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Valuing Ecosystem Services for WFD Implementation?

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Content

- Implementing the WFD
  - economic considerations
- Environmental and resource costs
- Economic Valuation
  - current situation
  - challenges
- Implications for the EsA

Implementing the WFD

Innovative approach

- incorporation of economic considerations, models, methods and tools
  - apply for many aspects of WFD
  - 2002 WATECO CIS guidance calls for a thorough integration of economic elements to facilitate decision-making

Implementing the WFD

Economics in the WFD

- Article 5
  - assessment of the economic significance of water use and the current level of cost recovery (completed 2004)
- Article 9
  - assessment of the level of cost recovery, incentive pricing: based on the cost of necessary measures to reach WFD environmental objectives, stipulates the polluter-pays-principle

Implementing the WFD

Economics in the WFD

- Article 11 (+Annex III)
  - selection of most cost-effective sets of measures for achieving good ecological status/potential - for the programmes of measures/management plan
- Article 4
  - decisions on derogations at disproportionate costs
    - time derogations
    - less stringent objectives
    - designation of hmwb and awb

Environmental & Resource Costs

...play a central role in the economic analysis of the WFD

...from the WATECO guidance:

- Environmental Costs:
  - damage cost to water environment and other uses (e.g. a reduction of ecological quality of aquatic ecosystems...)
- Resource Costs:
  - cost of foregone opportunities which other uses suffer due to the depletion of the resource costs of using water as a scarce resource (e.g. the overabstraction of groundwater)

Environmental & Resource Costs

ERC and the selection of measures

- To what extent are existing or new environmental standards met or not?
- What are the associated costs/benefits?

  (including residual environmental damage costs and any costs arising as a result of an inefficient allocation of water and pollution rights)

Environmental & Resource Costs

Tools:

Cost-Effectiveness Analysis

- estimation of the least cost way to achieve the environmental objectives

Cost-Benefit Analysis

- comparing cost for of pollution control measures and the damage cost avoided (benefits)
- Article 4: do the cost outweigh the potential benefits to be occurred through avoided damages?

Economic Valuation

- Determining the economic value of environmental goods and services: placing a monetary value on these goods
  - challenge: no markets - replacements, surrogate and virtual markets, stated preference
- Allows for making trade-offs between environmental protection and economic development more explicit
- Can help policy-makers in reaching decisions, increases acceptance of policy decisions?

Economic Valuation

Methods are abundant, discussed in literature

damage avoidance costs: averted cost, cost incurred in absence of ES
replacement, restoration costs: cost to replace service
factor income: increase in income due to ecosystem service
travel cost: implied value, states preference
hedonic pricing: prices for associated goods
contingent valuation: hypothetical scenarios, WTP

Problems:

- lack of empirical data,
- time intensive
- scepticism
  - ethical reasons, transparency, public involvement
- methodological biases

Economic Valuation/WFD

- May play different roles in the implementation process - usefulness needs to be judged
- What has been done so far in the MS?
  - Netherlands
    - cost of water protection measures used as a proxy to look at cost recovery
    - cost of environmental protection at the national level
    - on-going efforts to translate environmental damages into economic values (CV)

Economic Valuation/WFD

- Germany
  - not a long tradition
  - most influential work: Meyerhoff and Dehnhardt (2002): valuation of the proposed restoration of 10,000 ha of floodplains along the Elbe river
  - CV - used to elicit WTP
  - replacement method: cost to replace ecosystem services
- UK
  - differentiation between small-scale studies for individual projects (quantification of the benefit of low-flow alleviation in various rivers in the UK for tourism)
  - large-scale study on estimating the economic value of inland fisheries

Economic Valuation/WFD

- UK (cont.)
  - benefit transfer studies - based on existing economic data to show benefits of individual projects as well as strategic programmes: CBA to analyse, which restoration effort should be undertaken
  - Collaborative Research Programme: Methodologies for WFD implementation(disproportionate costs)

⇨ use economic of economic valuation for water-related decision-making is still in early stages...especially with view to implementing WFD

Economic Valuation/WFD

- What could be the reasons?
  - Lack of decision-making structure and strong legal requirement in the individual member states
  - Applied to difficult decisions (last resort)
  - Valuation studies rejected by decision-makers

- What are the challenges/problems?
  - Scattered examples - no clear guidance on application
  - Lack of data
  - Multiple sources of uncertainty
  - No existing standard values for the purpose of benefits transfer
  - Lack of aggregation and disaggregation at the level of different water management units

Implications for the EsA

- ESA stresses the importance of the valuation of ecosystem services
- WFD establishes strong legal setting for economic approach
  - based on the assessment of environmental damage cost or damage avoidance cost (similar with biodiversity)
  - seeks to find solutions for the basin scale
  - WFD strives for an integrated approach
  - pragmatism - only use when valuation is applicable

Implications for the EsA

- Integration with WFD concepts
  - Foregone Ecosystem services as part of ERC
  - ⇨ but this would neglect benefits beyond meeting WFD goals
  - ⇨ WFD very much directed at selecting most cost-effective sets of measures
- Methods and acceptance in both fields are still emerging
  - Potential for mutual learning?...and thus improvements?
  - *If rightly, applied a powerful tool for policy-makers, PP...*

Work currently underway

- Methodology for the selection of most cost-efficient sets of measures
- Role of valuation studies in the WFD
- Valuation of Environmental and Resource Costs (+Benefits) - Development and testing of practical guidance

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