

Mainstreaming climate adaptation into regional water & land use planning

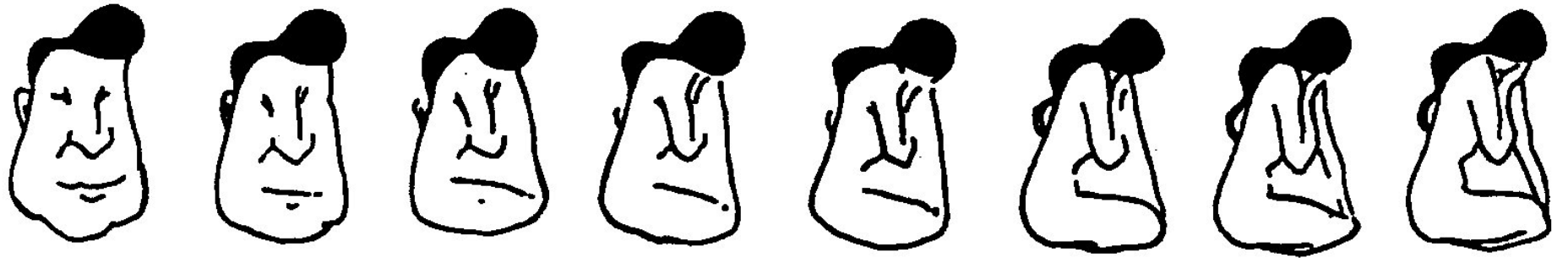
🌿 **Saskia Werners (Wageningen University & Research Centre, NL)**
with Xingang Dai (CN), J.David Tàbara (ES), Jennifer West (NO), Darryn McEvoy, Henry Neufeldt (UK), Zsuzsanna Flachner (HU), Francesc Cots, Nicola Luger (IT), Marco Moriondo, Piotr Matczak (PL), Zsolt Harnos (HU, †) & many others

Main message:

- 🌿 **+**: pilot projects that test and debate diverse sets of new ideas through collaboration between recognised actors from civil society, policy and science.
- 🌿 **Challenge**: flexible support of a diverse set of potentially better-adapted new activities rather than compensate for climate impacts on existing activities.

Experiment

Experiment



Today

- Introduce & share results of regional case studies ADAM project
- *Our objective:* Examine *constraints* and *opportunities* for adaptation to climate change in land use and water management
- Using 6 aspects of adaptation: environmental, technical, financial, institutional, social and cognitive/informational.

➤ *Conclusions & Discussion*



*Graffiti artist
Laser 3.14,
Amsterdam
Januari 2008*

Background: the ADAM project



ADaptation And Mitigation Strategies:
Supporting European Climate Policy
funded by the EU under FP6

- ADaptation And Mitigation Strategies:
Supporting European climate policy www.adamproject.eu
- Supported by the European Commission, 6th Framework program of the Research Directorate
- 25 partners in Europe & outside (e.g China, India)
- Research on mitigation, adaptation, scenarios, policy appraisal
- Three regional case studies: Guadiana river in Spain/Portugal, Alxa region in Inner Mongolia-China & Tisza river, Hungary
- Key questions in regions: Adaptation in land use & water management; institutional setting conducive to adaptation?

Adaptation to climate change

Measures/Options

Water retention / irrigation

Who takes action?

Can take actions?

Reaches goal?

ADAPTATION

People

Government /

Farmers / migrants

Goal

Reduce flood risk /

Reduce crop failure

What goal?

What risks perceived?

Guadiana Basin

Spain & Portugal



Semi-arid climate, forest,
agriculture, tourism
Significant temperature
increase, rainfall decrease

Inner Mongolia

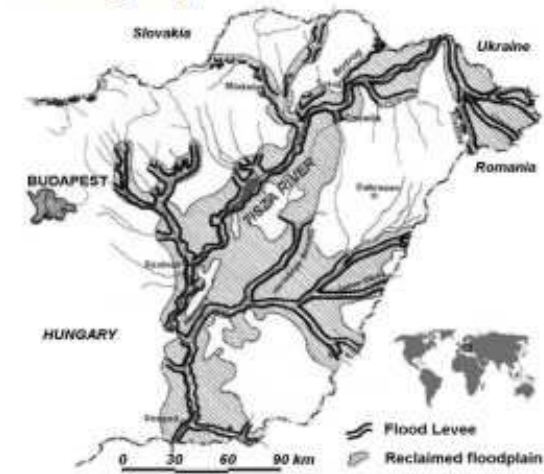
Alxa Region, China



Arid climate, desert,
livestock, agriculture
Temperature increase,
rainfall trend uncertain

Tisza River Basin

Hungary



Continental climate,
grassland, agriculture
Temperature increase,
rainfall more irregular

Results

6 Aspects of adaptation:

- *Environmental*: ecosystems degraded. Traditional land use systems had active role in coping with climate.
- *Technical*: existing technical solutions run into limits. Pilots for new technologies. Available assessm. models less appropriate
- *Financial*: new financial instruments emerge. To be addressed: unequal cost / benefits distribution
- *Institutional*: responsibilities unclear. New coalitions emerge. Institutions not ready to implement adaptation.
- *Social*: informal social networks and knowledge often ignored.
- *Cognitive/info.*: people struggle to connect regional trends to global climate change. Debates crucial. Access to new techno.

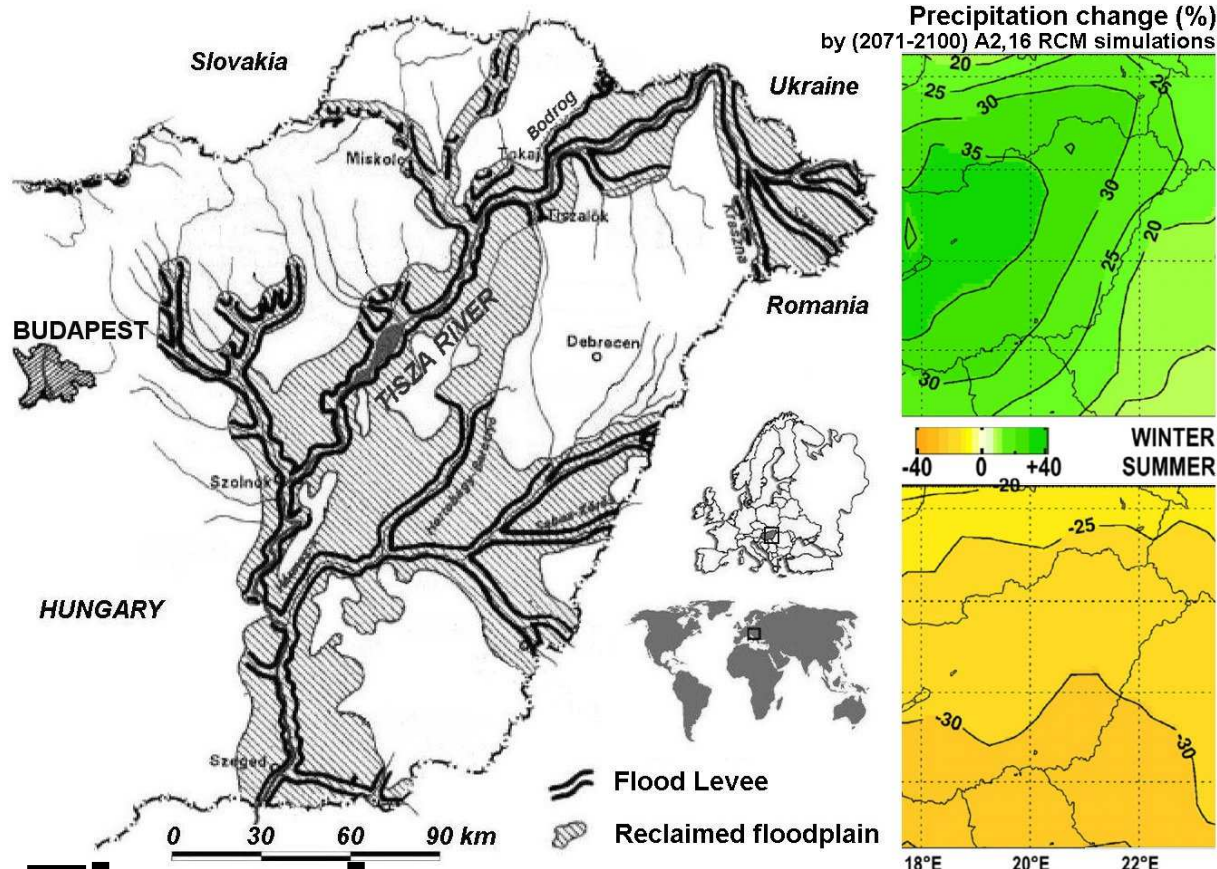
Conclusions, Adaptation enhanced by:

- Environmental, technical, financial, institutional, social, *and* cognitive / informational aspects of adaptation. In particular: clear implementation responsibility, flexible financial instruments, benefit and burden sharing, social learning and (transboundary) cooperation.
- Adaptation pilot projects and regional coalitions that test and debate a diverse set of new ideas. Pilots can deliver both on process & outcome.
- (Traditional) agro-ecological production systems and landscapes that regulate climate impacts.
- Concrete adaptation plans to share with government and donors.
- Support for diverse set of potentially better-adapted new activities rather than compensate impacts on existing activities.
- (Free &) easy access to info on climate impacts & adaptation options.

Thank you & discussion

- More from: Saskia E. Werners (Saskia.werners@wur.nl) *et al.*
Mainstreaming Adaptation in Regional Land Use and Water Management. In: Adaptation and Mitigation Opportunities in European Climate Policy (edited by Hulme, M. and H. Neufeldt. Cambridge University Press, 2009)
- How can today's presentations be used to strengthen the pilots and your ability to respond to climate change?
- Continue work in European MEDIATION project
www.mediation-project.eu

Extras

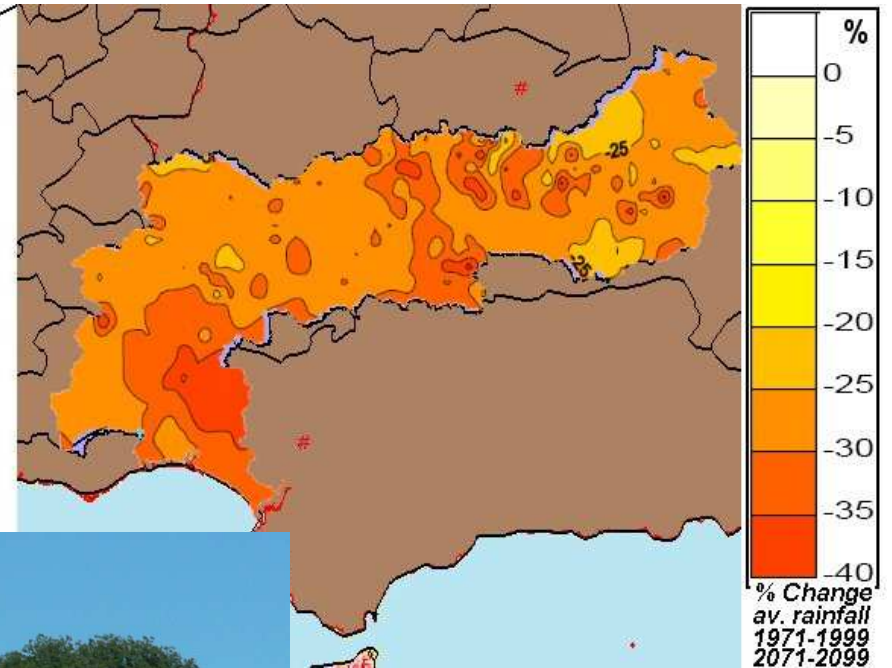


Tisza river Hungary, Europe

Continental climate, grassland, agriculture. Floods, summer drought, rainfall more irregular

Strategy: Allow river to flood, store water in floodplain





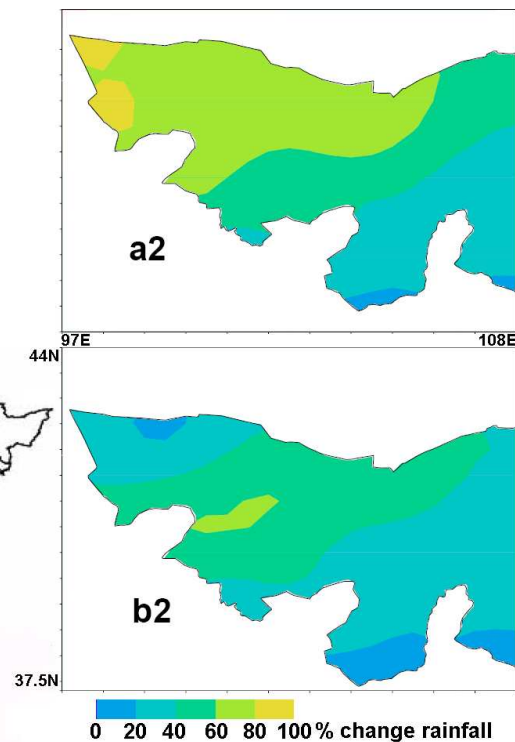
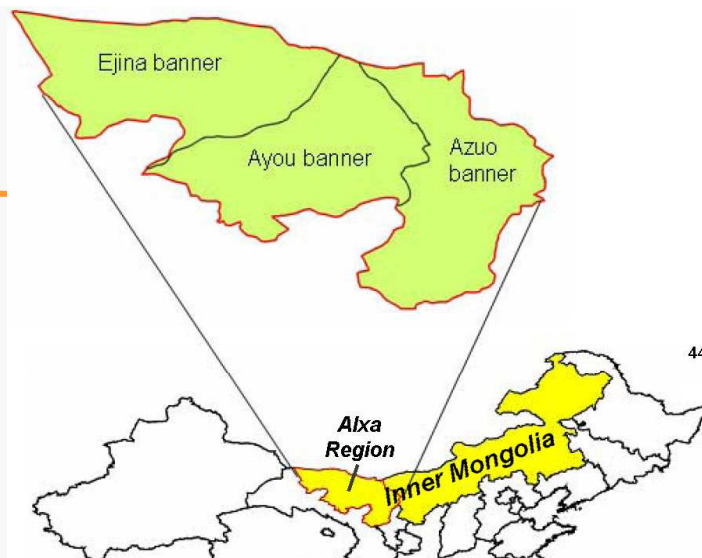
Guadiana Spain/Portugal Europe

Semi-arid climate, forest, agriculture, tourism.

Significant temperature increase, rainfall decrease



Inner Mongolia



Arid climate, desert,
livestock, agriculture
Temperature increase,
rainfall trend uncertain

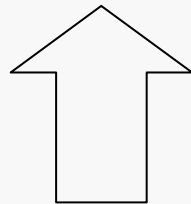


Problem



floodplain management

**flood risk reduction (polders, floodplain revitalisation),
regional development, nature protection**



Politics: elections, EU accession



Policy option: Idea / coalition



Traditional water
management is an
inspiration

Tisza Water Policy

	Spain&Portugal,Europe	Alxa Region, China	Hungary, Europe
<i>Land-use</i>	Semi-arid, forest, agriculture, tourism	Arid climate, desert, livestock, agriculture	Continental climate, grassland, agriculture
<i>Climate</i>	(14-31°C; 440mm/year) Significant temperature increase, less rainfall	(-10-25°C; 120mm/yr) Temperature increase, rainfall trend uncertain	(2-22°C; 1400mm/yr) Temperature increase, rainfall more irregular
<i>Area</i>	66,800 km ²	270,000km ² /72,000km ²	46,000 km ²
<i>Arable</i>	20 million ha (oak,wheat, sunfl, wine, olives, citrus)	30,000ha (wheat, corn, vegetable)+9million steppe	2.6 million ha (wheat, sunflower, corn)
<i>Technical</i>	2000 dams. Reservoir and irrigation system	Irrigation, groundwater and water transfers	2800 km river dikes, drainage system
<i>Economy</i>	Participation in EU and global market. Tourism. GDP 20,000 per capita Below EU average	Increasing market forces and industrialisation. GDP 2,500 euro per capita	Transition economy. GDP 4,500 euro per capita. Below country average
<i>Govern.</i>	EU member in 1986. EU regulation. Regional policies Spain & Portugal	Communist party-led state; limited regional autonomy	EU member in 2004. Implementation national & EU policy
<i>Social</i>	4 million people. Aging	200,000; Mongol minority	4.1 million. Roma minority