

Economic Valuation of Environmental and Resource Costs: The Case of Germany

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This presentation

- Builds on the project "Basic principles for selecting the most cost-effective combinations of measures according to Article 11 WFD", carried out by Ecologic for the German Federal Environment Agency
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The EU Water Framework Directive

- The Water Framework Directive (WFD)
 - entered into force in 2000
 - establishes an integrated approach to water resource management:
 - covers groundwater, surface and coastal water
 - integrates other Directives (UWWD, BW, Nitrate)
 - demands basin-wide strategies
 - incorporates ecological, social, economic aspects
 - starts a long-term process towards the good ecological status in all water bodies (2015)



Economic Aspects of the WFD

- Novelty: first major environmental Directive to integrate economic aspects & approaches
 - Baseline Scenario
 - Cost-effectiveness analysis for programmes of measures
 - Exemptions based on disproportionate cost
 - Cost recovery for water services





Cost Recovery in the WFD

 According to Article 9 WFD, cost recovery for water services to be achieved by 2009

"Member States shall take account of the principle of recovery of the costs of water services, including environmental and resource costs, having regard to the economic analysis conducted according to Annex III, and in accordance in particular with the polluter pays principle."

- provide adequate incentives for efficient water use
- ensure an adequate contribution of water uses to cost recovery of water services



The concept of environmental & resource costs

 Defined in WFD guidance and previous Commission documents

Environmental costs are the costs of damage that water uses impose on the environment and ecosystems and those who use the environment

Resource costs are the costs of foregone opportunities which other uses suffer due to the depletion of the resource beyond its natural rate of recharge or recovery (e.g. linked to the over-abstraction of groundwater).

 Introduced in Article 9 (cost recovery), but also relevant for exemptions, cost-effective programmes of measures, financing?



Environmental & resource costs

- Environmental cost = classical externality: economic activity by one agent creates an uncompensated welfare loss to another
 - e.g. upstream factory, downstream fishers
 - How to assess welfare loss in monetary form
 - Market approaches: income losses
 - Non-market approaches: willingness to pay, esp. in the case of immaterial damage
- Resource cost = cost of unsustainable use
- Both are cases of a market failure







The CIS process & DG Eco 2

- The CIS process for implementation of the Water Framework Directive
 - more than 15 Working Groups so far
 - combining scientists, policy makers
- Drafting group DG Eco 2 set up to clarify the concept of ERC and advice on their assessment in practice
- Results published in June 2004 in the form of a non-binding information sheet



Results & recommendations of Eco 2

- Some clarification on environmental costs and their assessment
- New definition of resource costs: resulting from a misallocation of scarce resources, rather than overexploitation.
- Clarifies distinction between EC and RC, and between external and internal ERC
- Choice of economic assessment methods: damage cost and/or damage avoidance cost





Implementation: the Case of Germany

- Implementation of the WFD driven by the Länder, with different levels of ambition
- Approaches are not clearly defined yet, thinking has only started
- Not a long tradition for economics in environmental policy (unlike UK, NL)
- First reports at the end of 2004, with tentative results on ERC - but no systematic assessment



Implementation: the political side

- General: some reluctance towards the concept of ERC at political level
 - Assessment seen as too costly
 - Validity of methods questioned
 - Relevance of results questioned will ERC be a decisive factor in the implementation?
- So far: only looked at already-internalised costs, e.g. wastewater tax revenue
- Resource costs not addressed specifically
- Great expectations of benefit transfer



Implementation: Academia

Little experience with water-related valuation:

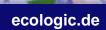
Study	Object	Methodology	Result (examples)
Holm-Müller (1991)	Environmental quality (e.g. drinking water, surface water)	Contingent valuation	Improvement of 1 quality class (€/household*a):
			48 (surface water) 24 (drinking water)
Hampicke, Schäfer (1994)	Isar estuary floodplains	Market prices (timber), contingent valuation	500 to 650 €/ha*a
Jung (1996)	Environmental quality (e.g. drinking water)	Contingent valuation	
Schönbäck (1997)	Danube floodplains, national park	Travel costs, Contingent valuation	Value of national park (11.500 ha): 8,3 billion€
Waibel, Fleischer (1999)	Costs and benefits of agricultural pesticides	Market prices (drinking water), Contingent valuation (biodiversity)	Drinking water supply: 65,9 Mio € p.a. for Germany (51% of total external cost)
Muthke (2001)	Quality of water bodies for recreation	Contingent valuation	Improvement of 1 class: 30 - 43 €, 2 classes: 34 - 53 € / household*a
Wronka (to be published)	Biodiversity, drinking water	Contingent valuation	Improvement of drinking water quality: 22 - 75 €/household*a
Dehnhardt, Meyerhoff (2002) (see below)	Elbe floodplains (biodiversity, nutrient retention)	Contingent valuation, market prices (nutrients)	Area of 10.000 to 15.000 ha: net present value 850 - 1.080 Mio €



Critique and Perspectives

Critique of the German approach:

- Internalised cost-only: misses the point
- Relevance of ERC underestimated:
 - decisions on "disproportionate cost" or "adequate contribution" are crucial
 - pressure groups will know how to exploit these concepts - policy should be prepared
- Do not overestimate the role of benefit transfer if the data basis is not there





Critique and Perspectives

Perspectives:

- Use of economic valuation methods not only for cost recovery, but also
 - to motivate exemptions (cost-benefit ratios)
 - to decide on cost-effectiveness
- Use of revenues from recovery of ERC to finance the programme of measures
- Assessment will be supported through ongoing research, e.g. Aquamoney (FP6)



Thank you for your attention.

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