

Stakeholder participation key to reducing nitrogen pollution from farming - DK

1. Policy Objective & Theme

- SUSTAINABLE USE OF RESOURCES: Preserving coastal environment (its functioning and integrity) to share space

2. Key Approaches

- Participation
- Knowledge-based
- Ecosystems based approach
- Technical

3. Experiences that can be exchanged

Good agricultural practices (GAP) and new integrated advisory services have been combined with positive results to help reduce eutrophication risks in Danish watercourses.

4. Overview of the case

This case shows that farm-led action can help to improve poor water conditions where agriculture is known to be an important contributory factor. It shows how farmers can work together with advisory services and municipalities to implement WFD objectives within a collaborative framework.

5. Context and Objectives

a) Context

Water quality levels in many Danish rivers and lakes have been recorded at levels below the standards anticipated by the Water Framework Directive (WFD). Previous assessments by regional authorities found that about half of the streams sampled could not meet the authorities' required quality goals. Eutrophication linked to agriculture was judged to be a major contributory factor to the poor water conditions. Economic profit has traditionally been the sole focus in farming, and only since 1987, when the first water management plan was launched in Denmark, have farmers been forced to consider the environmental impact due to national regulations. Implementation of the WFD will demand farmers to balance the financial and environmental conditions and furthermore, to consider not only the environmental impact at farm level, but at the level of river basins or sections thereof.

This is a new approach because the nitrogen and phosphorus contribution from agriculture at present is mainly regulated on a national level, not taking regional and local conditions into consideration. It is assumed that the environmental objectives for the aquatic ecosystem, set by the environmental authorities in accordance with the WFD, can be achieved through farmers' voluntary implementation of GAP with improved and coordinated support by the Danish agricultural advisory system and by environmental authorities. The work took place in three intensive agricultural areas in the Mid-eastern part of Jutland, Denmark

b) Objectives

The aim of this LIFE funded project was to bring agricultural pressure on the drinking water supply and the aquatic

environment into line with the requirements of the WFD while at the same time enabling farmers to continue to earn a living. It was also to develop and test an integrated participatory advisory approach for implementation of Good Agricultural Practices (GAP) and to demonstrate and quantify the impact of GAP on P and N in surface and groundwater in relation to expected achievement of established tolerance limits.

6. Implementation of the ICZM Approach (i.e. management, tools, resources)

a) Management

The work was led by the Danish Agricultural Advisory Service National Centre. There was overall co-operation between 20 farmers, three local agricultural associations, the Danish Institute of Agricultural Sciences, the Danish Agricultural Advisory Service, Aarhus County and the Danish Ministry of the Environment.

b) ICZM tools

The partners in this untraditional cooperation have selected three agriculturally intensive pilot areas in eastern Jutland in which to demonstrate good agricultural practice. These included Norsminde Fjord and its catchment. The approach was based on development of co-operation and co-ordination between environmental authorities, agricultural advisory services, agricultural research institutes and farmers. The farmers showed how they can voluntarily attain the objectives for nutrient losses through good agricultural practice – objectives which would otherwise be imposed upon them later pursuant to the WFD.

To facilitate preparation of holistic plans for the individual farms, an electronic map system for the three pilot areas was developed. This system contains all relevant data on production and environmental conditions so that the agricultural advisors can base their advice on the best available knowledge. When a farmer accesses the map, the data are presented to him. Moreover, the data are accompanied by suggestions as to where the risk of nutrient loss is greatest and what he can do to reduce it. The farmer is thereby able to focus his efforts on those places where the effect is greatest e.g. a farmer zooms in on one of his fields located in sloping terrain. In the lowest part of the field an area is highlighted to indicate that there is a high risk of phosphorus loss. This is accompanied by a number of proposals for reducing phosphorus loss from that specific field such as ploughing in the other direction or establishing a border zone (with a subsidy attached). The map system provides the farmer and his advisor with very specific possibilities to see how best to protect the aquatic environment – while concomitantly leaving room to cultivate the land and make a profit. It is a strong foundation for the integrated advisory system. At the same time the map system is so clear that it helps promote understanding of the WFD and its objectives. This understanding gives the farmer a sense of joint responsibility for it.

Nitrogen leaching has already been reduced by using a combination of different farming techniques e.g. use of ammonium instead of nitrate fertiliser, early sowing of winter cereals, use of catch crops and spring ploughing of grasslands.

7. Cost and resources

The project budget was DKK 15 million, of which half was provided by the EU and half is provided by the project partners and the Danish Environmental Protection Agency.

8. Effectiveness (i.e. were the foreseen goals/objectives of the work reached?)

From the beginning all the project partners were involved in designing the new advisory tool which enabled the agricultural advisors and environmental authorities to draw up integrated plans for the farms in collaboration with the farmers. The plans integrated consideration for:

- Production
- The farming community
- The environment

in an integrated advisory approach. Only by getting all three pillars to stand solidly would the farming community have a viable

strategy that would create an understanding of the need to show consideration for the environment – and hence acceptance of voluntary measures. A GAP manual for farmers was produced bringing together all available environmental knowledge related to agro-eutrophication. It took account of important commercial factors concerning productivity gains and losses from the different GAPs.

9. Success and Fail factors

The LIFE project ensured that the WFD was not simply imposed upon the farmers against their will. To the contrary, the participating farmers gained joint ownership of the directive by actively influencing how it is implemented through good agricultural practice.

10. Unforeseen outcomes

The GAP manual helped facilitate an agreed eutrophication management plan for each farm using it. Leaching of nutrients has already been reduced in Norsminde Fjord by 20-25%, half of the needed amount. It is unlikely that the environmental targets needed can be reached by voluntary initiatives in all places.

11. Prepared by

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12. Verified by

It has not been possible to verify this case.

13. Sources

- Cleaner water through improved agricultural practice (undated) Danish Agricultural Advisory Service National Centre
- AGWAPLAN - Norsminde Fjord (undated) Danish Agricultural Advisory Service National Centre (In Danish).
- www.agwaplan.dk



AGWAPLAN - Skilt_Norsminde (545.86 KB) 



AGWAPLAN folder (5.2 MB) 