

# Regional and sectoral downscaling to prioritize Adaptation & DRM investments

Workshop on Climate Change Adaptation in the Economic Development Sector  
Using Integrated Water Resources Management (IWRM) Tools

Amman, 25-27 May 2016

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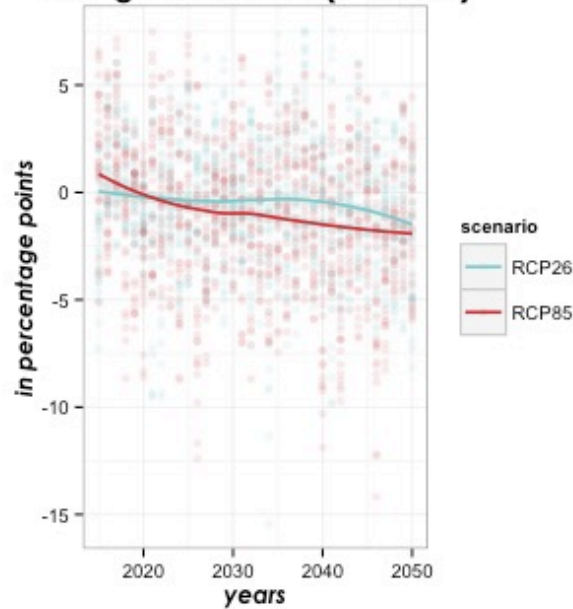
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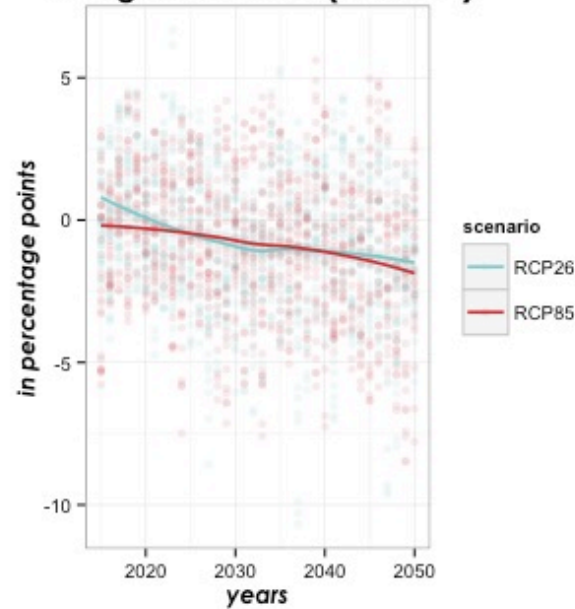
<sup>3</sup> Potsdam Institute for Climate Impact Research (PIK), Potsdam, Germany

<sup>4</sup> Wageningen University and Research Centre (WUR), Wageningen, The Netherlands

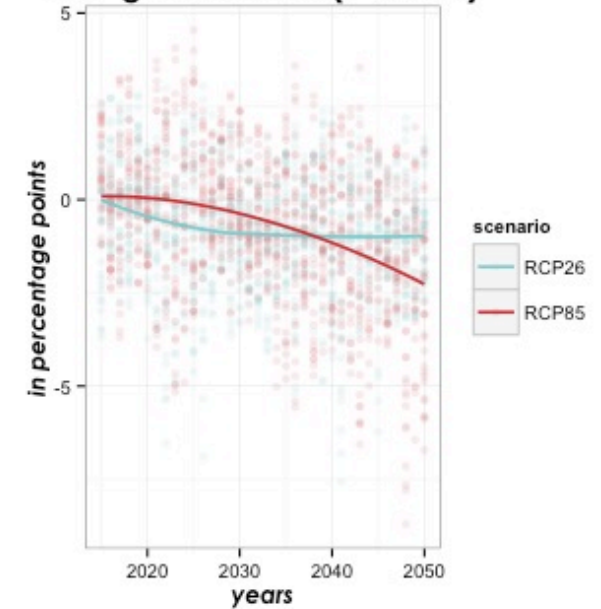
**Algeria**  
GDP growth at risk (1 month)



**Libya**  
GDP growth at risk (1 month)

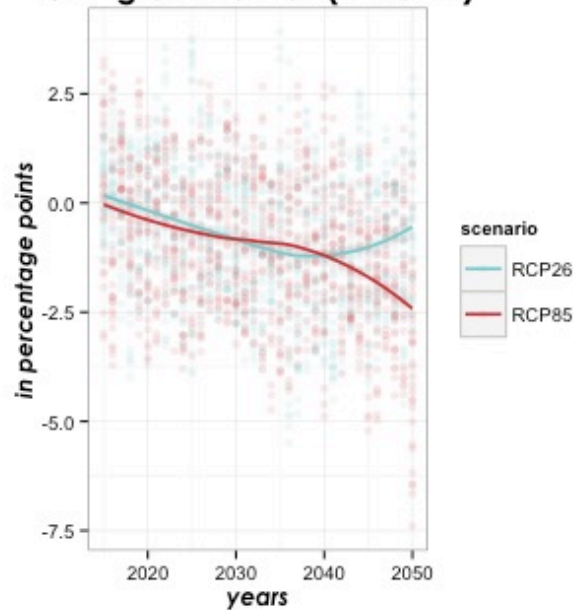


**Sudan**  
GDP growth at risk (1 month)

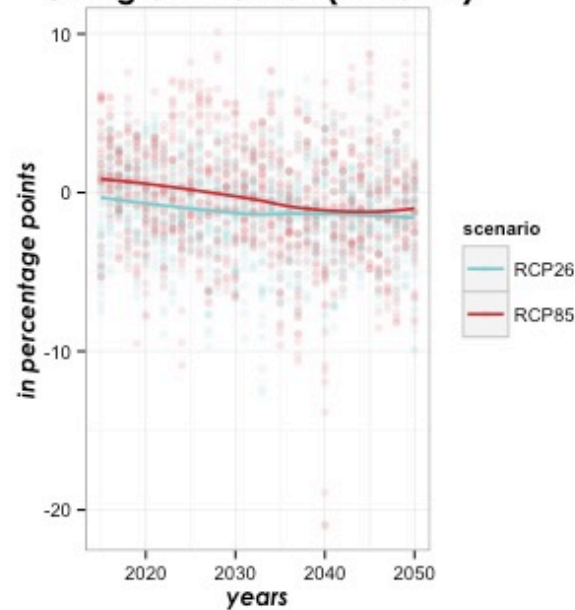


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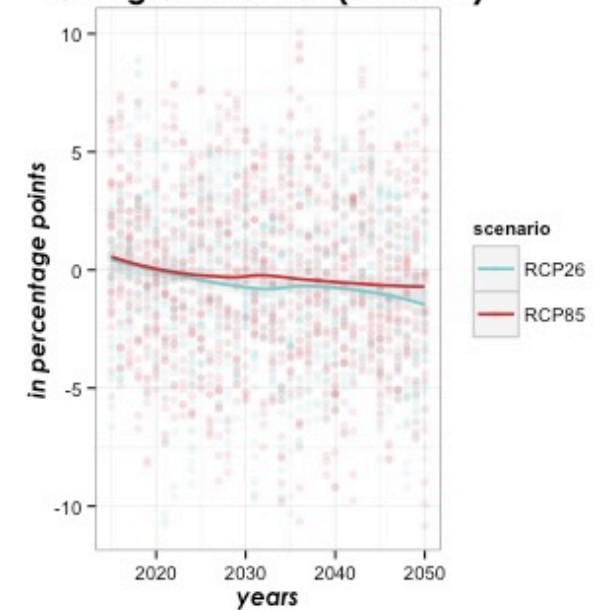
**Egypt**  
GDP growth at risk (1 month)



**Morocco**  
GDP growth at risk (1 month)



**Tunisia**  
GDP growth at risk (1 month)



# Outline

1. Research and project inception
2. Why prioritizing?
3. Approach – a socioeconomic vulnerability framework
4. Main outputs
5. Informing policy-making process
6. Looking forward

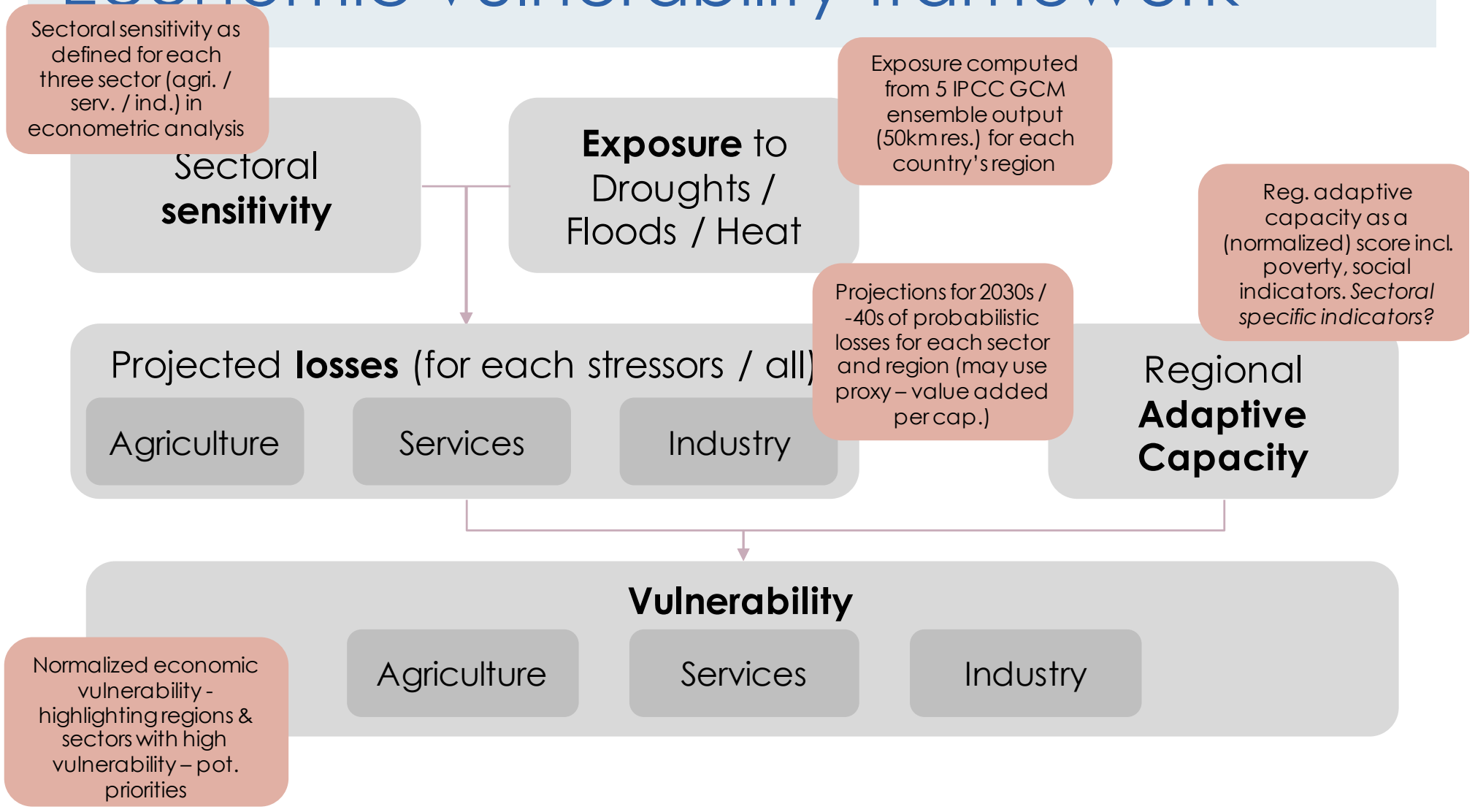
# Inception

- On-going research / implementation work with the World Bank in five countries in Africa: Cameroon, Ghana, Malawi, Mali and Senegal.
- Under IDA-17 – designing investment plans to support countries deal with adaptation and DRM needs and mainstream of climate change in development plan.
- Objective to regionally and sectorally downscale existing model to estimate regions / sectors with highest risks and vulnerability from different climate stressors (droughts / floods / heat).
- **On-going = open to ideas, comments, feedback**

# Why prioritizing?

1. Limited funding available for adaptation and DRM – at domestic and international levels (see e.g. UNEP Adaptation Gap report 2016)
2. In a socioeconomic perspective – at least three dimensions to the definition of priorities: 1- temporal / 2- geographical / 3- sectoral.
  - Temporal dimension of the needs (today, in 20 or 40 years?)
  - Need to account for changing economic structure: current vs. future share of agriculture in GDP & employment (dynamic economy)
3. Political process leading to prioritization not necessarily guided by scientific approach: replication of existing power structure, un-represented stakeholders, etc.

# Economic vulnerability framework



# Main outputs

- Sectoral and regional level **probabilistic** economic risks estimates for:
  - Droughts / Floods / Heat separately (isolation of "extremes" - DRM)
  - All climate stressors together ("climate" - adaptation)
- Time horizons of outputs relevant to adaptation and DRM decision-making as well as development planning:
  - [Possibly current days for DRM]
  - For 2030s
  - For 2040s
- Relative sectoral and regional level socioeconomic vulnerability.
- Insights on poverty risks, urban development, water sector.

# Informing policy-making

- Better supporting the increasing importance of local policy-makers in adaptation and DRM actions;
- Supporting development, adaptation and risk policy-makers in identifying sectors and regions facing highest risks and vulnerability & costing the "development at risk";
- Proposing policy-makers scientifically based information on the key climatic stressors affecting their country: adapting to flood different from droughts than adapting to both;
- **ONLY** – one of large array of indicators to define priority, beware of priorities solely relying on an economic / cost perspective; what about social equity? culture, etc.?



# Looking forward

- *Supporting government needs?* Information could be used in support to National Communications, design of National Adaptation Plans, etc.
- *Benefits and costs?* New frontier in climate change economics: modelling of adaptation and DRM options – to be integrated in the regional and sectoral framework to estimate costs and benefits of actions.
- *Integration in existing policy-making tools?* Finding entry points and connections with national territorial development plan as well as national development plan.

# Thank you!

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