

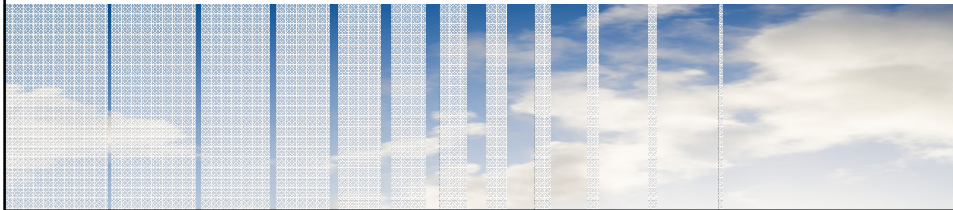


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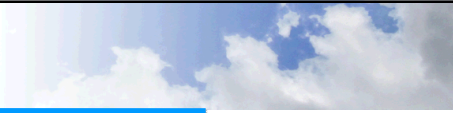
Global assessment of the costs & effects of adaptation on different scales

Delta Conference 2010
session DP FE 1.2

Marloes Bakker, Willem Ligtoet,
Joost-Jan Schrande, Joost Knoop, Arno Bouwman, Peter Cleij and Hans Visser



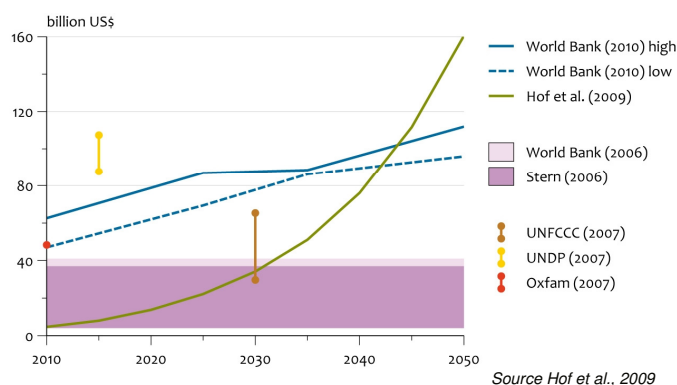
Introduction



- The opportunity for preventing *any* warming has now passed; respond by
 - Minimizing further warming (mitigate)
 - Finding ways to adapt to the impacts warming will bring
- Adaptation cuts across a myriad of sectors, thereby complicating attempts to assess the costs of global adaptation to climate change

Adaptation costs in developing countries

Adaptation costs in developing countries



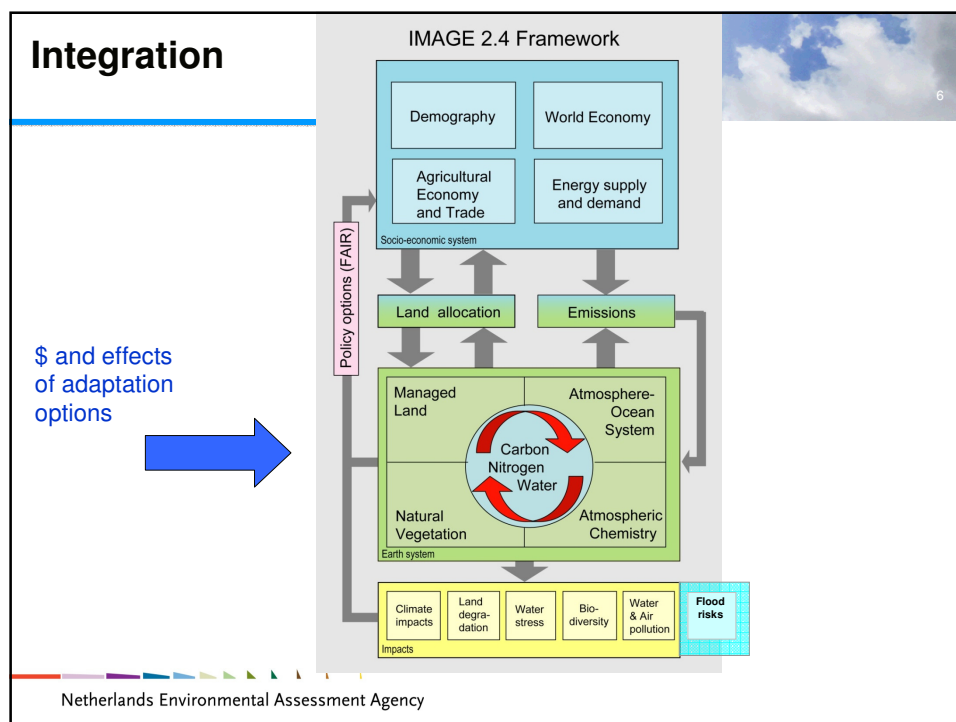
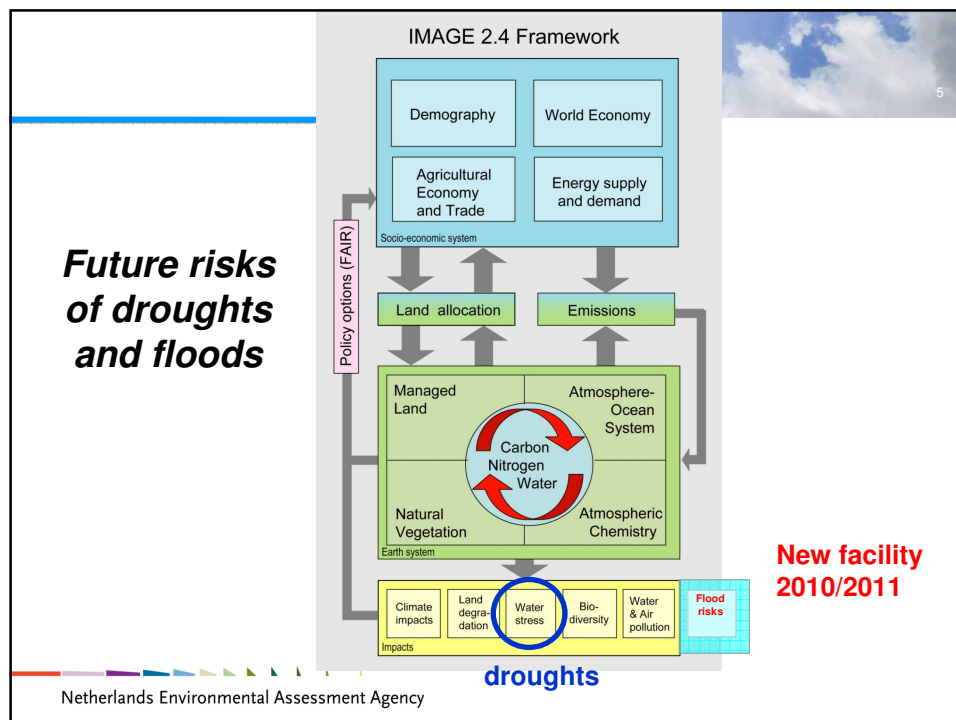
All top-down estimates

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Research Objective

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.

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Scope of research on adaptation

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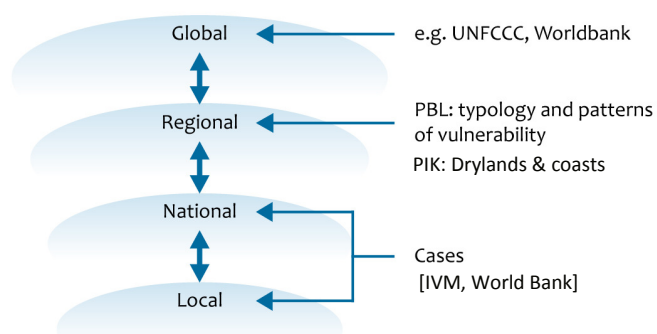
- Focus: developing countries
- Droughts / drylands
 - Floods
 - *Inland*
 - *coastal*
 - Salinisation of deltas
- Typology
 - Drylands
 - Riversystems
 - Coastal zones



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Bridging scales

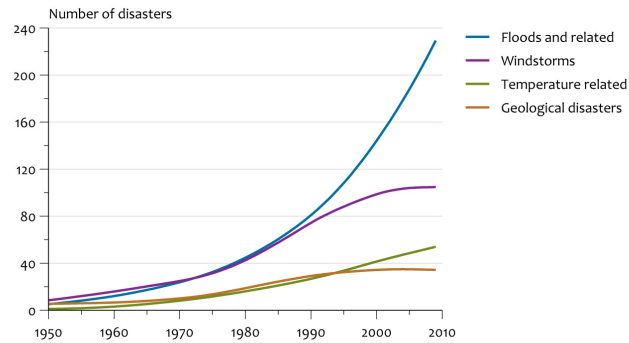
Challenge: bridging scales



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Vulnerability to floods

Trends in mayor types of natural disasters: 1950 – 2009 [as reported by CRED]



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In sum

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- Risks of drought ⇔ potential use of deep aquifers
- Risks of floods
- Risk of salinisation of deltas
- Future developments
 - * *climate change*
 - * *population growth*
 - * *land use changes*
 - *
- Types of measures
 - * *Adjustment of behaviour/management*
 - * *Technical measures*
 - * *Land use development*
 - * *Migration (tipping points?)*



Changes in
vulnerability
patterns?

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Willem Ligtoet, Marloes Bakker

Methodology (work in progress)

	Reduces # casualties	Reduces \$ damage	Indication of costs	Indication of effect
Soft measures				
Technical measures				
Land use measures				
Adaptive capacity measures				

Overall goal

Addressing:

- Drought
- Floods
- Salinisation in deltas

Types

- Adjustment of behaviour/management
- Technical measures
- Land use development
- Migration (tipping points?)

Adaptive capacity

- Institutional
- Education
- Finances

Analysis of main actors

Building blocks for effective adaptation strategies

The road ahead

- Groundwater report: ready by mid 2011
- Trends in disasters report: ready by mid 2011
- Typologies report: ready by mid 2011
- Final report: ready by end 2012
- Continued cooperation with IGRAC/Deltares, Institute for Environmental Studies
- Future cooperation OECD and WWDR
 - *Water chapters in OECD Environmental Outlook*
 - *Costs and Effects in WWDR 4*

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Thank you!



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