



**Evaluating Economic Policy Instruments for Sustainable Water Management in Europe**

## WG 2 Tackling water quality concerns – diffuse pollution

Ecologic

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### 1. Case studies

#### Dorset, UK

- Incentive payments (and information) for improved farm management practices - cooperative agreement between farmers and Wessex Water

#### Denmark

- Ad-valorem pesticide tax applied nationwide

#### Evian, France

- Payment scheme for eco-system services among dairy farmers paid for by Evian Company

#### Baden-Württemberg, Germany

- SchALVO – compensatory payments for regulation of protected areas
- Water abstraction charges
- MEKO – payments for environmentally friendly farming practices

#### New York City Watershed Agricultural Program (CS26)

- Publicly-financed, farmer-run program to implement best management practices

#### Australia – three case studies on de-salinisation

- Salinity offsetting credit program  
(Neuse, NC – nitrogen permit trading)



2. Environmental outcomes

- Environmental outcomes
  - Australia – salinity rates down
  - Dorset – reduced short term pressure from nitrates
  - B-W – reduced nitrate in soils, water productivity
- Success of EPI - output
  - Farmers signing up for voluntary programs
  - Denmark: very small effect, no reduction in pesticide use
- Issues:
  - Environmental outcomes typically not measured
  - Difficult to isolate effect of the EPI
    - a) complexity of social and ecological cause-effect chains, and
    - b) EPI as part of policy package



2

3. Economic assessment criteria

- No CBAs
- EPIs assessed to be cost-effective
  - Dorset: EPI and simple technical solution as effective as more expensive treatment
  - Denmark: general assessment that taxes are cost-effective
  - B-W: MEKA → largest environmental benefit among agri-envi schemes
  - NYC: BMP and conservation easement purchases less costly than filtration plant
  - Australia: Ulan Coal Mine
- Winners and losers?
  - Voluntary agreements: typically win-win
  - Taxes/charges: farmers pay revenues, reimbursed in DK, but not in B-W?
- Issue
  - Economic assessments require better data on environmental outcomes



3

4. **Distributional effects and social equity**

- **No or low negative distributional effects**
  - Farmers compensated under voluntary schemes
  - Taxes: design favoured farmers
    - DK: reimbursement (although distributional effects among types of farmers)
    - B-W: exemptions; BUT water consumers pay
- **Improved social equity and sustainability**
  - Australia: EPI facilitated learning process
  - Dorset: learning, practices to apply less fertiliser without loss of yield



4

5. **Institutions**

- **Supportive institutional setting is a requirement for adoption and implementation of EPIs**
  - Favourable attitude towards and experience with EPIs in policy system promotes adoption
    - Denmark
    - Australia
  - Stakeholder involvement and trust building
    - Voluntary schemes: Evian, NYC stakeholder fora promote farmer participation
    - DK farmer involvement in policy process
  - Supportive regulatory schemes
    - Evian
    - Dorset a negative case



5

6. Policy Implementability

- Flexibility
  - All measures: some adaptability to farmers
  - Revisions of instruments
- Participation
  - Interest group and stakeholder participation in policy formulation phase (DK)
  - Stakeholder participation in implementation/ administration of programs
- Impact of institutional context
  - Voluntary schemes: flexibility and involvement promotes acceptance and participation
  - Taxes/charges: interest group involvement in policy formulation → weaker incentives and smaller effect?
- Policy coherence
  - Synergies: agro-enviro schemes, WFD, Natura 2000
  - ? Common Agricultural Policy (DK: pos; B-W, neg)
  - Conflicts: EU renewable energy policies



6

7. Transaction costs

- Voluntary agreements with compensation
  - Substantial transaction costs
    - Many meetings with farmers
    - Research and program design
    - Lower transaction costs when fewer participants !
    - Investment for the future: building trust
- Taxes/charges
  - Transaction costs low in relation to revenues
    - E.g. DK: EUR 0.4 million establishment, EUR 0.2 mill running expenses, revenue EUR 67 million
    - E.g. B-W: administrative expenses 1 to 20% of expenses



7

## 8. Uncertainty

- Lack of specific and quantitative objectives
  - Inadequate understanding of causal relations
- Economic assessments uncertain
- Pedigree tables: variation but many 2, 3 and 4s.
  - Generally
    - Uncertainty higher appears to be higher from reading studies than what is expressed in pedigree tables



8

## 9. Discussion points

- What can we conclude about the EPI performance regarding water quality – to what extent and how do they solve water quality management problems?
- What appear to be key conditions for effective EPIs in water quality management?
  - Positive and negative interactions with other policies
- What are the barriers for optimal functioning of EPIs?
- In future research, how can we design studies to measure more accurately the environmental effects of EPIs as well as their cost-effectiveness



9



**Thanks!**

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