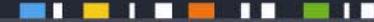




Programmes of Measures – Economic Aspects
Experiences From the Danish Implementation

Hans Christian Karsten
Head of Water Department

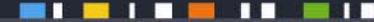
Recent Danish Activities



Stepping stones:

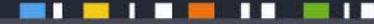
- 3 Water Action Plans ('87, '98, '04)
- 2 Pesticide Action Plans (*, *)
- Main Challenges: Eutrofication, Ground Water Protection
- Focus on Agriculture, Waste Water and Pesticides

Danish Experiences Through 20 Years



- Time is crucial
- Money is needed (Who's is going to pay?)
- Point sources can be managed
- Diffuse sources are difficult to manage

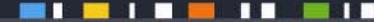
Programme of Measures - Benchmarks



The Programme of Measures:

1. Has to be SPECIFIC and OPERATIONAL
2. Must PENETRATE the environmental problem (time and space)
3. Should be COST-EFFECTIVE with adequate FINANCING

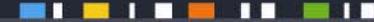
Danish Strategy for RBMP's



A straight political platform is needed

- Implementation of WFD in close cooperation with the Ministry of Finances and Ministry of Agriculture
- Activities and the Financial Framework should be politically agreed

State of Danish Affairs



Planning is 1 year behind schedule

but

- The Government has a political agreement with the Parliament (the "Green Growth Action Plan")
- The Programmes of Measures are fully financed (2.5 Bkr./year ~ 330 M€/year)
- Approved activities are identified
- Measures will be fully operational in 2012

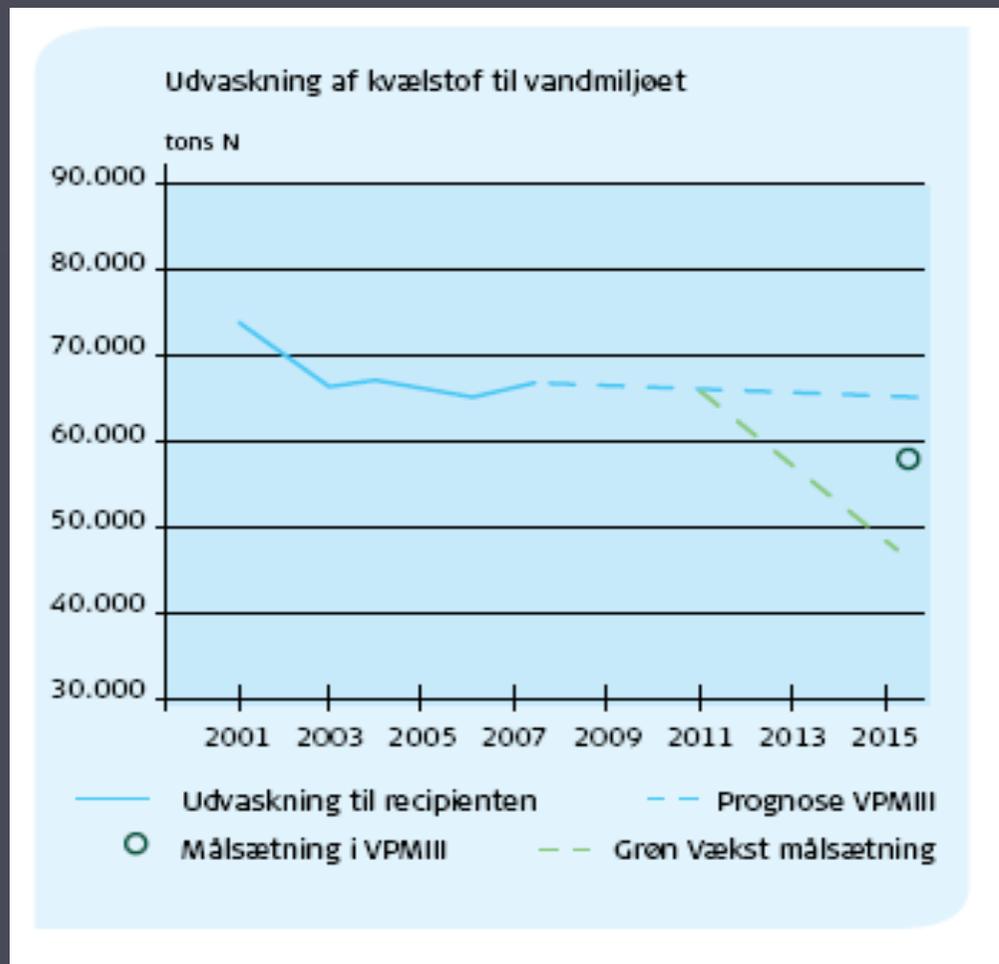
C/E measures in Denmark (for combating Eutrofication)

	Price/unit	Appliance	Effect (N)	Effect (P)
<i>General measures</i>				
Stringtheneing normsystem (farms)			1.008 t N	
Limiting ploughing in fall	1,35 dkr/kg N	110.000 ha	739 t N	18 t P
Limiting ploughing of some grassfields	4,35 dkr/kg N	15.000 ha	230 t N	
More catchcrops	30,43 dkr/kg N	50.000 ha	690 t N	
10 m bufferzones	43 dkr/kg N	53.400 ha	2.561 t N	160 t P
<i>Specific measures</i>				
Targeted catchcrops	30 dkr/kg N	140.000 ha	1.950 t N	
Nitrogen reducing wetlands	144 dkr/kg N	10.000 ha	1.132 t N	
Phosphorus reducing wetlands	500 dkr/kg P	3.000 ha		30 t P
Tradable Nitrogen qvotes for farms	36 dkr/kg N		10.000 t N	

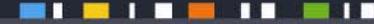
Nitrogen to Marine Waters - objectives



Reduce Nitrogen 19.000 t - from 65.000 t



What about Cost-Benefit?



CBA's are not used in the 1. Planning Period (2009-2015)
All activities are based on Cost-Effectiveness

The CBA is challenged with Extreme Methodical Problems
- and The Commission's help is needed

Environmental Challenges in RBMP's



Results from 1987-2008

Achieved:

- Xx.000 tN reduction
- Yyy tP reduction

Main measures:

- Tertiary waste water treatment
- Strict permits to industries
- N-fertilisation restrictions
- Controlled manure storage and disposal
- Etc.

RBMP-measures 2009-2015

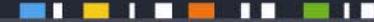
Objectives:

- 19.000 tN reduction (coastal waters)
- 210 tP reduction (lakes)
- 7.300 km river/stream remediation

Mitigation measures:

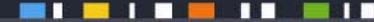
- 50.000 ha river and lake bank zones
- 13.000 ha wetlands
- Additional Sewage Treatment
- All Permits & Authorisations must respect RBMP-measures
- New ammonia emission requirements

Economic Impacts RBMP-Odense



- Find her økonomiopstilling fra Odense-Å-plan eller en anden plan

23 RBMP's in Denmark



- DK-kort med vandoplande

Pointer

- Plans are more than framework – they include concrete measures
- State level plans are to be followed by 98 local action plans
- Integrated water management (planning, authorisation and operation by one and the same authority)
- All activities ranked by C/E
- Full integration of environment and economics in RBMP's