

13. FINLAND

13.1 Water Resources Management Policies and Actions

In November 2006, the Finnish Government approved a new set of national Water Protection Policy Outlines to Year 2015 in a decision-in-principle defining measures needed to improve water quality. The new outlines, as detailed in **Exhibit FI-1**, set out five water protection targets for Year 2015:

- achieving good water quality
- combating eutrophication
- targeting agricultural emissions
- nitrogen removal to be intensified
- social impacts

The two main laws in Finland governing the protection of groundwater are the Environmental Protection Act²⁰¹ and the Water Act.

*Environmental Protection Act*²⁰²: A good chemical state of groundwater is safeguarded by means of the prohibition against groundwater pollution laid down in Section 8 of the Act. According to the regulation, no substance shall be deposited in or conducted to a place or handled in a way that: (i) groundwater may become hazardous to health or its quality otherwise materially deteriorate in areas important for water supply or otherwise suitable for such use; (ii) groundwater on the property of another may become hazardous to health or otherwise unsuitable for usage; or (iii) the said action may otherwise violate the public or private good by affecting the quality of groundwater.

*The Water Act*²⁰³: The Water Act contains provisions on groundwater extraction. The prohibition on groundwater pollution means that a permit may not be granted for an activity which does not conform to this regulation. There is also a legal obligation to remediate polluted groundwater and the polluter is held responsible. The prohibition on altering groundwater in the Water Act refers to maintaining a good quantitative state of groundwater.

A permit is required if the extraction amounts to at least 250 cubic metres a day. The extraction of groundwater, or other activities affecting groundwater, must not essentially harm the natural state of springs, brooks, and ponds and lakes of at most one hectare.

Besides, being a member of the European Union, the EU Water Framework Directive (WFD) (60/2000) sets the framework and objectives for water protection in Finland. The Act on the Organisation of River Basin Management forms part of Finland's

²⁰¹ Unofficial translation of the original Act of the "Environmental Protection Act" can be obtained at <http://www.finlex.fi/fi/laki/kaannokset/2000/en20000086.pdf>

²⁰² Extracted from the website of the Ministry of the Environment, <http://www.ymparisto.fi/default.asp?node=19088&lan=en>

²⁰³ Extracted from the website of the Ministry of the Environment, <http://www.ymparisto.fi/default.asp?node=19088&lan=en>

ongoing implementation of this Directive.²⁰⁴ This Act requires that by the end of 2009 regional river basin management plans and related action plans should be drafted to cover the whole country. These plans aim to protect, enhance and restore surface waters and groundwater so as to ensure their state is at least “good” by 2015 at the latest.²⁰⁵



Source: “Efficient Water Consumption”²⁰⁶



Source: “Website of the Ministry of Finland”²⁰⁷

²⁰⁴ Extracted from the website of the Ministry of Environment,
<http://www.ymparisto.fi/default.asp?node=19088&lan=en>

²⁰⁵ Extracted from “Action Plan for the Protection of the Baltic Sea and Inland Watercourses”,
<http://www.ymparisto.fi/download.asp?contentid=53579&lan=en>, page10-11

²⁰⁶ Extracted from “Efficient Water Consumption”,
<http://www.ymparisto.fi/download.asp?contentid=33381&lan=en>, page 1

²⁰⁷ Extracted from “the website of the Ministry of Finland”,
<http://www.environment.fi/default.asp?node=8297&lan=en>

Exhibit FI-1 Water Protection Targets for 2015²⁰⁸

- Aiming to achieve good water quality by 2015
 - to reduce the nutrient loads that cause eutrophication
 - to reduce the risks caused by hazardous substances
 - to protect groundwater bodies
 - to protect aquatic biodiversity
 - to restore ecologically damaged water bodies

- Tackling the problem of eutrophication
 - Eutrophication is the most serious ecological problem today facing Finland's inland waters and the Baltic Sea. Nutrient inputs into water bodies from all kinds of human activities must be reduced, especially diffuse loads from agriculture. Agricultural nutrient releases still account for more than half of all the nutrient discharges into water bodies, in spite of recent reductions in the use of fertilisers, the widespread establishment of buffer zones, and the adoption of farming practices that reduce erosion.
 - Eutrophication is the consequence of decades of excessive nutrient loads. Nutrient releases must be considerably reduced from their present levels in order to restore the natural ecological balance to water bodies. Such water protection measures will need to be carried out for decades, as excess nutrients have also been accumulating over time in soils and sediments.

- Targeting agricultural emissions
 - The Government objects to reduce the nutrient loads entering water bodies from agriculture by a third by 2015 compared to their levels over the period 2001-2005, and halved over a longer timescale. In planning the measures needed to reach these targets, due consideration must be given to the productivity and economic viability of agriculture. Research must be intensified to help identify new cost-effective water protection measures. Water protection measures carried out by farmers on a voluntary basis should be favoured where possible.

- Nitrogen removal to be intensified
 - Municipal wastewater treatment must be further improved wherever wastewater is released into water bodies that are suffering from eutrophication. More investments must be made in the repair and maintenance of ageing sewerage networks and treatment plants. Nitrogen removal rates must be improved to ensure that at least 70% of all nitrogen is removed in treatment plants dealing with wastewater from areas with more than 10,000 inhabitants.

- Considering social impacts
 - The Water Protection Policy Outlines to 2015 has been drawn up in close co-operation with different stakeholder groups, accounting for the social and economic impacts of its measures, as well as their environmental effects. The new programme will facilitate the preparation of regional river basin management plans to be drawn up by 2009 based on the EU Water Framework Directive.

²⁰⁸ Extracted from the website of the Ministry of the Environment,
<http://www.ymparisto.fi/default.asp?node=9974&lan=en>

Other actions or programmes related to water resources management

In order to improve water protection, the Finnish Government believes that development of innovative technologies is important to deal with pollution caused by wastewater from sparsely populated rural areas, as a result of deterioration of water quality in rivers, lakes and groundwater. In Finland, special wastewater technology is particularly needed in island communities. Dry composting toilets, for instance, are promising technological means to reduce nutrient emissions in rural areas.²⁰⁹ The rural municipality in southwest coast of Finland has set a target that all new toilets installed in the community are to be dry composting or urine separating toilets.²¹⁰

In recent years, the specific consumption of water from waterworks has decreased considerably due to increased charges and new efficient technologies. Industries have kept making improvements to reduce the consumption of water, which also reduced pollution loads in wastewater. Finnish legislation on sewerage charges came into force in 1974. Most waterworks in Finnish towns and cities are owned by the local authorities. Users pay charges for water, to cover the costs involved in supplying clean tap water and treating wastewater. These charges influence both the quality of water supply and consumption levels.²¹¹

In April 2002, the Government adopted Finland's Programme for the Protection of the Baltic Sea²¹². Under the programme, steps will be taken to combat eutrophication, decrease the risks caused by hazardous substances, reduce the risks of maritime traffic, protect biodiversity, and increase environmental awareness and research. Discharges will be cut in Finland, and through international cooperation, in other countries, in the Baltic's catchment area. In June 2005, the Ministry of the Environment approved an action plan²¹³ that presents the actions needed to meet the objectives of the programme.²¹⁴ More description on the Baltic Sea Programme can be found in Section 13.5.

²⁰⁹ Extracted from "New approaches for water protection", obtained at <http://www.ymparisto.fi/download.asp?contentid=33379&lan=en>, page 2

²¹⁰ Extracted from the website of the Ministry of the Environment, <http://www.ymparisto.fi/default.asp?contentid=79135&lan=en>

²¹¹ Extracted from "Efficient water consumption", obtained at <http://www.ymparisto.fi/download.asp?contentid=33381&lan=en>, page 1

²¹² Description of the Programme for the Protection of the Baltic Sea can be found at <http://www.ymparisto.fi/download.asp?contentid=14976&lan=en>

²¹³ Detailed information of the Action Plan can be obtained at <http://www.ymparisto.fi/default.asp?contentid=200864&lan=en>

²¹⁴ Extracted from the website of the Ministry of Environment, <http://www.ymparisto.fi/default.asp?node=6043&lan=en>

13.2 Environmental Evaluation/SEA in Finland

In Finland, it is a statutory requirement under the “Act on the Assessment of the Impacts of the Authorities’ Plans, Programmes and Policies on the Environment (200/2005)” (i.e. SEA Act)²¹⁵ (came into force on 1 June 2005) to implement SEA processes that an environmental assessment of the authorities’ policies, plans and programme should be carried out if:

- the policy, plan or programme is drawn up for purposes of agriculture, forestry, fisheries, energy, industry, transport, waste management, water management, telecommunications, tourism, regional development, land use, environmental protection or nature conservation and it sets the framework for decisions on permits for or approval of projects; or
- the assessment duty referred to in section 65 of the Nature Conservation Act (1096/1996) applied to the plan or programme.²¹⁶

The legislation aims to (i) ensure that environmental impacts are assessed and duly considered during the preparation and approval of authorities’ plans and programmes; (ii) improve the availability of information, and provide more opportunities for public participation in planning; and (iii) promote sustainable development.

The legislation has been drafted in accordance with both the European SEA Directive (2001/42/EC), which requires that environmental assessments should be carried out for certain types of strategic plans and programmes, and a related protocol of the United Nations’ Economic Commission for Europe (UNECE) on strategic environmental assessments.²¹⁷

In the following paragraphs, the SEA processes before the implementation of the SEA Act in Finland are to be discussed.

In 1994, a general SEA requirement to assess environmental impact of policies, plans and programmes was imposed on responsible authorities in a vague manner under the “Act on Environmental Impact Assessment Procedure (468/1994)”.²¹⁸ Chapter 5 of the “Act on Environmental Impact Assessment Procedure (468/1994)” related to general investigation duty and states under section 24 that policies, plans and programmes “that may have a significant impact effect on the environment shall be investigated and assessed to a sufficient degree”. This provision requires all spheres of government to assess their own actions at this level”.²¹⁹

²¹⁵ Extracted from <http://www.ymparisto.fi/default.asp?node=19744&lan=en>

²¹⁶ Originated from the web site of Finland’s Ministry of Environment, <http://www.ymparisto.fi/download.asp?contentid=44490&lan=en>, Section 4 - Plans and programmes requiring environmental assessment.

²¹⁷ Originated from the web site of Finland’s Ministry of Environment, <http://www.ymparisto.fi/default.asp?node=17876&lan=en#a1>

²¹⁸ More information can be found in this link, <http://www.ymparisto.fi/download.asp?contentid=12805&lan=en>, originated from the web site of Finland’s Ministry of Environment.

²¹⁹ Strategic Environmental Assessment: A sourcebook and reference guide to international experience, Barry Dalal-Clayton and Barry Sadler, 2004, http://www.iied.org/Gov/spa/documents/SEAbook/Chapter3_Oct04.pdf, page 64

A subsequent “Decree on Environmental Impact Assessment Procedure (268/1999)”²²⁰ set out the functions of various Finnish environmental authorities at the project level, but did not specifically address the role of the responsible authority with regard to policy, plan or programme. For this purpose, the Finnish Ministry of the Environment issued a guideline called “Guidelines for the environmental assessment of plans, programmes and policies in Finland”²²¹ at that period.²²²

Since April 2005, amendment was made to section 24 of the “Act on Environmental Impact Assessment Procedure (468/1994)”, which states that “provisions concerning the assessment of the environmental impacts of plans, programmes and policies prepared by the authorities are laid down in the SEA Act.”²²³

In addition, there was SEA-like requirement for land use plans under the “Building and Planning Act (1999)”²²⁴ and brief reference to the assessment of environmental impact in the “Act on Regional Development (1993)”. However, these provisions have all been readdressed in the SEA Act.

Conclusively, regarding the provisions for the SEA process at the level of policies, plans and programmes, the SEA Act should be followed.

Under sections 8 and 9 of the SEA Act, the authority responsible for a plan or programme should investigate and assess any likely significant environmental impacts caused by implementation of the plan or programme and the alternatives to be examined, and should prepare an environmental report, and carry out consultations, taking into account the environmental report and the results of consultations in decision-making, and the provision of information on the decision.

Under section 2 of the SEA Act, environmental impact is defined as the direct or indirect effect of a plan or programme in Finland and outside Finland’s territory on the following aspects:²²⁵

- human health, living conditions and amenity;
- soil, water, air, climate, flora, fauna and biodiversity;
- community structure, built environment, landscape, townscape and cultural heritage;

²²⁰ More information can be found in this link, <http://www.ymparisto.fi/download.asp?contentid=12806&lan=en>, originated from the web site of Finland’s Ministry of Environment.

²²¹ More information can be found in this link, <http://www.ymparisto.fi/download.asp?contentid=19877&lan=fi>, originated from the web site of Finland’s Ministry of Environment.

²²² Strategic Environmental Assessment: A sourcebook and reference guide to international experience, Barry Dalal-Clayton and Barry Sadler, 2004, http://www.iied.org/Gov/spa/documents/SEAbook/Chapter3_Oct04.pdf, page 64

²²³ Originated from the web site of Finland’s Ministry of Environment, <http://www.ymparisto.fi/download.asp?contentid=12805&lan=en>, Section 24 - Programmes, plans and policies

²²⁴ More information can be found in this link, <http://www.environment.fi/download.asp?contentid=10147&lan=EN>, originated from the web site of Finland’s Ministry of Environment.

²²⁵ Extracted from Web site of Finland’s Ministry of Environment, <http://www.ymparisto.fi/download.asp?contentid=44490&lan=en>

- the utilization of natural resources; and
- interrelations between the factors referred to all the above.

13.3 Environmental Evaluation/SEA on Water Resources Management in Finland

According to the Guideline issued in 1998 by the Ministry of Environment, the legal obligation to investigate and assess environmental impact is laid down in the Water Act (264/1961). General plans for water supply, which involve a potentially significant impact on the environment, shall conduct a SEA before implementation.²²⁶ For the process and requirements on SEA, information can be referred to Section 13.2.

A summary table for both the water resources management policies and actions and SEA status in Finland is presented in **Exhibit FI-2**:

Exhibit FI-2 Summary of Water Resources Management (WRM) Policies and Actions and SEA status in Finland	
(a) WRM Policies and Actions	
WRM Policies and Actions	Policies: <ul style="list-style-type: none"> ● Water Protection Policy ● Implementation of EU WFD Actions: <ul style="list-style-type: none"> ● Introduction of Dry composting toilets ● Sewage charges
Guidance/Legislations for WRM	<ul style="list-style-type: none"> ● Water Act ● Environmental Protection Act
(b) Environmental Evaluations / SEA Status in WRM Policies and Actions	
Type of Assessment	Strategic Environmental Assessment
Requirement Mechanisms	Statutory
Legislation for Environmental Evaluation / SEA	Act on the Assessment of the Impacts of the Authorities' Plans, Programmes and Policies on the Environment (200/2005)
Applications	Policies, Plans and Programmes

²²⁶ Extracted from the "Guidelines for the environmental assessment of plans, programmes and policies in Finland", full document can be obtained at <http://www.ymparisto.fi/download.asp?contentid=19877&lan=en>, pg6, 17.

13.4 Analysis and Conclusions

WRM Policies

Finland's water protection policy aims at improving and protecting water quality in lakes, rivers, groundwater and in the Baltic Sea. The objective is that the state of the Baltic Sea and inland waters is not degraded any further by human activities. In Finland, WRM policies have been based on long-term-strategies. Three national water protection programmes identifying targets, measures and instruments have been prepared since the beginning of the 1970s. The Government adopted the November 2006 a new set of national Water Protection Policy Outlines to 2015.

The European Union Water Framework Directive, enacted in 2000, gives guidelines for WRM policy for many years to come. In Finland an act on organising river basin management planning was adopted in 2004. The objective of the river basin management plans is to achieve a good state of surface waters and groundwater by the end of 2015. The first river basin management plans are due to be completed by 2009.

Finland has signed several international conventions related to the protection of the marine environment and watercourses. The protection of the Baltic Sea is one of the priorities of Finnish environmental cooperation. Finland also has good experiences and results from long-term cooperation on protecting transboundary waters. This work started with an agreement with the Soviet Union in 1964 (subsequently continued with the Russian Federation since 1992), followed by agreements with Sweden in 1971 and Norway in 1980.

Finland has been placed near the top or at the top in several recent international comparisons of the water and environmental sectors, such as the United Nations World Water Assessment Programme in 2003 and the Water Poverty Index in 2003.

Compared to Finland, Hong Kong is not within the EU Directive regime and the scope of water resources need to be managed is restrained to the two main sources of water – rainfall from natural catchment and supply from Guangdong. It is Water Supplies Department's (WSD) scope of work to cover the whole process from the collection of natural yield from rainfall, the reception of raw water from Guangdong to the provision of a supply with a quality of accepted international standards to the users' taps. WSD also supplies sea water for flushing purposes to over 80% of the population. For protection against flooding, sewage collection, treatment and disposal, it is under Drainage Services Department's (DSD) jurisdiction.

For the sustainable development of Hong Kong, WSD has initiated a *Total Water Management programme* comprising key elements of new water resources, water reclamation, water conservation and water resources protection and management was initiated for better utilization of the different water resources.

Similar to Finland, Hong Kong, while is part of Guangdong province, has a neighbour city, Shenzhen, to the north. Effective transboundary cooperation is considered to be essential for the protection of inland water bodies.

EE/SEA

As an EU Member State, Finland is obliged to adopt the requirements of the EU Directive 2001/42/EC by bringing into force the laws, regulations and administrative provisions necessary to comply with the Directive. Under its “Act on the Assessment of the Impacts of the Authorities’ Plans, Programmes and Policies on the Environment (200/2005)”, an environmental assessment of the authorities’ policies, plans and programme should be carried out if:

- the policy, plan or programme is drawn up for purposes of agriculture, forestry, fisheries, energy, industry, transport, waste management, water management, telecommunications, tourism, regional development, land use, environmental protection or nature conservation and it sets the framework for decisions on permits for or approval of projects; or
- the assessment duty referred to in section 65 of the Nature Conservation Act (1096/1996) applied to the plan or programme.

Hong Kong is not an EU Member. Hong Kong’s SEA/EE is under Environmental Protection Department’s (EPD) jurisdiction. Similar to the EU Member counterparts, there are both statutory and administrative systems for PPP projects in Hong Kong. While the statutory requirements govern primarily large scale development projects (i.e. over 20 ha of area or population over 100,000), the administrative counterpart has been applied to land use planning, transportation and sectoral PPP.

In most EU Member States’ practices, a statutory system is put in operation for WRM related plans and programmes. Hong Kong may adopt a similar approach by expanding the scope of the current statutory system to cover other sectors such as WRM.

Also, the SEA Directive sets out the requirements for undertaking environmental assessments for plans and programmes in various sectors, namely, agriculture, forestry, fisheries, energy, industry, transport, waste management, water management, telecommunications, tourism, town and country planning or land use, etc. A similar scope or categorisation of sectors is recommended for setting up within Hong Kong’s next generation SEA management framework.

13.5 Examples of Water Resources Management Policies / Actions or their Environmental Evaluation/SEA

Example FI-1 Ex-ante Evaluation and Strategic Environmental Assessment of the Central Baltic Cross-border Programme 2007-2013²²⁷	
Type of Study	Strategic Environmental Assessment, SEA Directive 2001/42
Description of Study	<p>This programme is a joint effort between the EU and the Member States of Estonia, Finland, Latvia and Sweden. The vision of the programme is to create a globally recognised, dynamic, sustainable and competitive region that is attractive for business and visitors and where people want to live, work and invest. The programme strategy shows how the vision can be accomplished. The strategy rests on three different approaches:</p> <ul style="list-style-type: none"> ● A geographical focus on the Central Baltic Area ● A cross-border aspect ● A thematic focus on three major priorities: (i) safe and healthy environment (ii) economically competitive and innovative region (iii) attractive and dynamic societies
Summary of Alternatives	<p>The alternatives considered in the study include:</p> <ul style="list-style-type: none"> ● Zero alternative – environmental scenario eventually occurring without the implementation the Central Baltic Programme ● Use of 3 thematic priorities: <ol style="list-style-type: none"> 1. Priority A: A safe and healthy environment This priority aims to increase the environmental awareness to improve the common environment to become a better quality of life, and a safe, environmental risk-reduced and healthy living environment. 2. Priority B: An economically competitive and innovative region This priority aims to increase the economic competitiveness of the region for both its business and individuals (actors and stakeholders) through the improvement of the determining factors for innovation. 3. Priority C: Attractive and dynamic societies (as a linking theme between Priority A and B) This priority focuses on developing the potential of human resources, advancing social well-being and good living conditions and increasing the vitality of local communities.
Scope of Assessment/ Study	<p>The evaluation parameters considered in the study include:</p> <ul style="list-style-type: none"> ● Population, human health, air quality ● Flora, fauna, ecology (biodiversity) ● Soil ● Water ● Climate / Climatic factors ● Landscape ● Cultural heritage and other material / physical assets
Environmental Measures	<p>Priority A:</p> <ul style="list-style-type: none"> ● Find an appropriate balance between the use and conservation of natural resources, forming a foundation for long-term sustainability in the CBP region. High standards should be maintained over time with clear environmental credentials and momentum. ● Environmental Impact Analysis should accompany each proposal of building

²²⁷ Full document can be obtained at

<http://trinity.siteadmin.fi/File.aspx?id=528998&ext=pdf&routing=329040&webid=329043&name=Central%20Baltic%20ex-ante%20SEA%20final%2024%20April>, page 2, 5, 37, 42, 47, 57, 59-60, 62-63

Example FI-1 Ex-ante Evaluation and Strategic Environmental Assessment of the Central Baltic Cross-border Programme 2007-2013²²⁷	
	<p>renewable energy facilities.</p> <p>Priority B:</p> <ul style="list-style-type: none"> Competitiveness among the objectives and target directions should be based on high environmental standards and environmental management techniques. <p>Priority C:</p> <ul style="list-style-type: none"> No mitigation measures are discussed as this Priority seems to be comprised of no significant negative environmental effects.
Outcome of Study	The “use of 3 thematic priorities” has been chosen.

Example FI-2 Finland’s Programme for the Protection of the Baltic Sea²²⁸	
Description of the Programme	The most serious problem in the Baltic Sea is eutrophication. There are also high levels of hazardous substances such as heavy metals, which has resulted in high dioxin content. And the increase in the volume of oil and chemical transports in the Gulf of Finland also heightens the risk of spills.
Scope of Assessment/ Study	<p>This Programme targeted to achieve a good ecological state in the Baltic Sea will be undertaken in six main objective areas, namely:</p> <ol style="list-style-type: none"> combating eutrophication reducing the risks from hazardous substances reducing the adverse effects of using the Baltic Sea preserving and increasing biodiversity improving environmental awareness; and research and monitoring
Environmental Measures	<p>Several actions shall be taken to achieve the goals:</p> <ul style="list-style-type: none"> To reduce the nutrient load on the Baltic Sea, construction of the southwestern wastewater treatment plant should be confirmed, and the Agri-Environmental Programme in Finland should be enhanced. Investment in neighbouring area cooperation shall be increased with the aim of bringing all community wastewater into an efficient treatment process by stages. The industrial load on the Baltic Sea comes mainly from the wood processing industry and the metal industry. Thus, reviewing industrial environmental permits and combined treatment of industrial and community wastewater shall help to reduce the amount of phosphorus and nitrogen discharges. Development and introduction of feeding, fish breeding, new types of fish farms and cleaning technology will help to reduce the load generated by fish farming. And the governments shall provide guidance on the location of fish farms. High standard of safety, for instance, implementation of a land-based Vessel Tracking System, and a multipurpose oil and chemical combating vessel shall improve the spilling and pollution to the sea.

²²⁸ Full document of “Finland’s Programme for the Protection of the Baltic Sea” can be found at <http://www.ymparisto.fi/download.asp?contentid=14976&lan=en>. The paragraphs are extracted from page 7, 8, 11, 13