Climate change risk and adaptation/mitigation options in Argentina

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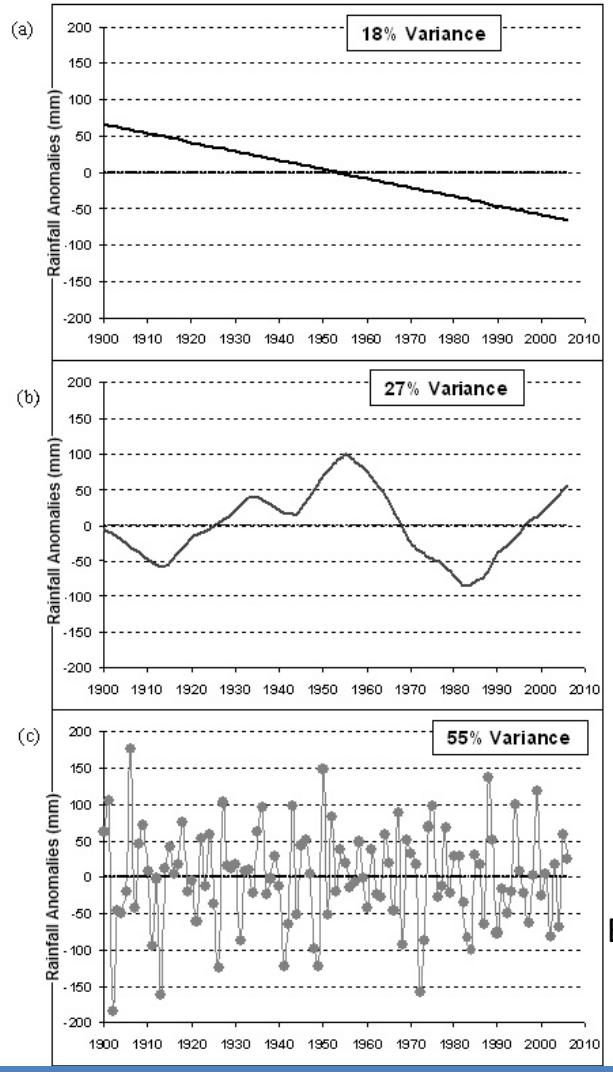
(AR5-SYR) For many regions and sectors, enhanced capacities to **mitigate and adapt** are part of the foundation essential for **managing climate change risks**

Decision makers at developing countries typically operate in a **near to medium term decision space** (2–5 yr, sometimes up to 10 yr)

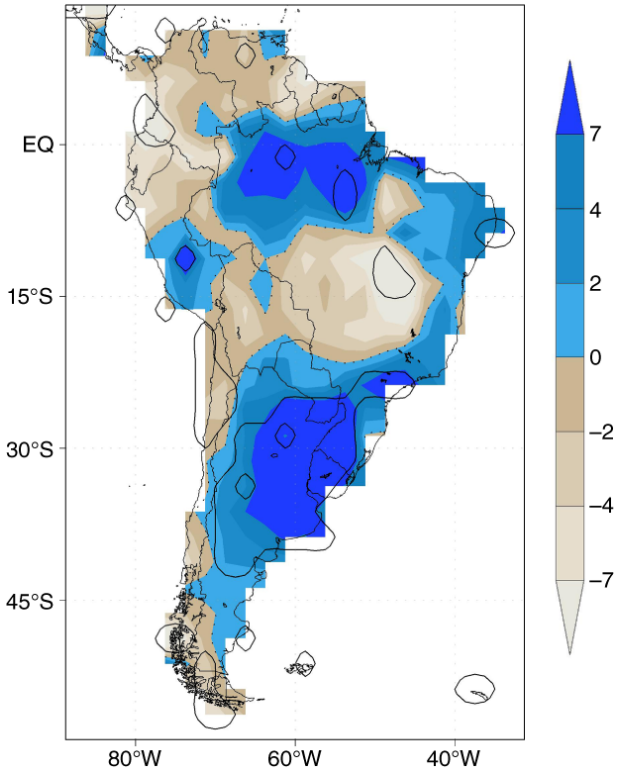
Need to improve knowledge and prediction of **natural variability and forced change from subseasonal to decadal timescales**



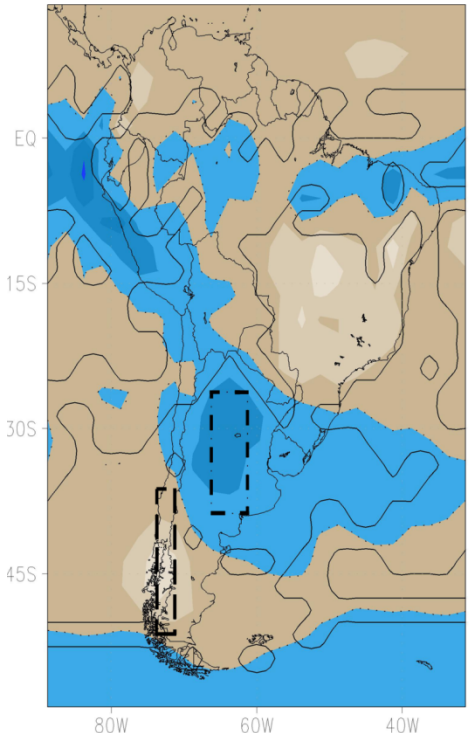
Baethgen (2010)

DJF Rainfall linear trends
1902-2005 (mm/summer/decade)

Observations (GPCC)



CMIP5 Historical simulations(H)
Multi-model Ensemble (MEM)



Vera and Díaz (2015)

The La Plata Basin

- The Plata Basin covers about 3.6 million km2.
- The La Plata Basin is the fifth largest in the world and second only to the Amazon Basin in South America in terms of geographical extent.
- The principal sub-basins are those of the Parana, Paraguay and Uruguay rivers.
- The La Plata Basin covers parts of five countries, Argentina, Bolivia, Brazil, Paraguay and Uruguay.

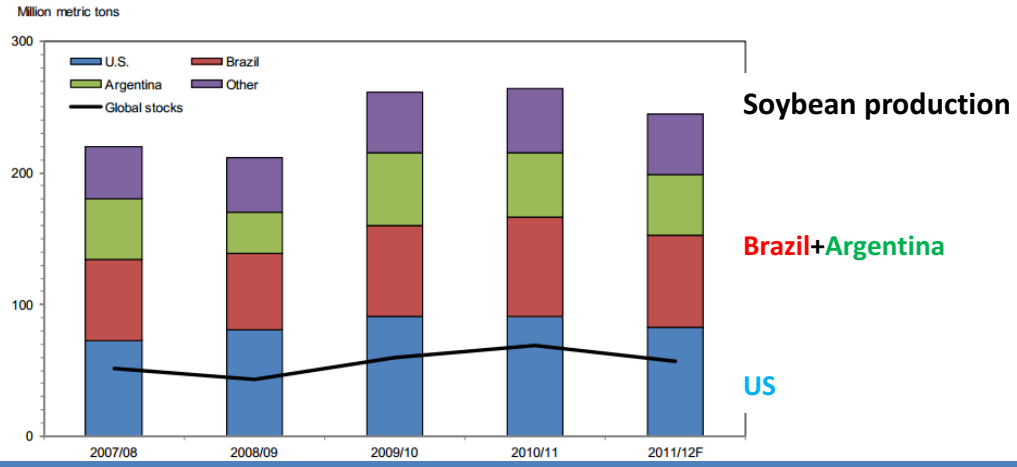
Global relevance of the la Plata Basin

•LPB is home of more than 100 million people including the capital cities of 4 of the five countries, generating 70% of the five countries GNP.

• The fluvial transport of the Paraguay-Paraná Waterway was of 17,400,000 tons in 2010.

• The hydroelectric potential is estimated at 106,000 MW. There is more than 230 dams, and 60% of the hydroelectric potential is already used.

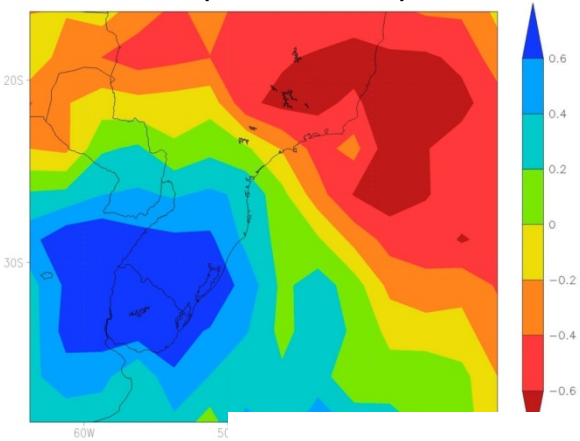
• It is one of the largest food producers (cereals, soybeans and livestock) of the world.



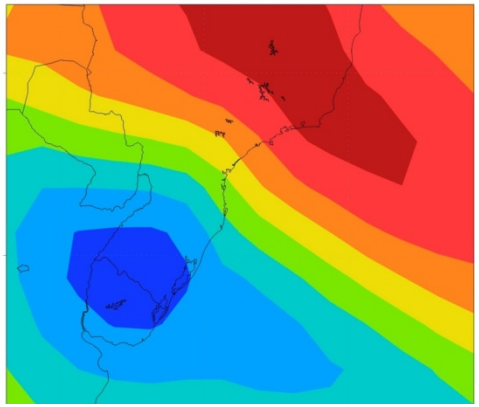
Internal variability and forced trends at present climate

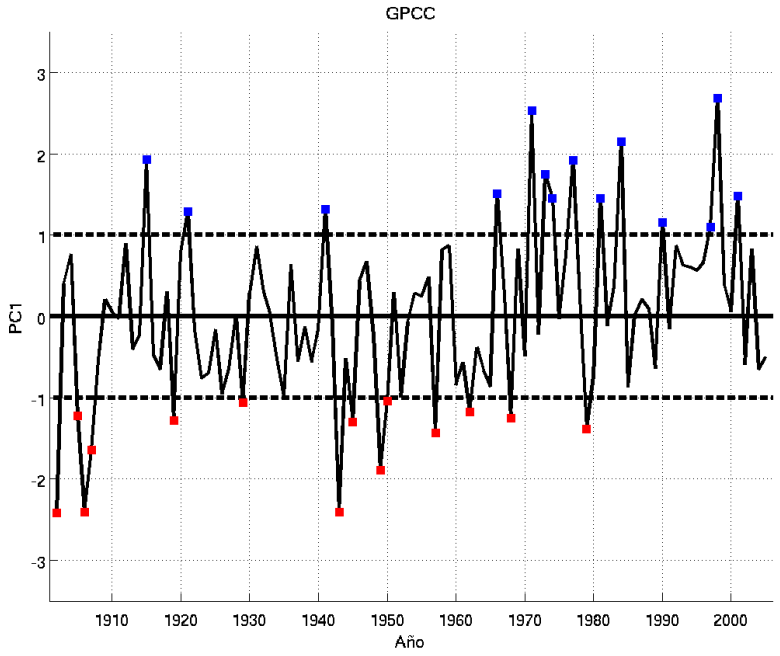
Leading pattern of summer precipitation variability (EOF1)

CMAP (1980-2005)



CMIP5 MEM Historical runs (1902-2005)



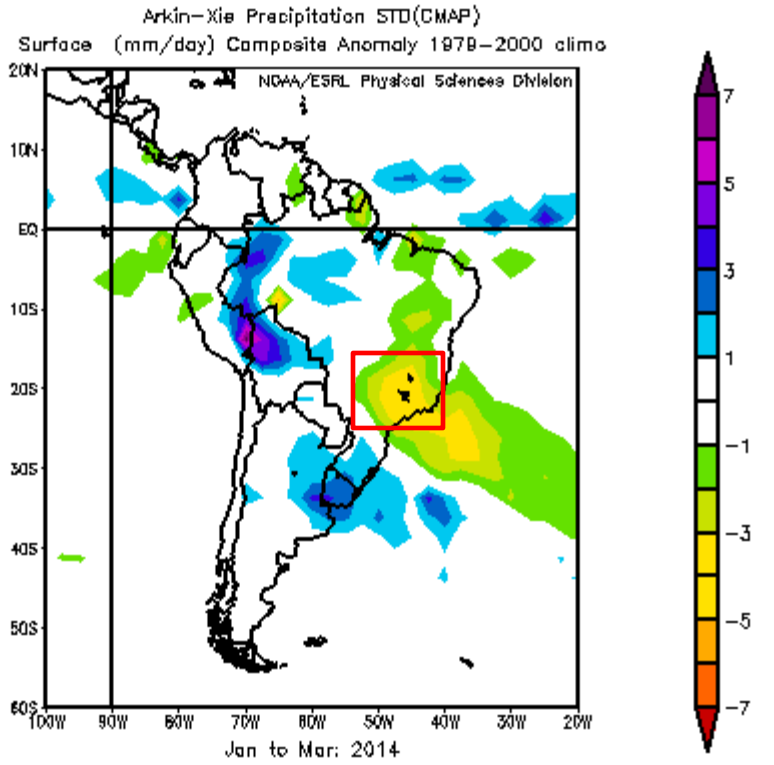


Observations and most of the models exhibit an **increase** of the **frequency** of **EOF1 positive phase** (wetter conditions in SESA and drier conditions in SACZ)
since early XX century to present

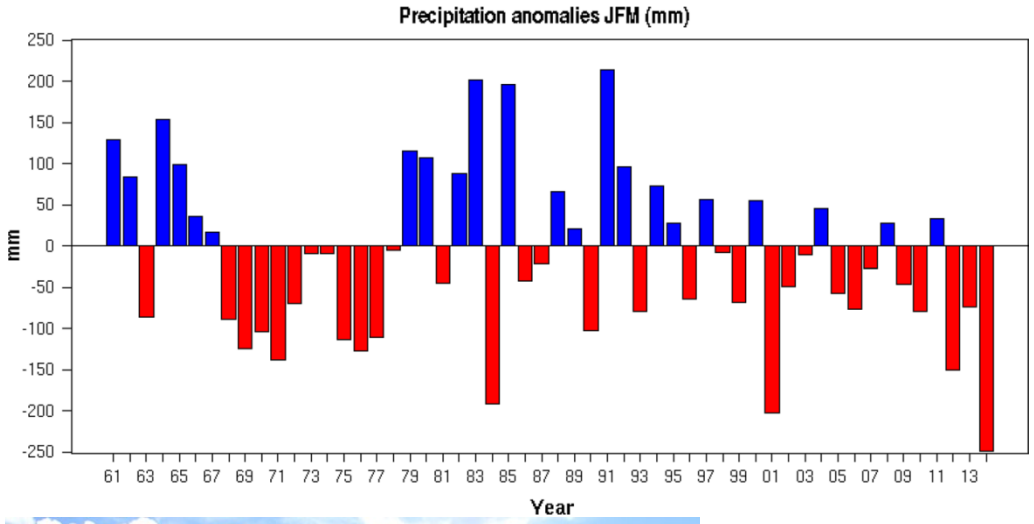
Díaz and Vera (2016)

The 2014 southeast Brazil summer drought: Extreme case of a positive EOF1 phase

JFM Precipitation anomaly in 2014



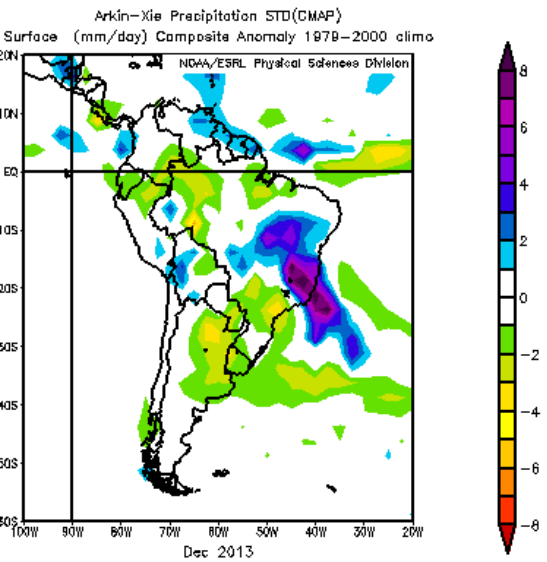
Observed JFM Precipitation anomalies averaged over southeast Brazil from 1961 to 2014



Coelho et al. (2015)

2013 December: Extreme case of a negative EOF1 phase

2013 December
Precipitation anomaly



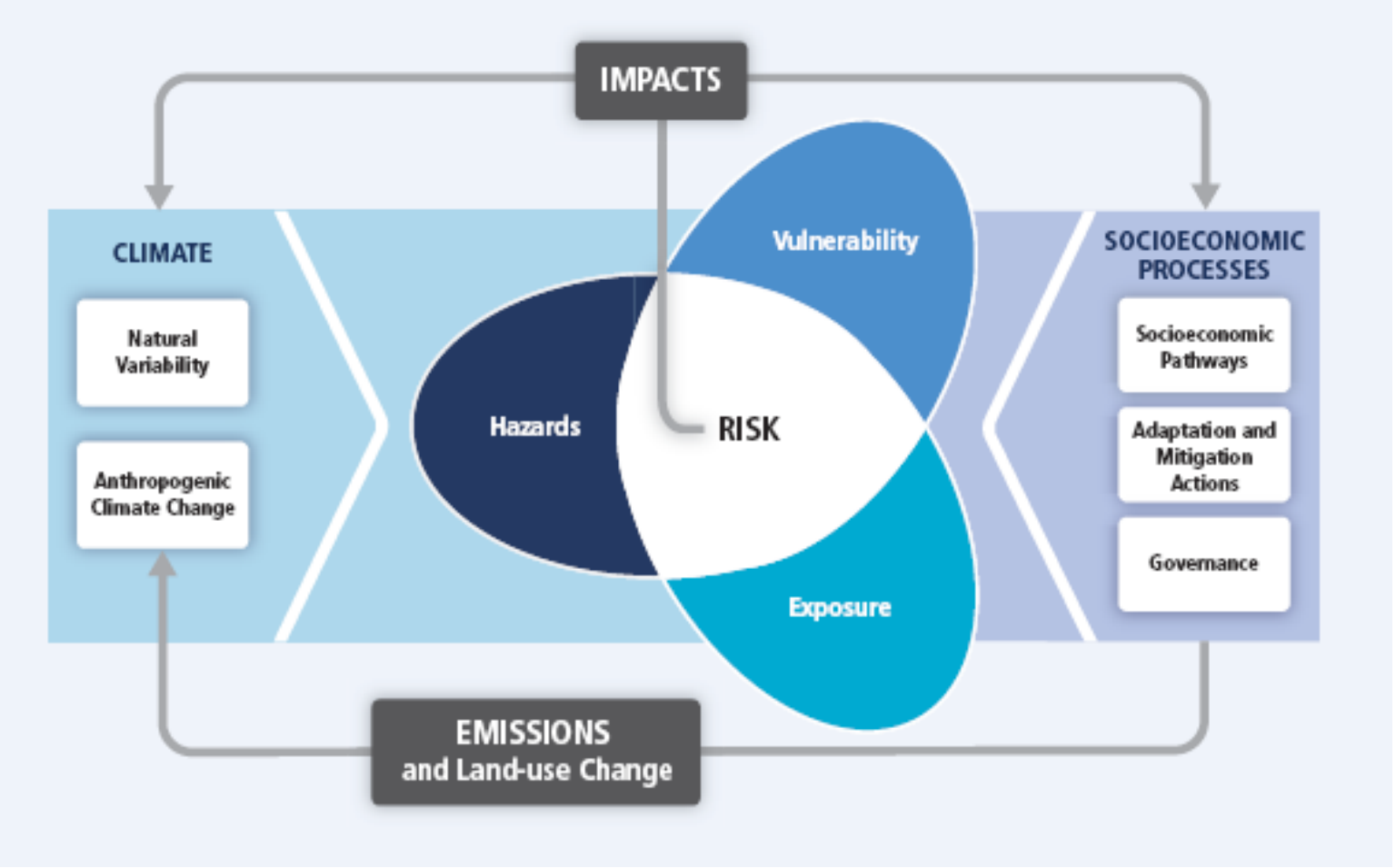
Extreme heat wave in Argentina

- More than 15 days with extreme hot conditions
- Collapse of the energy system of Buenos Aires

Extreme precipitation and floods in Southeast Brazil

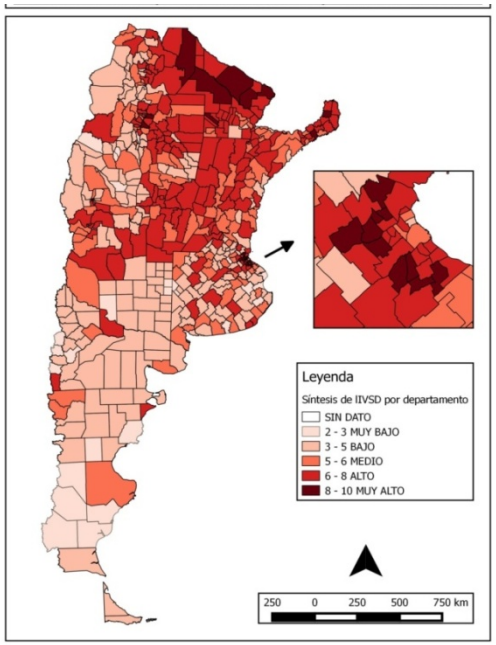
- More than 15 days with extreme rainfall conditions
- Emergency at many states, serious and large socio-economic impacts

Managing the risk in the context of climate change

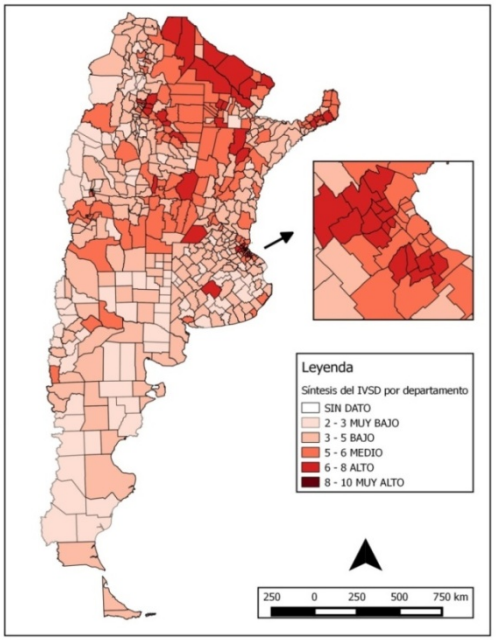


Changes in social vulnerability (from 10 socio-economic indicators)

2001

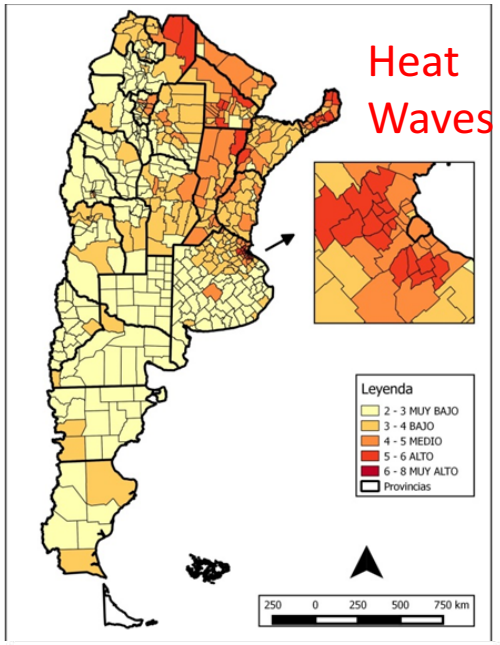


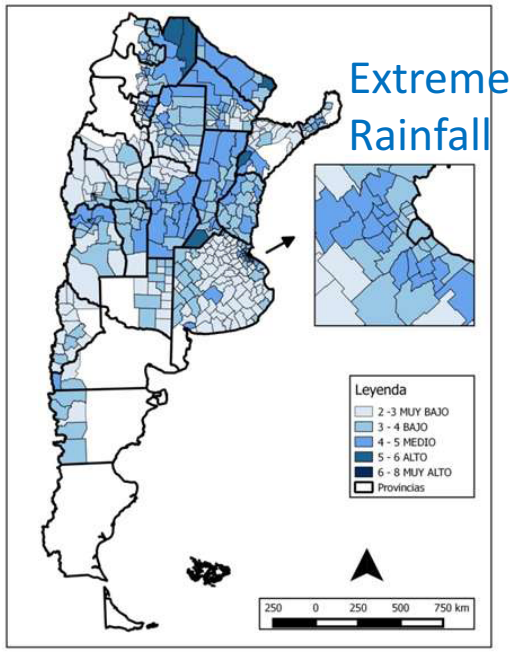
2010



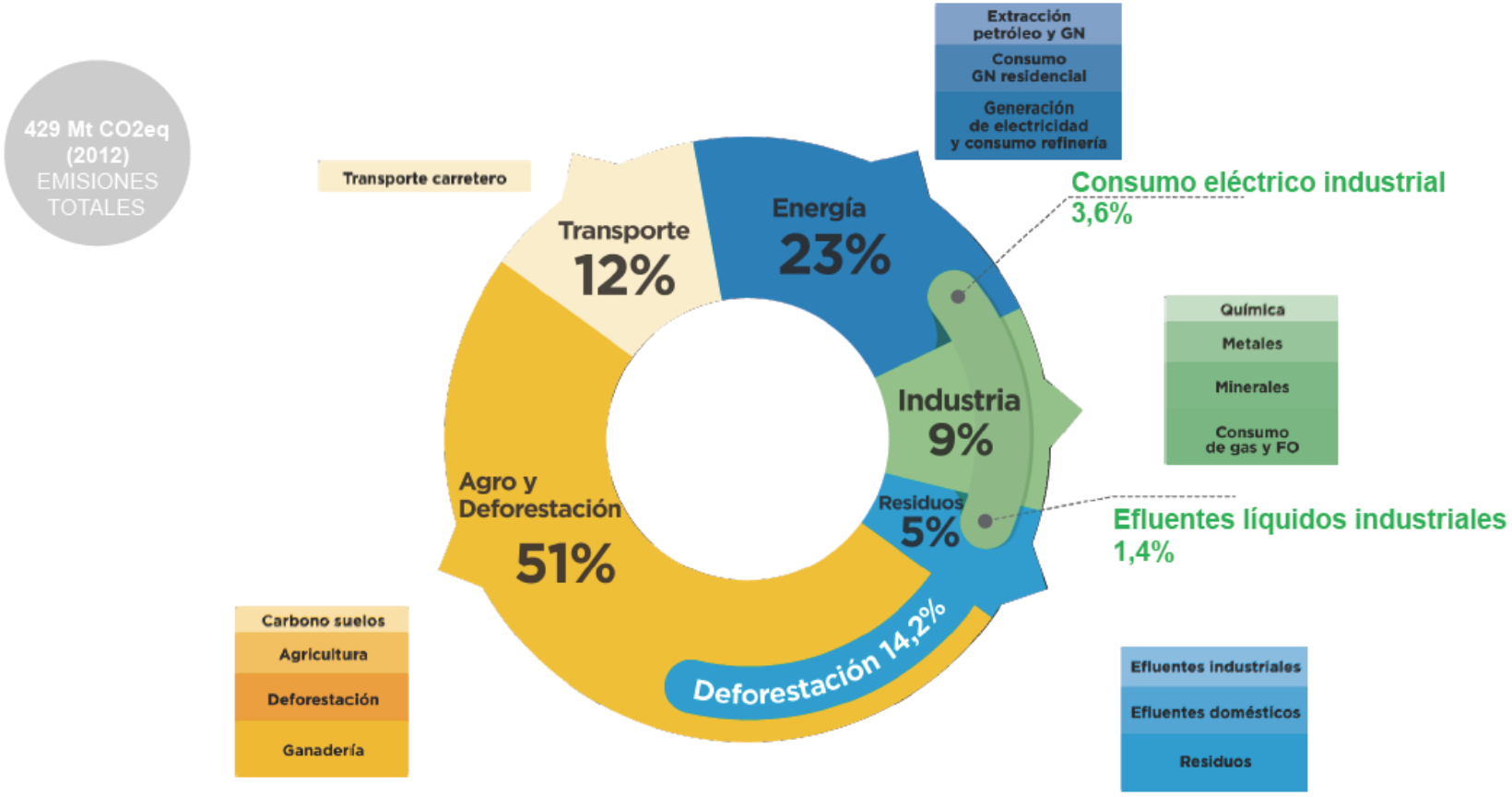
Natenzon et al. 2015

Risk associated with:





Emissions profile: Overview of country's GHG emissions (by Ministry)



Ministerio de Ambiente y Desarrollo Sustentable
Presidencia de la Nación

ARGENTINA 200 AÑOS DE INDEPENDENCIA

(From Alvaro Zopatti's presentation at PMR meeting, Oct 2016)

National Climate Change Cabinet

National Climate Change Cabinet (NCCC): established by Decree N° 891/2016.

Expected Outcomes:

- Revised NDC
- National Climate Change Plan
- Mitigation and Adaptation Provincial and Sectoral Plans
- Climate Risk Map
- International Financing
- Education and Awareness on Climate Change

Under the NCCC, fourteen ministers and their representatives meet regularly to advance mitigation and adaptation policies, in light of new government sector plans and policy frameworks.
Interested Ministries in the PMR: Environment and Sustainable Development; Finance; Agriculture; Production; Energy and Mining; Transport; Foreign Affairs; Chief of Cabinet.

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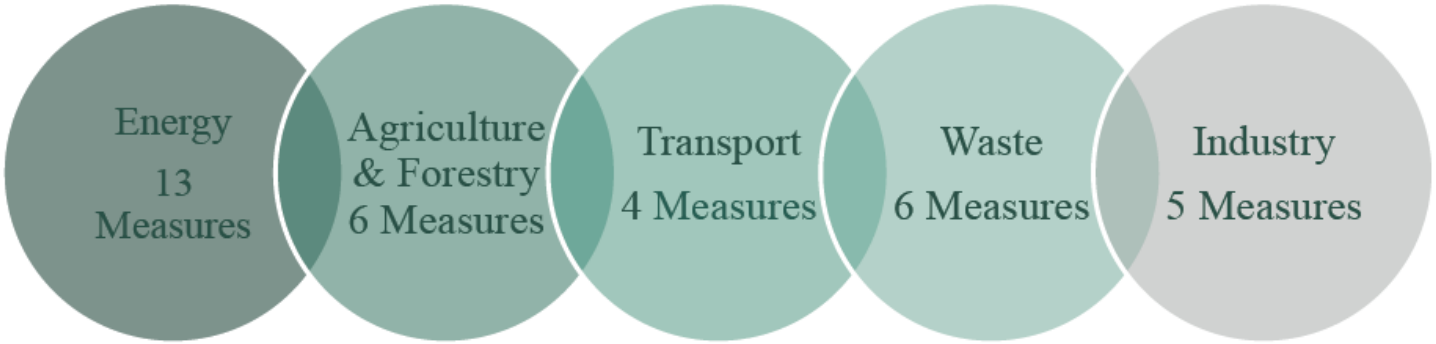
Taking stock of relevant sectors

- Currently, the work within the NCCC focuses on all relevant sectors for climate change mitigation in Argentina and there are 41 mitigation measures under revision from the following sectors:



- Analyze and study mechanisms and economic instruments in sectors covered by the NDC. Priorities will be set based on identified measures and contribution to total national GHG emissions.
- New measures expected to be added in the revised NDC. Total estimation of around 50 measures – validated by sectors - considering the original INDC and the revised NDC.
- Estimations of added measures to date amount to 200 MtCO2e.

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Adaptation options identified in Argentina's INDC (2015)

a) The implementation of structural and non structural measures to face extreme events including the intensification and increase in early warning systems for intense rains, floods, heat waves, and systems for response to and recovery from climate disasters;

b) The enrichment, conservation, restoration, improvement, and sustainable management of native forests;

c) The increase in irrigated crop area and improvement in water resource management;

d) The improvement in decision making on crop management;

e) The reduction in vulnerability and strengthening of processes in health management related to the direct and indirect impact of climate change;

f) The promotion of biodiversity conservation and adaptation based on ecosystems.


SUSTAINABLE DEVELOPMENT GOALS
17 GOALS TO TRANSFORM OUR WORLD
1 NO POVERTY
2 ZERO HUNGER
3 GOOD HEALTH AND WELL-BEING
4 QUALITY EDUCATION
5 GENDER EQUALITY
6 CLEAN WATER AND SANITATION
7 AFFORDABLE AND CLEAN ENERGY
8 DECENT WORK AND ECONOMIC GROWTH
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
10 REDUCED INEQUALITIES
11 SUSTAINABLE CITIES AND COMMUNITIES
12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION
14 LIFE BELOW WATER
15 LIFE ON LAND
16 PEACE, JUSTICE AND STRONG INSTITUTIONS
17 PARTNERSHIPS FOR THE GOALS
SUSTAINABLE DEVELOPMENT GOALS