



Scenario development - quantified stories

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Aim of the project

A vertical photograph on the left side of the slide showing a calm lake reflecting a dense forest of tall, thin trees under a hazy sky.

To develop and analyze a set of scenarios of Europe's freshwater futures up to 2025 and 2050

Environmental consequences of key socio-economic and political development as well as climate change

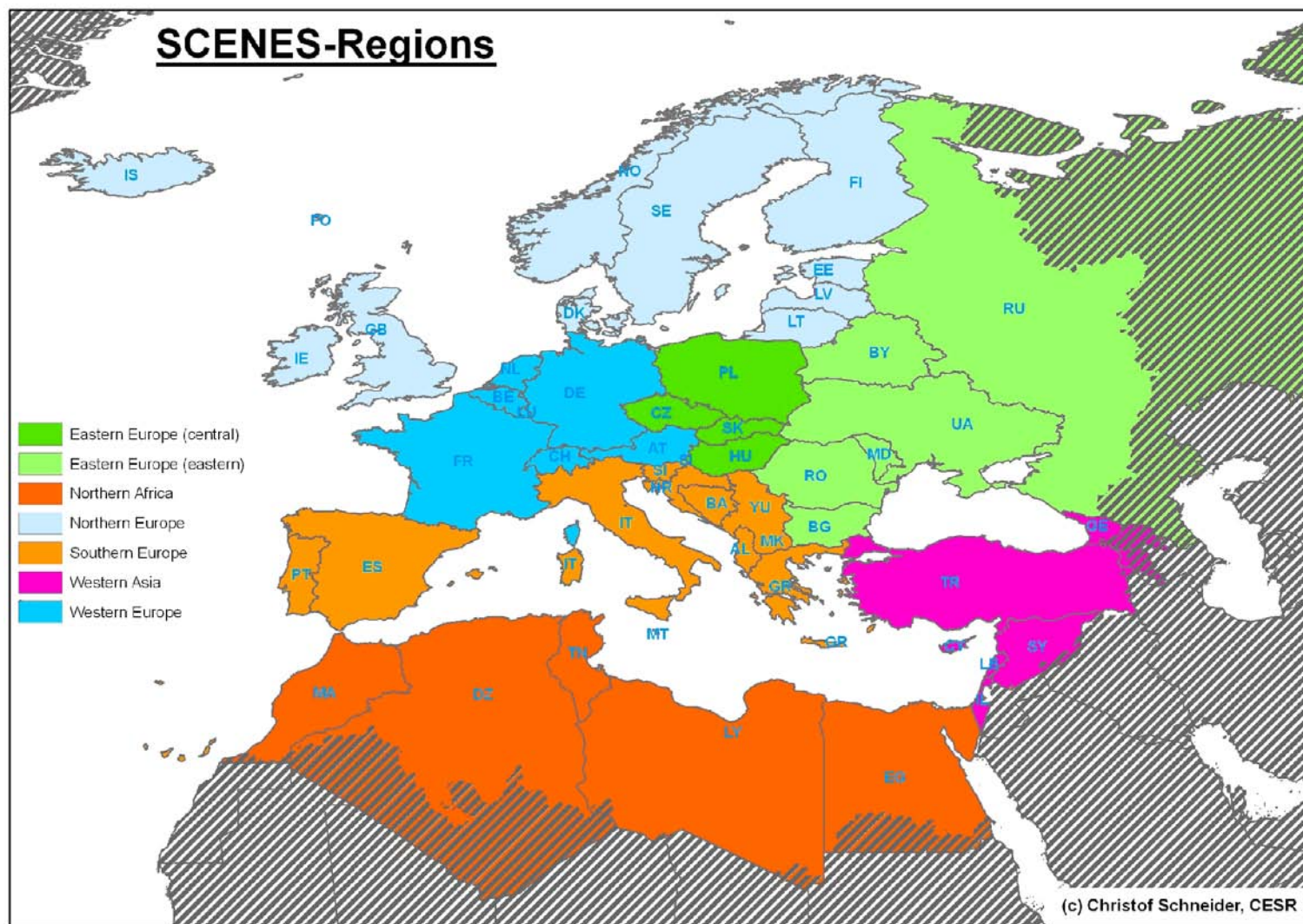


Main objectives of large-scale modeling

- Integrated modeling of pan-European future water resources
- Further development and improvement of WaterGAP model
- Supporting impact analysis
- Quantitative cross-scale analysis



Geographical extension

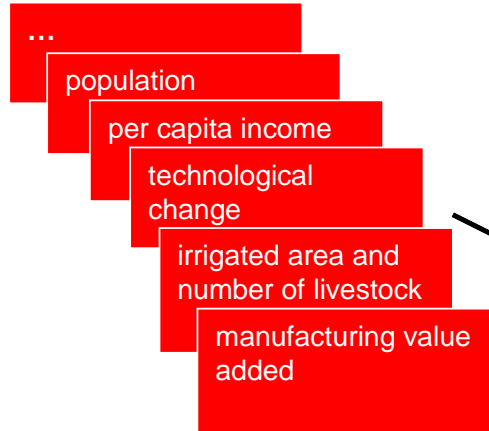


Modelling tool: WaterGAP 3

(Water - Global Assessment and Prognosis)



Input data sets



WaterGAP submodels

Water use model

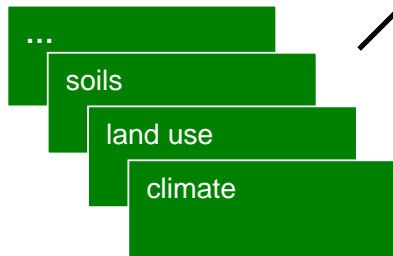
water withdrawals and consumption (domestic, electricity production, manufacturing, irrigation, livestock)

WorldQual

water quality, in-stream concentrations

Hydrological model

water balance components, river discharge and groundwater recharge



observed discharge

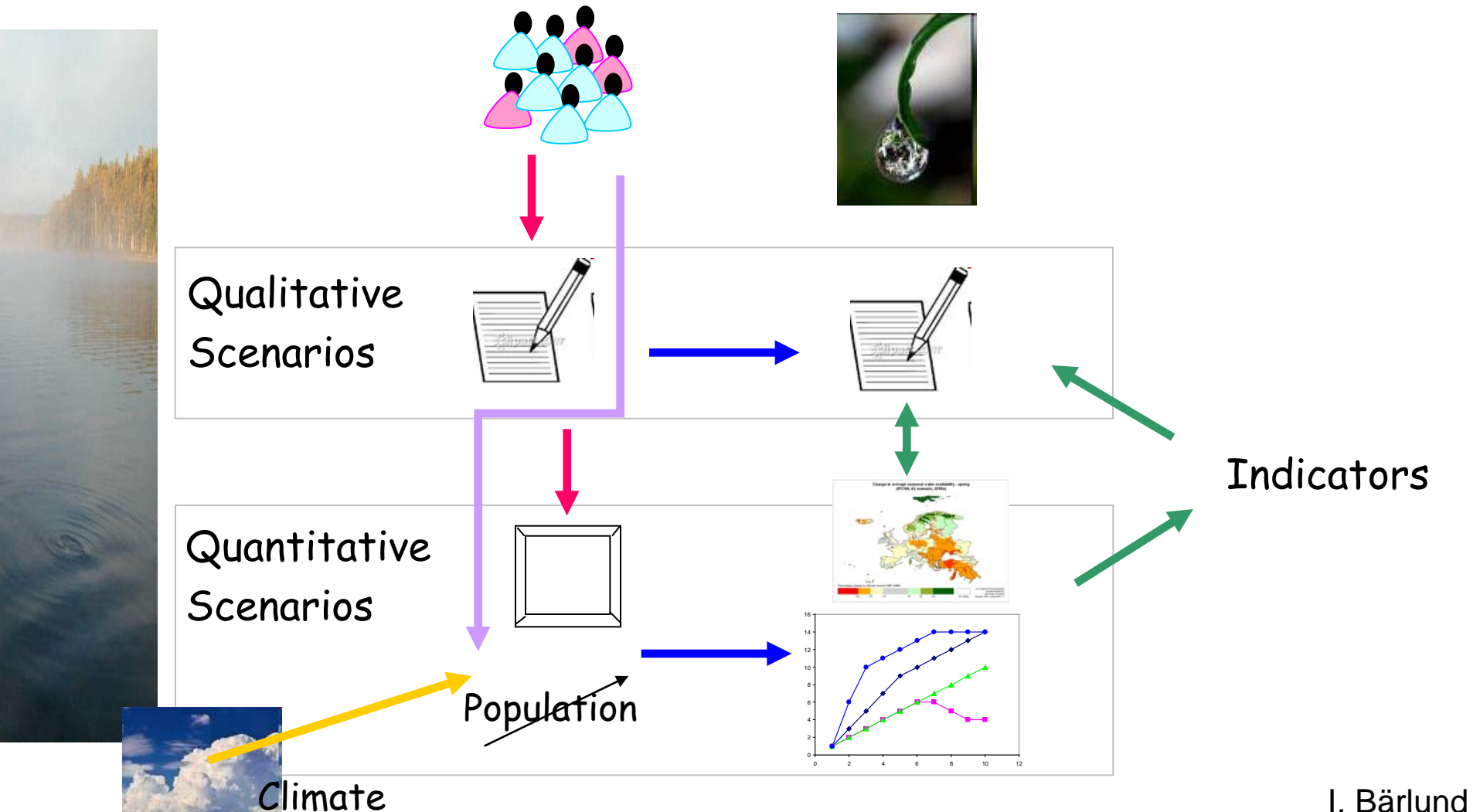
calibration

Results (current conditions and scenarios)

water availability, water use, water stress indicators



SCENES scenario process

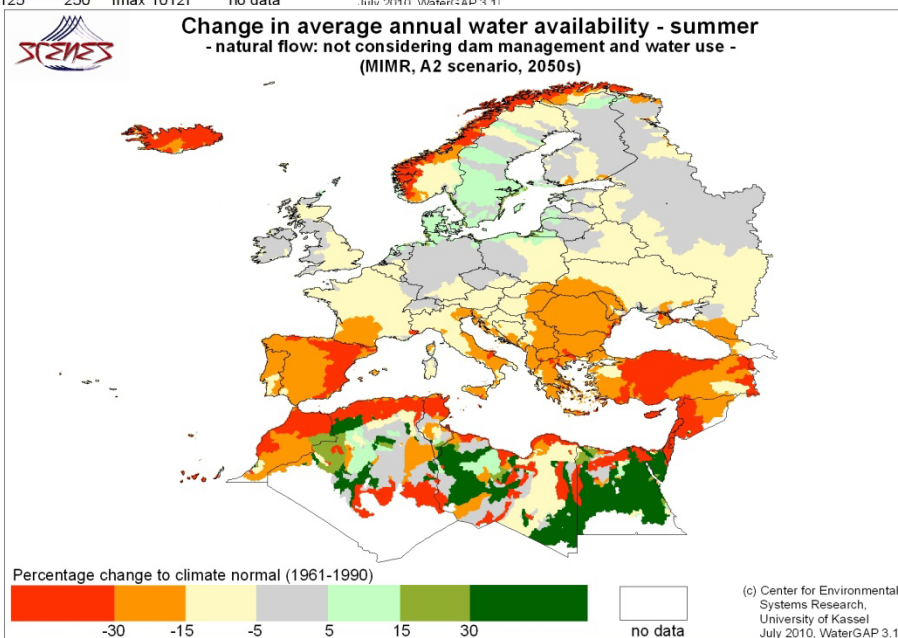
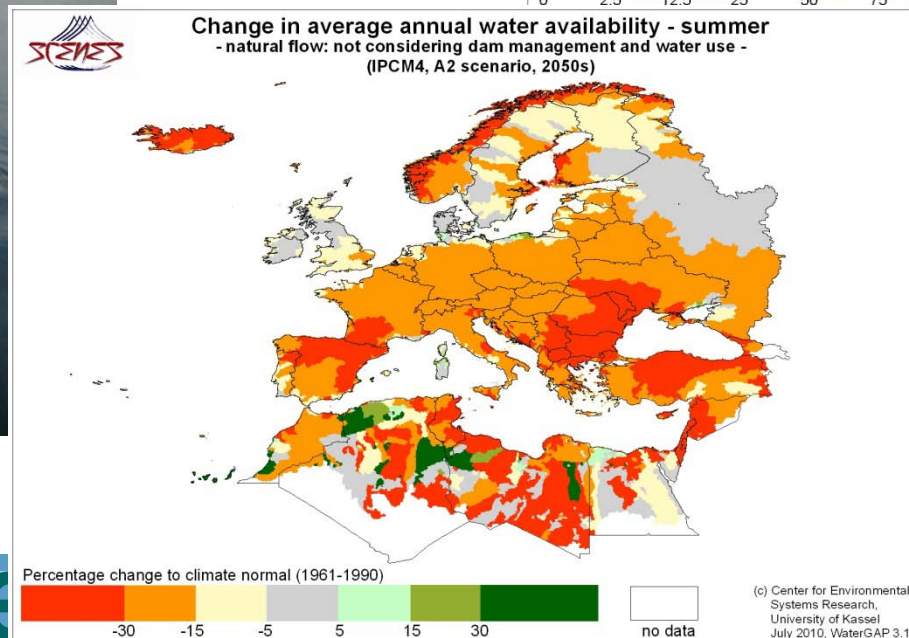
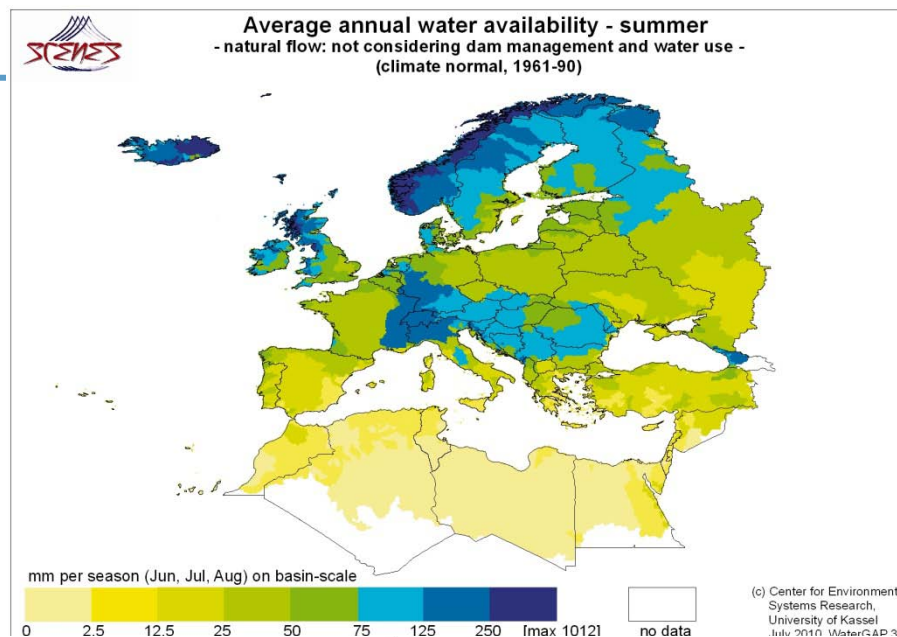


I. Bärlund

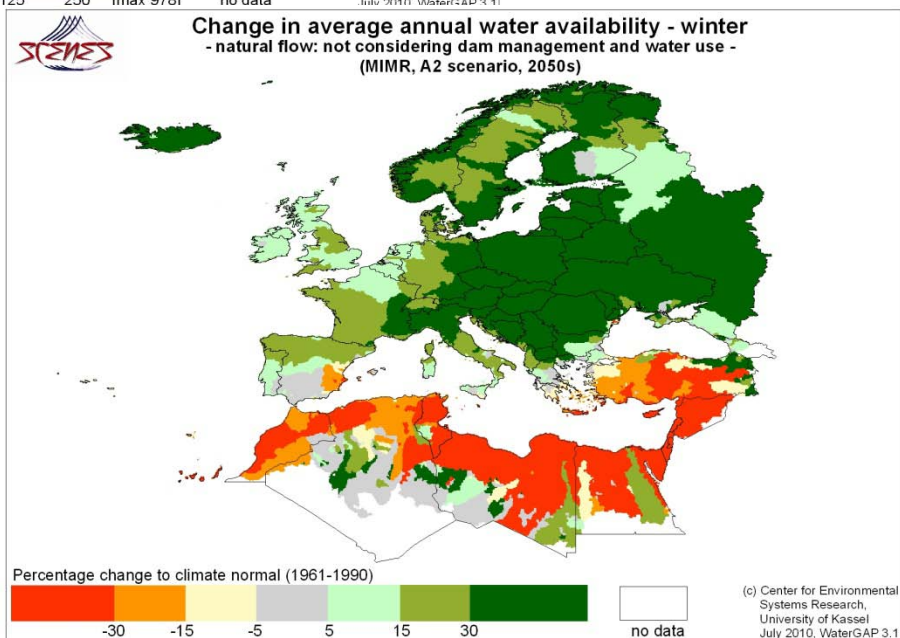
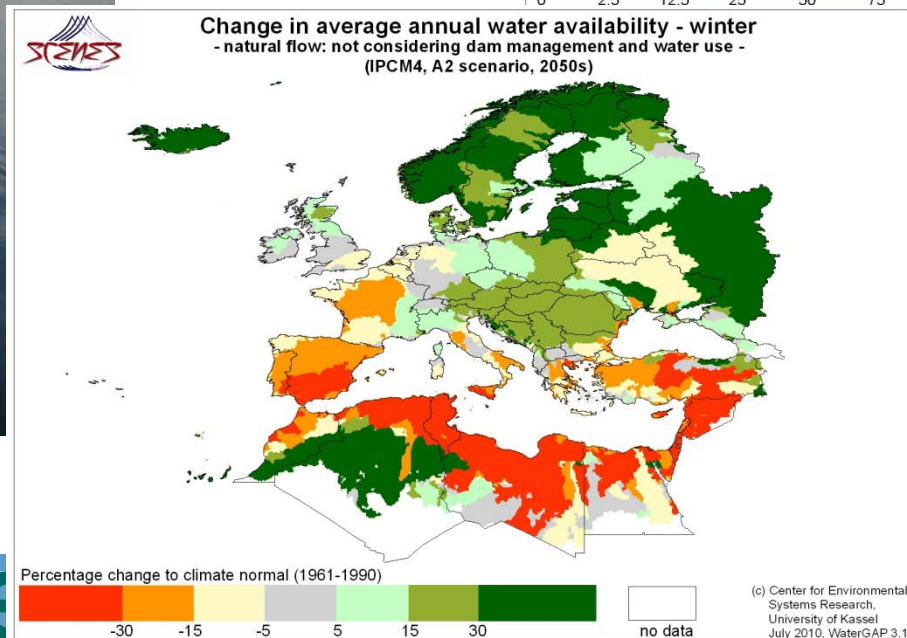
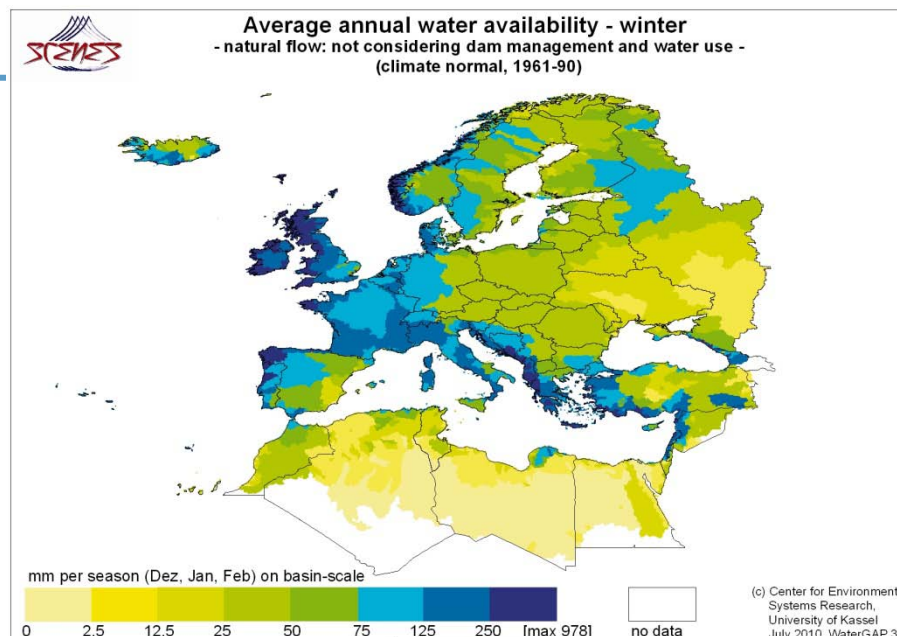


- IPSL-CM4 model from the Institute Pierre Simon Laplace, France (IPCM4); A2 scenario, warm and dry
- MICRO 3.2 model from the Center for Climate System Research, University of Tokyo, Japan (MIMR); A2 scenario, warm and wet

Water availability - summer

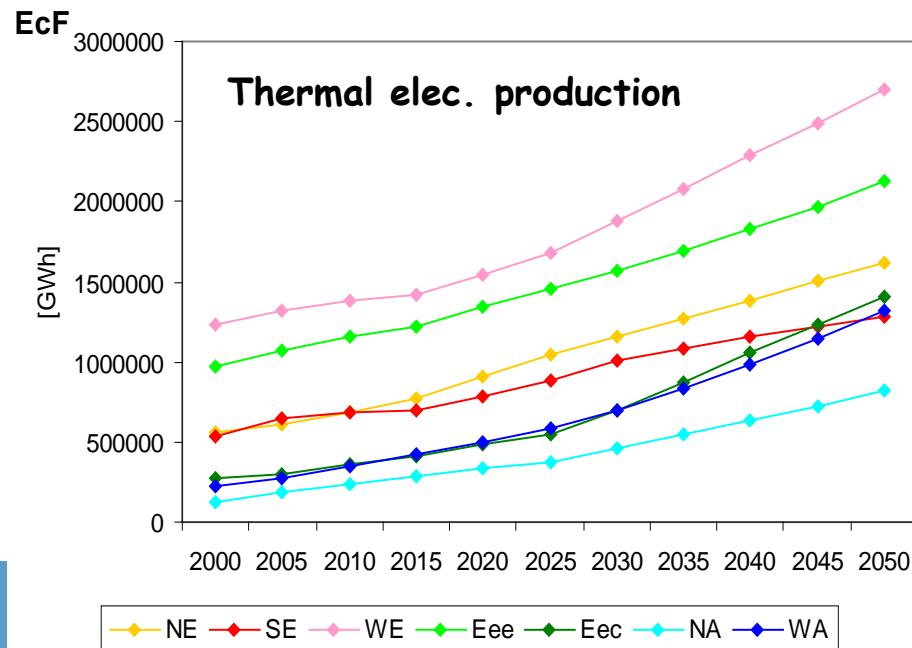
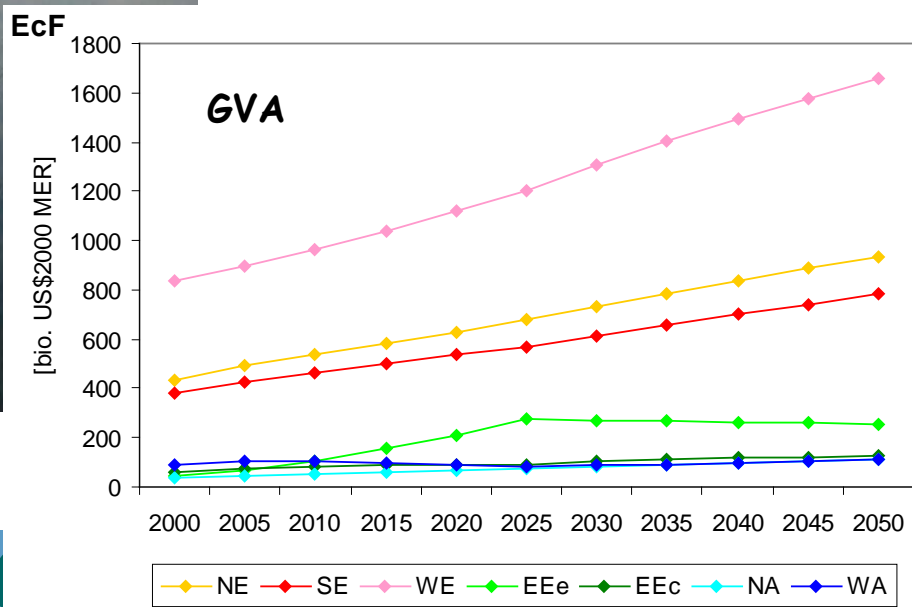
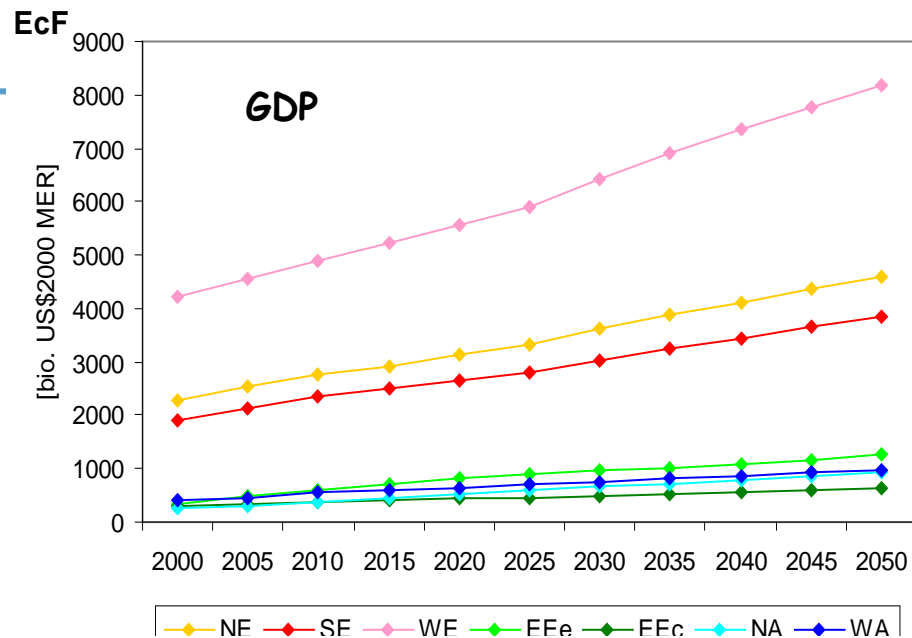
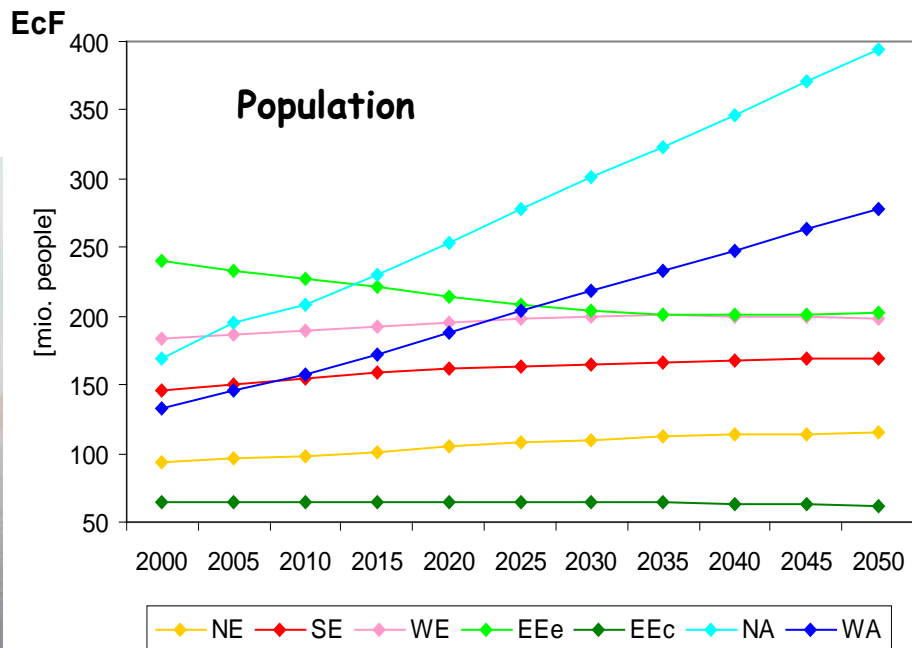


Water availability - winter

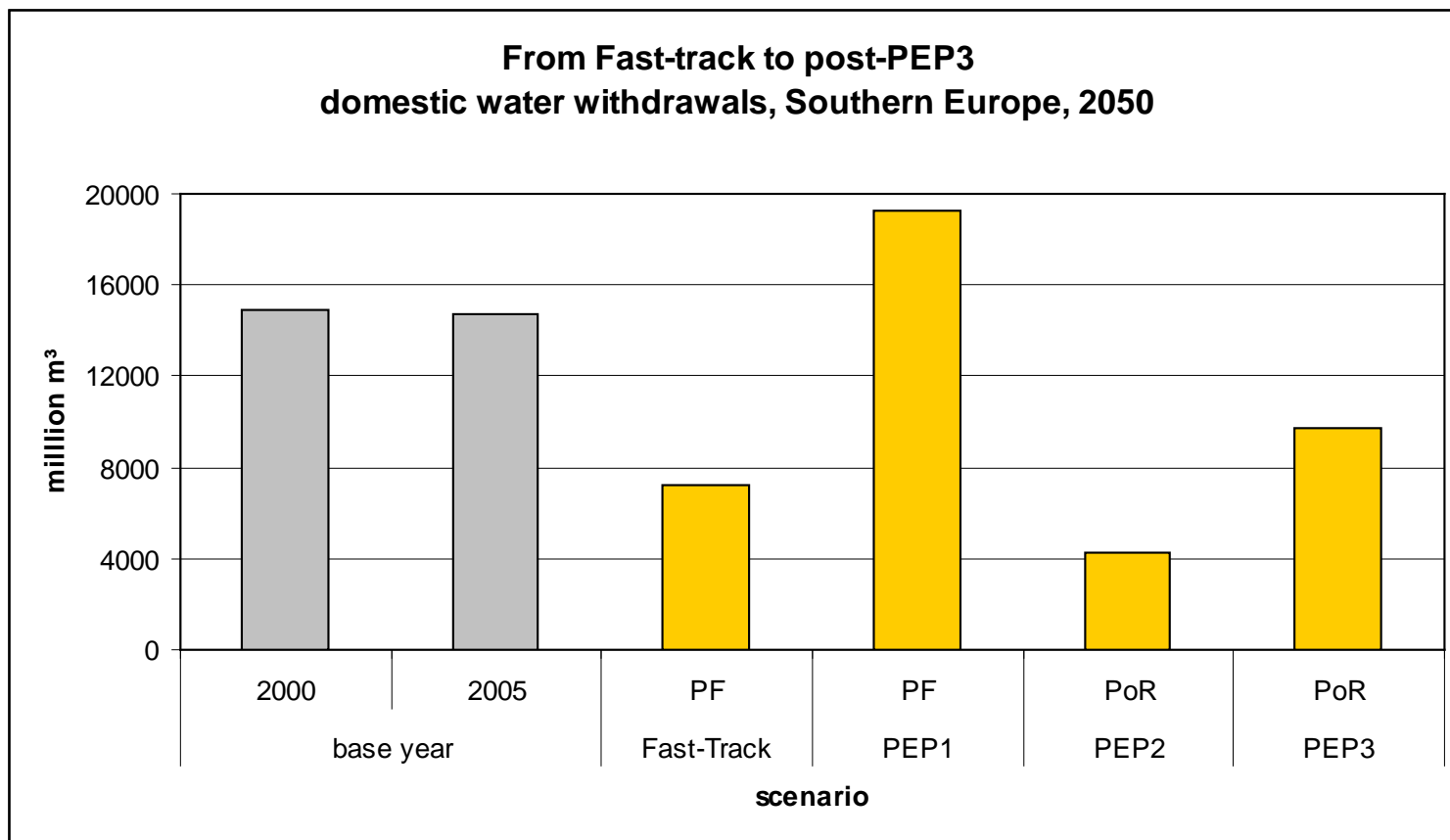




Main model drivers (EcF)

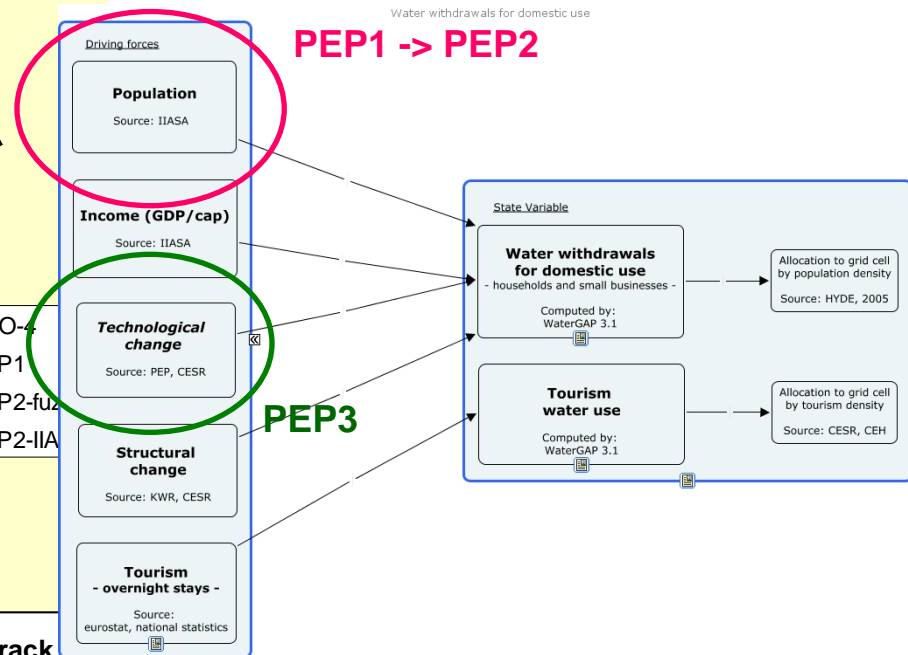
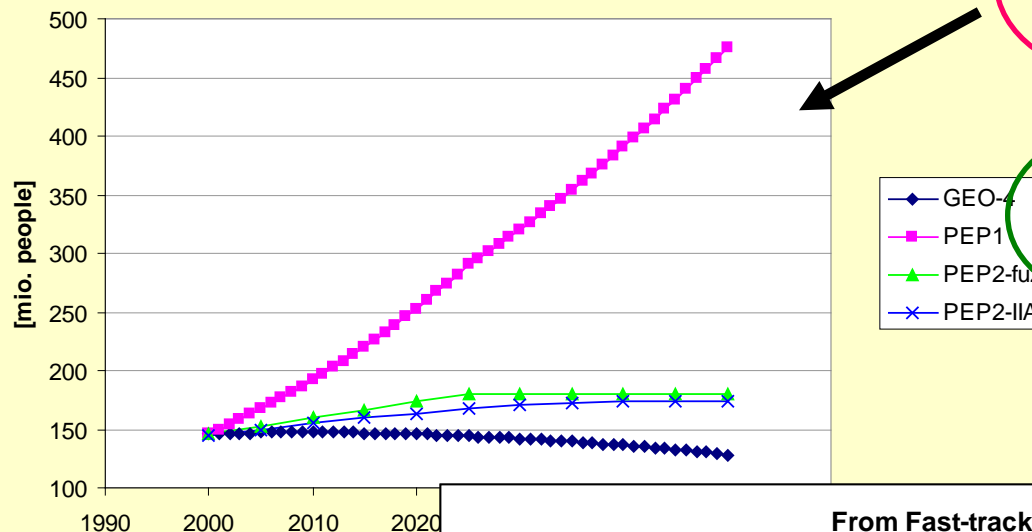


The iterative process

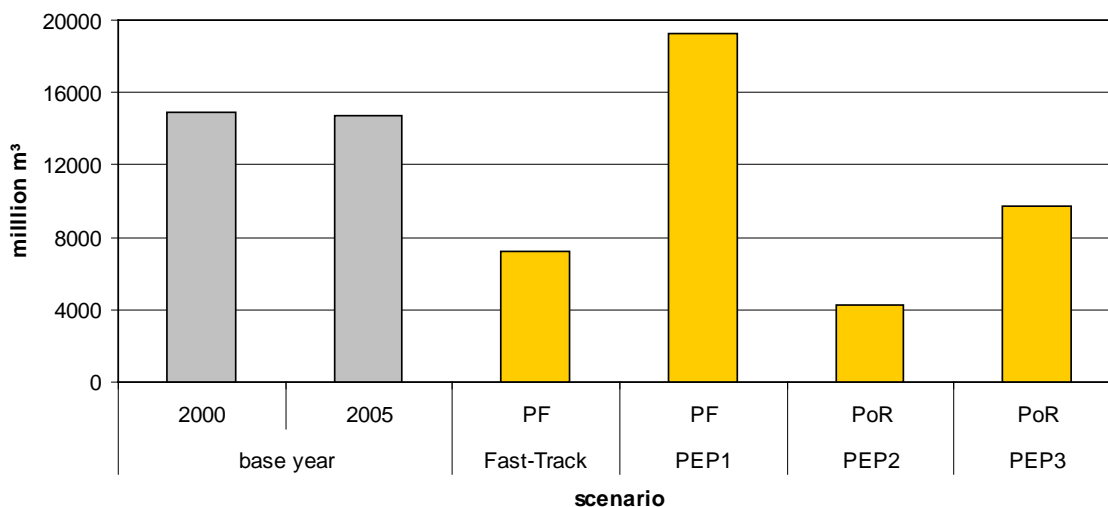


Iterative steps

Population - Southern Europe (def. UN World Regions)
Scenario: Policy First/Rules

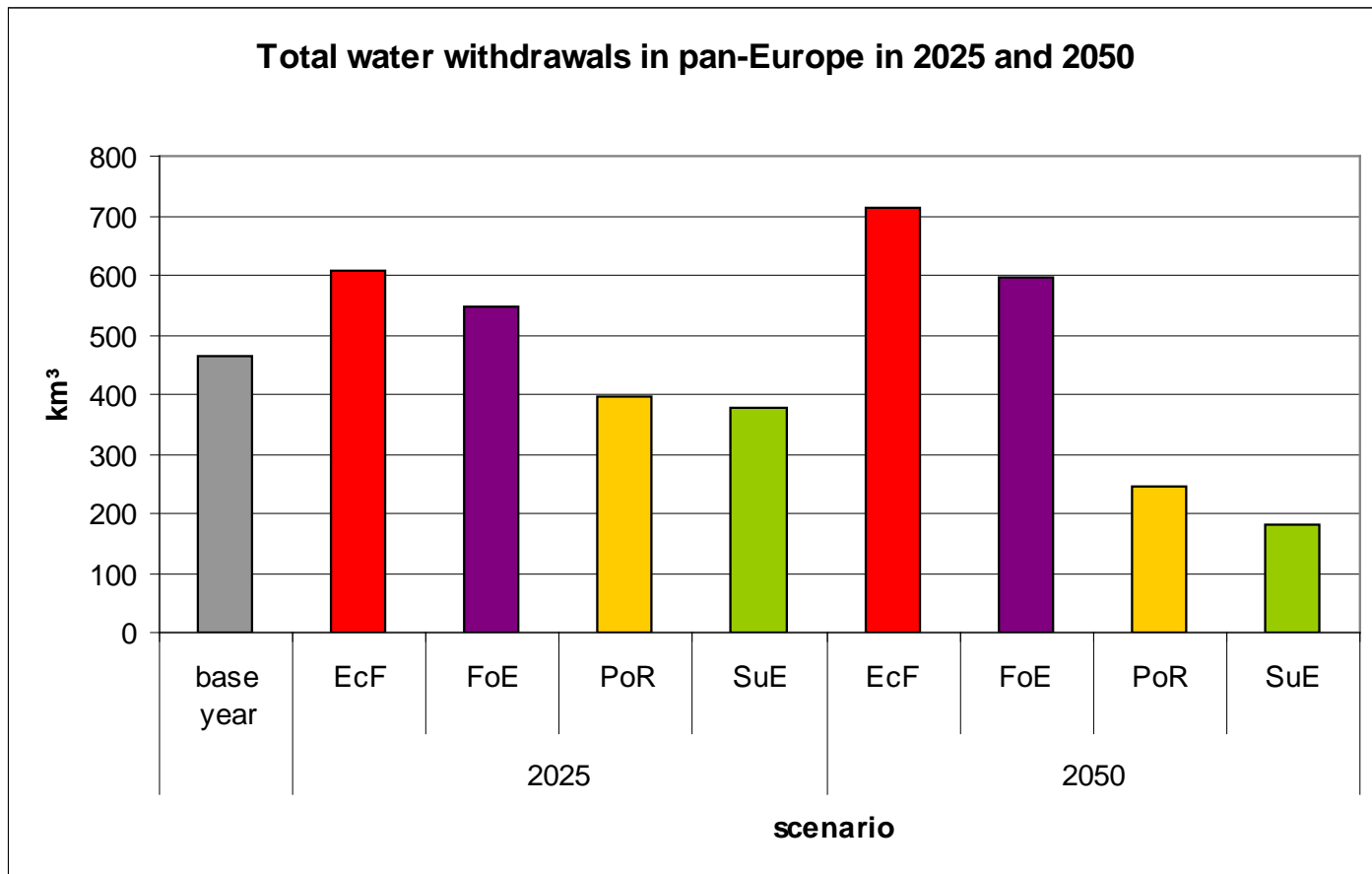


From Fast-track domestic water withdrawals, Southern Europe, 2050



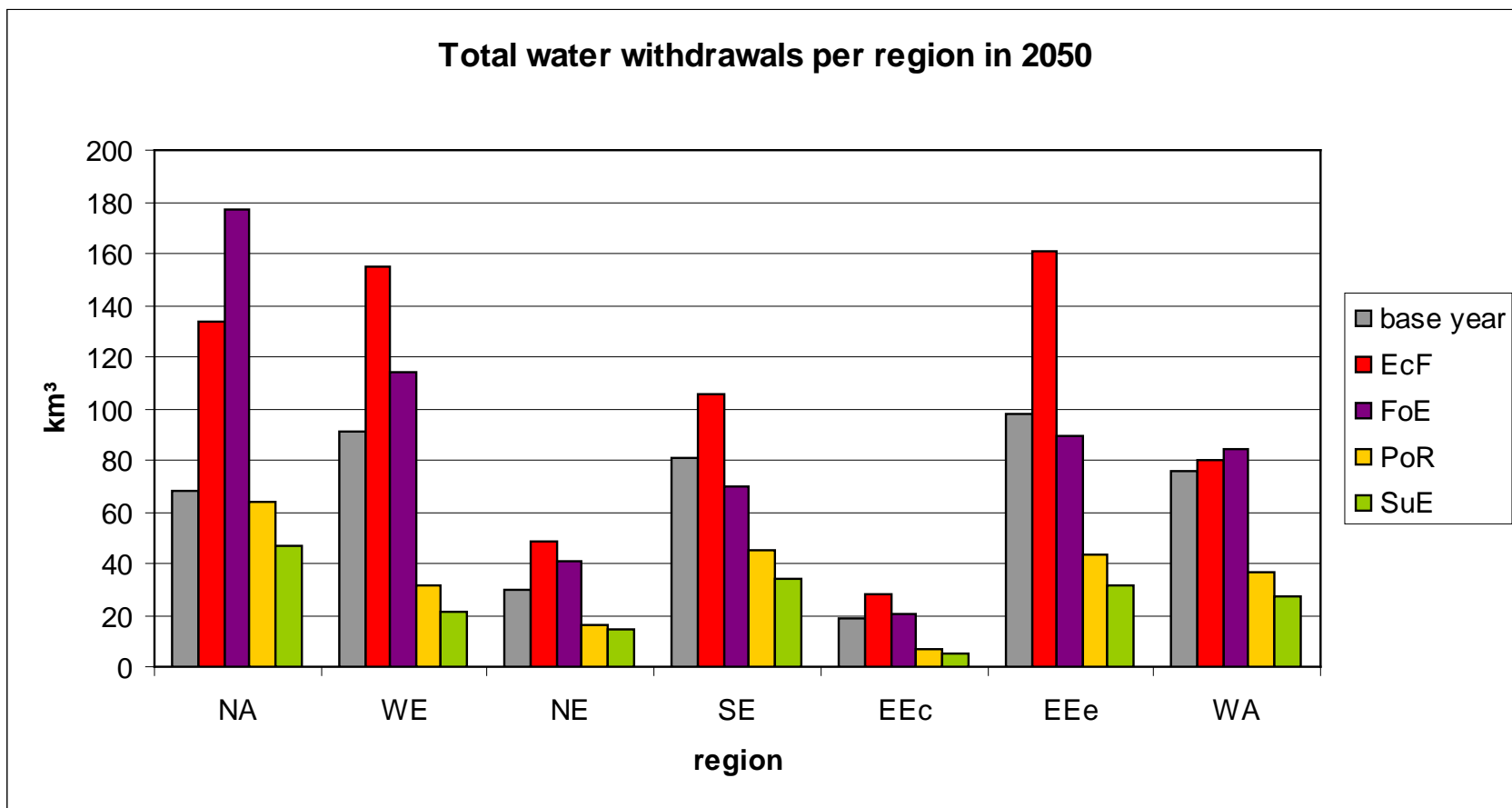
Water withdrawals

Water uses are expected to increase or decrease
...depending on the scenario.

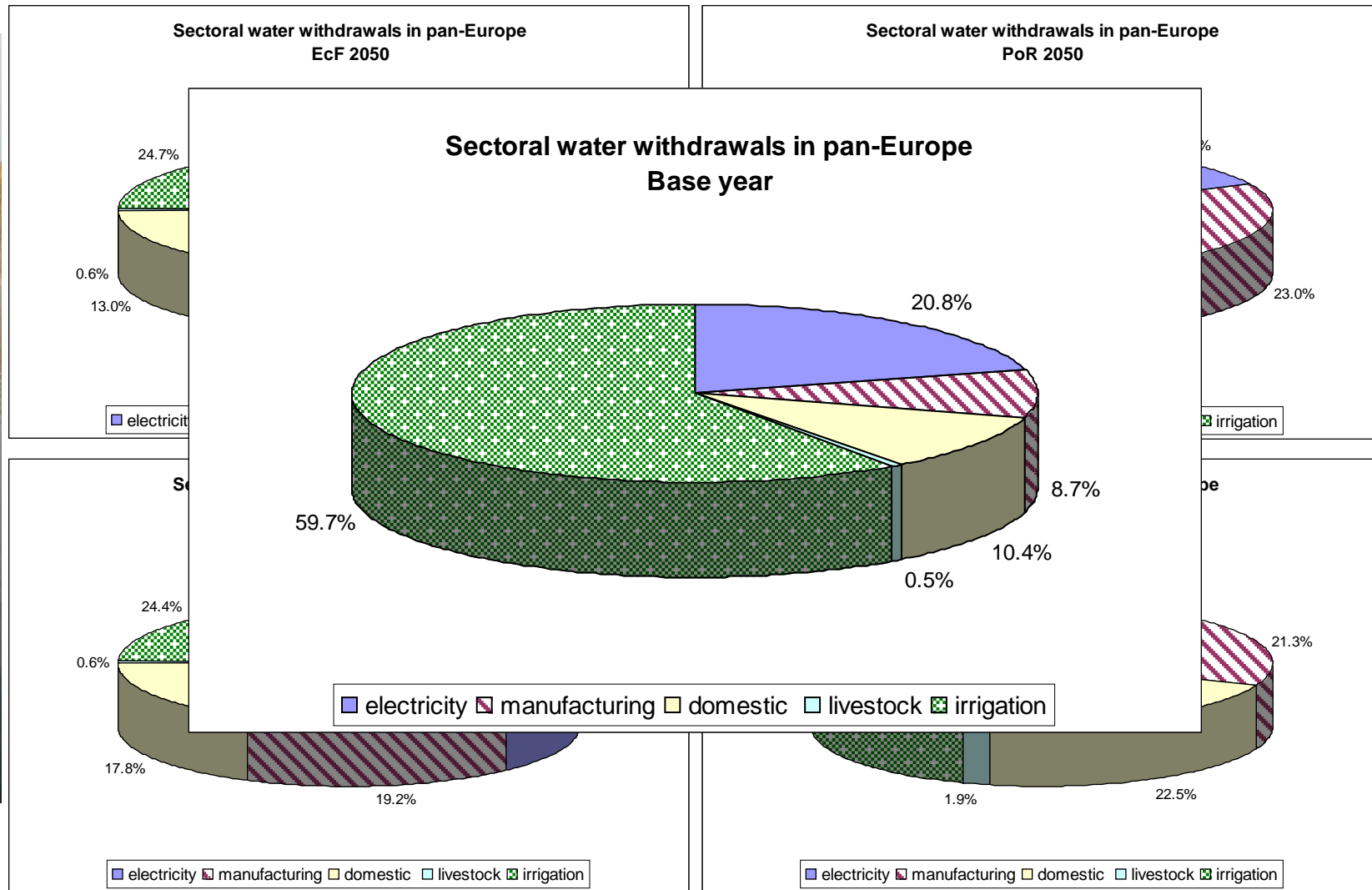


Future water uses

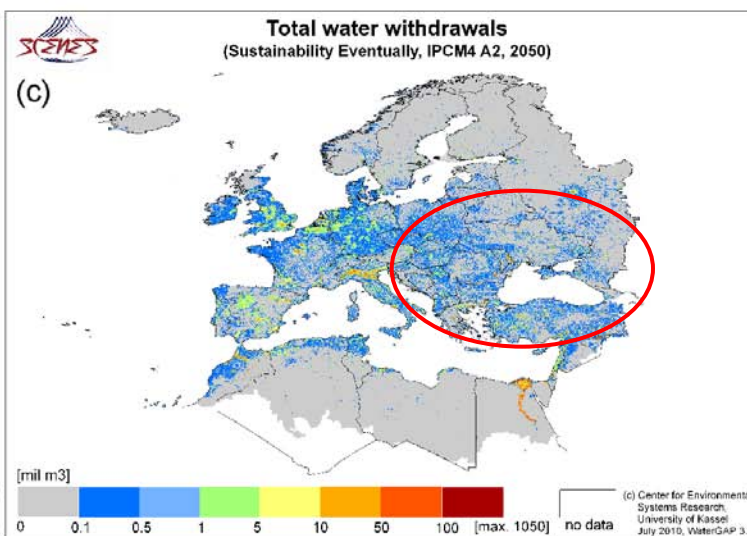
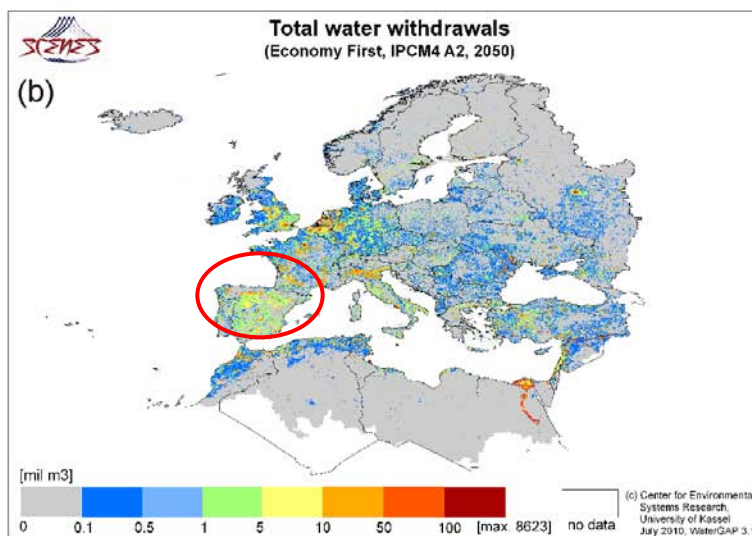
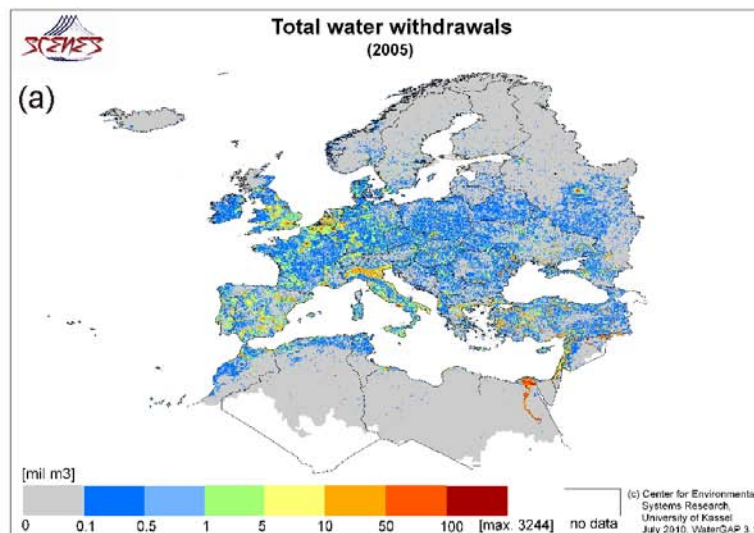
Water uses are expected to increase or decrease
...depending on the region.



Sectoral shares

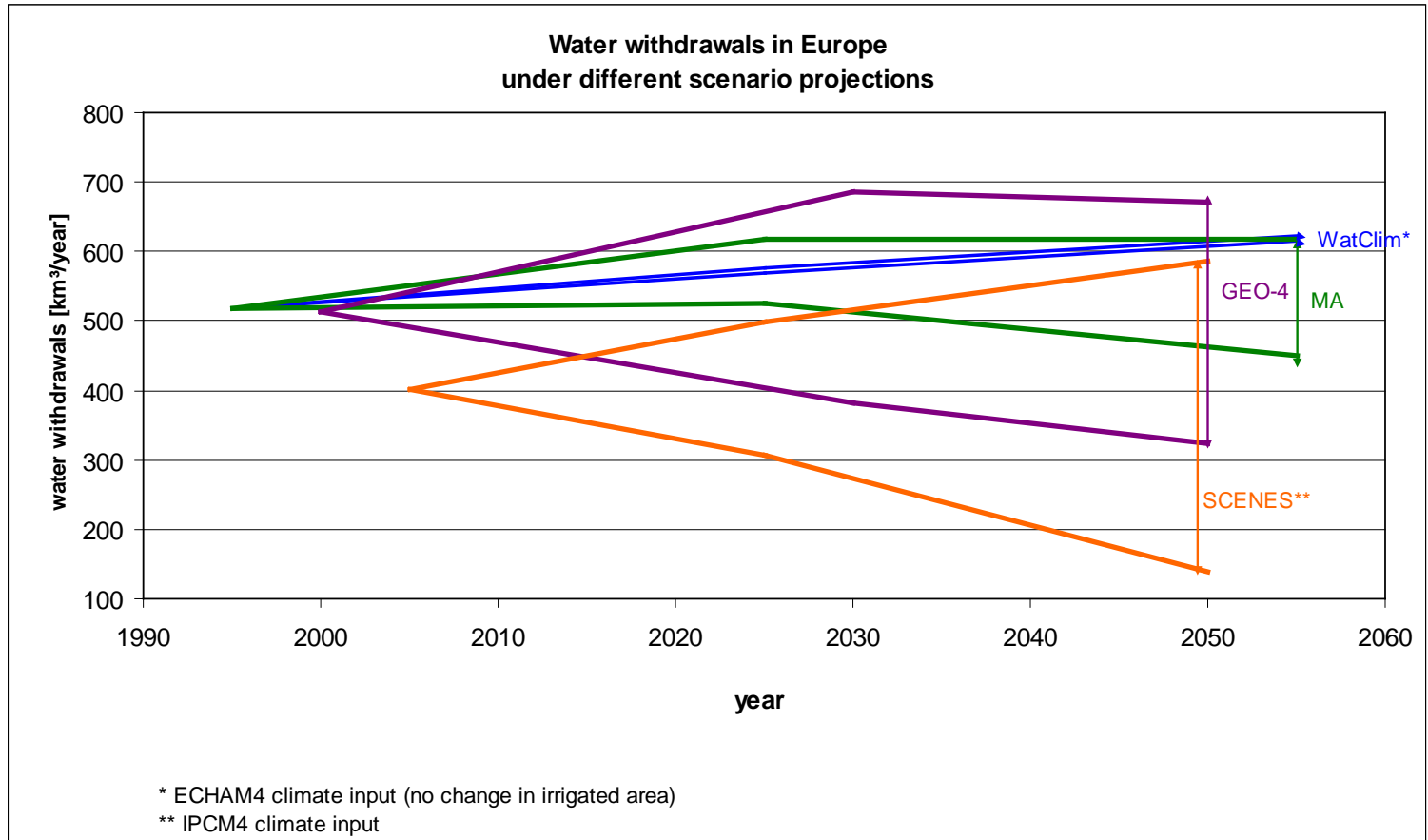


Spatial distribution of total water withdrawals







SCENES in the Scenario Family



Key findings

- 
- A vertical photograph of a calm lake with a dense forest of tall, thin trees in the background. The water is dark blue with some ripples, and the sky is overcast.
1. Quantitative scenarios complement and support the narrative scenario development. Coupling through SAS.
 2. SCENES scenarios show a broad variety in the development of future water withdrawals.
 3. Sectoral profile of water use is expected to change.
 4. Increasing awareness and more efficient use of water reduce water abstraction.
 5. Climate change and increased water uses enhance the risk of water stress and higher in-stream concentrations

... & lessons learnt

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- A vertical photograph on the left side of the slide shows a calm lake reflecting a dense forest of tall, thin trees under a hazy sky. The water is dark blue with some ripples, and the trees are mostly evergreens with some bare deciduous trees visible.
- Linking existing climate scenarios to new “pan-European socio-economic scenarios” requires good arguments.
 - Due to complexity a more frequent interaction between the stakeholders and the quantification team needed.
 - Living with uncertainty: Ensemble approach needed, analyze many climate models, scenarios, ...

Access SCENES Scenarios: WebService



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Welcome to the SCENES Webservice

This is a web based interface to access results from the **SCENES** project on qualitative and quantitative scenarios. In the first phase of the project (years 2006-2008), work is based on **UNEP's** GEO-4 'Global Environment Outlook' scenarios. Through this interface you can access maps and charts describing both the driving forces like GDP per capita and population growth rate and results in form of e.g. water availability and water use.

[Read more ...](#)

The **SCENES** project "**Water Scenarios for Europe and for Neighbouring States**" is a 4-year research project that started in late 2006. The aim is to develop and analyze a set of comprehensive scenarios of Europe's freshwater futures up to 2025. The project area covers all of "Greater" Europe reaching to the Caucasus and Ural Mountains, and including the Mediterranean rim countries of north Africa and the near East.

[Read more...](#)



For more information on the project please contact:

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