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**Innovative practices, Finland**

**STEP-VISE APPROACH IN WATER PROTECTION IN FINLAND**

High standards of water protection based on the ecosystem approach are necessities in Finland, where we have large numbers of water bodies, and where water bodies are highly vulnerable to environmental changes. Water management is based on good governance, long-term planning and target-setting, and involves wide-ranging co-operation with many different stakeholders. The knowledge base for planning has been established through intensive research and monitoring. Research tools such as mathematical models and geographical information systems have been developed providing a knowledge base for target setting.

**Description of the Initiative**

Finland has reached good results in water protection by setting quantitative national water protection targets with specific time frames. The United Nations World Water Assessment Programme examined water quality indicator values in 122 countries. Finland was the highest ranked country in this assessment, which was published in the World Water Development Report in 2003.

Three national Water Protection Programmes, adopted by the Government have been drawn since the beginning on the 1970's. In these Programmes quantitative targets for the most important pollutants are defined. Also for other activities, measures to combat adverse effects on water quality and ecosystems are identified. Achievement of these targets has been monitored. The targets in the new Programmes have been set taking into account the results from the follow-up and other emerging needs. Progress has therefore been achieved step wise. In the target setting the environmental impacts, available technology and costs have been taken into account.

The third national water protection Programme, approved by the Government in 1988 sets targets for the year 2005. The Programme represents the political stance on water protection. The long-term goal is that the state of the Baltic Sea and the inland surface waters is not further deteriorated by human activities. The main aim of this Programme is to reduce the eutrophication of the Waters. The target is to reduce nutrient discharges by about 50 % from the level of the early 1990s. As a result of these reductions in the pollution load, the water quality will improve in many lakes and along coastal areas. The ecological diversity of shore habitats and aquatic environments in sea areas, lakes and rivers will be safeguarded.

In April 2002, the Finnish Government adopted Finland's Programme for the Protection of the Baltic Sea. Steps that will be taken include combating eutrophication, decreasing the risks caused by hazardous substances, combating risks of sea traffic, protecting biodiversity, increasing environmental awareness and research. Discharges will be cut both in Finland and, with international cooperation, with countries in the basin areas. The total costs of the protection programme are estimated at EUR 300-370 million during a 10-15 year period.

The measures and objectives of the Programmes shall be taken into account in the different sectoral policies. In order to implement the Programmes, the Ministry of the Environment will draw up and approve an Action Plan in cooperation with the various sectors (e.g. industry, agriculture and transport). An evaluation of the fulfillment of the recent targets is going on, and the aim is to elaborate new targets for 2006-2015.

These initiatives (National Water Protection Programmes and Finland's Programme for the Protection of the Baltic Sea) contribute to the achievement of MD and WSSD targets in the following ways:

a). Setting water protection targets strengthens the ecosystem approach in integrated water resources management. The targets contribute also to the national implementation of the European Union Water Framework Directive. Adopted in 2000, the directive includes measures and mechanisms for setting environmental objectives, for production of river basin management plans and for public information.

b) Water protection programmes have influenced the development of local water protection measures. Wastewater treatment in urban areas, where about 80% of the Finnish population live, is of a high standard in international terms. About 95% of both organic compounds and phosphorus, and about 50% of nitrogen are

removed. Also the discharges from industrial sources have decreased dramatically compared to the situation in the beginning of the 1970's. The share of the areas where the water quality is poor has decreased considerably.

The Water Protection Programme for the year 2005 identified the need to reduce pollution coming from households in rural areas. About a fifth of the Finnish population live outside the centralized sewerage treatment system. New legislation was therefore passed in summer 2003, setting minimum standards for the treatment of wastewater from households outside sewerage networks. The new legislation should lead to an overall reduction of 6-8% in total anthropogenic phosphorus emissions in Finland. The costs of improving wastewater treatment systems vary greatly according to local conditions, but the necessary investments have been estimated to amount to an average of around EUR 3,000 per property. Government subsidies may be granted in certain cases.

The 1st International Dry Toilet Conference was organized in Finland in summer 2003. The Conference presented dry toilet technologies as feasible means to reduce wastewater emissions especially in rural areas, in both developed and developing countries.

### **Mainstreaming/Sustainability**

The water protection targets have been adopted by the Government and they provide the political framework for action. They have been integrated into the national strategy on sustainable development. They have influenced the development of the agri-environmental support system aiming to decrease the pollution load to watercourses from agriculture.

National targets have provided the framework for the regional and local water protection measures. Pulp and paper production involve highly water-intensive processes, but mills in Finland have been able to carry out major improvements in efficiency of their water use. The specific water consumption has dropped by 80% from the level of the beginning of 1970s, contributing to the major decrease in water pollution.

Treatment of wastewater from industrial and municipal sources has improved considerably during recent decades. Diffuse pollution, including pollution caused by wastewater from sparsely populated rural areas has become a more significant factor in the deterioration of water quality in rivers, lakes and groundwater. It is therefore increasingly important to develop innovative technologies to deal with these problems, including small-scale solutions.

According to the Polluter Pays Principle, the municipalities and industries have primary responsibility to take actions required to minimize their adverse effects to water quality. The Government has some minor subsidies to support the community sewerage development in rural areas. The agri-environmental subsidy system 2001-2006 incorporates environmental subsidy. It has been estimated that in the long-term, the environmental subsidy to be provided to agriculture in 1995-2006 will reduce the phosphorus and nitrogen load on watercourses. The environmental subsidies for agriculture totaled EUR 306 million in 2003.

### **Replicating the Initiative**

Good governance, polluter and user pays –principles, national, regional and local target setting, step wise approach and time frames, co-operation with different stakeholders can be used in the integrated water resources development in other countries.