



Policy instruments for the promotion of adaptation to climate change


CE1 Adaptation strategies

September 13, 2011

Michel Köhler, Sonja Butzengeiger, Reinhard Mechler,
Sven Schulze, Axel Michaelowa, Martin Stadelmann

Agenda

- **Background of the study**
Overview of potential economic instruments for adaptation
- **Selected instruments**
- **Questions and Discussion**

 Special consideration of climatic and meteorological impacts



Background of our work

Objectives of our work

- **Study for the EU COM**

- **Identify and evaluate economic instruments for**

- Promotion of adaptation in the EU
 - Risk sharing and transfer

- **Scope**

- Review of existing EIs, Selection of EI for further analysis Evaluation of shortlisted EI
 - Development of proposal for innovative EI: AMM
 - Feedback from experts
 - Policy recommendations

**Preliminary findings;
No reflection of EU position**

- **Evaluation criteria**

- Applicability, Effectiveness, Efficiency, Equity and Conditions and Barriers

Shortlisted economic instruments for further evaluation

Policy instrument category	Selected subcategories for further analysis
Subsidies	<ul style="list-style-type: none">- Grants- Tax reductions
Taxes and fees	<ul style="list-style-type: none">- Land taxes and fees
Licences, permits and variations	<ul style="list-style-type: none">- Adaptation market mechanism
Other Market Based Instruments	<ul style="list-style-type: none">- Water markets/pricing- PES
Public Private Partnerships (PPPs)	<ul style="list-style-type: none">- Financial instruments: Loans- Financial instruments: Guarantees

Shortlisted economic instruments for further evaluation

Policy instrument category	Selected subcategories for further analysis
Subsidies	<ul style="list-style-type: none">- Grants- Tax reductions
Taxes and fees	<ul style="list-style-type: none">- Land taxes and fees
Licences, permits and variations	<ul style="list-style-type: none">- Adaptation market mechanism
Other Market Based Instruments	<ul style="list-style-type: none">- Water markets/pricing- PES
Public Private Partnerships (PPPs)	<ul style="list-style-type: none">- Financial instruments: Loans- Financial instruments: Guarantees

One major topic in the context of adaptation: **Climate uncertainty**



Economic Instrument: Concessional loans

Instruments to promote adaptation

Concessional loans

Justification in the context of adaptation:

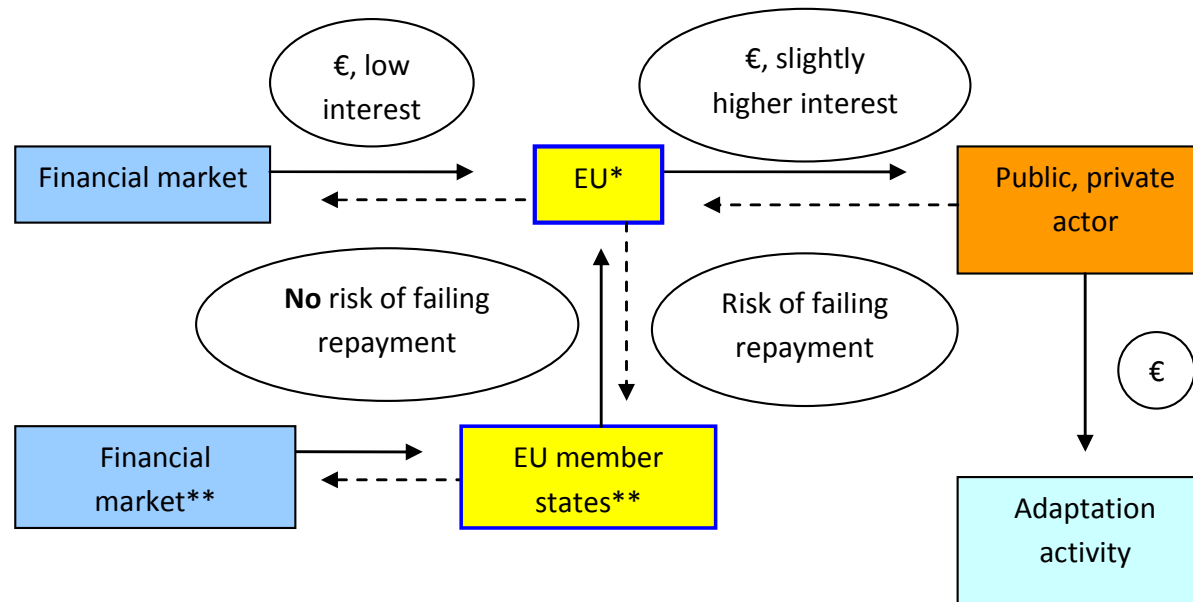
Major investment barrier	Small and private investors	Large corporate investors
Investments with financial return	Accessibility of loan	High interest rates (only if return if investment is at the margin of profitability)
Investments without financial return	Investment per se	Investment per se (but potentially higher willingness to invest in cases with clear, predictable damage potential)

Purpose:

- Make loan available to finance adaptation activities
 - Reduce costs of loans that are available on the regular financial market
 - a) Reduce risk premium for default risk
 - b) Reduce interest rates for project developers
- Incentivize additional adaptation actions

Instruments to promote adaptation

Concessional loans - Working principle



*) including intermediaries like EIB

Forms	Effect
Direct loans from EU budget	Max. cap of loans is lower, refinancing through taxes/own resources required.
Loans financed by member states	Higher interest rates likely (some MS have lower ranking) or tax increase required.
Raised funds from the financial market	No public budget required, EU budget only serves as collateral for credit defaults. Max. cap might be relatively high.

Concessional loans

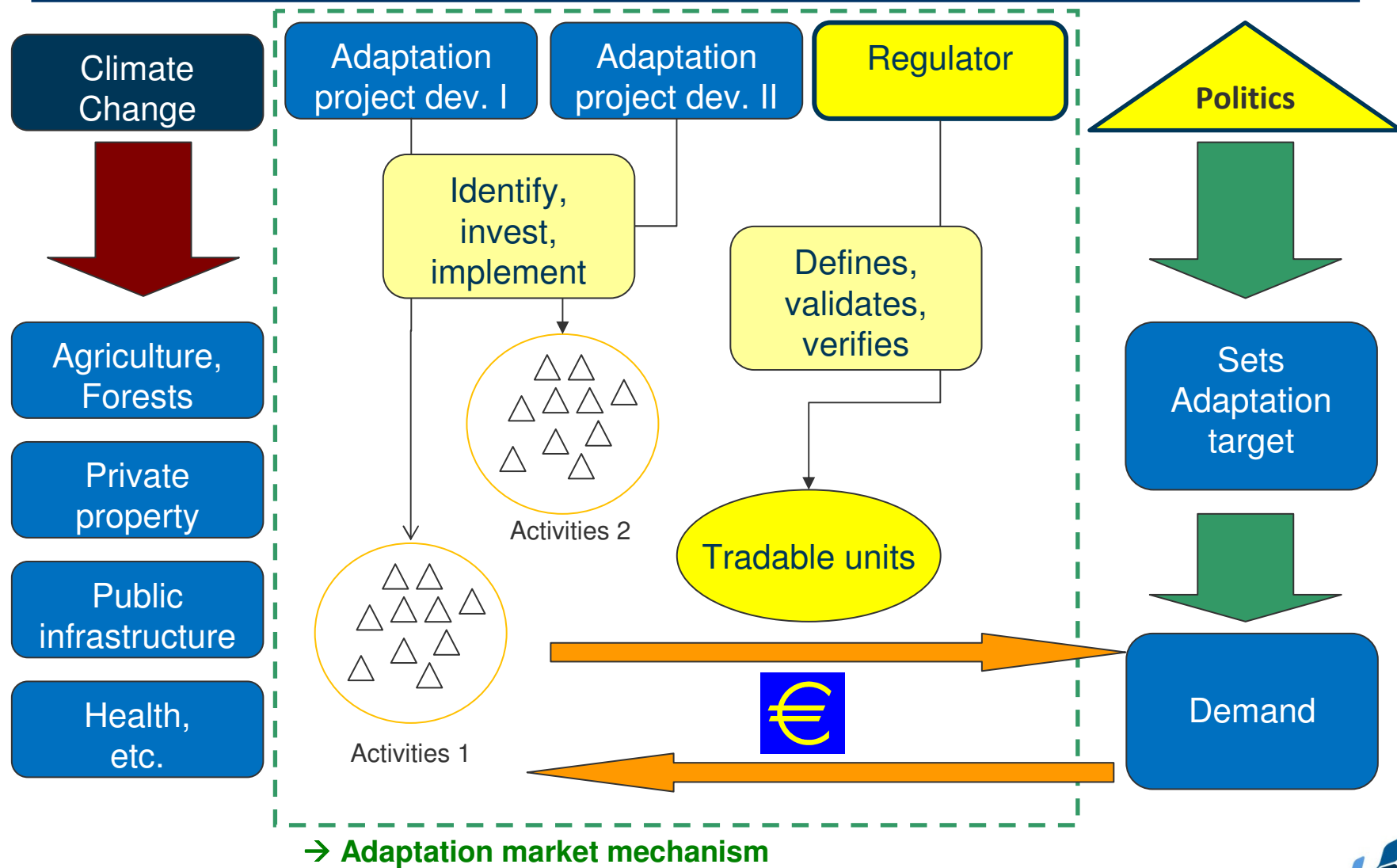
Challenges:

- Often adaptation actions do not generate direct monetary revenues
 - Return is uncertain/non-existent
 - Unlikely that improving loan availability/slight improvement of loan conditions will increase investments in adaptation.
- Politicians would need to agree on a loan funding structure and the related collateral (e.g. EU budget). As in many cases no revenues are created, the **default risk needs to be considered carefully**. Capacity to assess risk has to be built up within the lending institution (e.g. EU).
- The allocation of loans needs to be tied to the specific adaptive action. Lobbies might try to favour certain target groups. **Misleading climatic forecasts can lead to maladaptation.**



Innovative economic instrument: Adaptation Market Mechanism

General concept of an AMM



Task 2 - Instruments to promote adaptation

Licenses & tradable permits: AMM

Justification in the context of adaptation:


- Cost-effective and economically efficient approach: the market identifies the most efficient activities over all participating “sectors”
- Tradable units standardize adaptation benefits and enable comparability.
- Costs can be allocated to responsible actors (public and private).
- Adaptation targets can be set by EU or its member states.

Purpose:

- Promote efficient adaptation.
- Guarantee transparency.
- Strong involvement of private sector, eventually allocation of contributions according to responsibility for climate change (GHG emissions).

Challenges for introducing an AMM

- Allocating targets might be a highly political process **without precise knowledge about future impacts of climate change.**
- Under **uncertain climate change projections**, a consistent estimate of the level of adaptation units across adaptation projects of strongly differing design and lifetime is very difficult -> might lead to inefficient spending.
- Assessment of the prevention of climate impacts through a certain technological intervention may be difficult.

 The regulator needs to be impartial and uphold “adaptation integrity”.



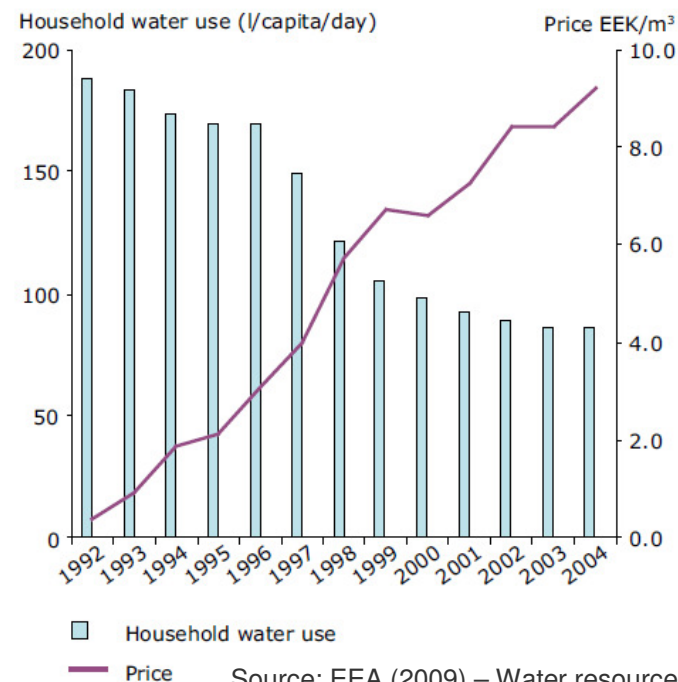
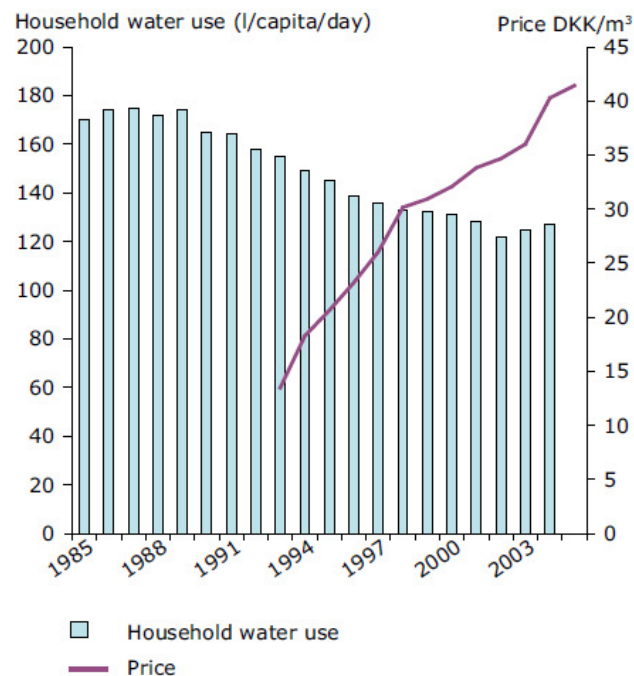
Economic Instrument: Water pricing

Instruments to promote adaptation

Water pricing

The starting point:

The overwhelming and unsurprising empirical evidence shows that pricing water (or rather rising costs for using water) sets incentives to save water.



Source: EEA (2009) – Water resources across Europe, p. 35.

- In our understanding water markets simply mean that **efficient water prices** are needed → full cost pricing! (not current practice...)

Water pricing

- **Challenges**

- Water pricing could cause social hardships.
- Some sectors, e.g. agriculture, would suffer disproportionately.
 - But: some change will be needed!
 - Option to carefully(!) compensate poor social groups through tax revenue

- **Conclusions**

- Prices should reflect the whole costs of water and need to be charged according to volume consumed.
- If efficient water pricing is for some reason not possible, water use should be taxed (regionally, seasonally). The revenues could be used to subsidize the implementation of water saving technologies.
- Water pricing is inevitable and can be **adjusted more flexible to climatic and meteorological changes.**



Thank you for your attention and feel free to ask questions!