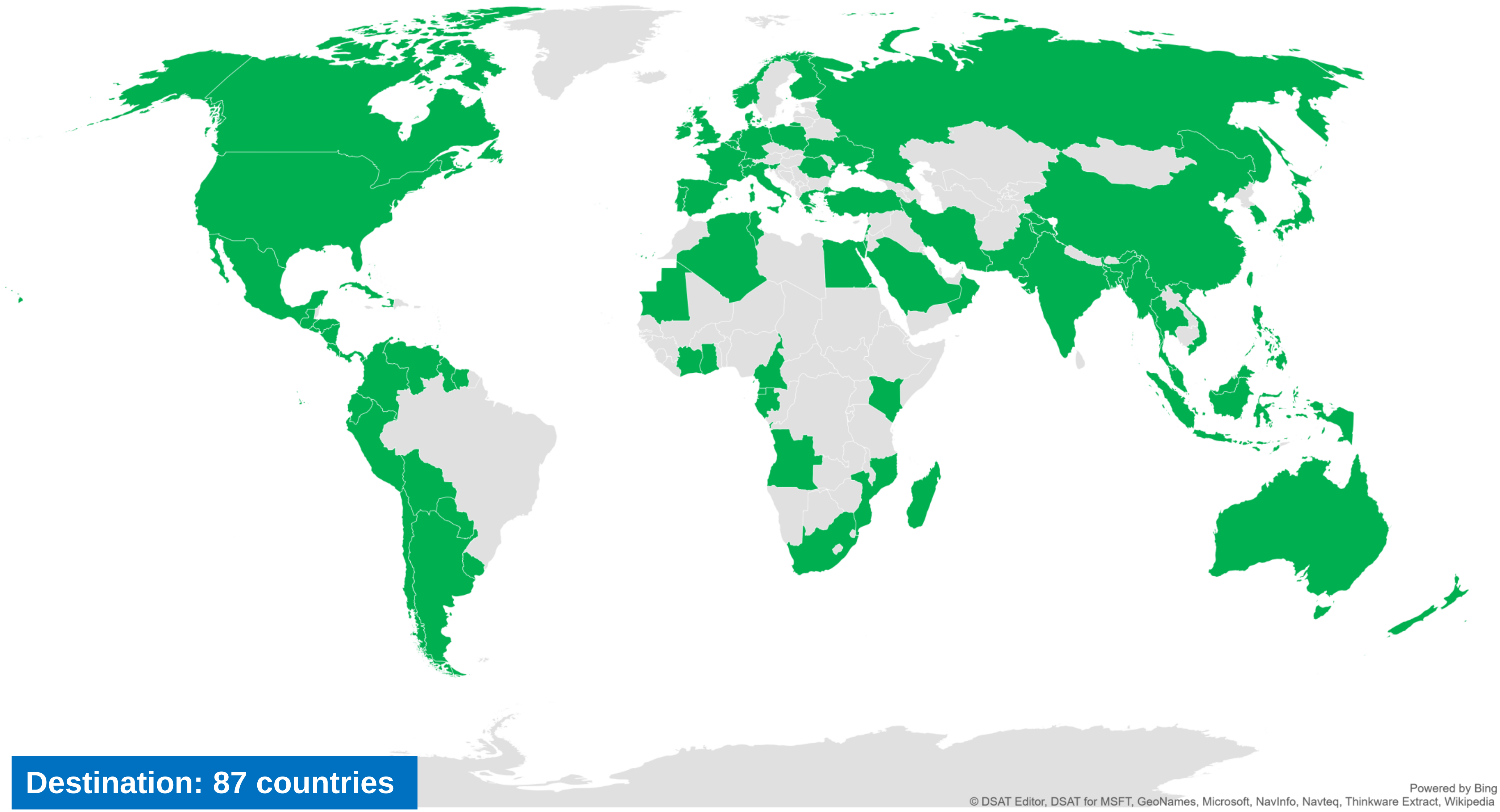
Brazilian exports market share growth in selected commodities (2006-2017)

Product	CAGR
Corn	13%
Cotton	9%
Celulose	5%
Soybean	3%
Pork meat	2%
Average BR	1%
Sugar	-1%
Coffee	-1%
Chicken meat	-1%
Bovine meat	-2%
Tobacco	-3%
Ethanol	-11%

Source: MAPA (Agrostat).
Note: Soybean complex = grain + oil + meal. Definition of Brazilian agribusiness according to MAPA, which includes 2,949 agricultural products. 2018 (%) refers to the products' share of the total exports in 2018; CAGR (%) is the Compound Annual Growth Rate between 2007 and 2018.

BRAZIL
Soybean complex exports

Open markets

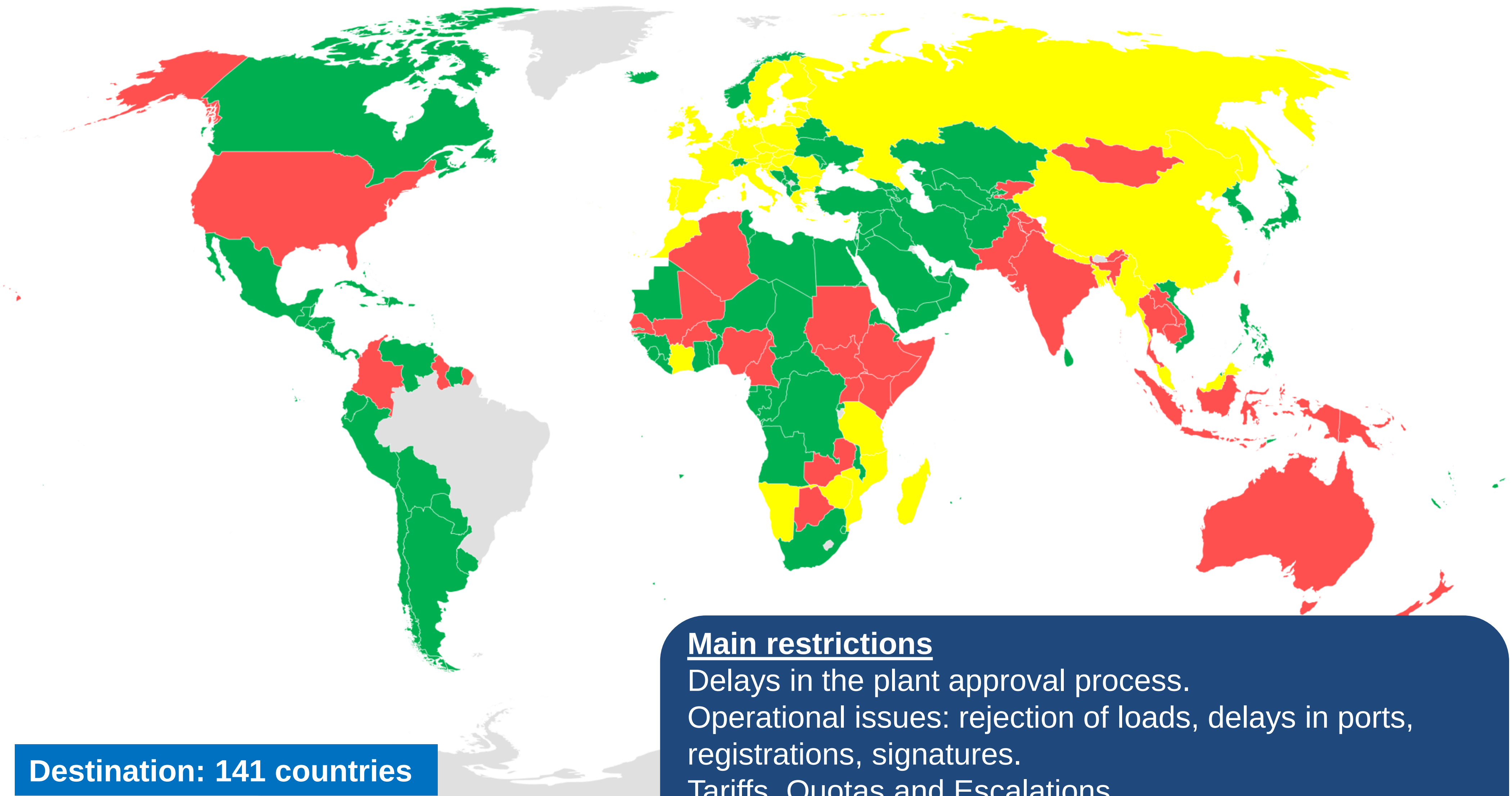


Destination: 87 countries

Source: MAPA (Agrostat).
Note: Soybean complex = soybean grain + oil + meal

BRAZIL
Poultry exports

Open markets   Closed markets   Markets opened with restrictions



Destination: 141 countries

Source: MAPA (Agrostat).

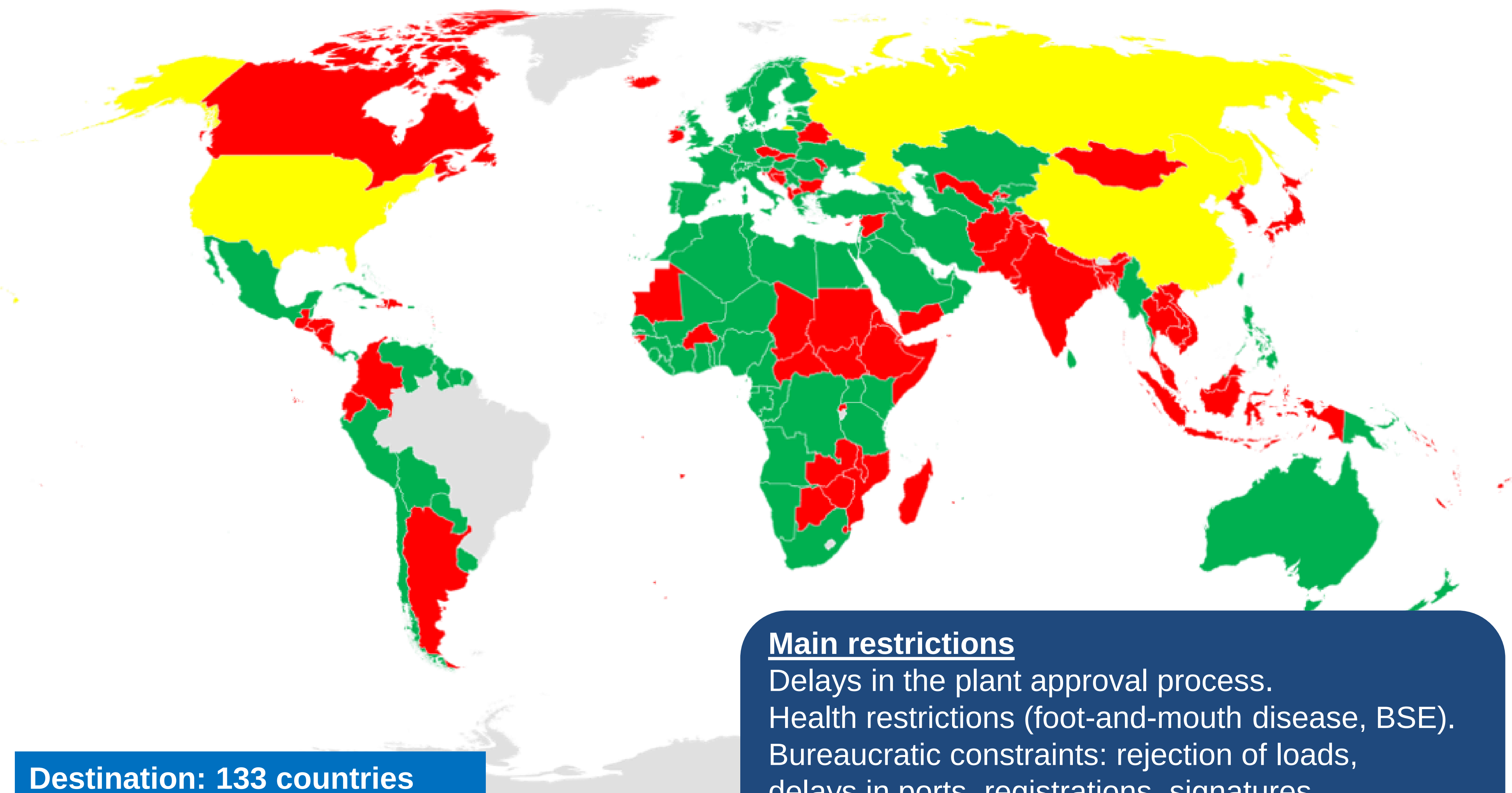
Main restrictions

Delays in the plant approval process.
Operational issues: rejection of loads, delays in ports, registrations, signatures.
Tariffs, Quotas and Escalations.
Health restrictions (avian influenza, salmonella, listeria).
Religious concerns (Halal process).

BRAZIL
Beef exports

ASIA BRAZIL AGRO ALLIANCE

Open markets   Closed markets   Markets opened with restrictions



Destination: 133 countries

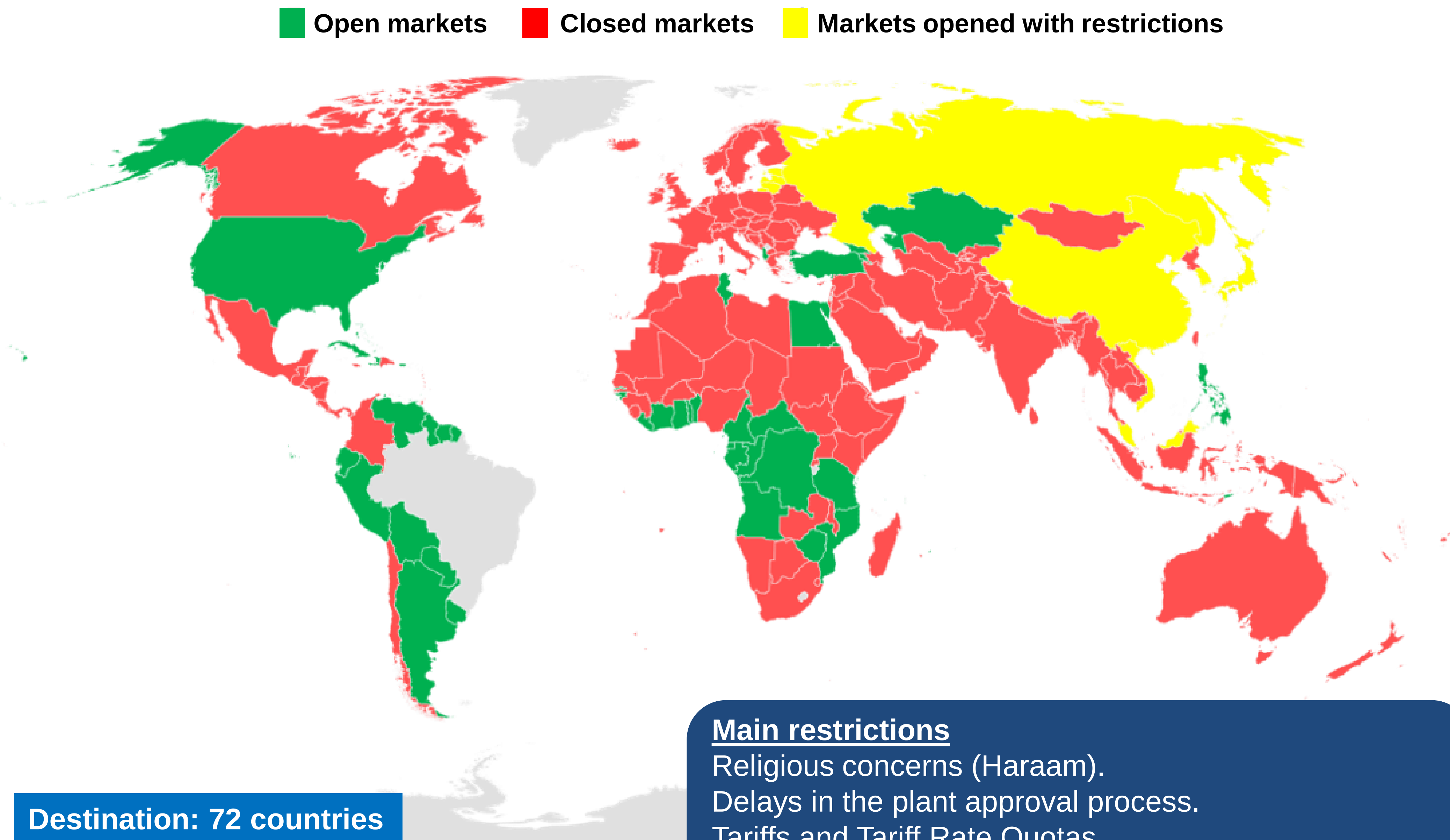
Source: MAPA (Agrostat).

Main restrictions

Delays in the plant approval process.
Health restrictions (foot-and-mouth disease, BSE).
Bureaucratic constraints: rejection of loads, delays in ports, registrations, signatures.
Technical restrictions (traceability).
Religious concerns (Halal process).

BRAZIL
Pork meat exports

ASIA BRAZIL
AGRO ALLIANCE



Destination: 72 countries

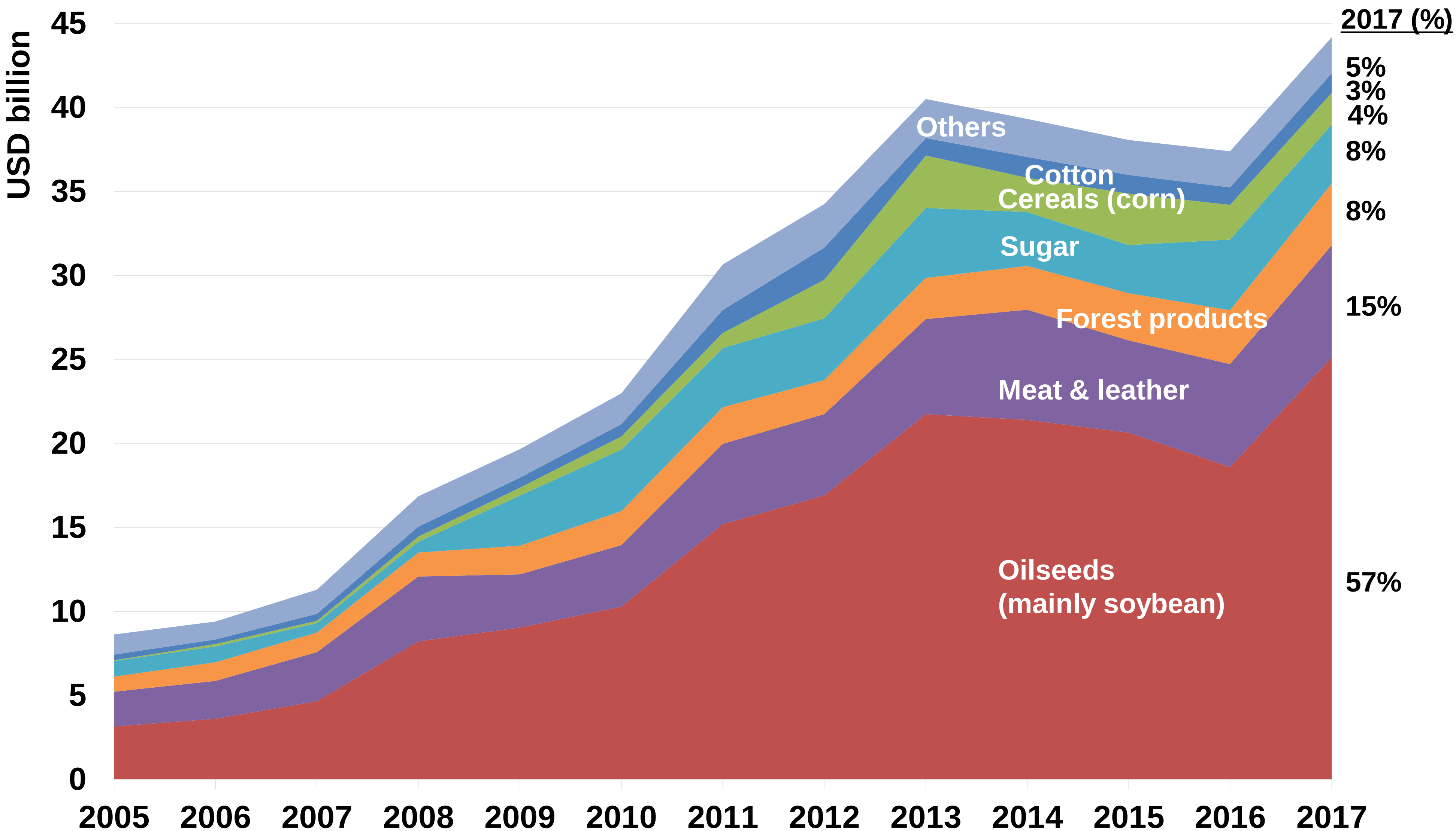
Source: MAPA (Agrostat).

Main restrictions

Religious concerns (Haraam).
Delays in the plant approval process.
Tariffs and Tariff Rate Quotas.
Health restrictions (mainly foot-and-mouth disease)
Technical restrictions (Ractopamina)

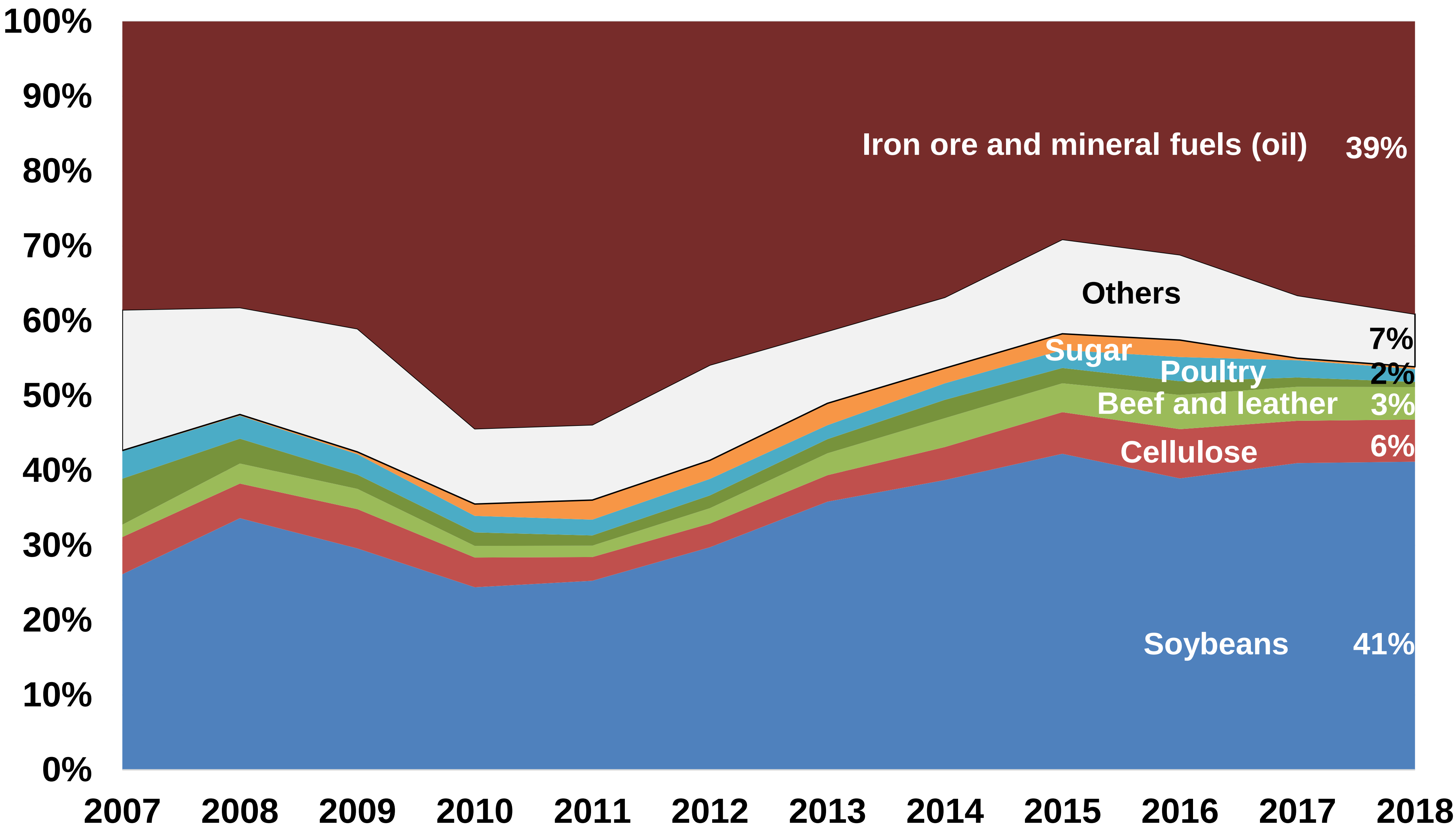
ASIA

Brazilian Agri-Food Exports (USD)



Source: MAPA (Agrostat)

GREATER CHINA
Top Brazilian Exports (100% Value)



Source: MAPA (Agrostat) and MDIC.

China's access to top agri-food export commodities

ASIA BRAZIL AGRO ALLIANCE

Free access	Restricted	Highly Restricted
 Soybeans  Wood pulp  Coffee  Cotton	 Beef (12%)  Chicken (14%)  Pork (18%)	 Sugar (50%)  Corn (54%) No imports  Wheat  Rice

% indicated = Tariff rates faced by Brazil into China; Nil = no exports in 2015. Source: TradeMap using UN ComTrade data

Emerging economies and the new growth in demand

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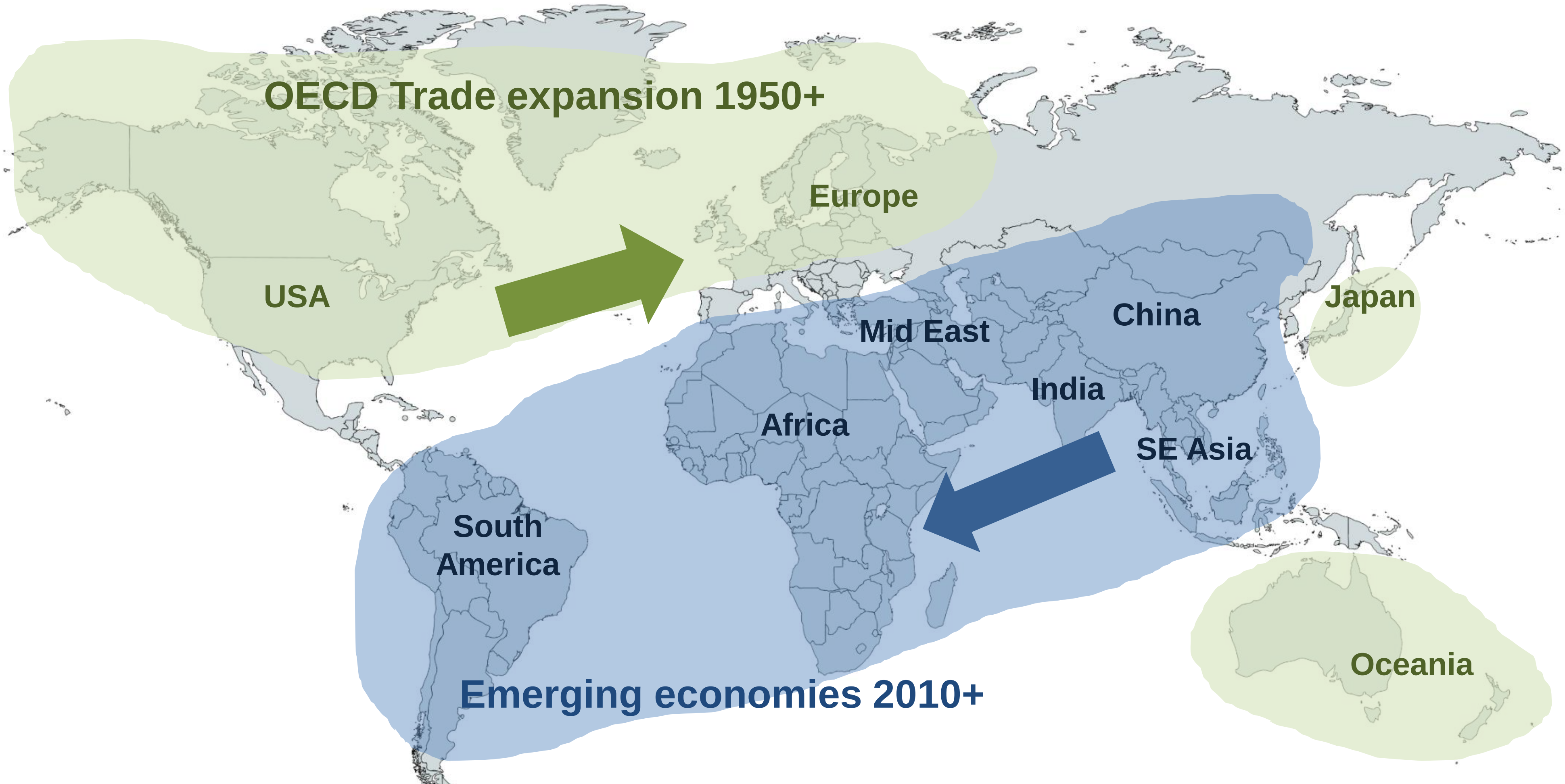
OECD (G7) vs. OBOR (emerging economies)



1. Commodity TRADE among emerging economies: energy, minerals and agribusiness.
2. Overseas INVESTMENTS to secure raw material supply: processing, trading, infrastructure.
3. GLOBAL INTEGRATION: supply or value chains?

Source: Emily French (2017). The silent giant - emerging economies & shifting market demands for the grain industry. Global Grains Asia 2017, Presentation by Consiliagra.

Top priority issues are challenging trade-offs

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How to achieve?

Food Security	**Food Safety & Quality**
Affordability **Low Inflation**	**Sustainability**

…with import restrictions and self-sufficiency policies?

Trade is still very limited in the agri-food sector…

- ✓ Trade: economic efficiency and sustainability

  Feed (grains) vs. Animal Protein → better carbon/water/energy footprints

Opportunities and Challenges

Brazilian Agribusiness International Agenda

ASIA BRAZIL AGRO ALLIANCE

1. **Fighting global ag protectionism**: reinforce the WTO, coalitions on sectoral agendas (sugar, grains vs. animal protein, etc.)
2. Re-launch **trade negotiations**, starting by EU-Mercosur agreement.
3. **Research and innovation in tropical conditions**: genetics, biotechnology, mechanization, geo-technology, precision agriculture, big data, drones, blockchains.
4. **Value-added products and branding.**
5. **Food safety, quality, traceability.**
6. **Sustainability, climate-smart agriculture, bioenergy.**
7. **Building integrated agri-food value chains to address global food security and food safety challenges**: exploring competitive advantages, cross-investments, consolidation.

ASIA BRAZIL
AGRO ALLIANCE

THANK YOU!

Marcos S. Jank
Isabel Cleaver

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Ministério da Agricultura e do Abastecimento

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MINISTÉRIO DAS RELAÇÕES EXTERIORES