European Commission

Application of integrated scenarios
The JRC PESETA II and HELIX projects

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PESETA integrated modelling

PESETA objective: assess climate impacts in Europe; 8 impact areas; 4 climate futures

Point estimates (instead of damage functions), horizontal unidirectional flow of information:

1) Common socioeconomic (SRES A2; E1) and climate data (ENSEMBLES project, downscaled and bias corrected)

2) Biophysical impact process models

3) Integration of market impact results under an economic CGE model (accounting tool)

What worked

- Good integration of climate-socioeconomic scenarios
- Advisory and review board in 1 to 3 (ensures consistency)
- Participation of climate modelers and experts in the climate-impact model link
- Our experience: coordination and CGE modelers overlapping; advantages and disadvantages
- Frequent meetings: need to set up common language

What did not work

- Socioeconomic downscaling beyond country level
- Heterogeneity wrt climate runs in some process models. Need of mapping, advice
- Not full cross-impact consistency in horizontal dimensions, e.g. water and land-use
- Absence of cross-impact effects, e.g. energy to health
- Communication of results

FP7 HELIX Project

High-End cLimate Impacts and eXtremes (HELIX), 4 years

What do 4ºC and 6ºC worlds look like compared to 2ºC?
What are the consequences of different adaptation choices?

Global impacts and adaptation at 2, 4, 6 degrees Celsius

Global, and Europe, Sub-Saharan Africa and the South Asia

16 partners, coordinated by MetOffice, UK

Selection of SSPs-RCPs matches, close coordination with IMPRESSIONS and RISES AM projects

Use of macroeconometric model output (MaGE, from CEPII)

Recommendations for the integration phase

Close involvement of the customer in the selection of (socioeconomic/policy) scenarios of interest, to address the research question

Crucial decision is selection of climate runs

Active participation of climate modelers in the integrated work, even if taking datasets of-the-shelf. Monitoring of whole process to ensure consistency

Need to have downscaled economic data is a challenge

Final comments

Practical guidelines for climate data users (offer overview, show key issues, options, trade-offs – e.g. bias correction - , past experiences, support). For socioeconomic data as well

Careful documentation of the economic models underlying the SSPs quantitative projections, both equations and data sources

Various SSPs, comparison across economic models

SRES and RCPs/SSPs mapping

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Thanks for your attention!

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