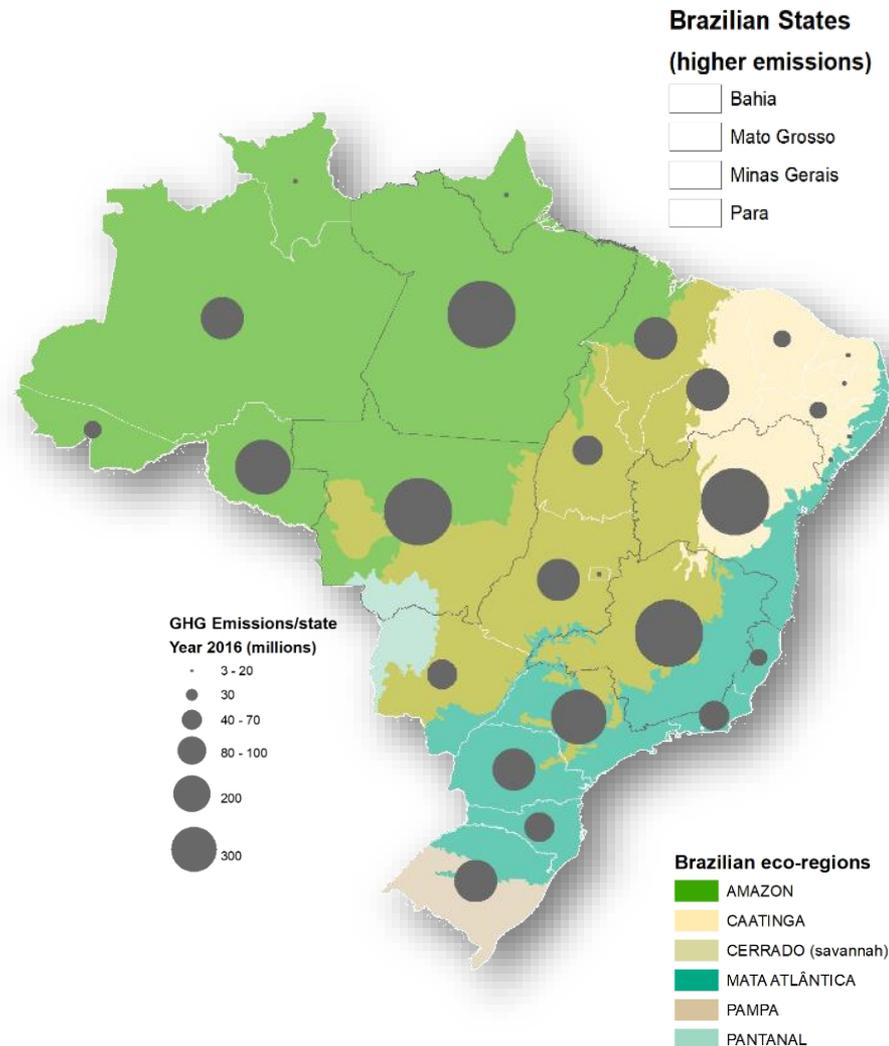
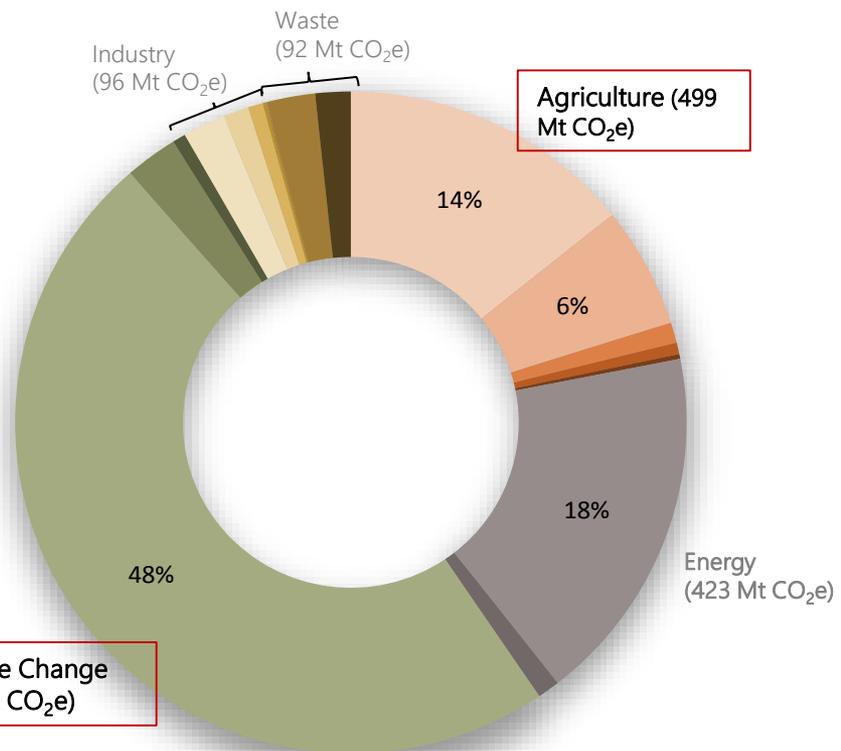


Climate Policies and Agriculture in Brazil

Carolina Milhorange
Center for Sustainable Development, University of Brasilia
CIAT, September 2018

The Climate Challenge of the Agricultural Sector in Brazil:

GHG Emissions by Sector and State

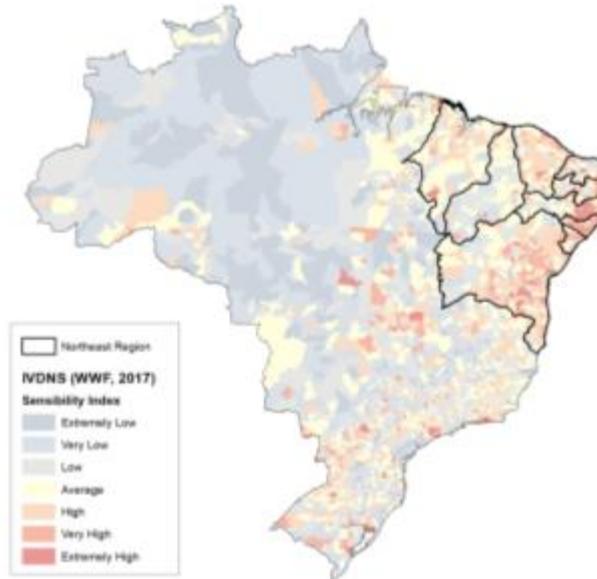
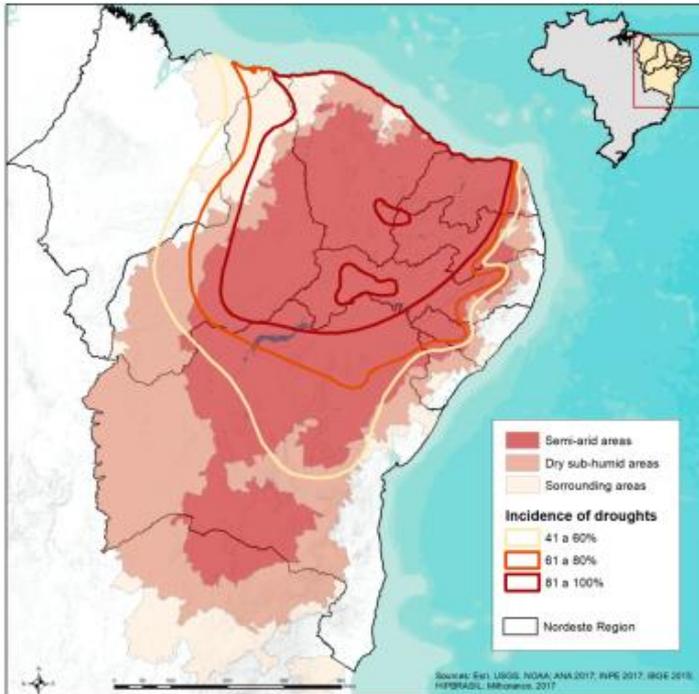


Brazil: 7th world GHG emitter
 2nd world emitter – Land Use Change
 3rd world emitter – Agriculture

Land Use Change – 51% of Brazil's emissions
 Agriculture – 22% of Brazil's emissions

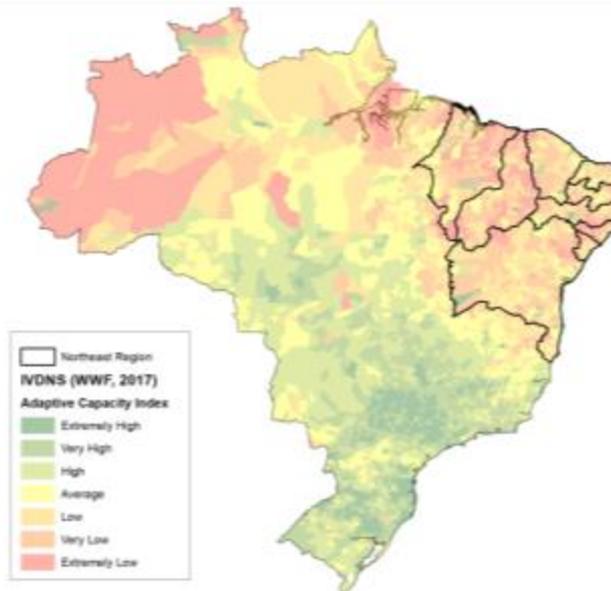
Climate Change and Vulnerability to Drought in Brazil

Sensibility and Adaptive Capacity in the Northeast Region



Sensibility to drought related to climate change

- Child mortality
- % population below the poverty line
- Demographic density
- Water public supply
- Land Use

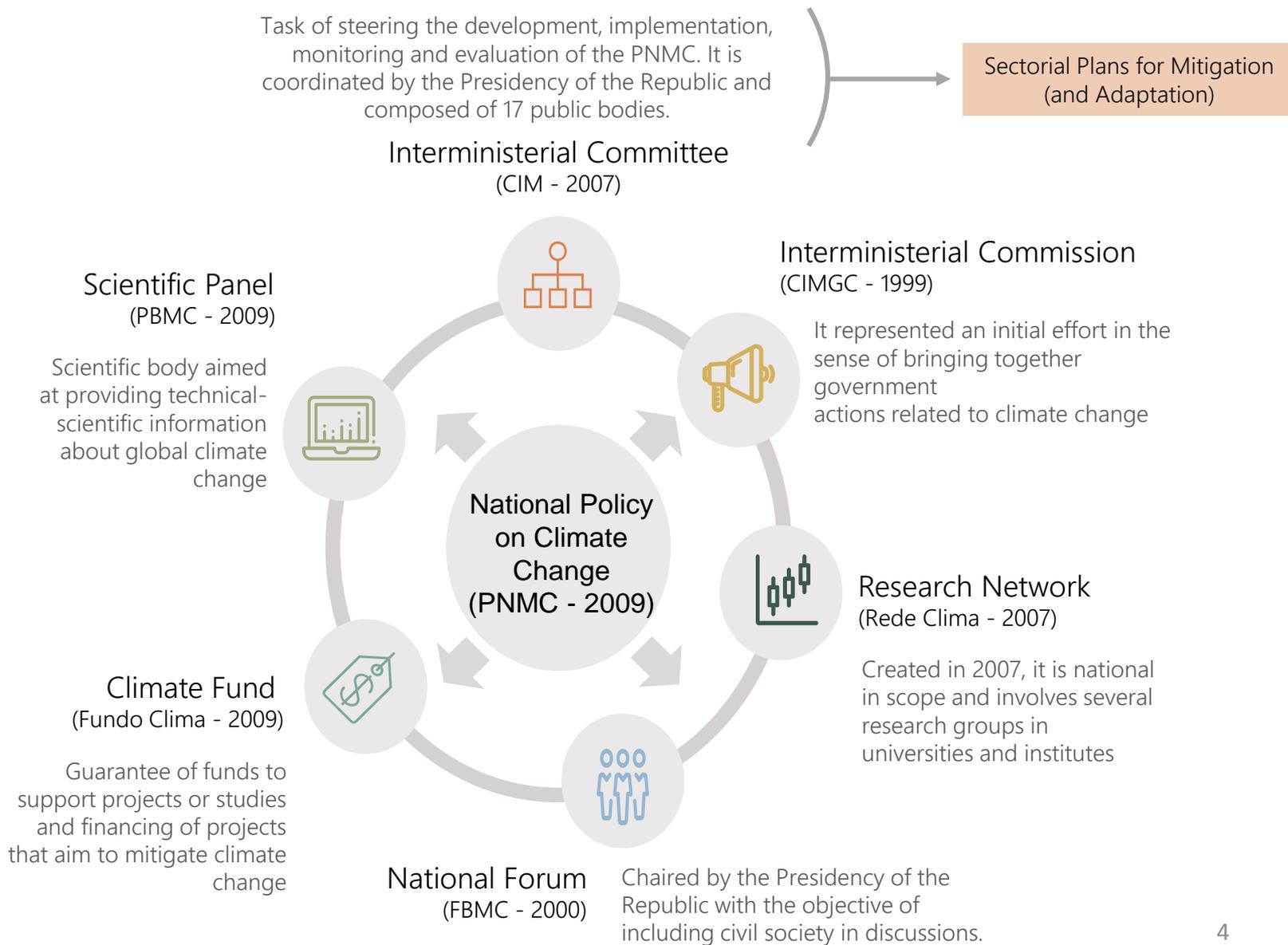


Adaptive Capacity to drought related to climate change

- Municipal HDI
- Gini
- Illiteracy rate

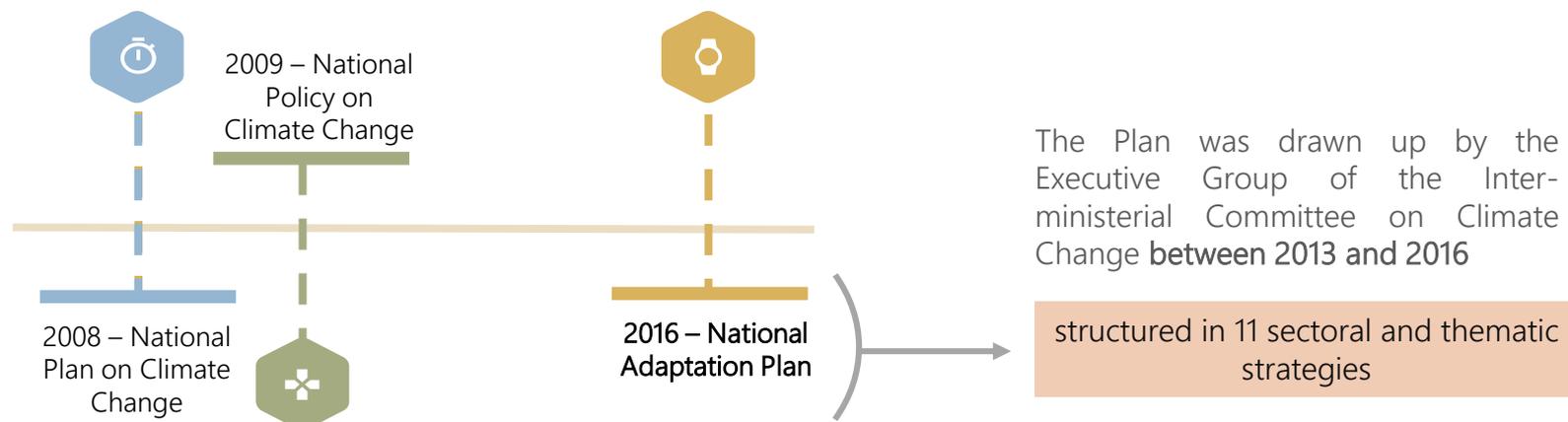
- **Scenarios for the Northeast Region:** water deficit or drought periods outside of normality
- The effects of climate change are not the only determinants of Northeast's vulnerability to drought → semi-arid climate, socioeconomic context and the patterns of water management and land use also increases vulnerability

The Climate Change Institutional Framework



The Climate Change Policy Framework in Brazil

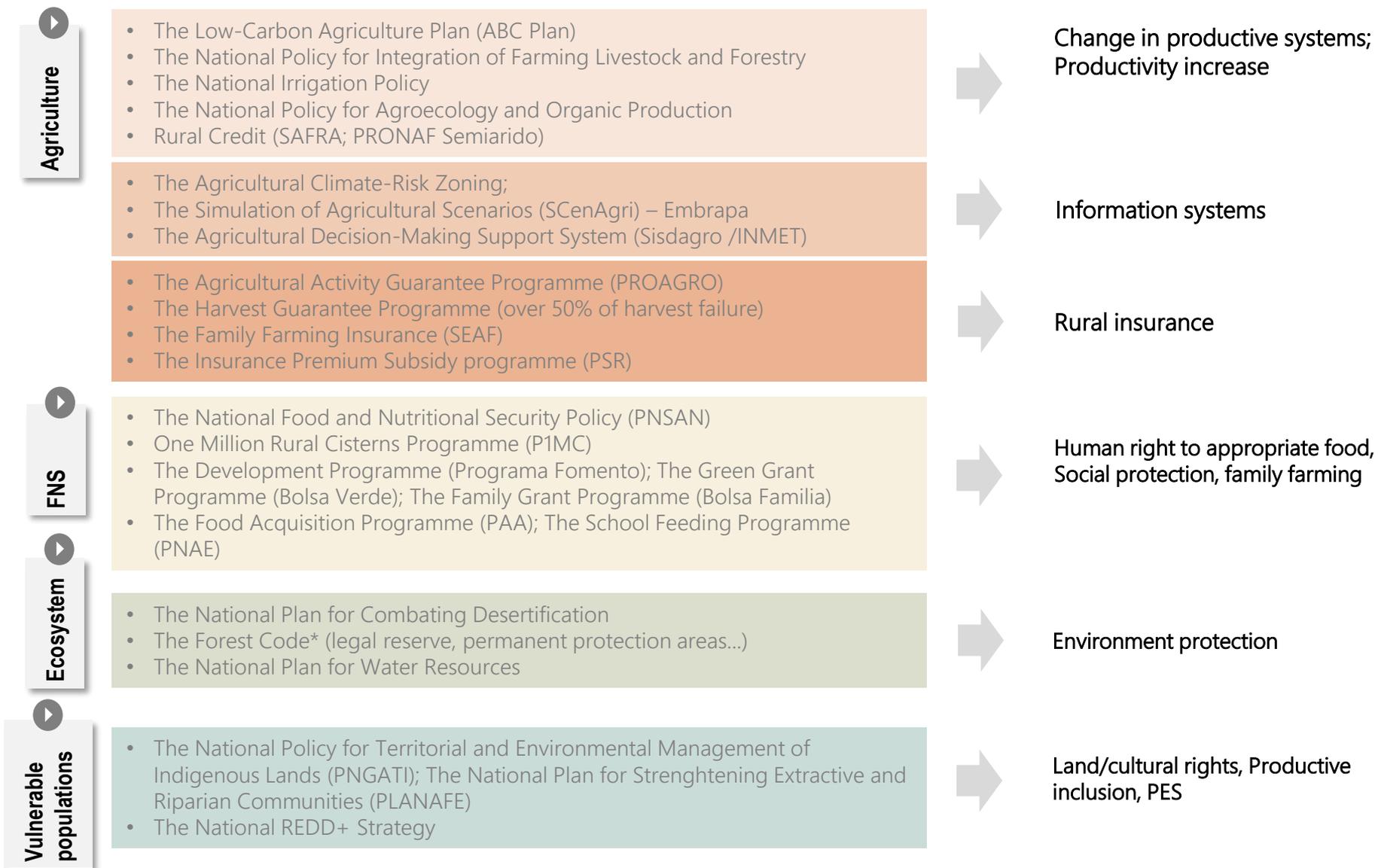
Timeline



- **2008: National Plan on Climate Change** – focus on mitigation (quantified national targets for reducing deforestation rates);
- **2009: National Policy on Climate Change** – climate law (targets were made legally binding);
- **2016: National Adaptation Plan** – a mix of sectorial programs lacking integration mechanisms:
 - Although Brazil's Adaptation Plan was drawn-up in a two-years process which highlighted the need of policy integration to address adaptation challenges, its final draft favoured sectorial agendas over integration mechanisms;
 - Its only novelty referred to knowledge production and diffusion.
- **Main funds:** Climate Fund, Amazon Fund, « green » lines of rural credit (ABC programme, FNE, FNO, FCO, Pronaf Verde), bilateral and multilateral cooperation, REDD+.

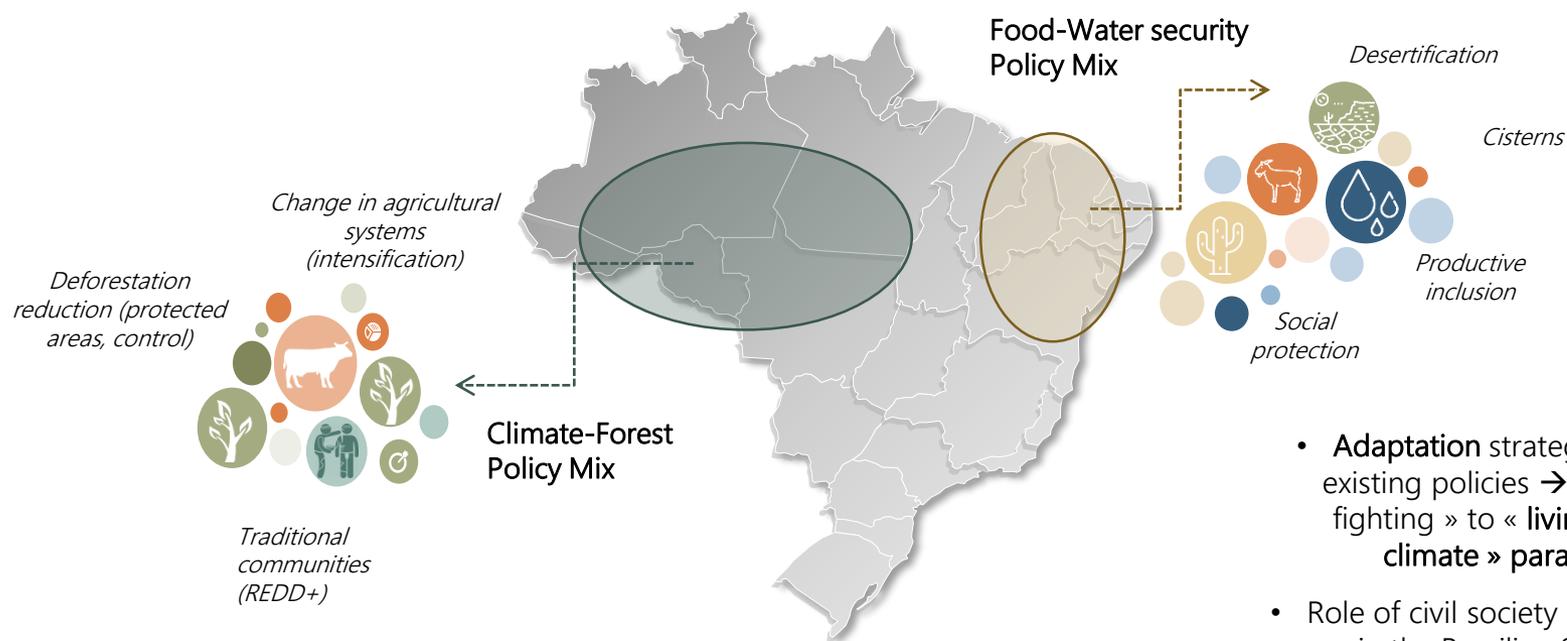
The National Adaptation Plan – A Mix of Sectorial Programs

Source: PNA, 2017



Climate-agriculture policy mixes and coalitions across regions and territories

Amazon frontier and semi-arid region



- Focus on **Mitigation**;
- Role of a climate-forest coalition including the Ministry of Environment, NGOs, and international agencies;
- Aligned with international conferences and international funds.

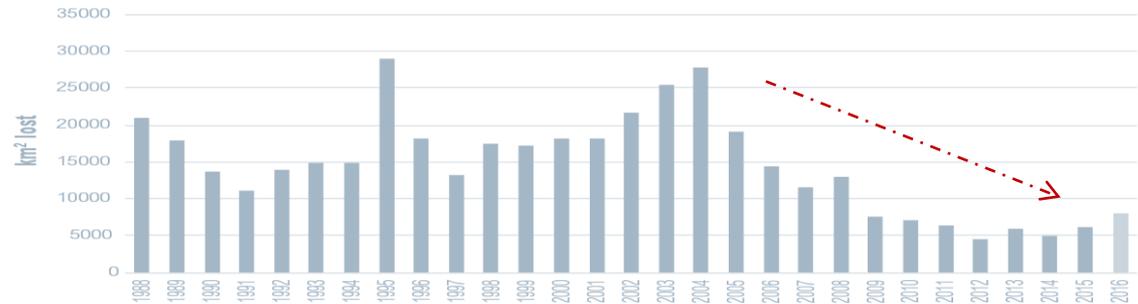
- **Adaptation** strategies overlapping existing policies → from « drought-fighting » to « **living with semiarid climate** » paradigm (1990);
- Role of civil society → the Articulation in the Brazilian Semiarid (ASA) developed social technologies that were simple, cheap and were adopted by farmers

Deforestation Reduction in the Amazon frontier

Deforestation control and PES



Annual Deforestation Rate in Brazil's Legal Amazon



Source: INPE
Learn More: bit.ly/PRODESonGFW

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- A strong climate coalition unity including the Ministry of Environment, unambiguous scientific knowledge, economic growth and international pressure contributed to **frame deforestation as a core climate concern** (Aamodt 2018);
- PPCDam (2004): Significant reduction in deforestation rates (82% decline between 2004-2014) → **protected areas, advanced monitoring systems, enforcement**; however, lower support to change in productive activities;

- Because of the high levels of GHG emissions from deforestation and land use change, the **conflict between agricultural expansion and forest conservation** is central in Brazilian climate politics;
- Recent signs of resumption in deforestation → changing land use dynamics (smallholder livestock, new commodities frontiers); decrease in control (change in government);
- **Brazil's national REDD+ strategy (2015)**: Decentralisation of 60% of REDD+ payments to Amazon states; ENREDD+ seeks to tackle challenges of scaling up and distribution of resources. However, there are remaining methodological problems and a recent debate proposes to promote jurisdictional REDD+ instead of REDD projects.

Deforestation Reduction in the Amazon frontier

National and subnational agriculture strategies

Low-carbon agriculture (ABC Plan)



- Brazil's **main climate change strategy** for the agricultural sector → it includes technological development and credit to promote change in productive systems. However, the initiative was designed to **agribusiness** sector (less accessible to family farming);
- Focus on technology development and **efficiency gains**;
- Several implementation challenges (high interest rates and operational difficulties comparatively to other rural credit lines);

Pará « Green Municipalities » programme



- Role of local rural elites in achieving the specific goals set by federal policies to be removed from a high **deforestation 'Red List'** → more legalized large-scale agriculture. However, by aligning production and conservation objectives, the project attracted medium and large landowners, but failed to prevent the further **marginalization of smallholders** (Viana et al 2016);

Mato Grosso « Produce, Conserve, Include » Strategy



- Mato Grosso is Brazil's largest carbon emitter (agriculture) → PCI was announced during 2015 Paris Climate Conference as a plan to reduce considerably the state's GHG emissions by promoting incentive, market-based and REDD+ initiatives;
- PCI is promoted as a **subnational policy integration strategy** and it's institutional framework, based on a **environmental fund structure**, is one of its main innovations;

Climate Adaptation in the Northeast Region

Water and food security policies

Cisterns programs (P1MC, P1+2)



- Decentralized rainwater catchment systems (pre-made cisterns built by communities) → **change in policy paradigm and role of civil society** (ASA Semiarido bottom-up approach);
- Between 2003-2015, more than 1,5 million human use cisterns (16,000L) and 117 thousand productive cisterns (16,000L) were built → **food security improvement** (IPC-IG, 2015; MI & MDS, 2016);
- The **scaling-up challenge** → political disputes and implementation deficit of “Agua para Todos” programme;

Rural credit (Pronaf); rural insurance (Garantia-safra); local food procurement (PAA, PNAE); social protection (Bolsa Familia)...



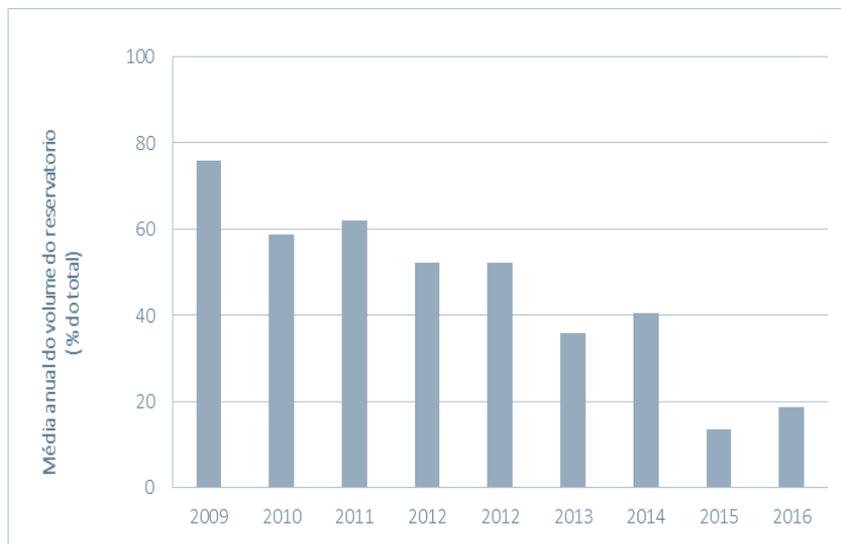
- **Combined initiatives** of public food procurement, rural credit to family farming and conditional cash transfers contribute to reduce smallholders’ vulnerability to climate shocks → Although these initiatives **were not designed as climate adaptation strategies**, their contribution to this objective is manifest (avoid conservative production strategies);
- Building adaptive capacity requires a combination of interventions that address not only climate-related risks but also the structural deficits (e.g., lack of income, education, health, political power) that shape vulnerability (Lemos et al 2016);
- Initiatives promoting **agro-ecological production, rescue of creole seeds and protection of the Caatinga biome** are increasing (with funds from international agencies and the national environmental fund), however they are still marginal.



Climate Adaptation in the Northeast Region

Adaptation x Mitigation

Volume of Sobradinho reservoir (BA), 2009-2016



Source: ONS 2017



- Droughts and rain patterns changes have caused **insecurity in hydropower supply** in recent years → increasing conflicts over land and water management in the Northeast region:
 - “Multiple uses” of water in the São Francisco basin (agriculture irrigation, hydropower, transportation, human use)... However, policies in the region have historically focused on the energy use → **conflict between mitigation x adaptation strategies**;
- Energy coalition’s preference for large energy projects → economic interests and argument that Brazil already has a low-carbon energy sector where prioritising new renewables could challenge energy security (Aamodt 2018);



- The « coexisting with the semiarid climate » paradigm intends to cope with scarcity of resources and environmental variability, promoting decentralised and participatory governance models as well as contextualized education and appropriate farming techniques → potential to promote climate adaptation, but it is a political project supported by less powerful actors

Final Remarks

- Brazil's mitigation strategies are mainly related to deforestation reduction based on command and control or agriculture intensification → need more emphasis on food security and family farming;
- Unlike mitigation, the international adaptation landscape is highly fragmented. In Brazil, adaptation was included in government agenda recently and the national plan was built on sectorial policies (layering) → bottlenecks in the formulation process
 - The paradigm of « coexisting with semiarid » provides useful tools for increasing food security and adaptation in water scarce environments; however it represents a less powerful political project → potential for further support and south-south experience sharing;
- Distinct policy mixes and coalitions for climate mitigation and adaptation across territories and policy levels → strong influence of regional politics in the translation of international and national priorities;
- Policy integration is a political process that goes beyond the combination of interacting instruments. It relates to power disputes between sectorial agendas but also between groups of interests at all administrative levels.
- Research agendas:
 - Conflicts and integration between mitigation and adaptation policies;
 - Impacts of emerging subnational hybrid governance structures → spaces for negotiation?

OBRIGADA

cmilhorance@gmail.com



Images: ASA, 2017