

Project title:
Climate change and adaptation in developing countries

Project leaders: Mr. Willem Ligtvoet & Ms. Marloes Bakker

Goal: to provide building blocks of knowledge on cost efficiency of adaptation options in developing countries and requirements for effective adaptation strategies within the context of sustainable development.

Focus: adaptation options in developing countries. Especially in developing countries the major challenges with respect to adaptation to climate change are related to water (e.g. Worldbank, 2009). In our study therefore we focus on: 1) droughts; 2) salinisation, and 3) floods (inland from rivers and coastal from sea)

Status: starting up; scope and methodology still in progress.

Research framework: IMAGE – integrated global modeling framework

Within PBL for global assessments the IMAGE modeling framework is used (eg. PBL, 2008). The work on costs and effects of adaptation options will be integrated in the modeling framework concerning the physical effects. Water stress and options to reduce the sensitivity for drought is already incorporated in the modeling framework. Coming years facilities will be developed to address the salinisation in deltas and the flooding of inland areas and coastal areas. See annex I.

Approach: Bridging scales

The IMAGE modeling framework is not suited for analyses on country level. In the PBL adaptation study a typology will be developed for drylands, riversystems and coastal areas to bridge the scale between global assessments and country scales. Case studies on national levels will be executed in order to get a better understanding of the situation on lower spatial scales and to better understand the restrictions of the assessment based on the typology (See annex II). Case studies will be based on literature. Interesting starting point will be the country studies of the World Bank (2010).

Adaptation options considered

- Adaptation options aiming at reducing sensitivity for drought/floods/salinisation (soft and hard options, land use development, migration)
- Adaptation options aiming at improving developing/coping capacity (improving infrastructure/health and social services/agricultural production systems/adaptive capacity local communities and education)
- Improving institutional capacity (strengthening institutions, improving legislation and regulations)

Analysis of societal costs and benefits within context of sustainable development

In analyzing costs and benefits, PBL has taken a broad scope; the project on adaptation is executed in close collaboration with projects on MDG's, halting biodiversity loss, quantifying ecosystem goods and services and developing evaluation tools. In addition, both monetary and non-monetary aspects will be incorporated in the evaluation tool. Items that can be easily monetized will be monetized; other items (like biodiversity, some ecosystem services, number of people affected/killed) will be quantified, not monetized. Also, the effect of adaptation/development options on especially vulnerable groups within developing countries (both in rural areas and urban areas) will be addressed.

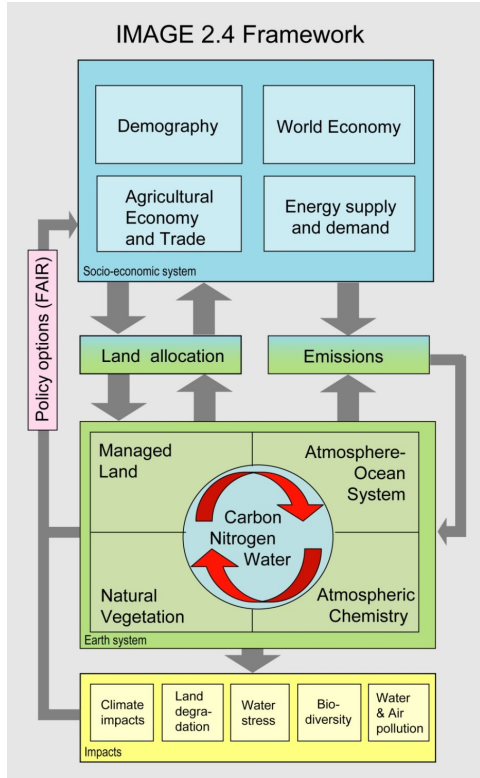
Analysing synergies and trade-offs

The analyses will pay particular attention to the synergies and trade-offs within a river basin, but also between different policy objectives and measures (see Annex III).

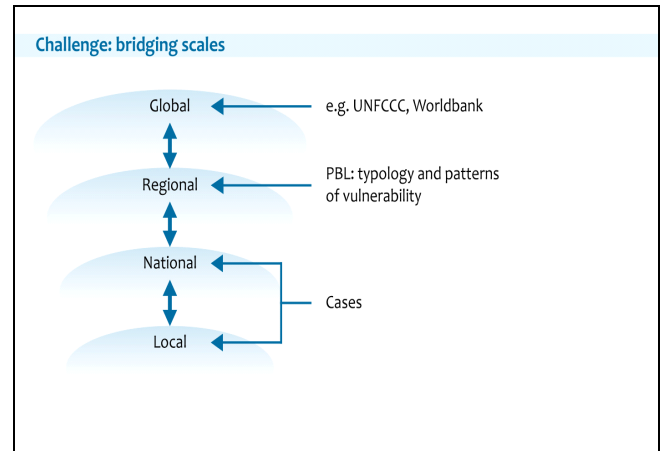


Netherlands Environmental Assessment Agency

Research framework: IMAGE integrated global modeling framework



Approach - bridging scales



Synergies and tradeoffs

