



CLIMATE CHANGE AND BIOSPHERE RESEARCH CENTRE (CCB)



Land, water



Climate?

Land use, Climate, Adaptation, Mitigation



Jeroen Veraart



Today:

- Welcome (Prof. Wim Cofino)
- Overview of CCB (Jeroen Veraart)
- Land use and Climate (Ronald Hutjes)
- Nature as a calendar for climate (Arnold van Vliet)
- Water and Climate (Paul van Walsum)
- Discussion

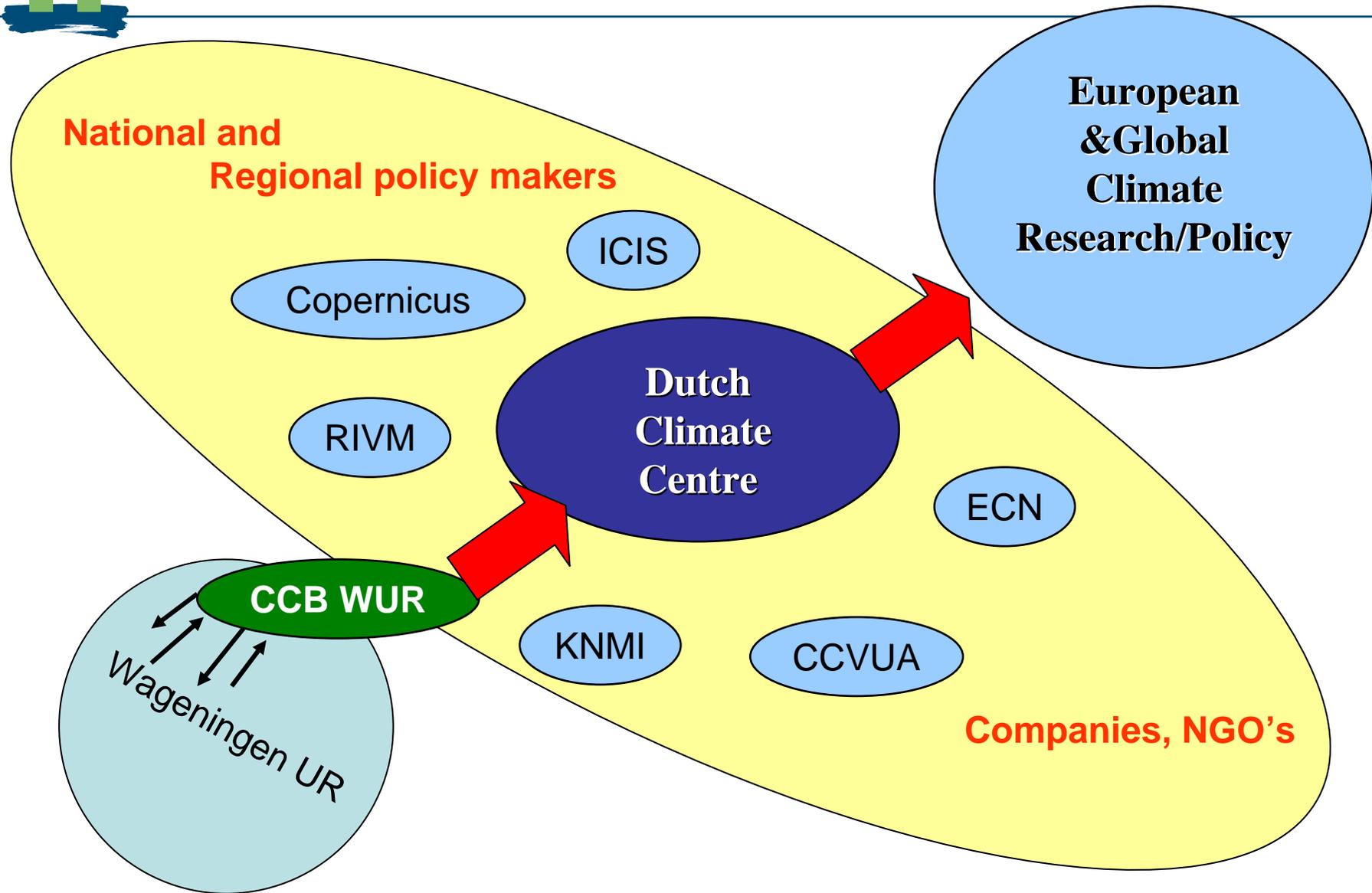


Objectives and strategy of CCB

- Multi-disciplinary climate research at Wageningen UR
- Virtual Focal point for policy makers, NGO's, entrepreneurs
- Co-operation with national & international research partners
- Contributions to in (inter)national research programmes & policy
- Dissemination of research into education and training
- communication platform



CCB ROAD MAP





RESEARCH THEMES

Environmental
Sciences

Plant
Sciences

Social
Sciences

Agrotechnology &
Food

Animal
Sciences

CCB Wageningen-UR

CCB Wageningen-UR Research and Education themes:

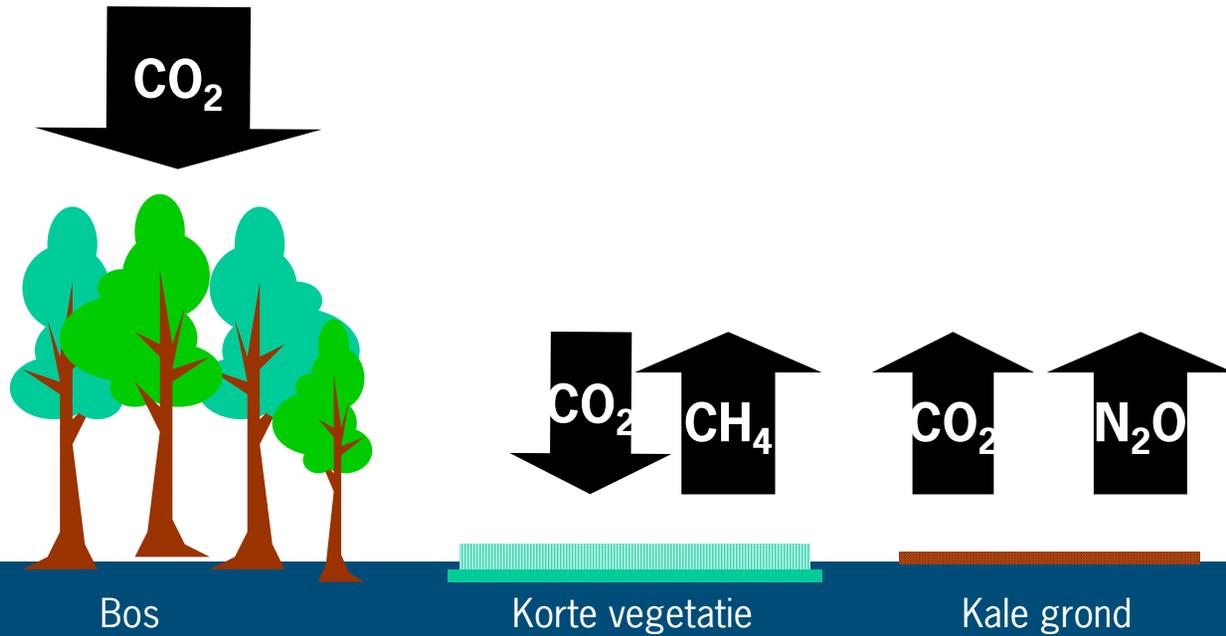
- Role of land cover in regional energy, water balance and biogeochemical cycles
- Formation and emission of greenhouse gases and monitoring
- effects of climate change on ecosystem functioning and biodiversity
- consequences of climate change for land use and water management
- Socio-economic aspects of climate change and policy analysis
- Mitigation and adaptation policies within the agro-production chain
- Education and communication



The role of land cover in the water, energy and biogeochemical (C&N) cycles'

Exchange of GHG's & aerosols

between atmosphere and biosphere



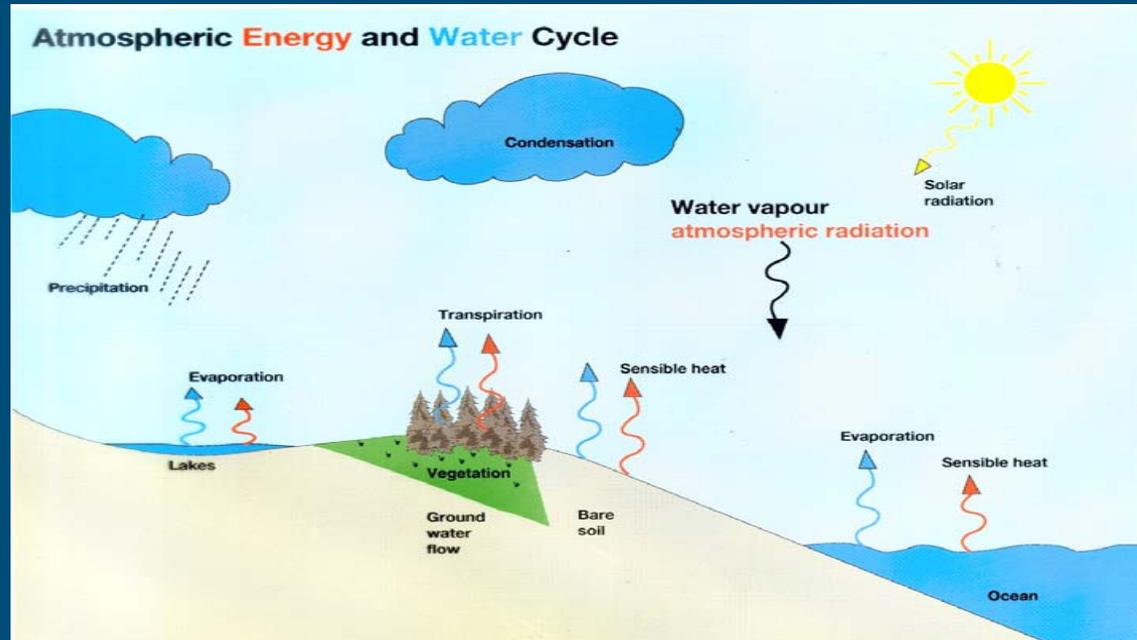
Water and Energy

radiation

evaporation, sensible heat

beweging

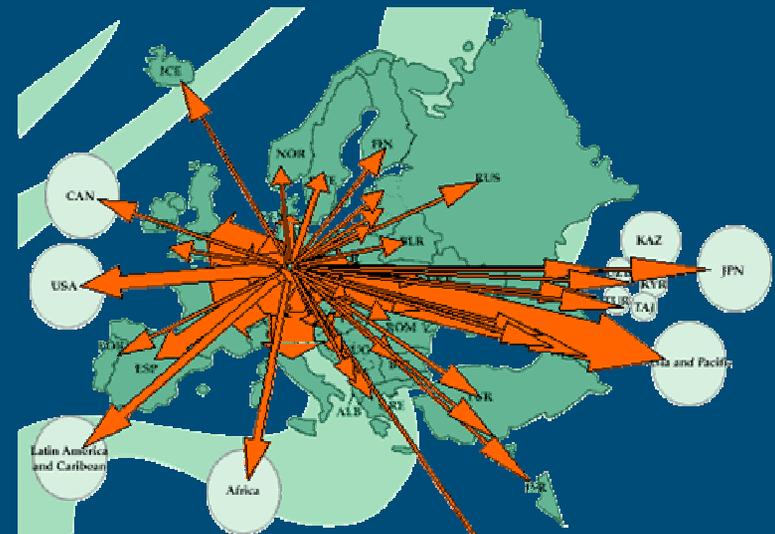
*Bert Holtslag,
Ronald Hutjes e.v.a.*





II Formation, emission & monitoring of Greenhouse Gases

- (Inter)nationale emission reports
 - Flux & Field measurements
 - Process knowledge
 - Developments of models
 - Estimations of biomass
- Assessment of CO₂ sinks
 - Emissions from agriculture (husbandry & plants)
 - Interactions with water management and spatial planning
 - Dutch Peat meadow area





III Effects on ecosystem functioning and biodiversity

- Disturbances in structure & dynamics
- Spatial change distribution of species
- Quantification of impacts
- Identification of vulnerable ecosystems



Evaluation of policy measures:

- Ecological Corridor structure

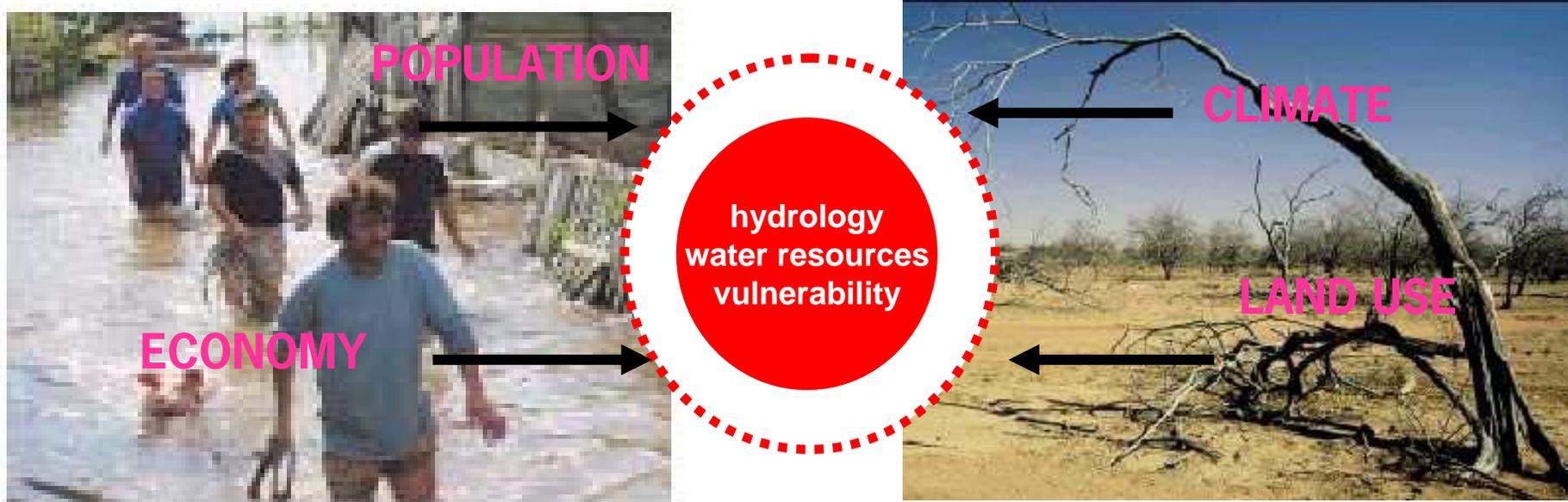
Participation of citizens:

- Natuurkalender





IV Consequences for land use and water management



- (Regional) landuse and the hydrological cycle (see pres. Paul, BSIK)
- Vulnerability, adaptation & risk analysis (EU NeWater, VIEWS, BSIK)
- Quantification of impacts on global water resources (ILEAPS)
- Dialogue en policy (DWC, BSIK)
- Mondial & local scope: Sustainability and developing countries



- **Integrated approach of agr. production chains**

- Energy
- C, CH₄, N₂O
- Water
- land claims
- Link acidification and climate

- **Multifunctionality/cascades**

- Spatial & crops (food, energy, chemistry)

- **Integrated approach of bio-energy chains**

<http://www.biomassandbioenergy.nl/>

- **Sustainability**

- People
- Profit
- Planet

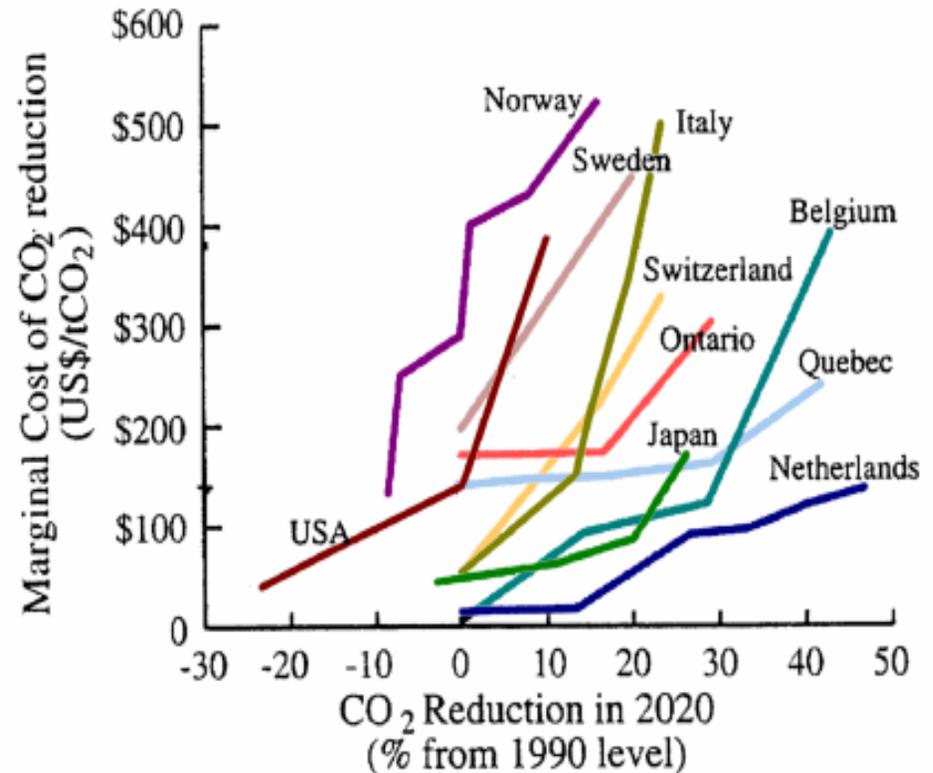
- **Biotechnology**





VI Socio-economic aspects and policy analysis

- Integrated Assessment
 - (Post)-Kyoto & relations with other environmental conventions
- Stakeholder Participation
COOL/NOP-IMPACT/BSIK
 - Risk Analysis



Marginal emission reduction costs,
source: Kram, 1993.



VII Education & Communication

Communication:

- Klimaatportaal: www.klimaatportaal.nl
- BSIK Climate changes spatial planning
- CCB website: www.wageningen-ur.nl/ccb
- CCB e-Newsletter
- Int. dialogue on water and climate

klimaatportaal.nl
communicatieplatform over
klimaatverandering

over het portaal contact wie is wie zoek home

informatie over
Klimaatverandering
Gevolgen
Preventie
Aanpassen
Dialogoog

informatie voor
Beleid & maatschappelijke actoren
Media & burger Academië

Nieuws
▶ 16-09-2004 Tweede Kamer krijgt rapport (CE/KNMI/WUR)
▶ 26-08-2004 Klimateffecten rapport USA (New York Times)
▶ 18-08-2004 Eur. rapport over effecten klimaat (RIVM, EEA)
▶ Meer nieuws

Klimaatkalender
▶ Symp. Duurzame energie (8 nov. 2004)
▶ ESPACE Conference (29 nov. 2004)
▶ Challenge Lezingen (15 okt 2004)
▶ Int. conf. Water & Climate (27-29 sept)
▶ BSIK Klimaat en Ruimte (2 April 2004)
▶ Geef uw evenement door!
▶ Kalenderarchief

Veel gestelde vragen
▶ Regent het nu meer dan vroeger?
▶ Waar kom ik niet-CO2 gassen tegen als consument?
▶ Boekje veranderingen in het klimaat
▶ Stel een vraag!
▶ Meer vragen

Het klimaatportaal is de interactieve toegang tot de meest recente wetenschappelijke inzichten over klimaatverandering, gefaciliteerd door de Nederlandse klimaat kennisinstuten.

Education:

- PhD course Global Change
- MsC course Global Change vak
- Contributions to MSc Earth System Sciences and MSc Environmental Sciences of Wageningen University

Veraart, Klostermann, De Groot e.v.a.



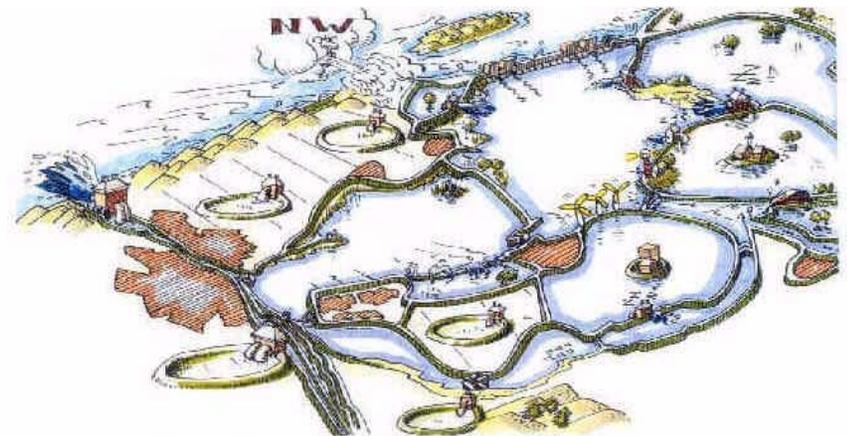


Climate *changes* Spatial Planning



*Dutch National
Public-Private Programme
on Climate Research and Knowledge
Infrastructure*

Duration: 2004-2010



The framework of climate *changes* spatial planning :

1

**CLIMATE
SCENARIO'S**

2

MITIGATION

3

ADAPTATION

Involved sectors:

- **Agriculture**
- **Fisheries**
- **Water Management**
- **Insurance**
- **Energy**
- **Construction**
- **Nature**
- **Recreation**
- **Institutions**
- ...

4. Integration:

- **Multi-stakeholder dialogue**
- **Communication strategy**
- **Risk analysis**
- **Education**
- **Data exchange**

NeWater

***New approaches to adaptive water
management under uncertainty***

Transdisciplinary research project: 6th FP EU

Expected start, January 2005

Duration of 4 years

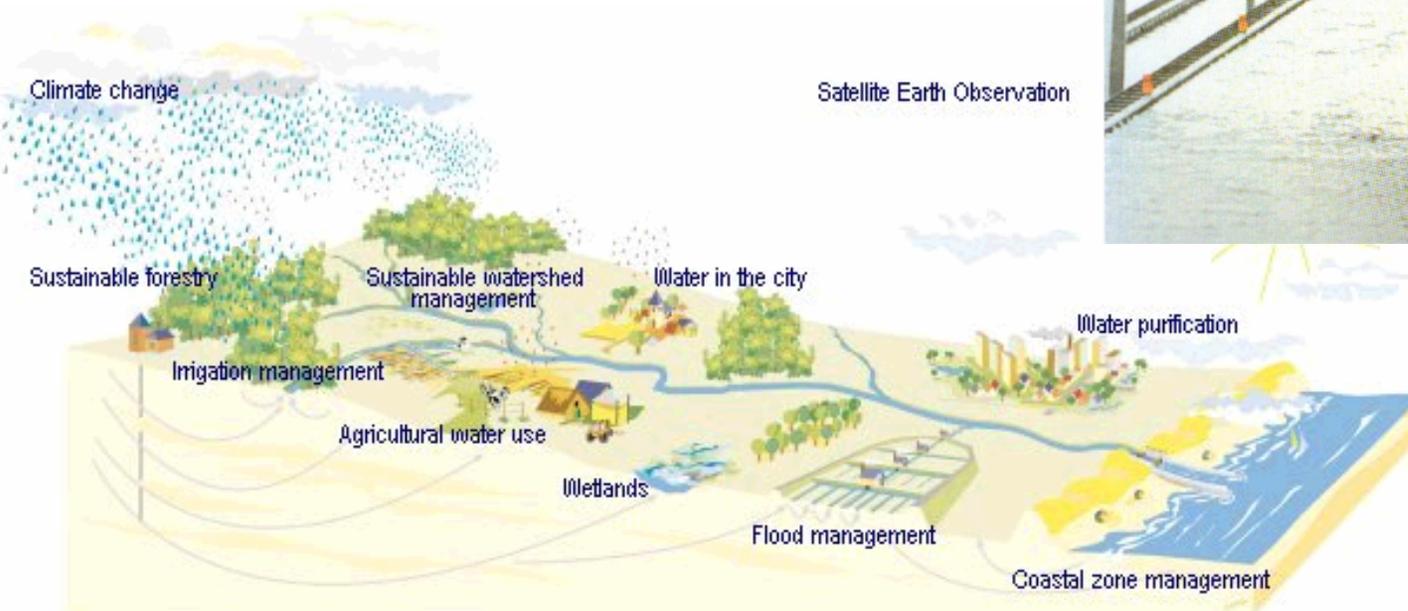




EU NeWater project

- To increase the adaptive capacity of water systems.
- It is aimed at integrated system design.
- To increase the ability of the whole system to respond to change rather than reacting to undesirable impacts of change.

FOCUS ON TRANSITION SINCE THIS SEEMS TO BE THE CRUCIAL STEP!!



Thank you

WWW.WAGENINGEN-UR.NL/CCB

