



Integrated Water Resource Management

Integrated water resources management and high standards of water protection based on the ecosystem approach are necessities in Finland, where water bodies are highly vulnerable to environmental changes. Water management is based on long-term planning and targets, and involves wide-ranging co-operation with many different stakeholders. The knowledge base for planning has been established through intensive research and monitoring. Many special research tools such as mathematical models and geographical information systems have been developed in Finland.

Integrated water resource planning

Integrated water resource management plans covering the whole Finland were drafted as long ago as the 1970s and the early 1980s. The aim of these plans was to create medium-term and long-term guidelines for regional water management, and to provide a knowledge base for decision-making by different interest groups.

Regional water resource development plans were drafted by regional water and environment centres in co-operation with other stakeholders in the late 1980s and early 1990s. Many regional **water protection plans** have

additionally been drawn up to improve water quality and usability. Finnish municipalities must nowadays also draft **development plans for water supply and sewerage**.

The EU Water Framework Directive provides a useful instrument for integrated water resource management in river basins. The Directive aims at achieving "good status" for all waters by setting timetables and deadlines for actions. The Directive also underlines such approaches as "getting the prices right" and getting various stakeholders and local people closely involved in the planning process. River basin management plans must

The Karjaanjoki Life Project

This integrated river basin management project involves a network for optimised water management and the rehabilitation and protection of aquatic ecosystems in the Karjaanjoki area.

The project:

- covers the whole river basin,
- aims to restore and improve the good ecological condition of the river basin, and to revive aquatic ecosystems,
- has created a network involving many different stakeholders,
- actively encourages participation from local people,
- started in 2001 and will run until the beginning of 2005, and
- has been financed mainly using national funds and EU Life environmental funding.

More information: www.karjaanjokilife.fi

be published by 2009 at the latest.

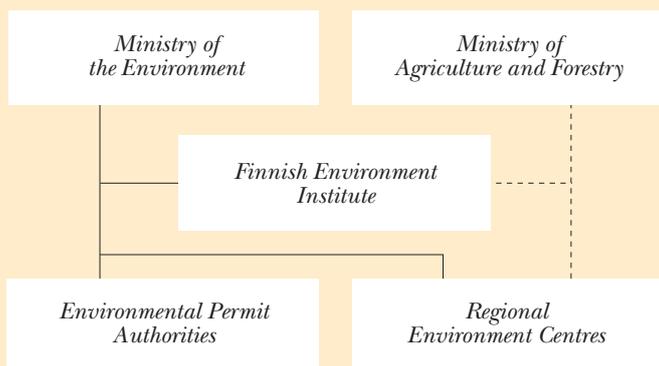
Achieving good status for inland waters concerns both water quality and the ecological structure of river beds. **Environmental hydraulic engineering** and **restoration measures** are important tools in water management and flood control. Future challenges will include integrating the use of water and the need to restore natural aquatic habitats, particularly for fisheries.

A lot of research and development has been conducted in Finland on the **regulation of watercourses** over the last 15 years. Together with improved forecasting and planning methods, the consequent increased understanding of the ecological, social and economic impacts of regulation now provides new potential for alleviating adverse impacts.

Long-term goals and programmes

Water Protection in Finland is based on long-term goals and proactive strategies. Three national water protection programmes have been issued since the early 1970s. The **third national water protection programme** was adopted by the Finnish Government in 1988, and sets objectives up to 2005.

Finnish Environmental Administration



— Overall supervision - - - - Supervision of use and management of water resources

The main goal of the programme is to prevent and reduce eutrophication. The Water Protection Programme specifies quantitative water protection targets for priority sectors including agriculture, industry and municipalities. Progress towards reaching these targets is closely monitored.

Measures to reduce eutrophication are particularly needed in agriculture and in small rural settlements. The programme also attempts to reduce the risks associated with hazardous substances.

Finland's National Programme for the Protection of the Baltic Sea was adopted in 2002. Domestic measures within the programme focus on reducing effluent loads from agriculture, municipalities and scattered settlements. The most important aim is to improve the state of the Finnish coastal waters of the Baltic Sea. Other elements of the programme include enhancing wastewater treatment in St Petersburg, building up emergency capacity to deal with winter oil spills, improving safety standards for shipping, and curbing emissions of hazardous substances. Finland works actively in international co-operation to promote improvements on these issues.

Good governance in water management

The Ministry of the Environment is in charge of water protection and environment policies. The Ministry sets targets for water protection, develops environmental legislation, and oversees international co-operation.

The Ministry of Agriculture and Forestry is in charge of management of water resources, including i.a. development of water supply and sewerage, flood control, drainage and irrigation.

The Finnish Environment Institute (FEI) produces information and solutions to support ecologically sustainable development. FEI has at the moment research programmes on integrated river basin management, on the protection of the Baltic Sea and on environmental technology.

Finland's 13 **Regional Environmental Centres** implement water protection and water management measures and supervise the enforcement of legislation in respective areas. They also process environmental permits for medium-sized industrial plants and other activities subject to a permit.

Finland's three **Environmental Permit Authorities** deal with permits for larger industrial plants, and permits issued under the Water Act.

Municipal environmental authorities promote and supervise environmental protection on a local level. They also issue environmental permits needed by smaller plants and facilities.

More information: www.environment.fi > water resources management