CLIMATE ADAPTATION IN BRAZILIAN CITIES: GOVERNANCE CHALLENGES

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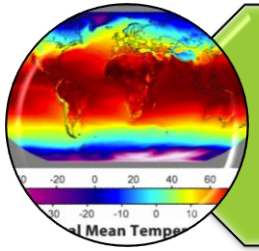
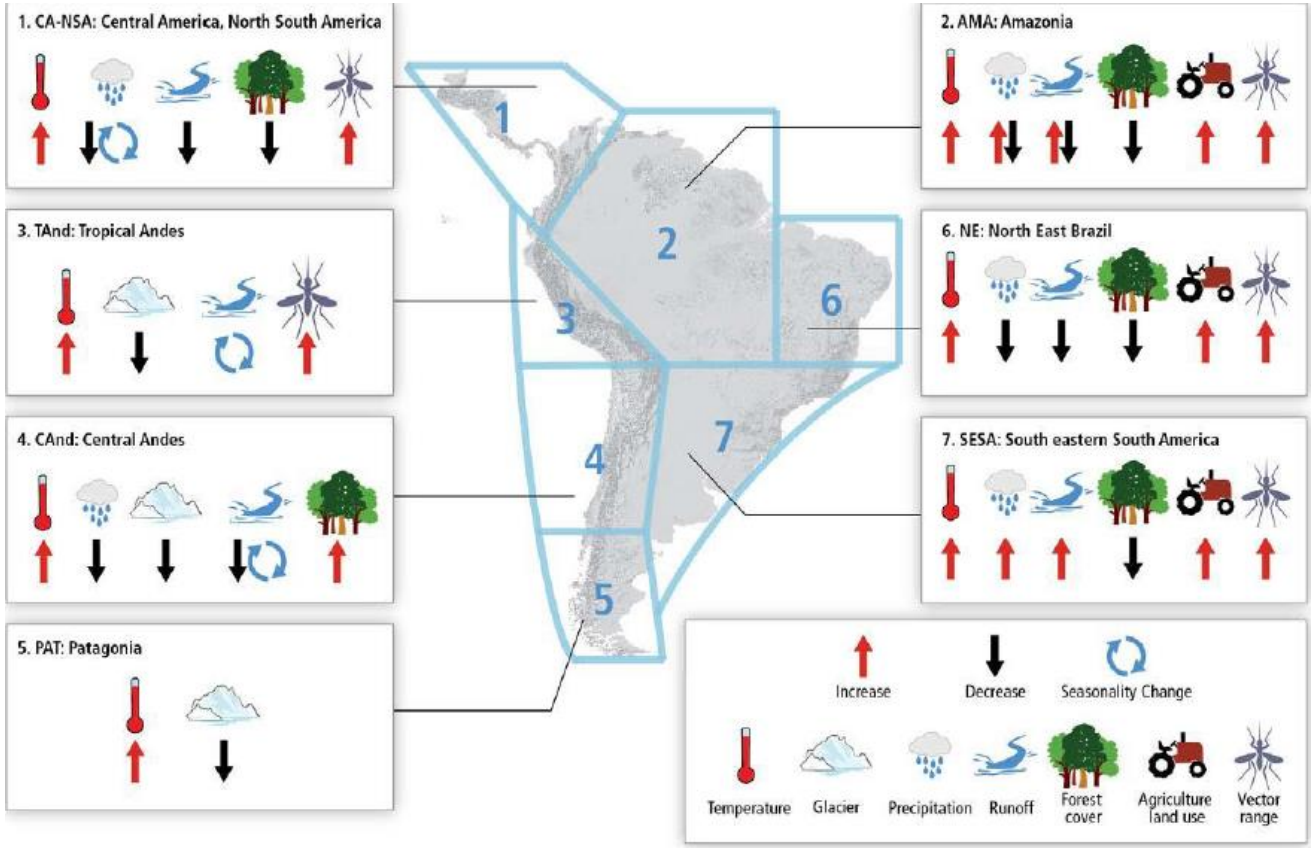


Climate Projections for Brazilian cities

Climate Policies in Brazilian cities

CLIMATE RISKS IN BRAZILIAN CITIES

OBSERVED CHANGES IN CLIMATE (SOUTH AMERICA)



Source: **AR5 – IPCC 2014 (**Summary of observed changes in climate and other environmental factors in representative regions of CA and SA)

CLIMATE RISKS IN BRAZILIAN CITIES

Droughts in the Amazon – 2005/2010

Water crisis in SP – 2013/2014

Hurricane Catarina (South) 2004

CLIMATE RISKS IN BRAZILIAN CITIES

Landslides Rio de Janeiro
Mountain Region - 2011

Floods - São Paulo - 2010

Floods - Santa Catarina 2008

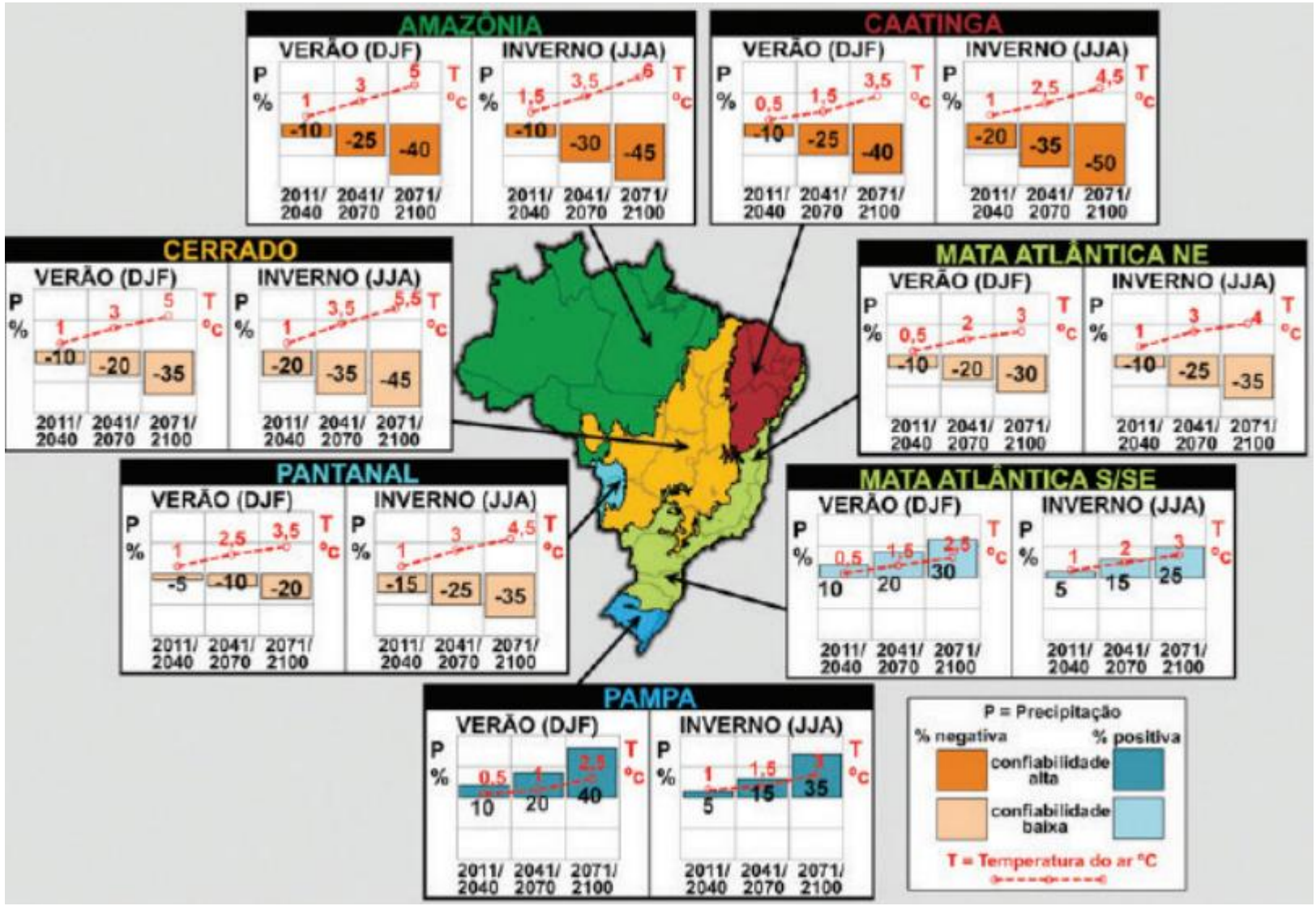
Floods - Piaui - 2009

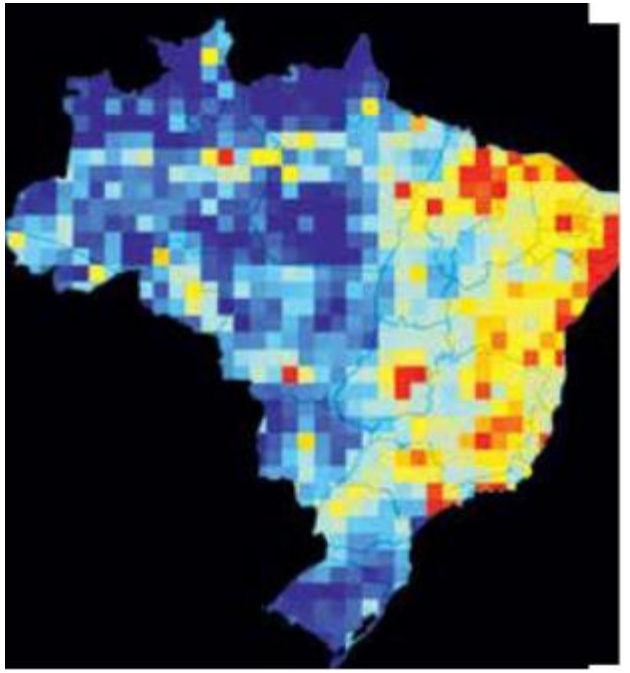
CLIMATE CHANGE RISKS IN BRAZILIAN CITIES

- **85%** of population live in urban areas
- **185** million people
- Urban deficit - urbanization process
- Urban issues can be aggravated by the effects of climate change.

CLIMATE CHANGE PROJECTIONS FOR BRAZILIAN CITIES

Regionalized **climate projections** in the **Brazilian** biomes [start-up periods (2011- 2040), mid (2041- 2070) and final (2071/2100)], based in scientific results modeling global and regional level (PBMC, 2013)





Areas most susceptible to climate change are in red, corresponding to areas of high population density (PBMC, 2016).

CLIMATE POLICIES IN BRAZILIAN CITIES

BRAZILIAN CITIES WITH CLIMATE POLICIES

Source: Updated from Barbi and Ferreira, 2017

CLIMATE POLICY IN BRAZILIAN CITIES

City	Year of policy approval	GHG reduction targets and/or intention	Adaptation strategies	Stakeholders participation in the policy-making process	Multi-sectoral policy implementation	Participation in city networks (climate change)
Belo Horizonte	2011	✅	✅	✅	✅	✅
Feira de Santana	2011	✅	⛔	⛔	⛔	⛔
Fortaleza	2017	✅	✅	✅	✅	✅
Palmas	2003	✅	⛔	⛔	⛔	✅
Recife	2014	✅	✅	✅	✅	✅
Rio de Janeiro	2011	✅	✅	✅	✅	✅
São Paulo	2009	✅	✅	✅	✅	✅

Source: Updated from Barbi and Ferreira, 2017

THE ROLE OF TRANSNATIONAL MUNICIPAL NETWORKS FOR CLIMATE POLICY IN BRAZILIAN CITIES

- **ICLEI's CCP** (Cities for Climate Protection) was the first city network to address climate change and the one that engaged most Brazilian cities.
- ICLEI has placed Brazilian cities in the **climate change debate** by bringing the issue to their **political agenda** and has driven climate governance action in Brazilian cities.
- ICLEI has enabled Brazilian local governments to create capacity to govern climate change and to undertake **climate governance experiments**.

ICLEI CLIMATE ACTIONS IN BRAZIL

ICLEI CCP in Brazil	1st phase (2001-2005)	2nd phase (2005/6-2011)	3rd phase (2011/12-present)
Main focus	Mitigation. Assist cities to make their GHG emissions inventory and identify priority areas for intervention	Mitigation. Direct action and target setting through specific projects	Mitigation and **adaptation**, **resilience**. Support local communities that are on the front lines addressing the challenges and opportunities of urban growth, exploring their green economy and green infrastructure, and pursuing a low-emission development trajectory
Issue areas	Sustainable Public Procurement; Transport; Renewable energies	Sustainable public procurement; renewable energies; sustainable construction; resilient and low carbon cities; solid waste management; urban mobility.	Sustainable urban planning Urban biodiversity and conservation Energy efficiency
Projects developed	Rede Elo CPS Brasil	SPP projects Polics M2M GeRes PAVS Peclima	Urban LEDS **Global Covenant of Mayors for Climate and Energy** InterAct Bio Protected urban land Building efficiency accelerator
Cities involved	Betim, Goiania, Palmas, Porto Alegre, Rio de Janeiro, São Paulo, Volta Redonda	Belo Horizonte, São Paulo, Porto Alegre, Campinas, Santo Andre, Manaus	Recife, Fortaleza, Rio de Janeiro, Belo Horizonte, Betim, Sorocaba, Porto Alegre, Curitiba, Londrina +75 cities of Global Covenant of Mayors for Climate and Energy

Source: Barbi and Macedo, 2018

ADAPTATION STRATEGIES IN BRAZILIAN CITIES

- Development of municipal adaptation **plans**;
- Involvement of civil defense, land use and health **sectors**;
- Restoration of permanent preservation areas;
- Reclassification of unhealthy and risky housing areas.

BARRIERS TO CLIMATE ADAPTATION IN BRAZILIAN CITIES

Difficulty to involve **other stakeholders** in the policy implementation;

Lack of interaction with **other levels of governance** (state and national actions);

Adaptation is characterized by **disaster management** rather than climate change risks management.

OPPORTUNITIES TO CLIMATE ADAPTATION IN BRAZILIAN CITIES

Brazilian municipal adaptation policies are **isolated initiatives** within the national context;

Science-Policy dialogue needs to be strenghened (future projections incorporated in adaptation plans);

Need to understand the role of **non-state actors** (organized civil society/private sector) in urban climate governance in Brazil.

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Thank you!

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