Adaptation Research Flagship of the NCCRP

Long Term Adaptation Scenarios

Adaptation Colloquium

November 2013

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NATIONAL CLIMATE CHANGE RESPONSE
ADAPTATION IMPLEMENTATION

environmental affairs
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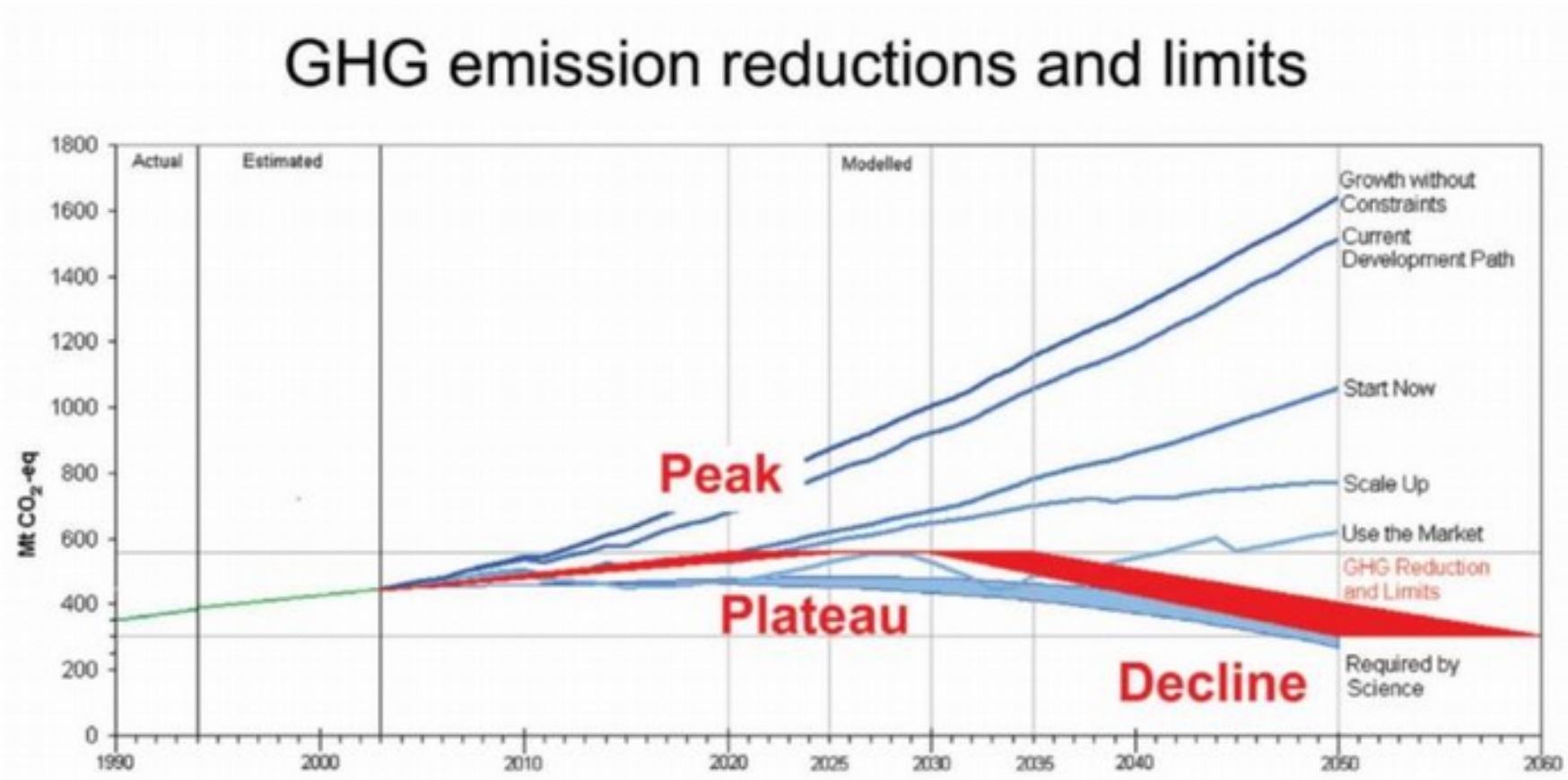
Para 8.8 of White Paper:
Adaptation Research Flagship

The design and roll-out of a national and regional research programme to scope sectoral adaptation requirements and costs and identify adaptation strategies with cross-sectoral linkages and benefits, including an assessment of climate change vulnerabilities in the sub-region, with a detailed scenario planning process to define potential sub-regional response strategies.

What is an LTAS?

LTMS – long term mitigation scenarios



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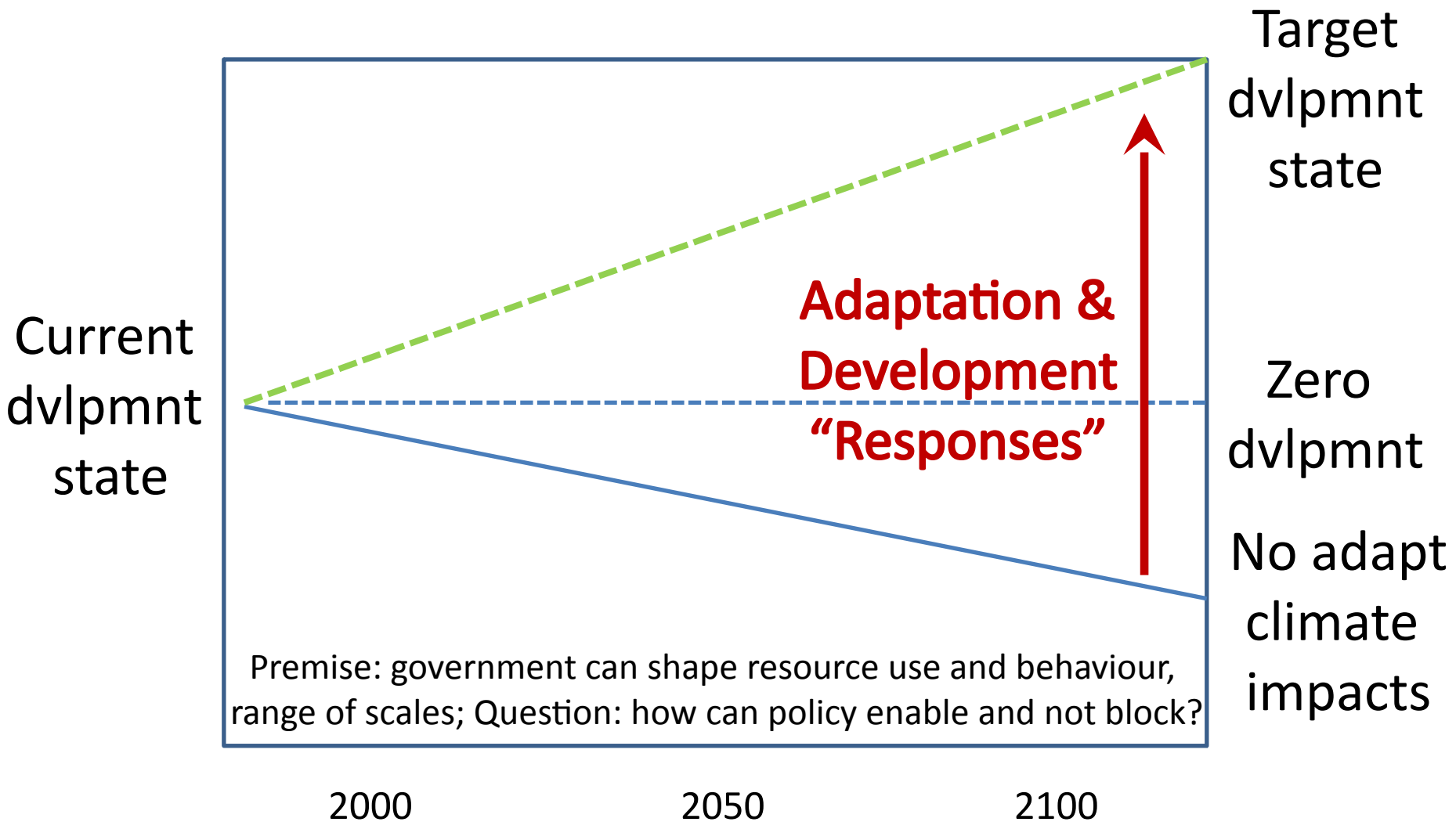
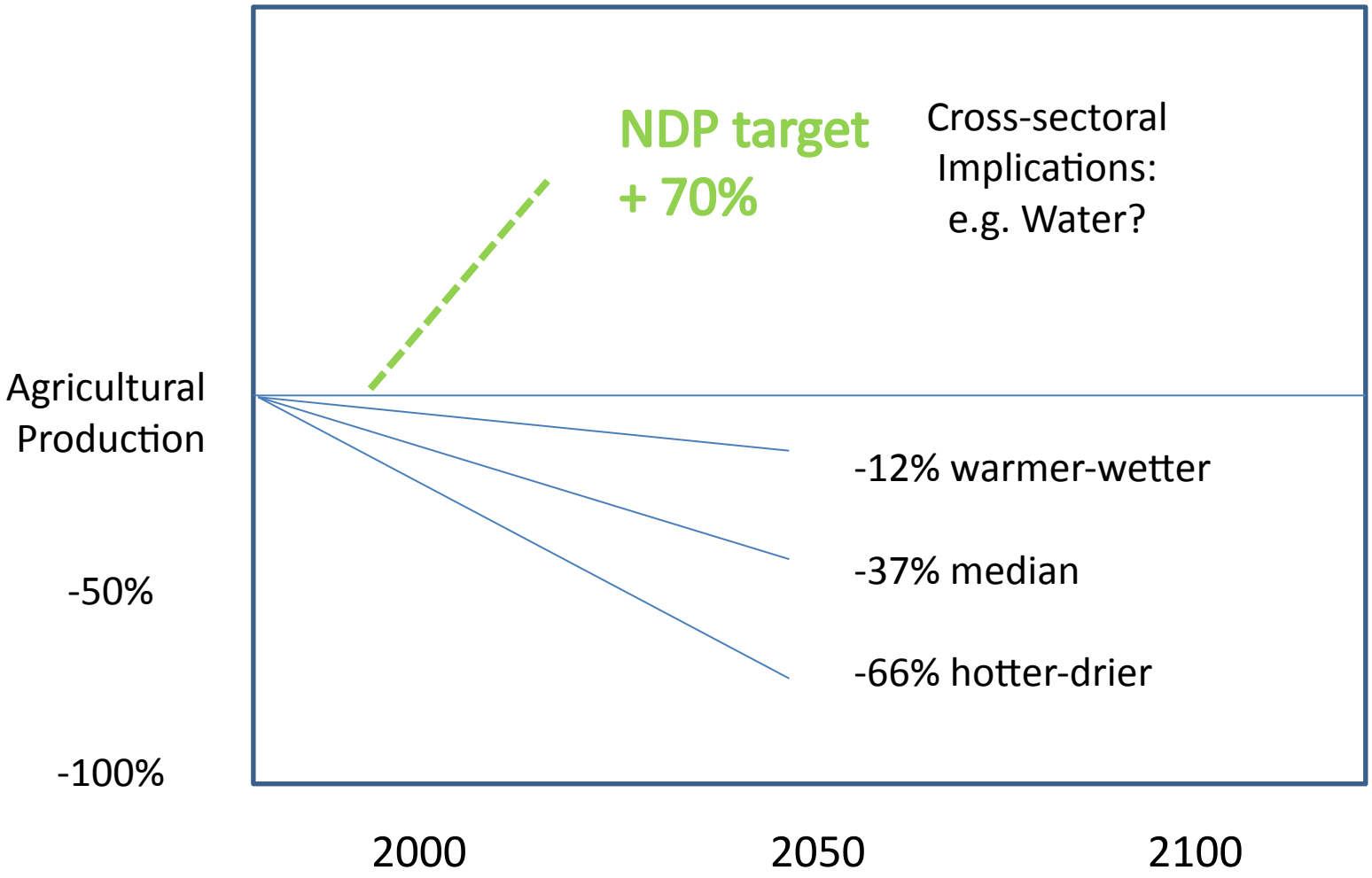
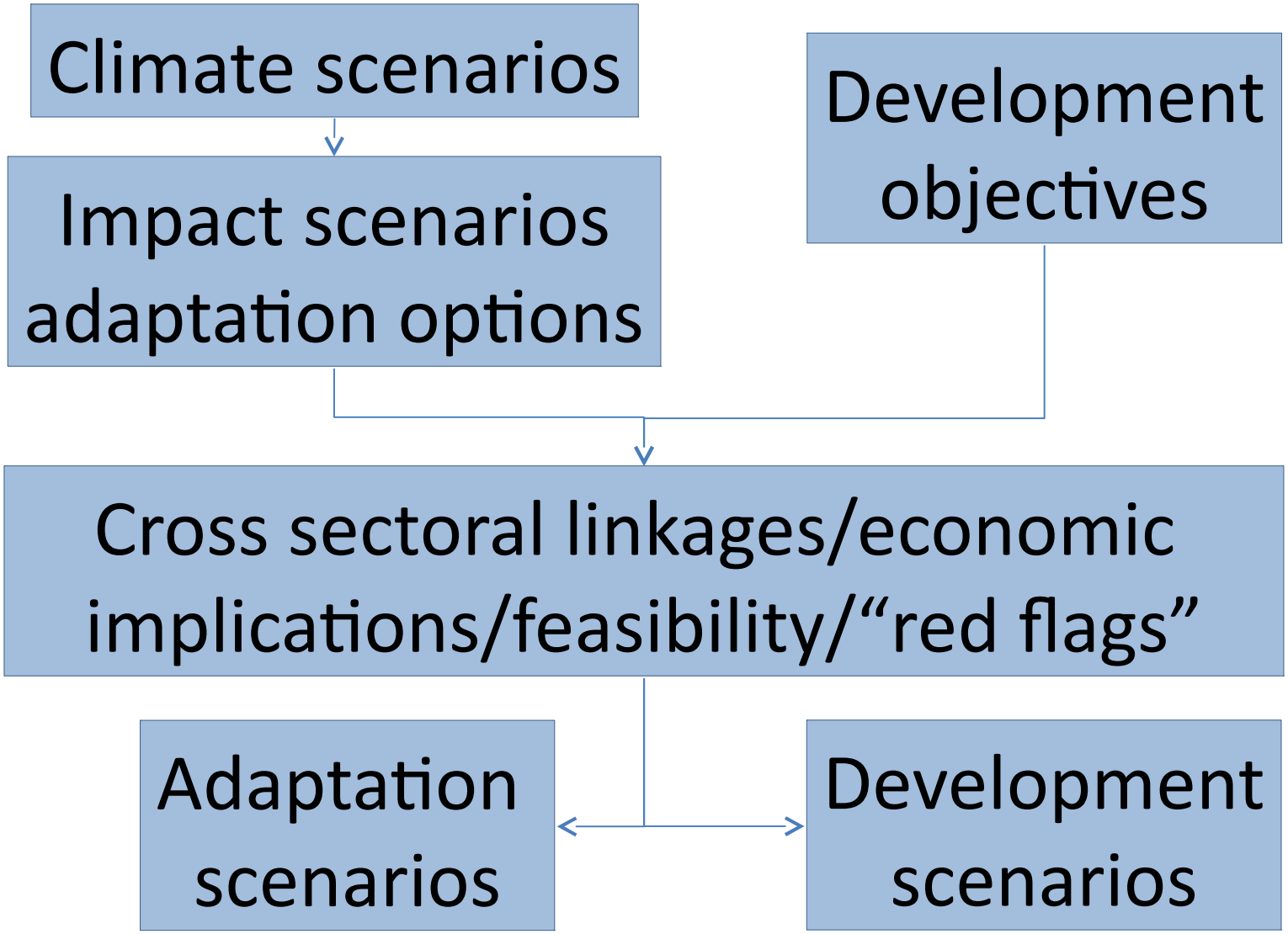
What is an LTAS?



Agriculture sector example



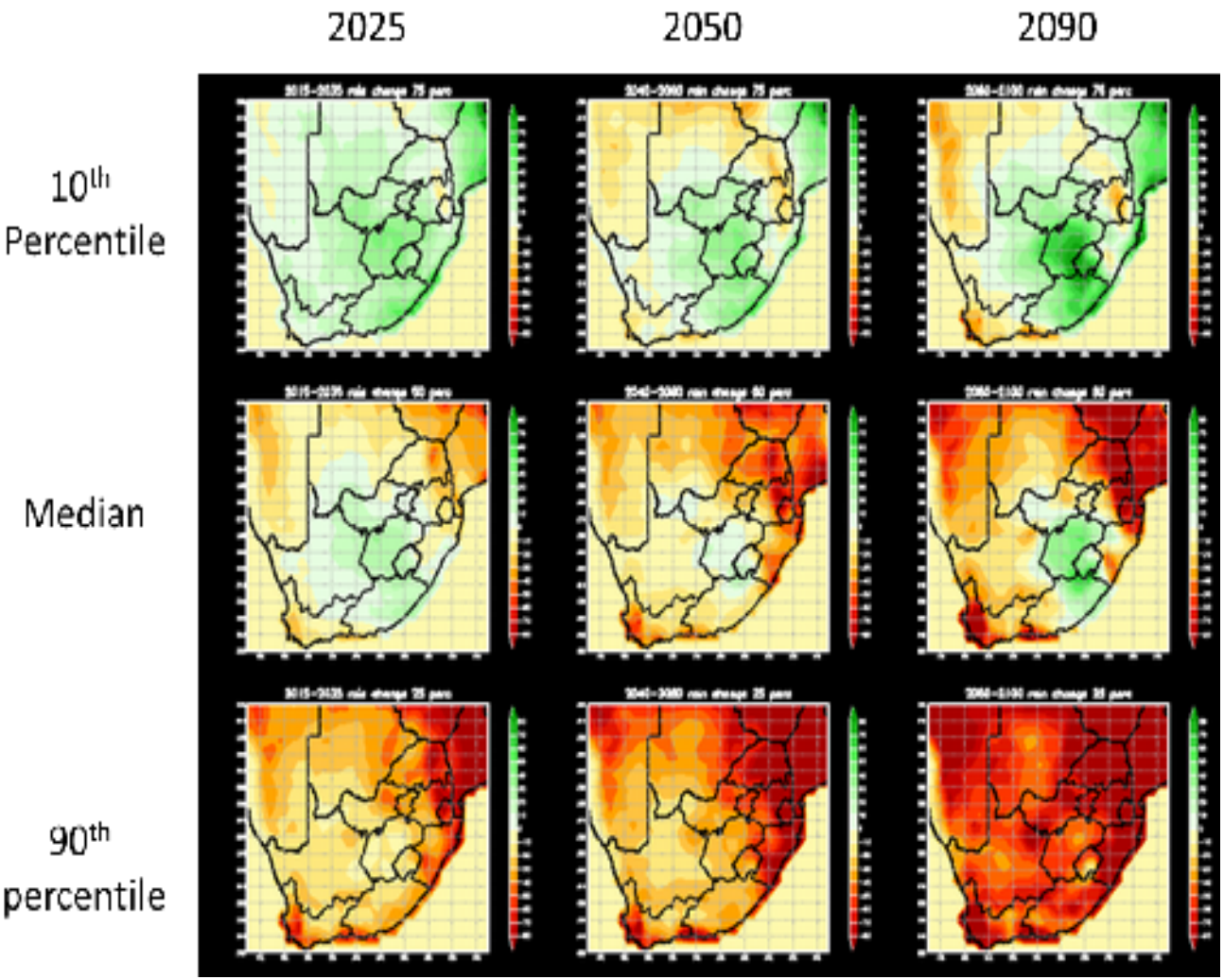
Methodology: process



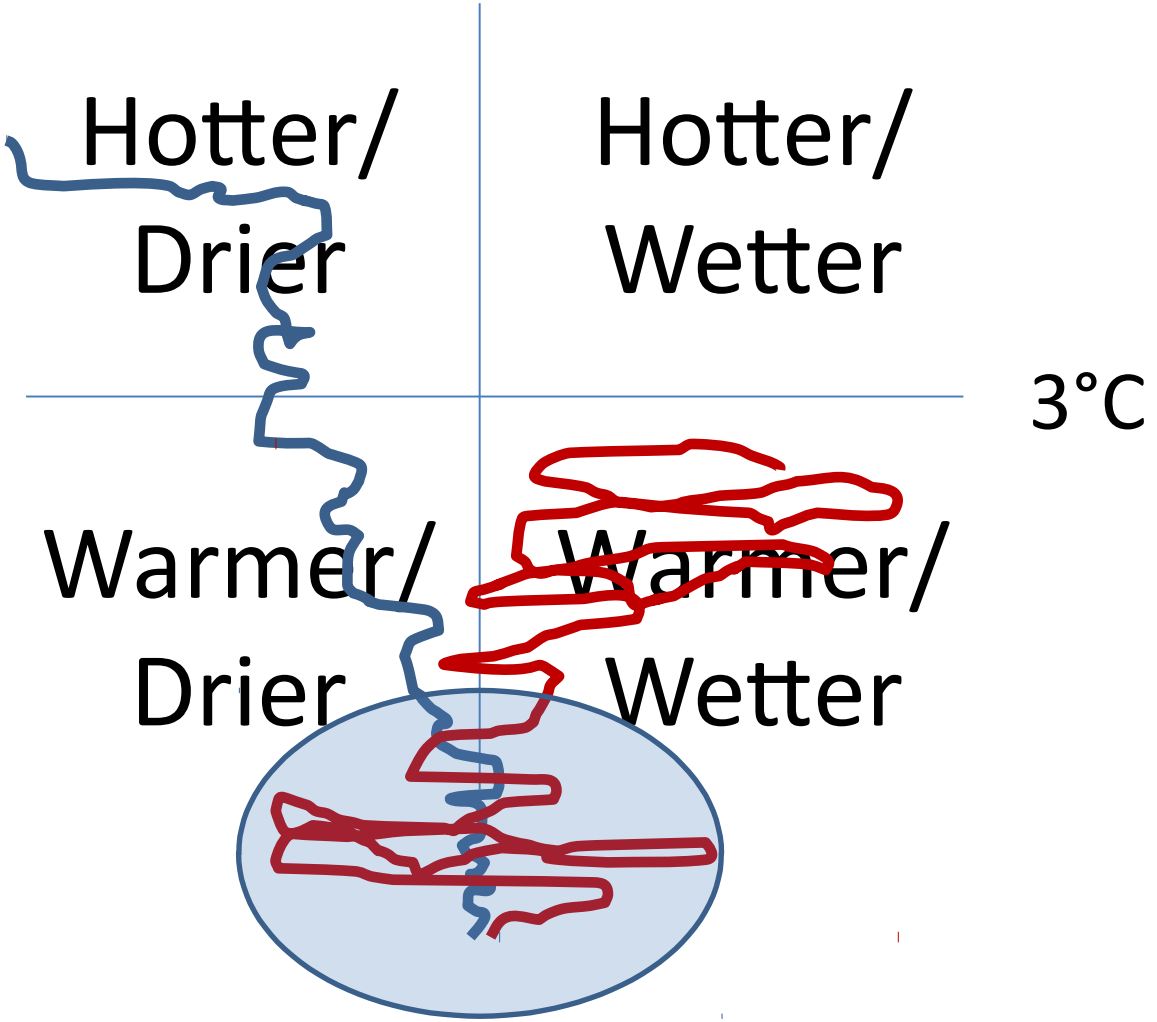
LTAS climate scenarios

- **Climate Projections**

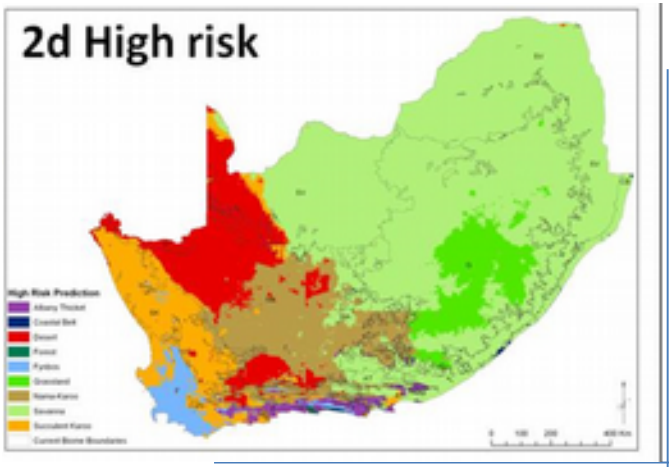
A2 emissions scenario, dynamical downscaling



LTAS climate scenarios

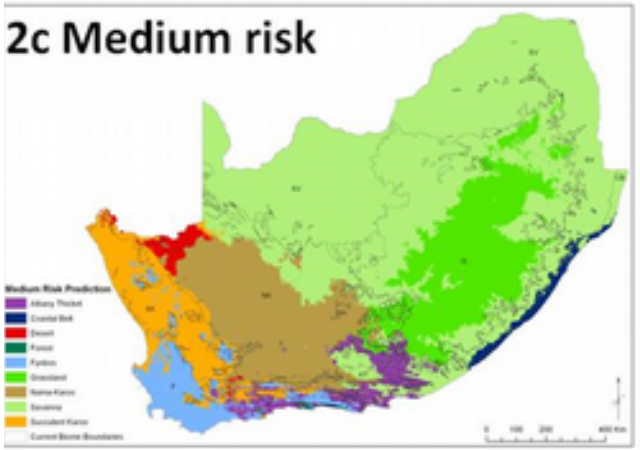


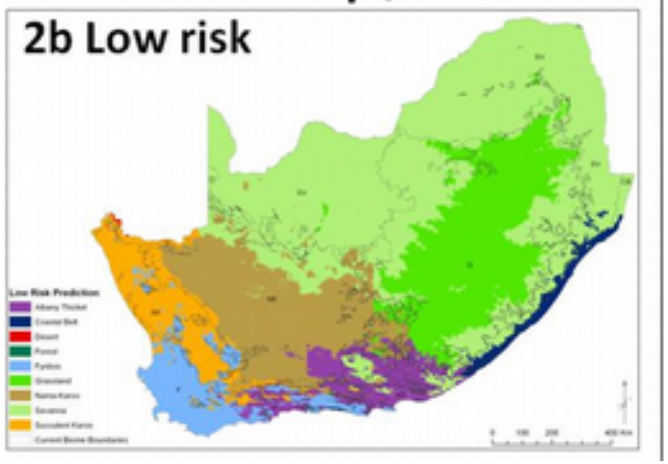
LTAS impact scenarios



Hotter/
Wetter

3°C



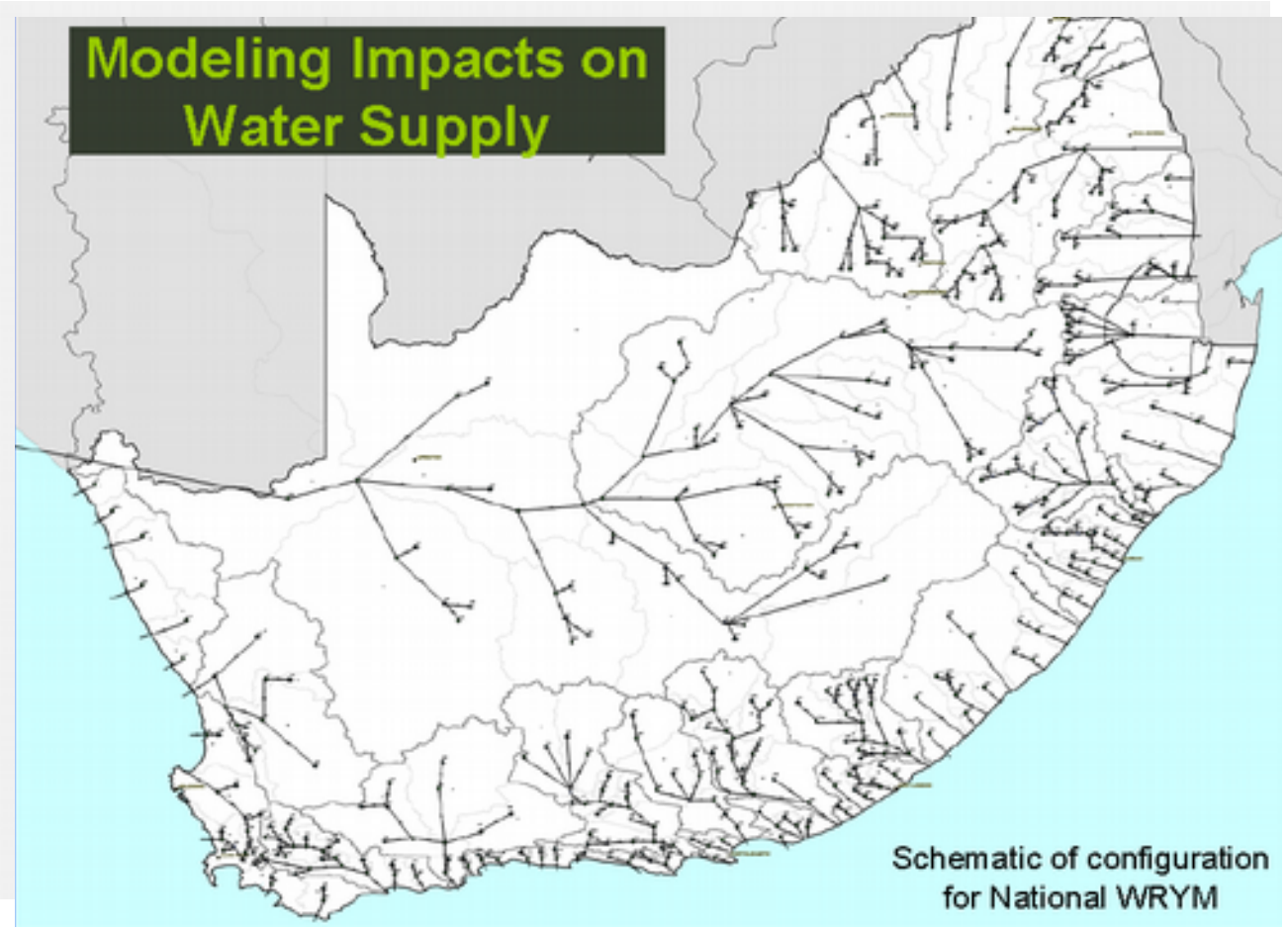


LTAS phase 2 work

- Focus on food and water security, using available tools and technology – Bureau for Food an Agricultural Policy and UNU/MIT Economy-wide Integrated Assessment Model
- Assessments of impacts and vulnerabilities for urban and rural settlements (incl sea level rise), costs and benefits of adaptation options
- Integrated assessment of disaster risk management objectives and options
- Develop adaptation scenarios aligned with development scenarios
- Develop national capacity, and conduct integrated economic modeling of high level adaptation scenarios

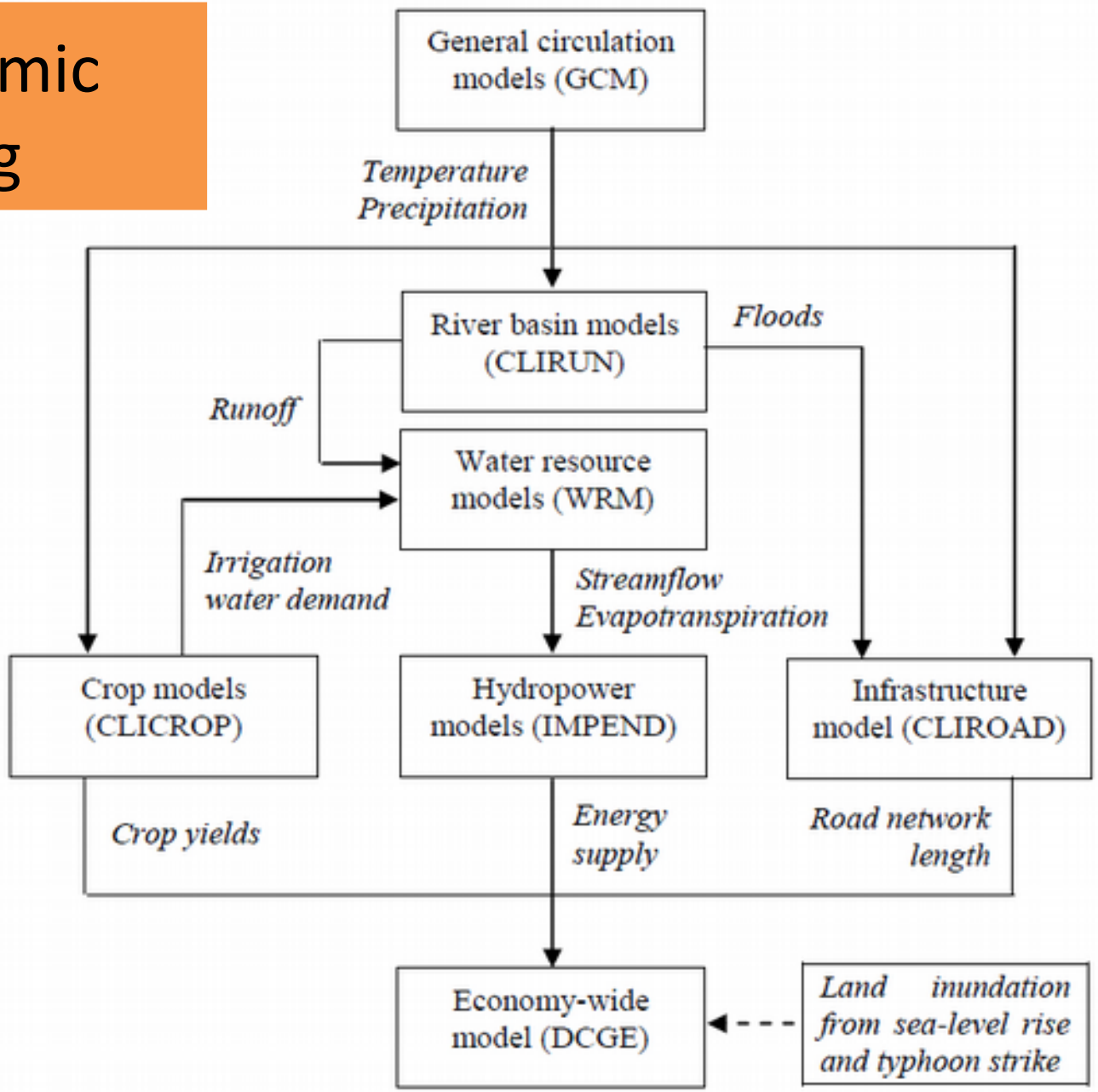
LTAS economic modeling

- Integrated Economic Assessment



LTAS economic modeling

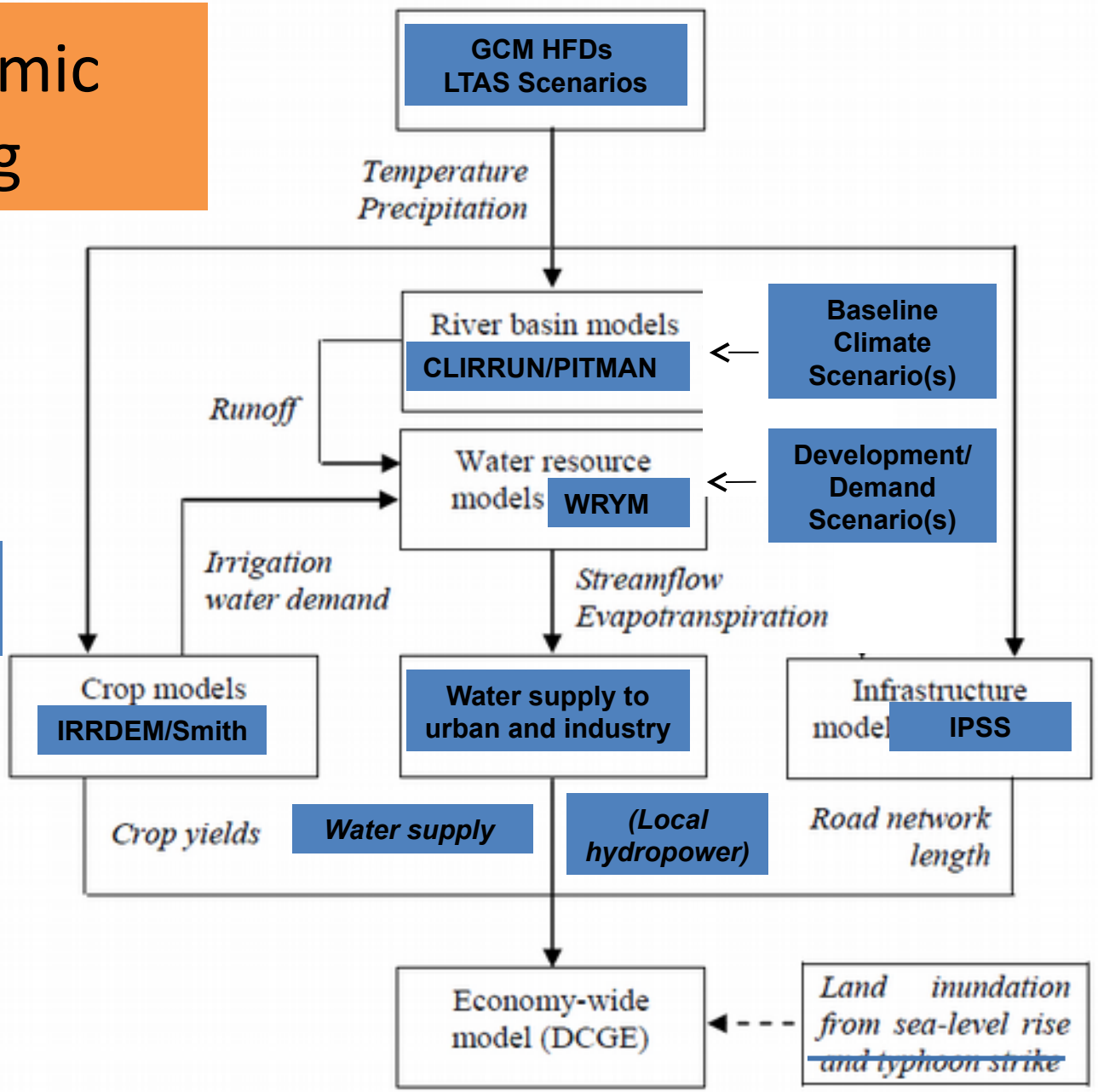
Integrated Modeling Framework



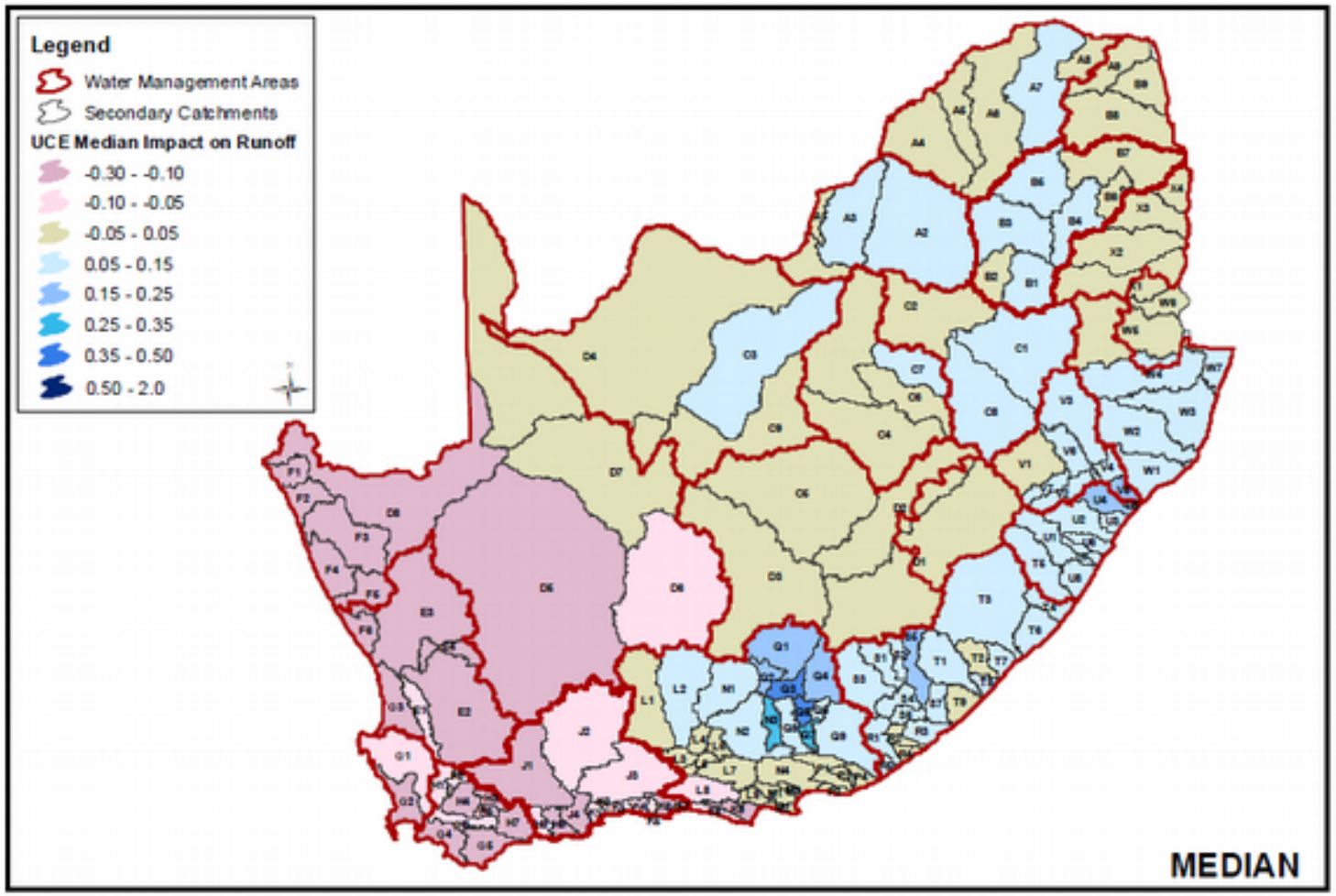
LTAS economic modeling

Integrated Modeling Framework

ADJUSTED FOR RSA MODELS

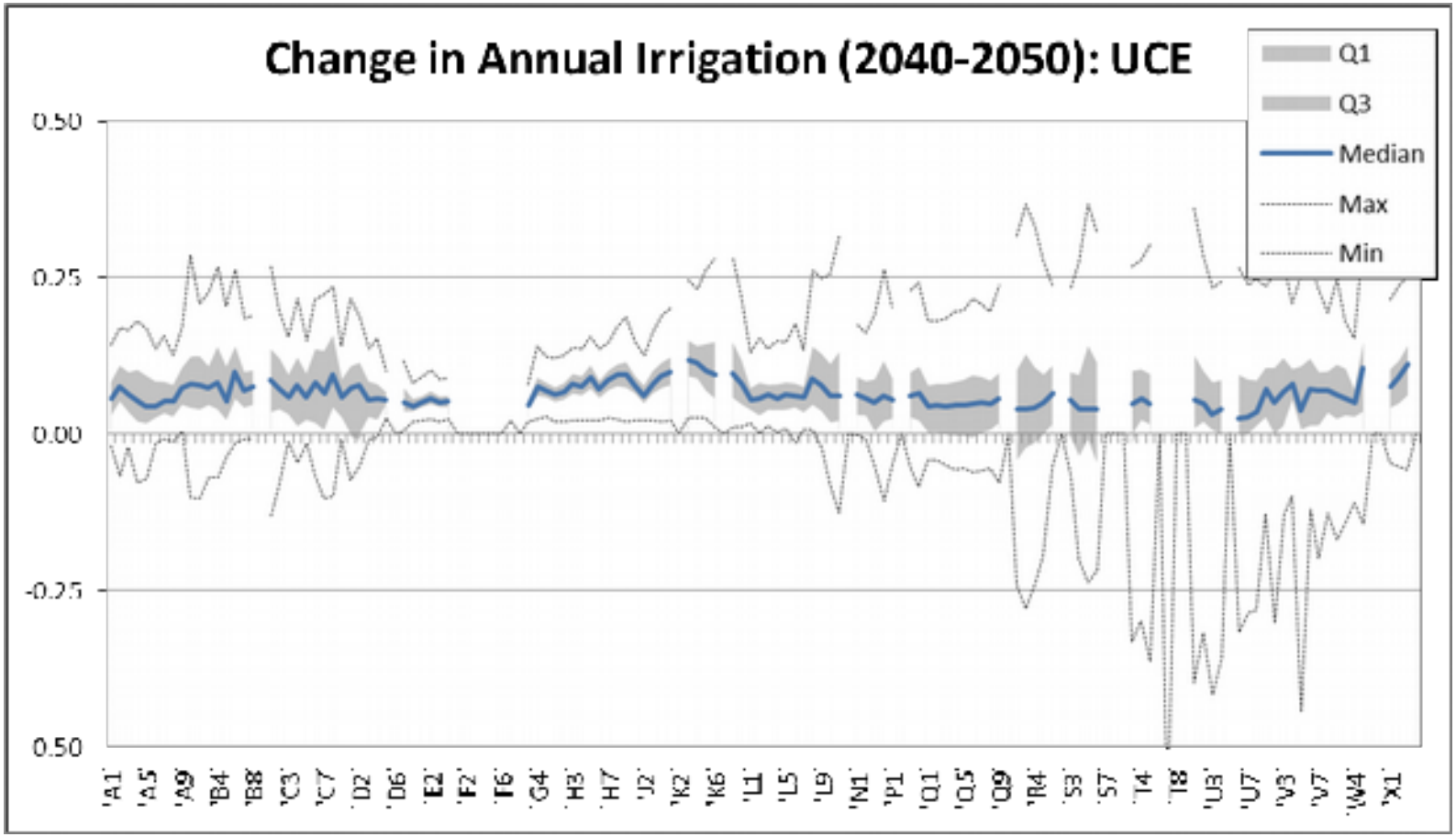


Spatial variation on potential climate change impacts on the average annual catchment runoff by 2050.
Median impacts for the Unconstrained Emissions scenario.



All models show drying in the west, and most models show wetting in the east, but with some models showing some drying. Generally increases over Lesotho.

Impacts on the average annual irrigation demand in each secondary catchment by 2050 based on Unconstrained Emissions scenario.



Increases in irrigation demands across the country (due to increasing Temp) except some scenarios in the east where it is offset by increasing precipitation.

Roads, Energy, Sea Levels and Cyclones

Mozambique example – SA model currently running