

ADAPTATION TO CLIMATE CHANGE IN THE PLANING HORIZONT

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ADAPTATION

- **ANTICIPATORY**
- **REACTIVE**

ANTICIPATORY

- **REMOTE IN TIME**

Technology?

Social and economic changes?

Lack of social and political interest

- **PLANNING HORIZON**

- **Infrastructure**

- **Land use planning**

- **Forestry**

**ALTHOUGH CLIMATE IS
SLOWLY CHANGING**

**IT HAVE ALREADY
CHANGED**

THEN ADAPTATION TO WHAT?

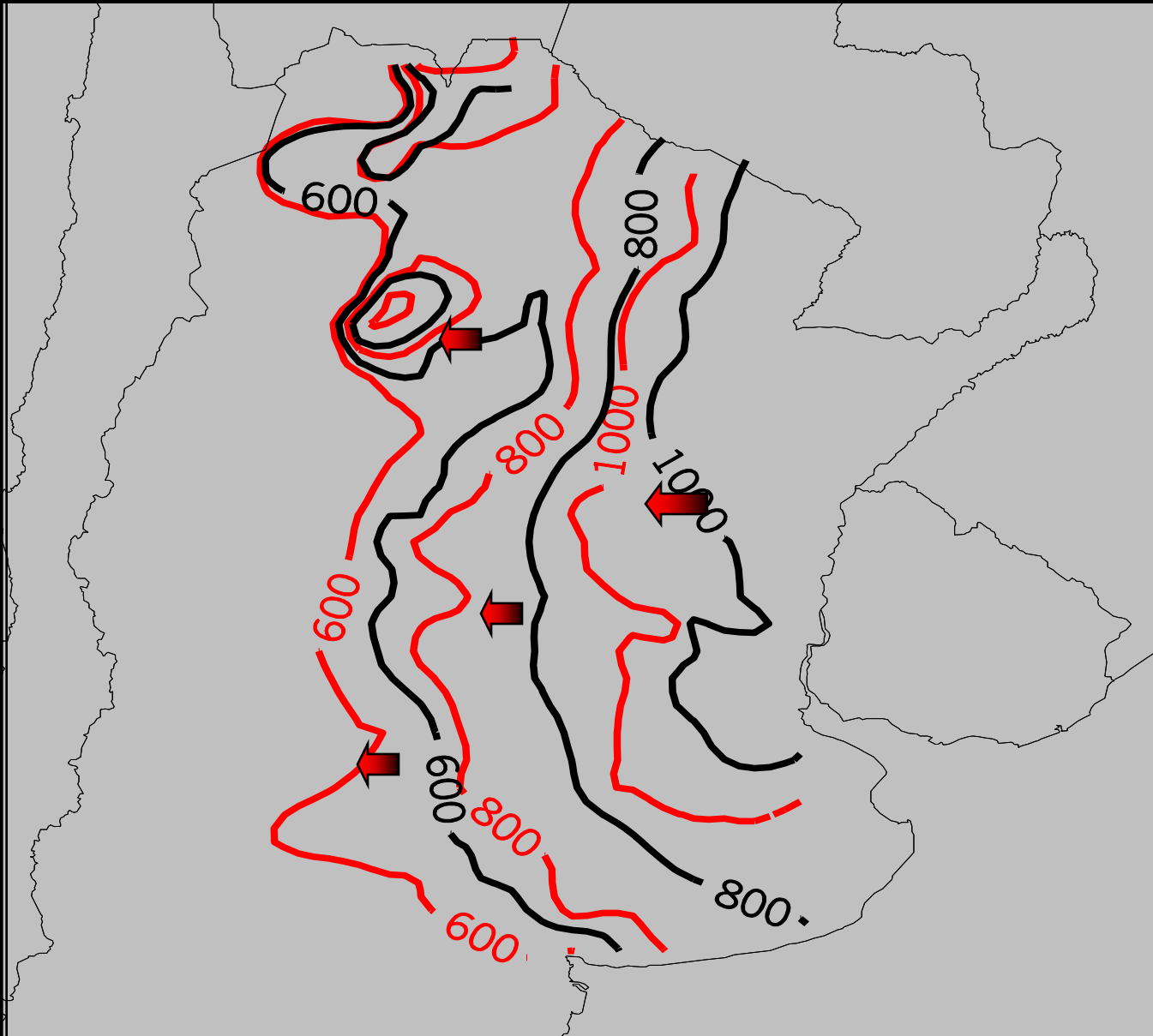
To climate variability

To observed climate change

To near future climate change

**REACTIVE ADAPTATION
IN
ARGENTINA**

Expansion of humid conditions to the west

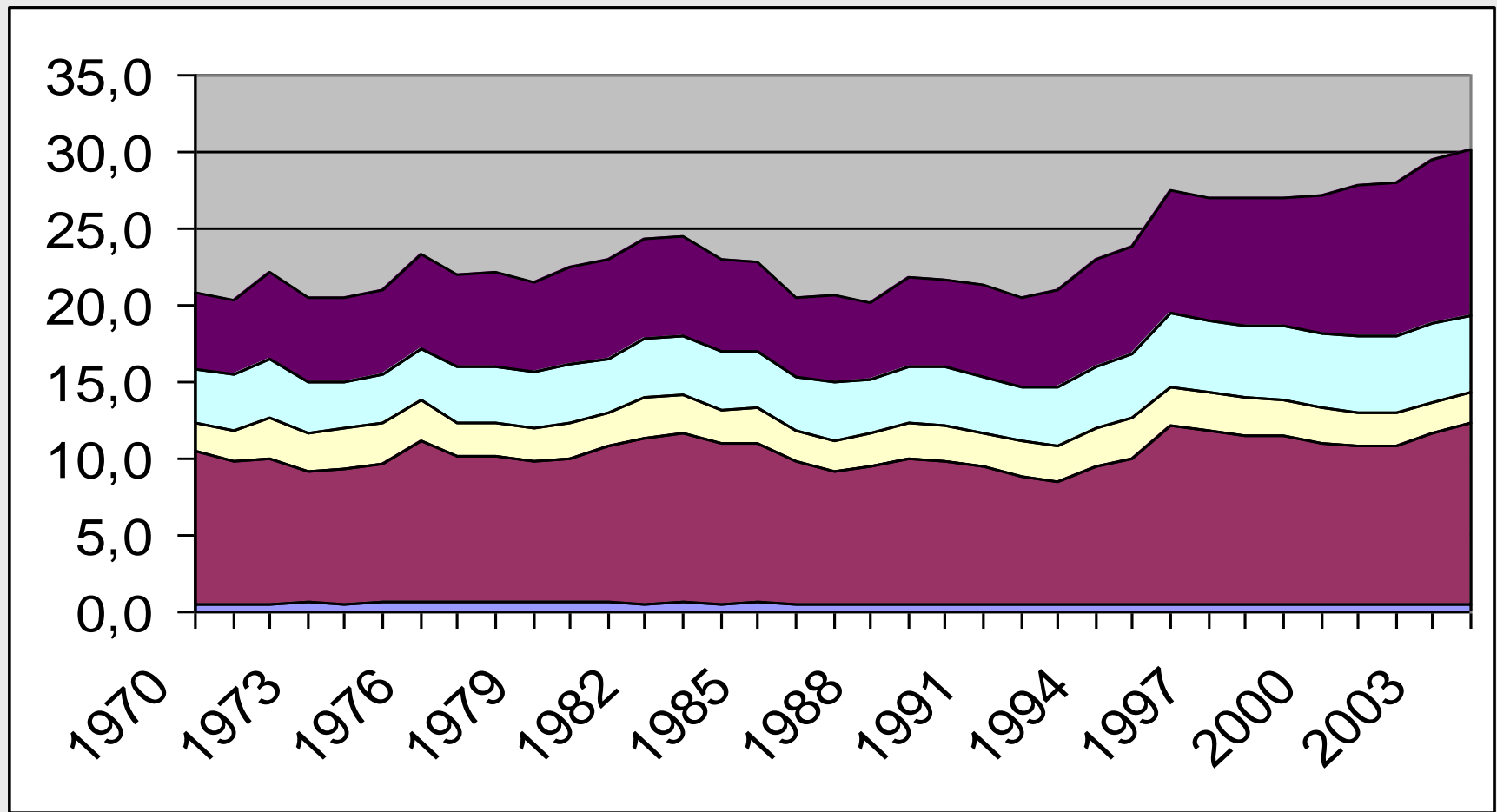


Negro:
1950-1969

rojo:
1980-1999

Doyle 2006

Cultivated surface in millions of hectares



● **Santiago de Estero + Salta + Chaco + Córdoba + Formosa + Tucumán: Semiarid fringe**

○ **Santa Fé** ○ **La Pampa + San Luis** ● **Resto de País**

● **Buenos Aires + Entre Ríos**

Last 30 years:

**From 30 M Ton of
grains to 90 M Ton**

**Prices and
Technology, but
also climate**

***HOW?
TECHNOLOGY AND
INTENSIFICATION***

***EXPANSION OF THE AGRICULTURE
FRONTIER***

***AND IN THE TRADITIONALLY
PRODUCTIVE REGION:***

+ PRECIPITATION = +PRODUCTIVITY

Autonomous adaptation

- **Result from massive, but individual decisions**
- **Starts after the change (reactive)**
- **It can lead to erroneous decisions (In the long range) maladaptation**
- **In this case: the deforestation in the Chaco region**
- **Or if the change is reversed by the interdecadal variability**

Main factor for adaptation:

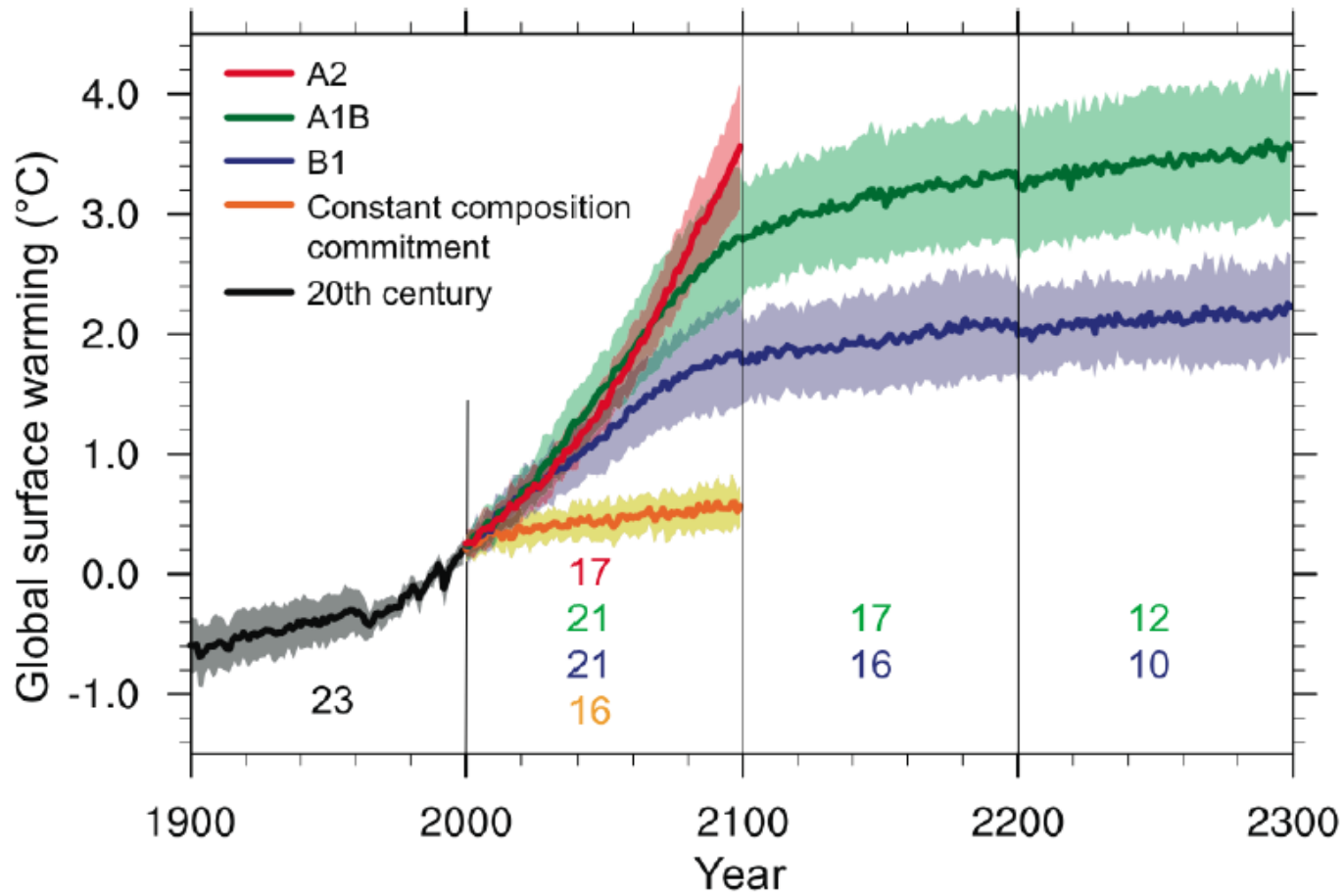
AWARENESS OF THE CHANGE

IN THE KEY ACTORS

CONCURRENT FACTORS

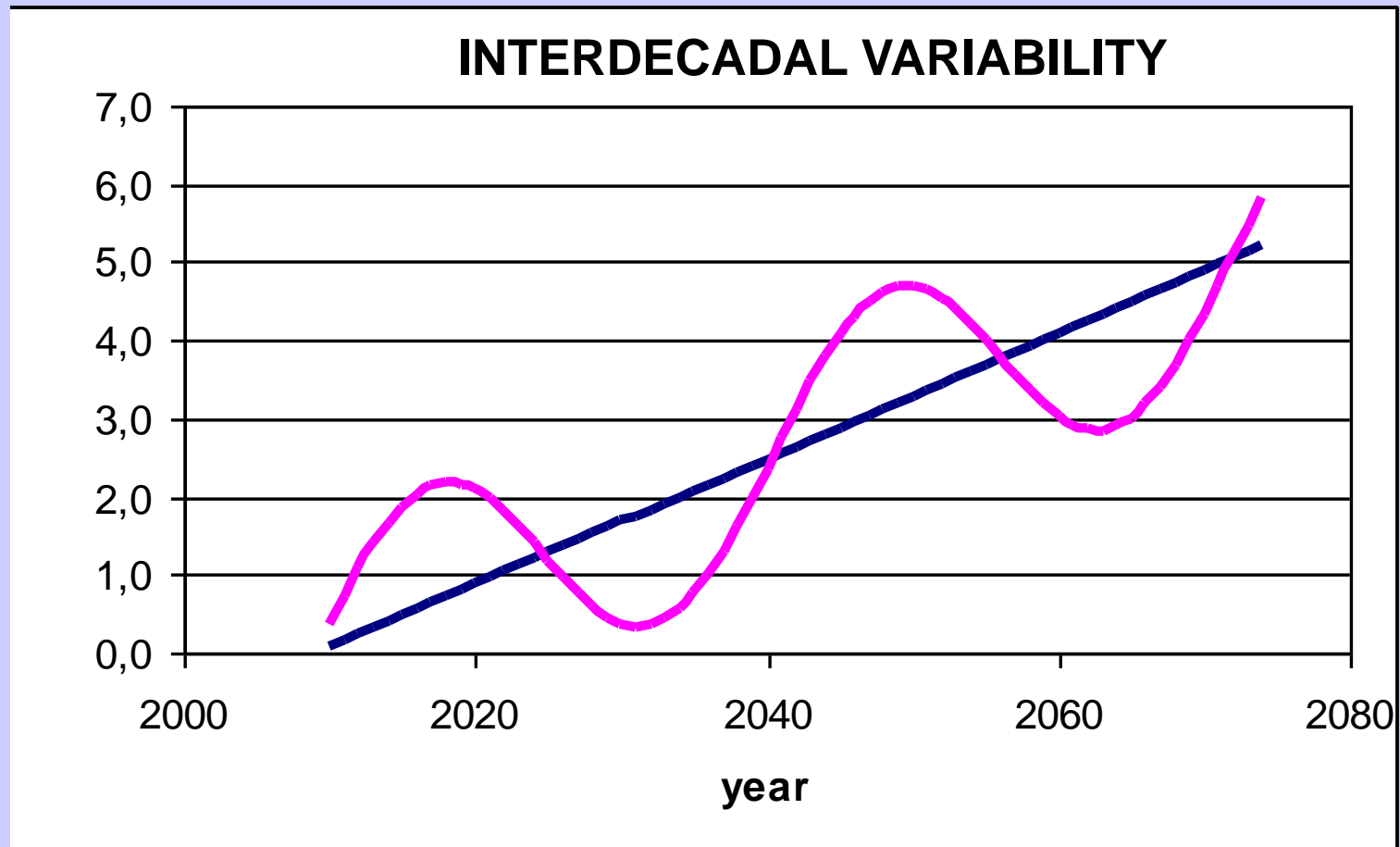
ANTICIPATORY ADAPTATION PLANNING HORIZON

Climate scenarios: are less uncertain?



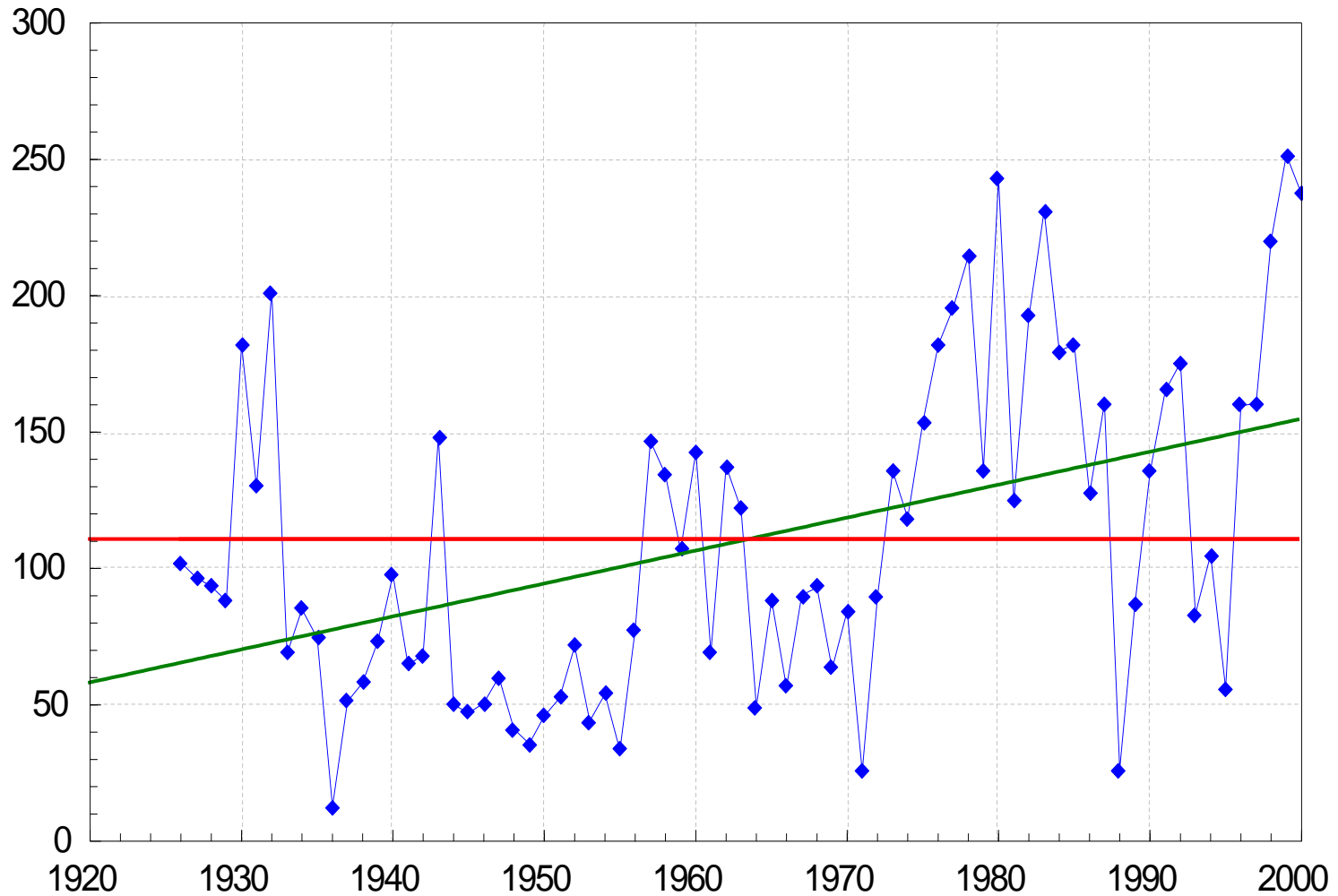
ANTICIPATORY ADAPTATION PLANNING HORIZON

Climate scenarios: are more uncertain?



Mean annual discharge (m³/s)

Río Dulce - Río Hondo



INTERDECADAL VARIABILITY

- **Not only adds uncertainty to future scenarios**
- **Masks past trends and difficult awareness**

PERIOD OF INTENSE NIÑOS 1970-2000

- **SINCE 2000:**

PHASE OF WEAK NIÑOS ?

LIMITING FACTOR
TO ANTICIPATORY
ADAPTATION

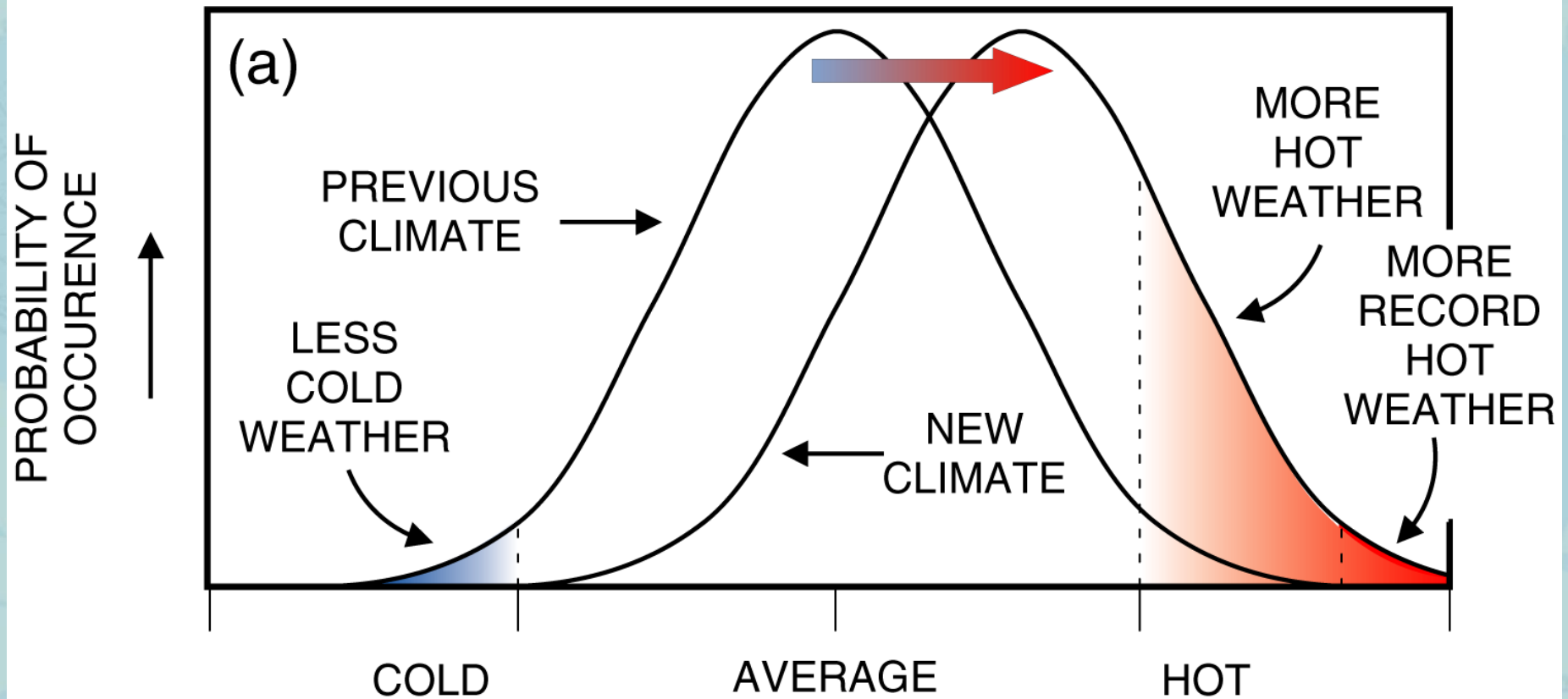
UNCERTAINTY

ADAPTATION TO NEAR FUTURE :

- ANTICIPATORY ADAPTATION SEEMS MORE LIKELY IN THE CASE OF NO REGRET OPTIONS
- INCREASE RESILIENCE

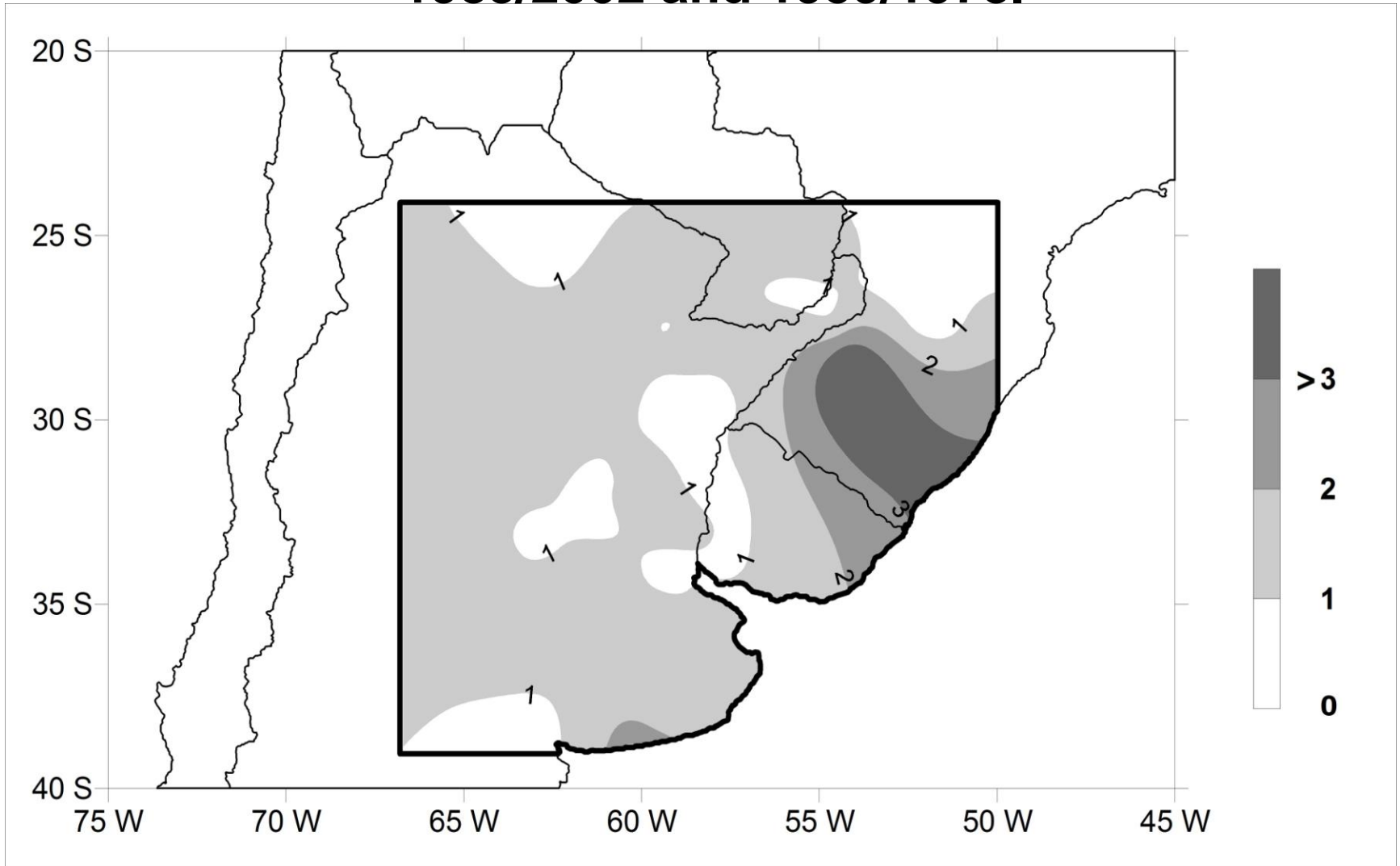
ADAPTATION TO EXTREME EVENTS

Increase in Mean



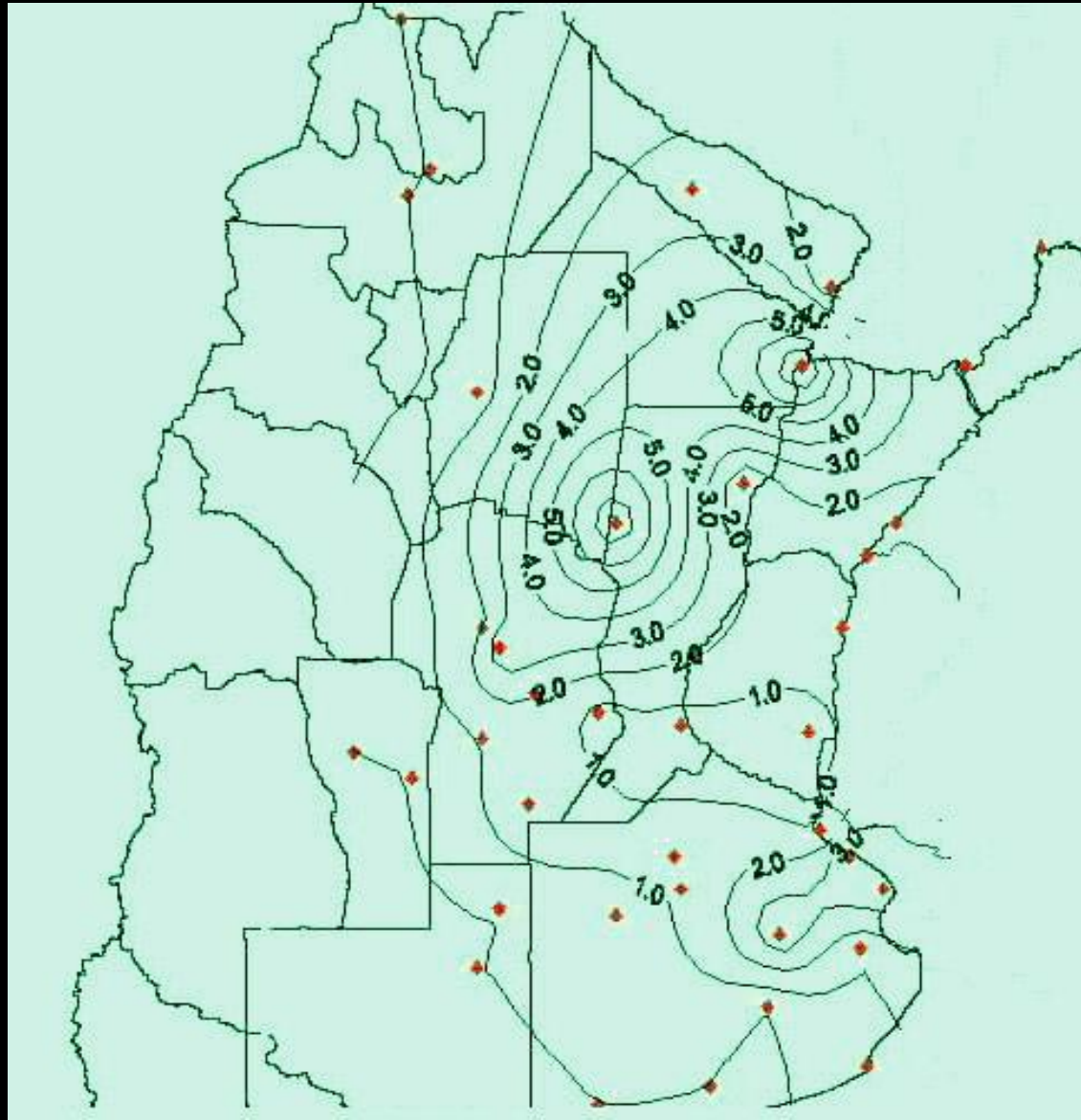
Large percentage change in extremes

Rate of the annual frequency of precipitation events with more than 50 mm between two 20-year periods, 1983/2002 and 1959/1978.



Re and Barros, 2008

Rate of the annual frequency of precipitation events with more than 150 mm between two 20-year periods, 1983/2002 and 1959/1978.



Are We Seeing Changes in Climate Extremes?

- Yes, there is evidence for observed changes in weather and climate extremes.
- Model projections suggest we will continue to see changes.
- Some changes have been attributed to human-induced climate change.

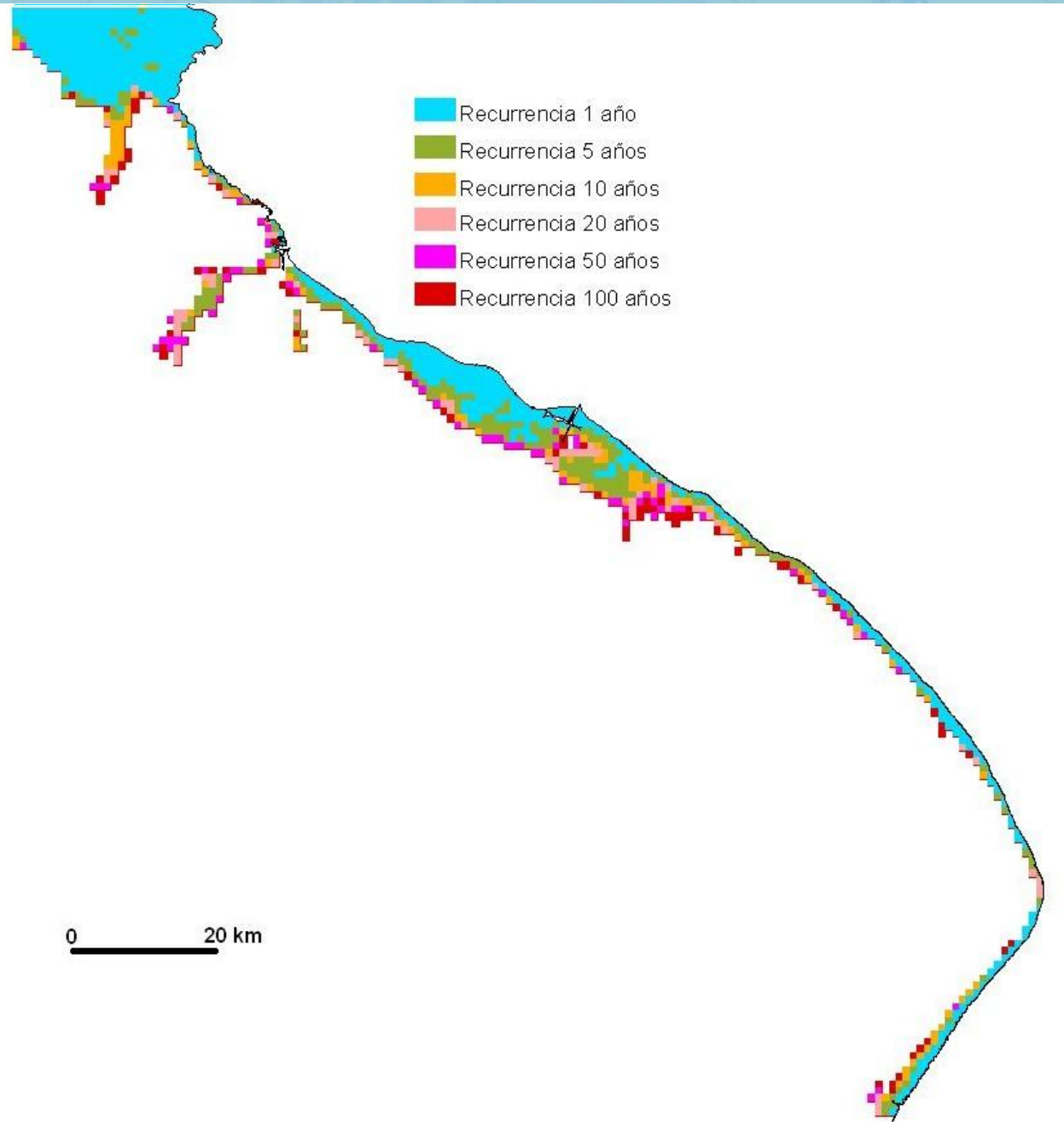


IPCC SPECIAL REPORT
ON
EXTREME EVENTS AND
DISASTERS, MANAGING THE
RISKS

Due 2011

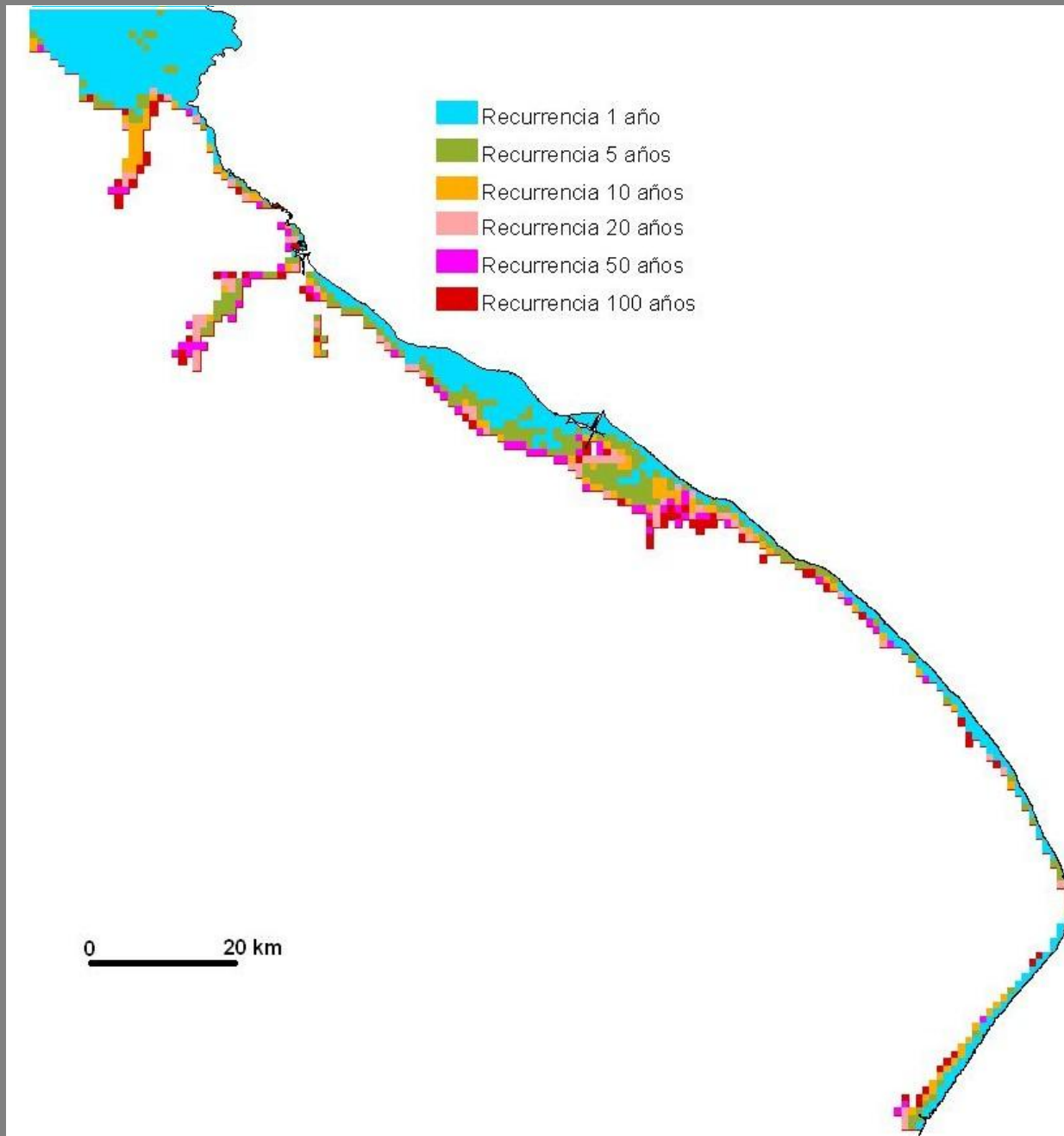
SEA LEVEL RISE IMPACT ON BUENOS AIRES COAST

RISK MAPS 2030



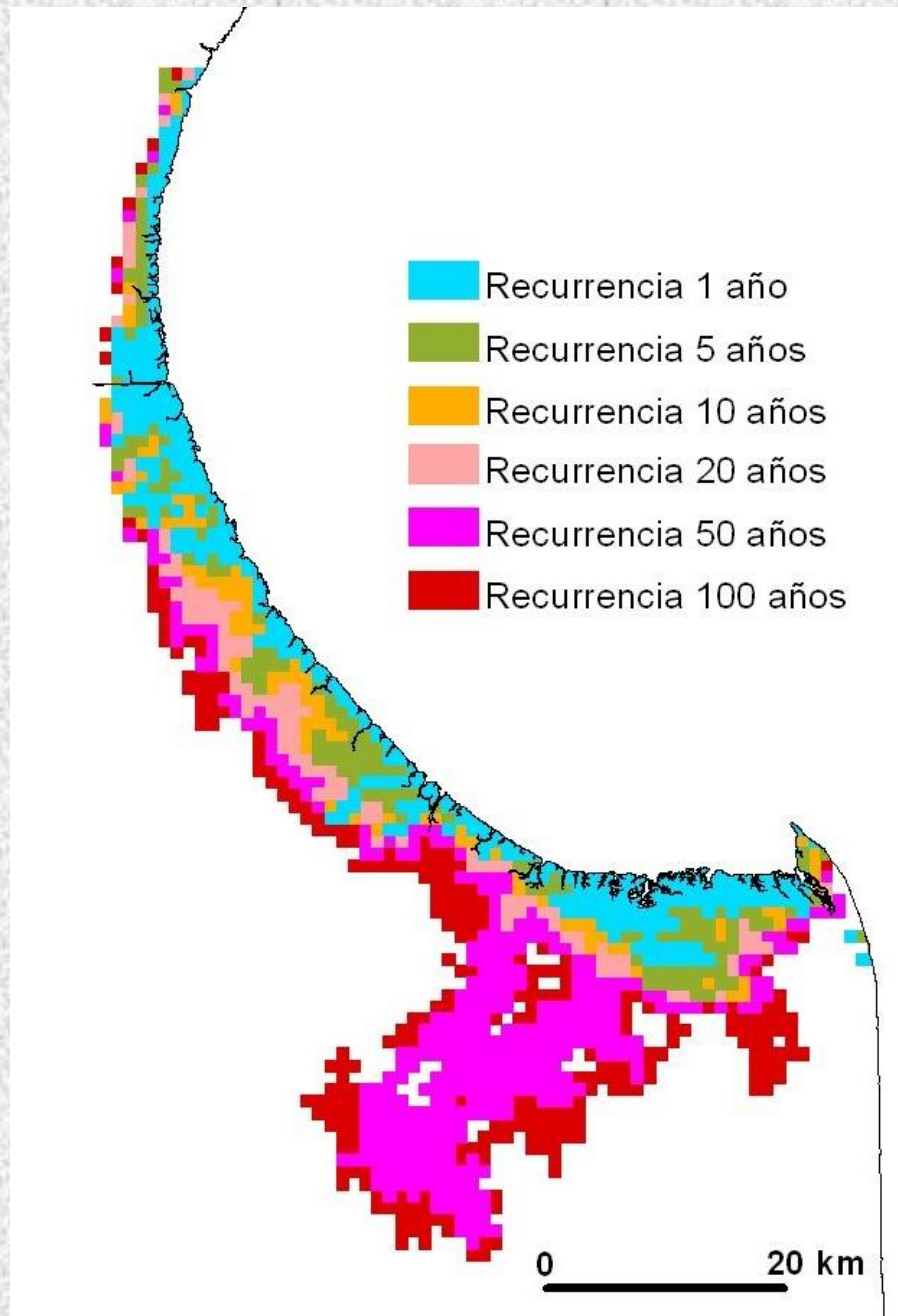


MAPAS DE RIESGO 2030





MAPAS DE RIESGO 2030





MAPAS DE RIESGO 2070

