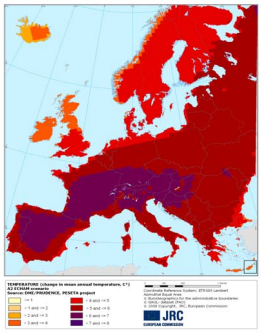
PESETA project
on the Impacts of Climate Change in Europe



Juan-Carlos Ciscar (JRC, European Commission)
UNFCCC Workshop, 22 June 2010, Madrid

The PESETA project

What are the *economic* consequences of climate change in Europe?
- overall order of magnitude
- distribution (space, time, sector)

Related to mitigation and, mainly, adaptation policies

Main purpose: *Quantitative, multi-sectoral* assessment of the monetary estimates of impacts of climate change in Europe

Impact categories: agriculture, river floods, coastal systems, tourism, and human health

Time horizon: 2020s and 2080s

JRC funded project, with 10 institutions involved

Largely based on past DG Research-funded projects (PRUDENCE, DINAS-Coast, cCASHh, NewExt,…)

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PESETA: Methodology

- **'End-to-end assessment'**
  - Socioeconomic and climate data
  - High resolution physical impact models
  - Economic assessment (partial and general equilibrium)
- **Climate Data**
  - Daily simulated climate data
  - 50 km horizontal resolution
  - Four scenarios for the 2080s
- **Adaptation**
  - Private adaptation in all sectors
  - Public adaptation in coastal systems
- **Key result: Overall impact of 2080s climate on today's economy without public adaptation**
  - Annual GDP loss between 20 and 65 billion Euro, depending on the scenario
  - Annual welfare loss between 0.2% and 1%, depending on the scenario

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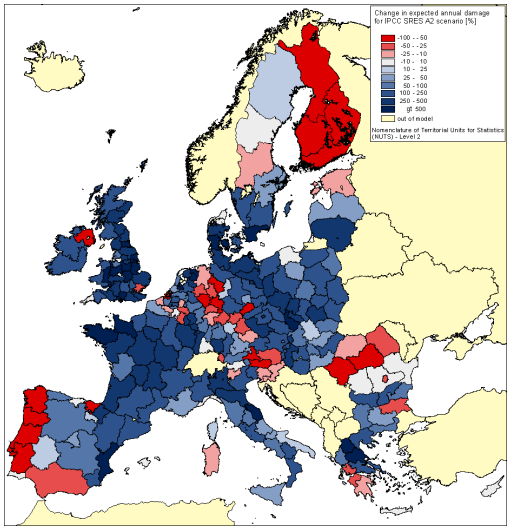
PESETA: River flood economic impact

River floods: relative change in expected annual direct damage (averaged over administrative level NUTS2) between scenario (2071-2100) and control period (1961-1990) for the 3.9ºC scenario



Source: Feyen et al. (2009)

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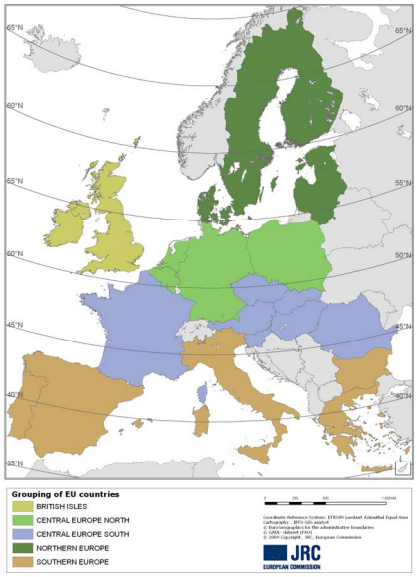
PESETA: Grouping of countries



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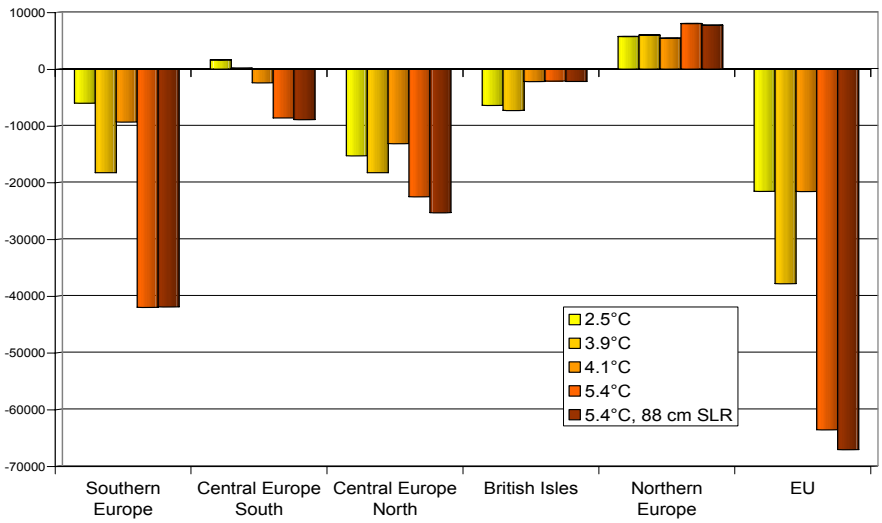
Annual damage in terms of GDP change (million €)



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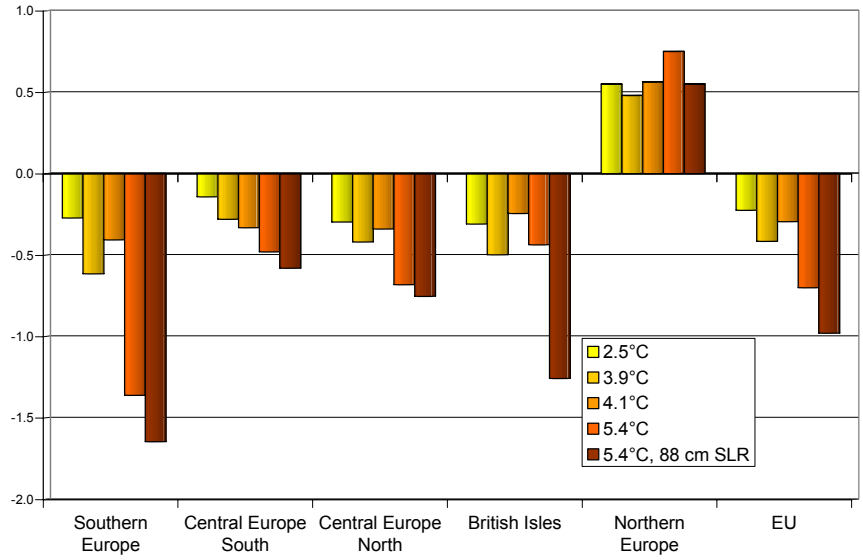
Annual damage in terms of Welfare change (%)



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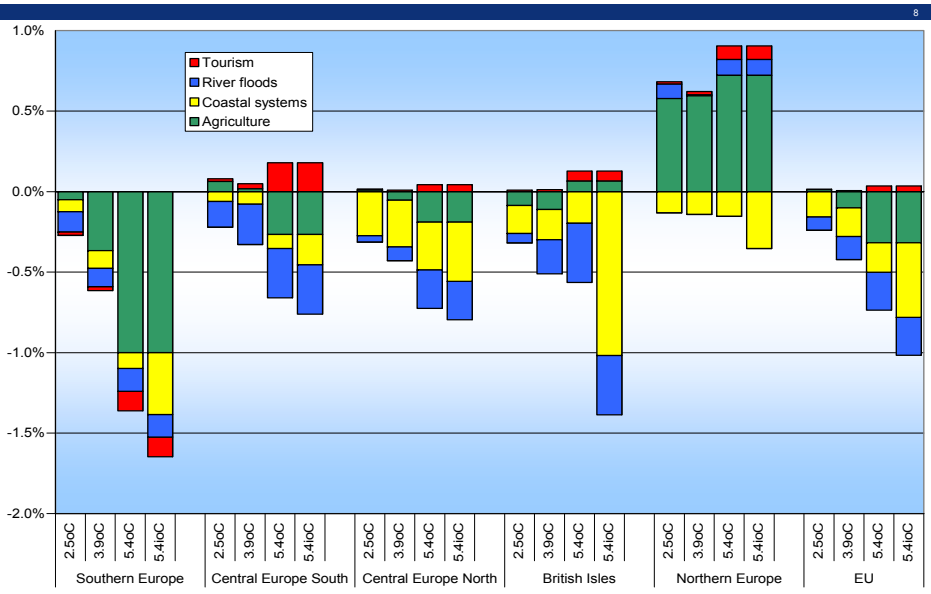
Sectoral decomposition of welfare changes (%)



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Conclusions

Integration of scientific disciplines, consistency requirements

Further research is needed (ClimateCost FP7), concerning:

- **Costs and benefits of adaptation**
- **Cross-sectoral consistency**
- **Land use modelling**
- **Probabilistic analysis**

Final report and all impact categories reports available at

http://peseta.jrc.ec.europa.eu/