

Economics of Climate Change Adaptation

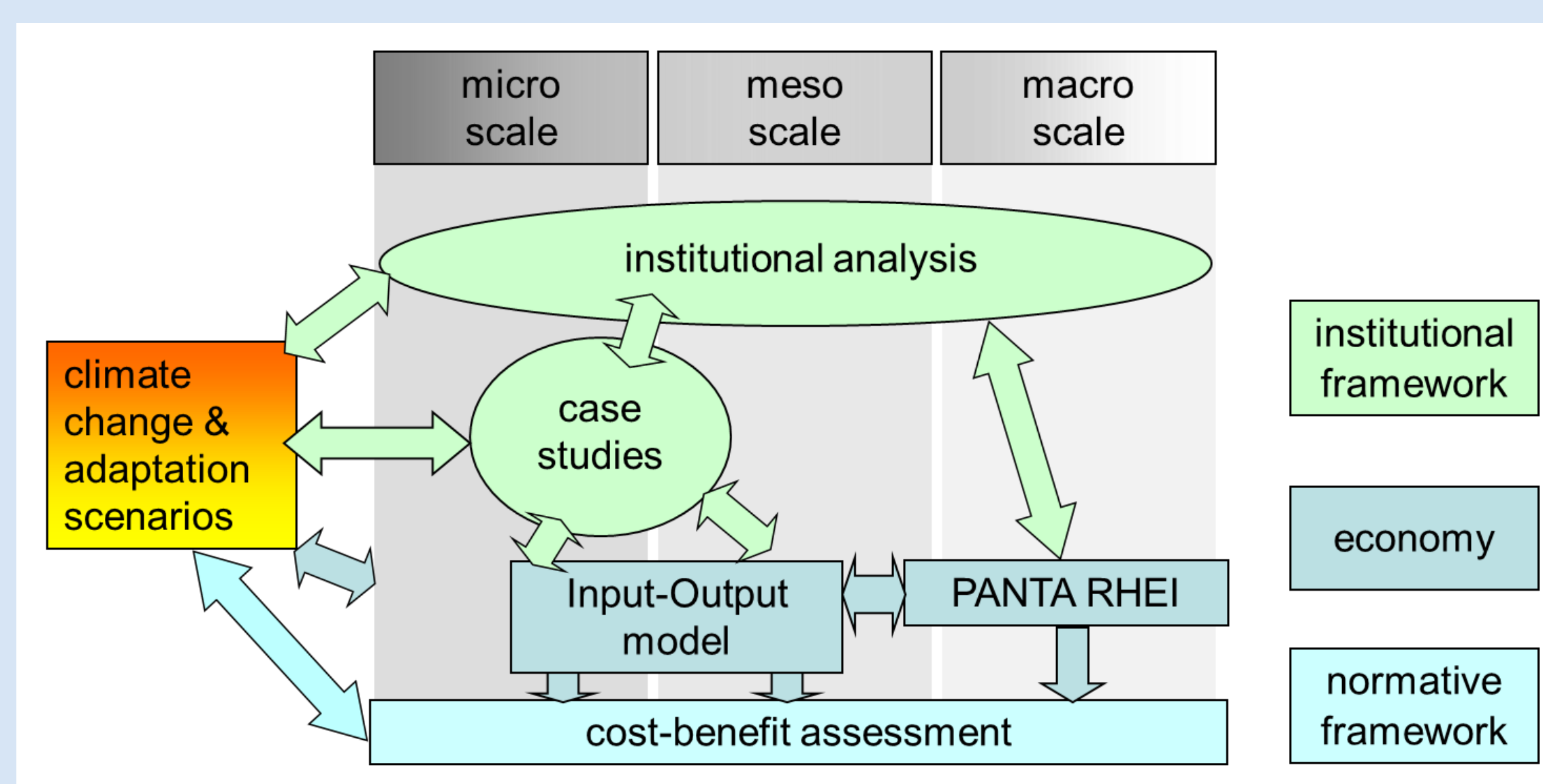
Costs and Benefits of Adaptation Options – How Scale Levels and Normative Assumptions Can Change the Ranking of Alternatives

econCCadapt

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The overall aim of the project “Integration of economic modeling and institutional analysis at different scale levels (econCCadapt)” is to analyze and quantify the costs and benefits of climate change and adaptation in Germany - differentiated with respect to spatial regions, economic sectors and social groups at different scale levels. The project interlinks an institutional analysis with economic modeling and an extended cost-benefit analysis.

Economic Modeling



Integrating climate change impacts and modeling adaptation to climate change

Aims: Simulation of economic climate change impacts for Germany until 2050, analysis of macroeconomic, sectoral and regional economic effects of selected climate adaptation strategies for Germany.

Methods: Expansion of the macroeconomic model PANTA RHEI (GWS) with a climate change impact module and extension of the simulation horizon until 2050

Simulation of adaptation strategies with the macro model PANTA RHEI (GWS) and a regional Input-Output-model (IÖW)

Results: Reduction of annual GDP by 0.1 % to 0.6 % (3 to 18 billion € p.a.) depending on climate change scenarios

The simulated adaptation strategies could save between 1 and 10 % of the simulated losses of national and regional GDP

Extended Cost-Benefit Analysis

Aims: Development of a methodology for integration of alternative normative foundations into an extended cost-benefit analysis of climate change and adaptation strategies

Methods: Application of alternative valuation methods (e.g. happiness and capabilities approaches) on climate adaptation measures within a case study (IÖW)

Results: Evaluation of selected adaptation measures in different normative currencies – example:

Adaptation Measures	Regional GDP	Private Budget	Municipal Budget	Ecosystem Services	Happiness	Capabilities
No Adaptation	↗	↘	→	→	↘	↘
Dyke Enforcement	↗	→	→	↘	→	→
Dyke Relocation	→	→	↘	↗	↗ ↘	↗ ↘
Priv. Flood Protection	↗	↘	→	→	→	→

Institutional Analysis

Aims: Understanding the link between existing institutional settings and different approaches to adaptation by local actors (HU)

Methods: Case study comparison and in-depth social research

Results: Isolation of specific combinations of key organizational factors within local governance for a successful implementation of adaptation strategies

Project Website: www.oekonomie-klimawandel.de

GEFÖRDERT VOM

