



PRIME MINISTER'S OFFICE  
FINLAND



## Challenges of the Baltic Sea and on Baltic Sea Policy

Government Report



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<b>Name of publication</b> Challenges of the Baltic Sea and Baltic Sea Policy. Government Report			
<b>Abstract</b> <p>The report outlines the Government's measures to improve the marine environment of the Baltic Sea, to increase the safety of marine traffic and to strengthen economic cooperation in the region.</p> <p>The report concentrates on actions that, for Finland, are the most important and most urgent in terms of the Baltic Sea. The most serious problem concerning the Baltic Sea is eutrophication. In the report, the Government proposes measures that would decrease the nutrient load from Finland.</p> <p>The report brings forward measures to improve the safety of marine traffic, to prevent accidents in advance and to improve oil-spill response capabilities.</p> <p>The part on the economy, transport and energy discusses issues that are of key importance to Finland. These issues are treated more comprehensively in the EU Strategy for the Baltic Sea Region.</p> <p>The report also briefly discusses the EU Strategy for the Baltic Sea Region and its external dimension, the Northern Dimension, which provides a functional forum for Baltic Sea cooperation with non-EU countries, particularly Russia.</p>			
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## INTRODUCTION

The Baltic Sea has a prominent place in the Programme of Prime Minister Matti Vanhanen's second Cabinet. The Government is committed to closer EU cooperation in the Baltic Sea region, with special emphasis on improved environmental safety and development of economic cooperation. The Government Programme contains several commitments and targets for improving the state of the Baltic Sea environment and water protection.

In autumn 2007, the Foreign Affairs Committee of the Finnish Parliament issued the report "The Baltic Sea and the Northern Dimension" (UaVM 7/2007 vp; in Finnish). The Committee stressed the importance of the Baltic Sea especially as an environmental issue. Themes associated with the environment and maritime safety were also emphasised in the debate in Parliament. In its report, the Committee considered it important that Baltic Sea policy is pursued in a determined manner and required that the Government issue a report on Baltic Sea policy to Parliament in 2008. During the debate in Parliament, the Prime Minister said that the Government is prepared to issue the report requested by the Committee.

Baltic Sea policy and the Baltic Sea can be viewed from two different angles. The Baltic Sea can be examined as the Baltic Sea region and as a comprehensive entity encompassing all issues and policies concerning the region. Another alternative is to examine the marine environment of the Baltic Sea, in particular issues relating to the state of the sea and maritime safety.

Seen from a broad perspective, Baltic Sea policy covers a number of issues, such as environmental protection, maritime safety, economy, transport, energy, and internal security. All these sectors involve much cooperation within the European Union, and they are regulated by actions and programmes at EU level. The European Union's policy, goals and actions in the Baltic Sea region will be discussed in the EU Strategy for the Baltic Sea Region, on which the Commission will give a proposal in June 2009. This EU strategy has four main objectives: the Baltic Sea as an environmentally sustainable area; as an economically prosperous area; as an attractive and accessible area; and as a safe and secure area. The strategy strives to define a wider operating framework for meeting the challenges and for utilising the opportunities in the Baltic Sea region. The primary means for achieving this are the application of EU legislation and tools and closer cooperation between EU Member States. The EU strategy will bring issues in the Baltic Sea region onto the EU agenda with more impetus than before. It is an integral element of the Government's

Baltic Sea policy and answers the Government Programme's goal of increasing the weight of the Baltic Sea region within the European Union.

The Government's Baltic Sea Report assumes a more limited perspective than that of the EU strategy; here, the Baltic Sea is examined mostly from the angle of the marine environment. The report concentrates on actions that, for Finland, are the most important and most urgent in terms of the Baltic Sea, especially as concerns the state of the sea and the maritime safety. The report analyses the principal challenges associated with the marine environment and how these challenges could be met in the most effective way. These challenges to the Baltic Sea are discussed in the first part of the report.

The Baltic Sea region is also an economic opportunity and a route for transports and energy. The economic opportunities offered by the region are treated comprehensively in the EU Strategy for the Baltic Sea Region. The strategy looks at the economy from the perspective of the Union and the internal market; in consequence, this report only gives a concise account of the practical issues and barriers that affect the business environment and that Finnish enterprises encounter when operating in countries around the Baltic Sea. Transport and energy are discussed from the angle that the Baltic Sea is a shipping channel and an energy transport route for Finland. The business environment, transport, and energy links are reviewed in the second part of the report.

The third part of the report examines the EU Strategy for the Baltic Sea Region, which is under preparation. The strategy forms a central instrument for Finland's Baltic Sea policy and a channel for pursuing Finland's goals. With respect to the contents of the strategy, especially issues concerning the economy, innovations, education and research cooperation, and internal affairs and justice – as well as Finland's goals in these issues – an official stand will be taken when the Commission's proposal has been received and the Council begins its debate on the strategy.

The Finnish Parliament required that the report explore the connection between the Northern Dimension and Baltic Sea policy. This topic is discussed in the part concerning the EU Strategy for the Baltic Sea Region, since the external dimension of the EU strategy is implemented through the Northern Dimension.

A follow-up report on the realisation of the actions recorded in the report will be issued before the end of the Government's term.

The Baltic Sea protection policy needs to be supported by a social and financial analysis that helps determine the most cost-effective ways to improve the protection of the Baltic Sea and to reach the goals set. Furthermore, the costs of doing nothing need to be assessed. A review on cost-effective measures to protect the Baltic Sea (the 'Stern review') is being prepared under the leadership of the Advisory Board for Sectoral Research. The review will be done in 2009–2011.

Parliament has required that the Government appoint a working group to monitor the development and financing of marine research. The Government is expected to give a report on this issue to Parliament in September 2010 (EV 177/2008 vp). The working group was appointed in May 2009.

### *Tools of Baltic Sea policy and the channels for pursuing Finland's goals*

The goals pertaining to Baltic Sea policy can be promoted nationally, bilaterally with neighbouring countries, or through the European Union or international organisations. Once the goals have been defined, it is easier to assess what means and tools would be the most effective for reaching them.

The actions taken nationally in Finland have an impact, in particular, on the state of our own coastal and inland waters. But wider cooperation among Baltic Sea countries is needed in many issues, especially those concerning maritime safety.

For Finland, particularly important partners in Baltic Sea cooperation are the neighbouring countries: Sweden, Estonia and Russia. Regular discussions on topics pertaining to the Baltic Sea are conducted at different levels. A good example of working trilateral cooperation is the mandatory ship reporting system in the Gulf of Finland (GOFREP), maintained together by Finland, Estonia and Russia. The Governments of Finland and Sweden held a joint meeting in Hämeenlinna, Finland, on 14 May 2009. Among other things, the Governments pledged to improve the state of the Baltic Sea and agreed that negotiations will be launched for new operating models in ice breaking and that the routing of vessel traffic in the Kvarken will be revised.

Several regional cooperation organisations are active in the Baltic Sea region. The principal organisation in terms of the protection of the Baltic Sea is the Baltic Marine Environment Protection Commission, HELCOM. All the Baltic Sea coastal states and the European Commission are its members. Implementation of the HELCOM Action Plan can effectively improve the state of the Baltic Sea. The Council of the Baltic Sea States (CBSS) also comprises all the Baltic Sea

coastal states, and the Council plays an important role as a forum of a high political level in the Baltic Sea region. Close cooperation has been exercised at various levels within the Nordic Council of Ministers. The Council supports and funds a wide variety of projects in the Baltic Sea region.

The enlargement of the European Union to the countries in the Baltic Sea region, with the exception of Russia, has changed the forms of cooperation in the area: many issues are now treated and regulated using the Union's tools. The EU Strategy for the Baltic Sea Region raises some of the special features and issues of the region onto the EU agenda in a new way and brings them with increasing vigour into the sphere of EU cooperation.

The EU Strategy for the Baltic Sea Region is the Union's first strategy for a macro-area; it seeks a new strategic approach for EU cooperation among the countries in the area and strives to accomplish a more efficient and more uniform implementation of EU legislation and programmes in the region. Finland has taken an active part in the preparation of the EU Strategy for the Baltic Sea Region and has made concrete proposals, in particular, for measures to improve the marine environment and to enhance the maritime safety. Finland has also provided the Commission with material on innovation policy, on measures to strengthen the internal security of the region, and on the external dimension of the strategy. Contributing to the preparation of the EU strategy and implementation of the strategy promote the Government Programme's goal and effort to intensify EU cooperation in the Baltic Sea region, with special emphasis on the improvement of environmental safety and the development of economic cooperation.

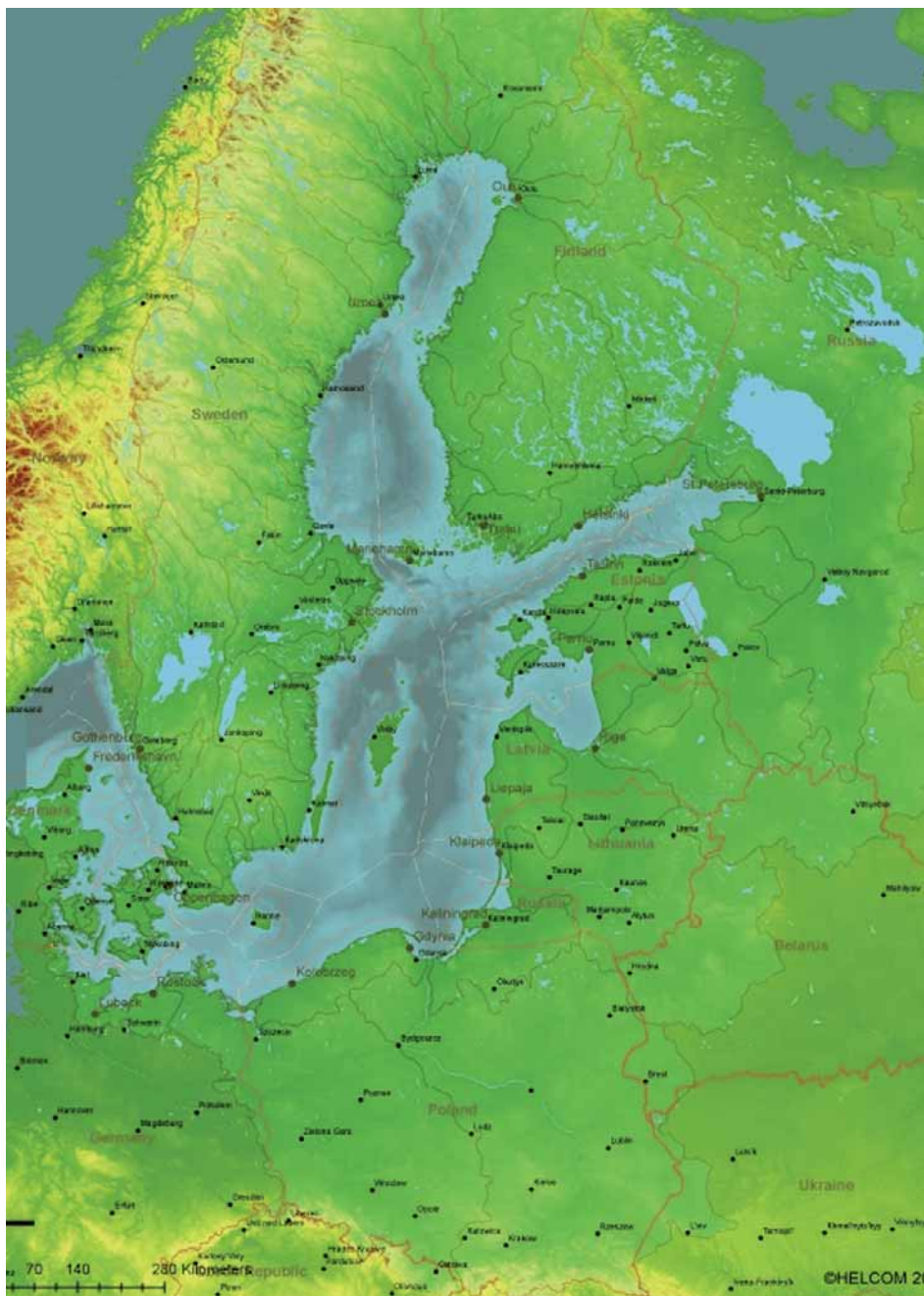
Wider international cooperation and regulations are needed in many issues affecting the Baltic Sea, especially as concerns seafaring. The central actor in this respect is the International Maritime Organization (IMO). Regionally agreed maritime safety arrangements also require IMO's approval. Finland works actively in international forums emphasising the Baltic Sea's specific circumstances and the sea's importance to Finland.

In addition to cooperation between States and the authorities, less formal cooperation is also carried out in the Baltic Sea region. The Baltic Development Forum has brought together representatives of states, institutions and private bodies from the Baltic Sea region to discuss economic issues in the area. In 2008, President of the Republic Tarja Halonen and Prime Minister Matti Vanhanen sent a New Year's letter to the Heads of State or Government of the Baltic Sea countries, encouraging them to work together to save the Baltic Sea. To follow up the letter and to improve the state of the Baltic Sea, the

President, the Prime Minister and the Baltic Sea Action Group have launched a joint project, the Baltic Sea Action Summit, that will gather together political decision-makers, enterprises and private actors to make concrete commitments for saving the Baltic Sea.

According to the Government Programme, the Government will endeavour to streamline the structure of the regional networks of cooperation in the Baltic Sea region and in the northern regions. Implementation of the EU Strategy for the Baltic Sea Region and the Government's Baltic Sea Report streamline and promote the determination and realisation of Finland's goals vis-à-vis the Baltic Sea in organisations operating in the Baltic Sea region and in international forums.

**Figure 1** The Baltic Sea catchment area. Besides the Baltic Sea coastal states, the catchment area includes parts of Belarus, Ukraine, the Czech Republic and Norway. (Source: HELCOM)



# PART I CHALLENGES IN THE PROTECTION OF THE BALTIC SEA AND MARITIME SAFETY

## 1 How to break the vicious circle of eutrophication?

The Baltic Sea is a very sensitive sea area. It is a shallow, partly closed water body with slow water exchange. The Baltic Sea is particularly vulnerable for reasons such as the low salinity of its water. In addition, because of stratification of the water, the layers do not mix easily and oxygen does not penetrate from the surface to the bottom waters. A strong enough pulse of saline water from the North Sea is the only way that new, oxygen-rich water can reach the bottom of the Baltic Sea.

The catchment area of the Baltic Sea, which is about four times larger than the sea itself, is the home of about 85 million people. The poor state of the marine environment today is the result of many decades of human activity in the area.

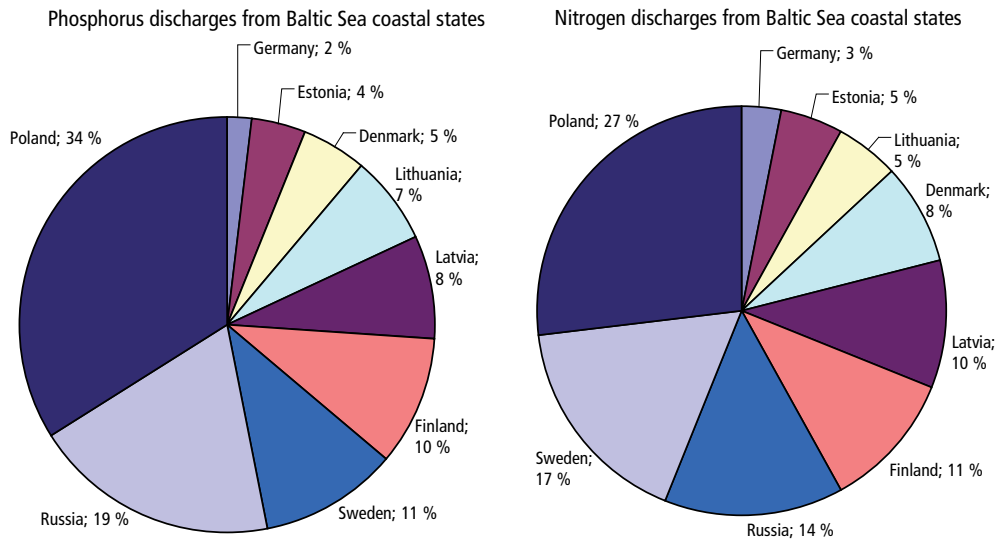
The most serious problem concerning the Baltic Sea is eutrophication, which follows when excessive amounts of nitrogen and phosphorus enter a water body. The visible signs of eutrophication include extensive algal blooms, slimy shores and murky water that recur every summer. Eutrophication has also affected living organisms; for instance, cyprinid populations have grown at the expense of more valuable food fish. Algae also produce toxins and, when occurring in large amounts, they pose health risks.

To be able to grow, algae need both nitrogen and phosphorus, which enter water as deposits from the air, through rivers, including nutrients leached from the catchment area (diffuse pollution), and as point source pollution from the wastewaters of industry and municipalities. Unlike most other algae, cyanobacteria, or blue-green algae, can use nitrogen that has dissolved from air into water. In fact, algal blooming increases when the water has high phosphorus content and a limited amount of nitrogen.

## 1.1 Nitrogen and phosphorus discharges causing eutrophication

### *External loads from the Baltic Sea countries*

**Figure 2** shows the relative phosphorus and nitrogen discharges into the Baltic Sea, by country in 2001–2006.



Poland accounts for clearly the greatest percentage of discharges into the Baltic Sea. Finland's share of the total load is 10 per cent for phosphorus and 11 per cent for nitrogen.

Discharges of nitrogen and phosphorus into the Baltic Sea have decreased markedly during the last ten years (phosphorus –15% and nitrogen –14%). This is thanks to actions taken in the catchment areas, especially the effective treatment of industrial and municipal wastewaters. In total, 641,000 tonnes of nitrogen and 30,200 tonnes of phosphorus were discharged into the Baltic Sea by rivers and point sources (average for the period 2001–2006).

The bulk of the total nitrogen load of the Baltic Sea originates in agriculture and in wastewaters from scattered settlements (about 71%). Around 25 per cent of the nitrogen in the Baltic Sea is transported by air. The principal sources of nitrogen deposits are motor vehicle traffic, fossil fuels used in heating and industry, shipping, and agriculture. The steep rise in shipping volumes has increased the amount of nitrogen oxides; at the busiest time in July, the share of shipping out of all nitrogen oxide deposits may reach 50 per cent. In total,



road transport accounts for about 42 per cent of the Baltic Sea's nitrogen load transported by air.

For phosphorus, industrial and municipal wastewaters account for about half of the total load, while agriculture accounts for the other half.

### *Internal loading*

In addition to discharges from the land and air, phosphorus is released into sea water through a mechanism known as internal loading. So much phosphorus has accumulated on the sea bottom that eutrophication has started to feed itself. When oxygen is lacking, the phosphorus buried in the bottom sediments is dissolved into water, and this accelerates the blooming of blue-green algae. Decomposition of algae consumes oxygen, which in turn promotes the release of phosphorus from the bottom. A vicious circle has been created.

Even though the deepest areas of the Baltic Sea are nearly always naturally oxygen-free, the extent of oxygen-free bottom areas varies considerably over the long term. The reasons for this include variations in the amount of saline water entering the Baltic Sea, or 'salt pulses', the slow exchange rate of deep waters, and the oxygen depleting effect of organic matter sinking from the surface. Phosphorus reserves in the water near the seabed are transported to surface waters mostly in autumn and winter, when the entire water column is mixed. Not all the phosphorus released from the sediment necessarily ends up in the surface layer, for use by algae.

Internal loading varies considerably from year to year. Similarly, estimates of the amounts of phosphorus released into sea water because of internal loading also vary. Earlier estimates, based mainly on model calculations, have ranged from 4,000 tonnes to 18,000 tonnes a year. A recent doctoral dissertation on the chemical nature and behaviour of phosphorus in the northeastern Baltic Sea presents the latest estimate of the phosphorus reserves in sediments to date. Accordingly, on average at least 1,900 tonnes of phosphorus would be released annually in the Gulf of Finland because of internal loading.

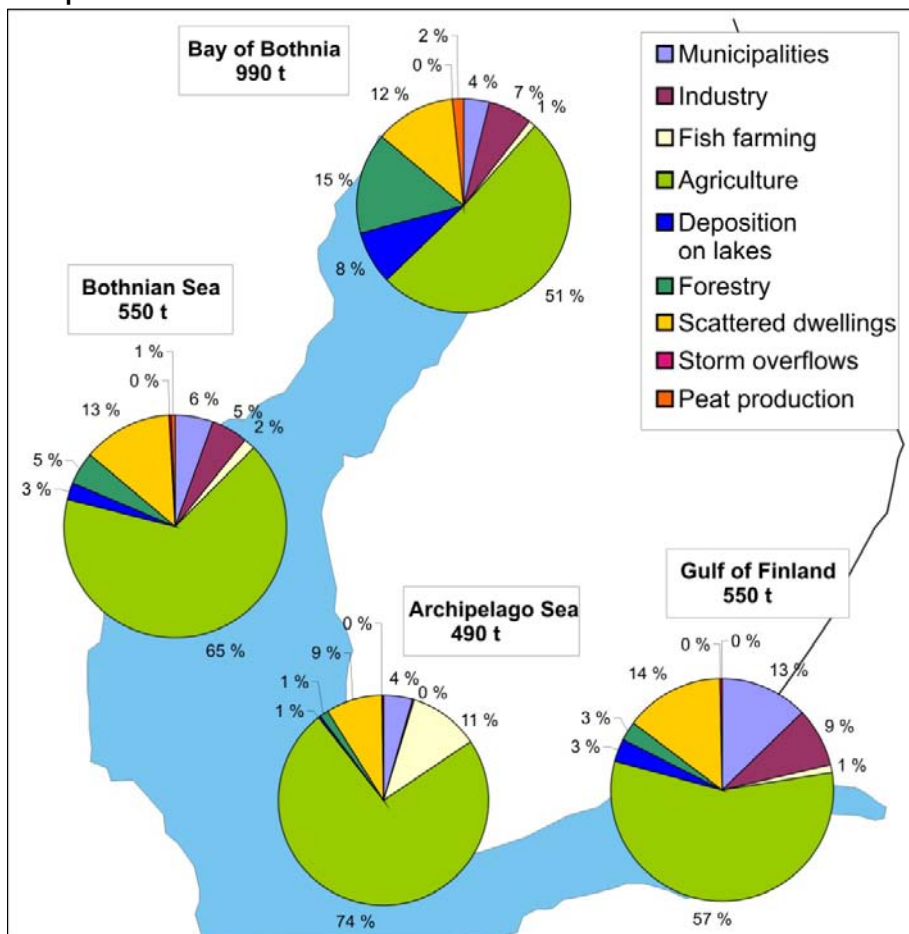
Early in 2009, Finland and Sweden together conducted studies on the possibilities of artificially maintaining the oxygen level of deep waters. This would improve the capacity of iron compounds in sediments to trap phosphorus, thereby reducing internal loading. However, technical solutions do not eliminate the problem permanently. The only way to affect the process of internal loading is effective reduction of external loads. For this reason, transport of both nitrogen and phosphorus into the sea must be reduced.

## External load from Finland

Even though a reduction in Finland's nutrient discharges would not have a major impact on the state of the Baltic Sea as a whole, the quality of our own coastal waters depends on the actions taken in Finland. The current state of our coastal waters stems mainly from our own discharges. In Finland, human activity causes an annual load of about 50,000 tonnes of nitrogen and 2,600 tonnes of phosphorus discharged into the Baltic Sea, calculated as an annual average between 2000 and 2006. Figures 3a and 3b show the breakdown of the load derived from diverse sources and discharged into the various sea areas.

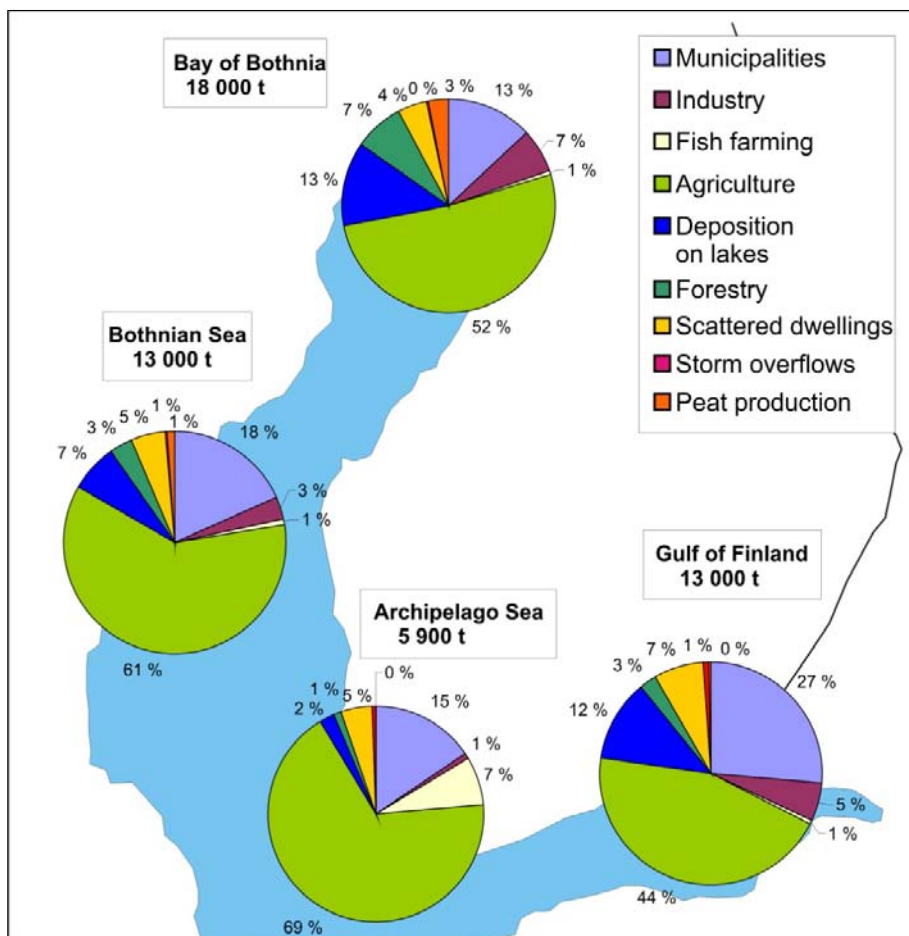
**Figure 3a** Total volume of phosphorus (t a<sup>-1</sup>) discharged from Finland into the Baltic Sea owing to human activity; annual average between 2000 and 2006. (Source: Antti Räike, Finnish Environment Institute)

### Phosphorus



**Figure 3b** Total volume of nitrogen (t a-1) discharged from Finland into the Baltic Sea owing to human activity; annual average between 2000 and 2006. (Source: Antti Räike, Finnish Environment Institute)

### Nitrogen



Long-range water protection efforts have been able to reduce loads markedly over the decades. The best results have been achieved in industry, municipalities and at fish farms.

There was a clear downturn in industry's discharges of phosphorus and nitrogen in the late 1980s. Improvements in industrial processes and more efficient treatment of wastewaters have both contributed to this trend. Owing to the treatment efficiency now reached, industry can no longer achieve any major reductions in its nutrient discharges.

The wastewaters of nearly all built areas have been treated at wastewater treatment plants since the mid-1980s. Municipalities have been able to cut their phosphorus discharges, in particular. On average, modern treatment plants can recover over 96 per cent of phosphorus and about 54 per cent of nitrogen. It remains a challenge that about one million Finns live beyond the reach of sewerage systems.

It has been considerably more difficult and slower to reduce discharges from agriculture, forestry and scattered settlements, because these loads cannot be decreased by means of technical treatment equipment. The environmental load generated by agriculture represents typical diffuse pollution, and weather conditions have an effect on its fluctuations. Factors such as heavy rains, rain in the wintertime and soil remaining unfrozen almost the entire winter increase soil erosion and the leaching of soluble nutrients. Survey data on Finnish rivers most of which are located in agricultural areas suggest that phosphorus and nitrogen loads from agriculture did not significantly diminish during the period 1995 to 2006. While the total phosphorus load from agriculture to water bodies decreased a little, nitrogen load grew slightly. Increased nutrient leaching, resulting from climate change, presents an additional challenge in terms of water pollution control methods in agriculture. In Finland, agriculture accounts for about 60 per cent of phosphorus and about 50 per cent of nitrogen in the Baltic Sea.

In addition, fish farming and peat production cause a strain on water systems. At present, they account for a relatively small percentage of all phosphorus and nitrogen discharges into water systems, but regionally and locally they may have a major impact on the state of water bodies.

## 1.2 Targets for reducing loads

### *Targets of the Baltic Marine Environment Protection Commission*

The Action Plan adopted by the Baltic Marine Environment Protection Commission (HELCOM) in November 2007 introduced a totally new approach to the prevention of eutrophication, as a ceiling was determined on the nutrient loads entering the sea. Preliminary maximum amounts for nitrogen and phosphorus discharges were set for each Baltic Sea coastal state.

The reduction targets defined in the HELCOM Action Plan were based on discharge figures from 1997–2003, which were 736,720 tonnes for nitrogen and 36,310 tonnes for phosphorus. The annual ceiling set in the Action Plan

was 601,720 tonnes for nitrogen and 21,060 tonnes for phosphorus. The ceilings were derived from preliminary estimates and calculations available in 2007 and made to determine what would be needed to restore the good state of the Baltic Sea.

The reduction targets set for the Baltic Sea countries are 135,000 tonnes for nitrogen and 15,250 tonnes for phosphorus. The greatest reductions, by tonne, were laid down for Poland and Russia. Finland's share of the joint reduction effort was 1,200 tonnes for nitrogen and 150 tonnes for phosphorus. Nationally, Finland has set stricter goals in water protection programmes and in environmental permits. The targets laid down for Finland do not include the Archipelago Sea. Finland pledged to reduce nutrient loads in the Archipelago Sea in national action plans so that the required good state would be achieved.

The country-specific reduction targets laid down in the HELCOM Action Plan may still change and may become stricter when there is additional information and more accurate estimates of how much the loads still need to be cut to achieve a good state for the Baltic Sea.

The prevailing economic crisis may slow down the implementation of the HELCOM Action Plan, especially in countries where the actions require large investments. Keeping to the timetable will be challenging without strong political commitment from all countries. Finland must act vigorously and visibly in order to promote the realisation of the HELCOM Action Plan.

### *National goals*

In addition to goals laid down internationally, Finland has set national goals that have been defined, for instance, in the Government Resolution on the Water Protection Targets for 2005, in the Baltic Sea Protection Programme adopted by the Government in 2002 and, most recently, in the Resolution on Water Protection Policy Outlines to 2015, adopted by the Government in 2006. The outlines support the implementation of the EU Water Framework Directive, the EU Marine Strategy Framework Directive, and the HELCOM Action Plan.

The objective of the EU Water Framework Directive (2000/60/EC) is to achieve a good surface water and groundwater state by 2015. In Finland, the Directive has been implemented through the Act on Water Resources Management (1299/2004) and the associated Decrees on Water Resources Management Regions, on Water Resources Management, and on Substances Dangerous and Harmful to the Aquatic Environment. The Act requires that Finland draw up

water resources management plans by the end of 2009. The actions included in the plans must be in effect at the end of 2012, at the latest.

The objective of the EU Marine Strategy Framework Directive (2008/56/EC) is to achieve a good state of the marine environment in Europe by 2020. Preparation of the national legislation concerning the implementation of the Directive is under way.

Both Directives take into account the state of the entire aquatic ecosystem. Finland and Sweden are preparing a joint proposal for making the Baltic Sea a pilot area for the implementation of the Marine Strategy Framework Directive.

According to the national water protection targets set in the 1990s, nitrogen and phosphorus loads should be halved. Realisation of these targets has been monitored, and on the whole they have also been attained. The targets set for agriculture were not achieved.

In the 2000s, reduction targets expressed in tonnes have gradually been replaced by actions designed to lead to a good ecological state of the Baltic Sea. Examples of these actions include the reduction of nutrient emissions from agriculture by increasing the number of protection zones and wetlands, more efficient treatment of municipal wastewaters, including intensified nitrogen recovery, more efficient building-specific wastewater treatment in scattered settlements, and reduction of the environmental impacts of fish farming.

The Water Protection Policy Outlines to 2015 provide a national framework for regional water protection planning. The target set for agriculture is to reduce nutrient loads by one-third by the year 2015, when compared against the average level in 2001–2005.

### 1.3 Reducing loads from municipalities , industry and maritime traffic

#### *Treatment of municipal wastewaters*

The EU Directive on urban wastewater treatment (91/271/EEC) requires biological wastewater treatment when the population of an area exceeds 2,000 people and, additionally, the recovery of phosphorus, nitrogen or both, depending on the local circumstances, when the population exceeds 10,000 people. In Finland, the Directive has been implemented by means of the Decree (888/2006) requiring biological wastewater treatment and intensified recovery

of phosphorus in areas with more than 100 people. When the wastewater treatment system encompasses an area with over 10,000 people, the process must include intensified nitrogen recovery should this lead to improved state of waters.

All Finnish treatment plants use intensified phosphorus recovery, which is more effective than the Directive's requirement level. HELCOM's Action Plan required that the water leaving the treatment plant should contain less than 0.5 mg of phosphorus per one litre of water. This is stricter than the requirement in the Directive on urban wastewater (1.0 mg/l). All Finnish plants have already reached this stricter level. For phosphorus, it is no longer cost-effective to impose more stringent wastewater treatment requirements.

In Finland, the need to recover nitrogen from municipal wastewaters is decided on a case-by-case basis in the environmental permits of wastewater treatment plants, depending on the type of loading and the area affected. Nitrogen recovery requirements must meet the requirements laid down in the Directive on urban wastewater treatment (91/271/EEC). Determined and successful measures have been taken since the mid-1990s to reduce the amount of nitrogen discharged into the sea. The current practice complies with Finland's Baltic Sea Protection Programme, where the target is that plants treating the wastewaters of over 10,000 people do not discharge more than 30 per cent of the incoming nitrogen into nitrogen-sensitive sea areas. Nitrogen recovery has been intensified especially at wastewater treatment plants located by the Gulf of Finland. In order to improve the efficiency of nutrient recovery, water utilities invested about EUR 65 million between 2000 and 2005. As a result, nitrogen discharges have fallen from 12,200 tonnes to 11,500 tonnes and phosphorus discharges from 245 tonnes to 200 tonnes. However, in certain circumstances in Finland, more efficient nitrogen recovery does not bring environmental protection benefits, for instance, because of water temperatures. In such cases, this has not been required.

The European Commission interprets the Directive on urban wastewater as requiring that nitrogen recovery is categorical, and has brought action against Finland in the Court of Justice of the European Communities. Finland has contested the action and has considered that the nitrogen recovery obligation in the Directive requires that local conditions be taken into account. The Court has not yet given a judgement in the case. In March 2009, the Advocate General proposed that the Commission's action be dismissed. If nitrogen recovery were implemented in accordance with the Commission's legal action, about EUR 60 million more would have to be invested in the expansion of treatment plants

when compared against the level defined in Finland's Baltic Sea Protection Programme. The annual operating costs would rise by about EUR 1.5 million.

In accordance with the Government's water protection policy outlines, an agreement is being negotiated with the Association of Finnish Local and Regional Authorities and the Finnish Water and Wastewater Works Association concerning recommended voluntary actions that would supplement the current environmental permit procedure in order to reduce wastewater loads.

Above all, the growth of built areas affects the wastewater management of municipalities. In addition, resources are needed for the repairs and maintenance of ageing sewers and treatment plants.

*1. The ongoing negotiations with the water management sector concerning recommended practices for municipal wastewater treatment will be brought to conclusion. In accordance with Finland's Baltic Sea Protection Programme, treatment plants will improve the efficiency of their phosphorus and nitrogen recovery operations. Thanks to more efficient techniques, whether required in environmental permits or adopted otherwise, nitrogen loads will fall from about 11,500 tonnes to 9,500 tonnes, and phosphorus loads from about 200 tonnes to 150 tonnes between 2005 and 2015, even though the volume of wastewater treated is estimated to increase by a good 10 per cent. The more efficient techniques in line with the Baltic Sea Protection Programme are estimated to require investments worth EUR 90–100 million in water management plants between the years 2005 and 2015.*

*2. Provision is made for the eventuality that the stipulations concerning nitrogen recovery in the Decree on Urban Wastewater Treatment may have to be adjusted once the European Court of Justice has given its judgement.*

*3. The sufficient scope and maintenance of sewerage are ensured using the means provided by the Environmental Protection Act and the Act on Water Services.*

### *Wastewater from scattered settlements*

In 2000–2006, phosphorous discharges from scattered settlements accounted for an average of 12 per cent of the total nutrient load, while the corresponding figure for nitrogen was about 5 per cent. In Finland, the catchment area of the Baltic Sea has over 300,000 buildings in permanent housing use outside built



areas. Of these, over 200,000 buildings are estimated to need more efficient wastewater treatment so that the requirements of the Decree on Treating Domestic Wastewater in Areas Outside Sewer Networks (542/2003) would be met. In addition, there are over 450,000 holiday homes in Finland. Most of them produce only small amounts of wastewater, and they have been able to lead their wastewaters untreated into the ground.

It is estimated that by 2015, the amount of phosphorus in wastewaters from scattered settlement will fall to about one-third of the level in 2000, owing to migration, expansion of sewerage, and building-specific treatment of wastewaters. Correspondingly, nitrogen loads are estimated to fall by half.

The HELCOM Action Plan recommends that phosphates would no longer be used in detergents. In Finland, phosphates have not actually been banned, but the use of phosphate-free detergents has been implemented on a voluntary basis since the early 1990s. Consumers have quickly shifted to using phosphate-free detergents. The shift was soon visible in the phosphorus load entering wastewater treatment plants; according to estimates, it shrank by some 20 per cent. The market share of phosphate-free detergents in 2006 was estimated at 90 per cent. Phosphate-free detergents are the most useful in households outside the sewer network, because the efficient chemical treatment systems in built areas recover over 95 per cent of the phosphorus coming to treatment plants with wastewaters. Adoption of phosphate-free or low-phosphate detergents in Poland, Latvia, Lithuania and Russia would have quickly visible, significant impacts.

*4. Through education, information and guidance, more efficient treatment of wastewaters from scattered settlement is accelerated so that the requirements laid down in the Decree on Treating Domestic Wastewater in Areas Outside Sewer Networks will be met by 2014.*

*5. Economic incentives aimed at the treatment of domestic wastewaters from scattered settlement are developed in order to make the management and maintenance of wastewater treatment equipment more skilled and more efficient. In order to speed up implementation of the Decree on Treating Domestic Wastewater in Areas Outside Sewer Networks, subsidies are kept at least at the present level until the end of the transitional period.*

*6. The possibilities of introducing an EU-wide ban on detergents containing phosphates will be investigated. Extensive adoption of phosphate-free or*

*low-phosphate detergents in the Baltic Sea region on a quick timetable is promoted within HELCOM.*

*7. Preparations are started for prohibiting detergents containing phosphates in Finland by the end of 2012. Consumers are encouraged to switch voluntarily to using phosphate-free or low-phosphate detergents, and industry is encouraged to develop increasingly better substitute detergents.*

### *Ship-generated wastes*

In accordance with the HELCOM Action Plan, a proposal is being drafted for the International Maritime Organization (IMO) to prohibit passenger vessels from discharging wastewater into the Baltic Sea. According to the proposal being prepared under the leadership of Finland, discharging of sewage from passenger vessels into the Baltic Sea would be prohibited unless the vessels have equipment enabling adequate wastewater treatment. As cruise vessel traffic in the Baltic Sea is increasing constantly, the purpose of these regulations would be to bring their discharges under control. The new regulations could enter into force in 2014 for new vessels and in 2016 for old vessels. The preparation of the proposal takes into account the fact that in 2005, IMO designated the Baltic Sea, except for Russian territorial waters, as a Particularly Sensitive Sea Area.

Wastewater from vessels does not present an enormous problem in the Baltic Sea. Nitrogen from wastewaters accounts for approximately 0.04 per cent of the total nitrogen load, while phosphorus accounts for some 0.3 per cent of the total phosphorus load. However, the problem is exacerbated locally, particularly on ship routes in the summer time.

In accordance with the EU legislation and HELCOM recommendations, ports are, by Finnish law, required to receive all waste generated on ships without any special fee – i.e. the fee is independent of the volume of the waste discharged. Reception of wastewater from cargo ships can be done by means of tanker trucks that transport the waste for processing. In practice, the reception of wastewater from large passenger and cruise vessels would require a direct link to the sewerage. For instance, the ports of Helsinki, Hanko and Turku in Finland have such a link to the sewerage. However, not all cruise ports by the Baltic Sea have sewerage links; they are dependent on transport by tanker trucks, nor do all ports by the Baltic Sea apply the “no-special-fee” system. The discharge prohibition and improving the reception capacity of ports must be promoted side by side. The European Cruise Council, an umbrella organisation

representing cruise companies operating in Europe, gave its assurance in May 2009 that the vessels of its member shipping companies would leave their wastewaters in ports which are equipped with well-functioning reception facilities and apply the “no-special-fee” system. The largest shipping companies with regular passenger ferry traffic have already volunteered to leave their wastewaters to port reception facilities.

*8. Efforts will be continued so that the discharge of sewage into the Baltic Sea would be prohibited. At present, a proposal is being drafted in HELCOM; the goal is that all Baltic Sea coastal states will approve it and that it will be submitted to IMO for adoption in 2009.*

*9. Voluntary measures will be promoted for a cleaner Baltic Sea by making efforts to receive commitments from ports and shipping companies.*

*10. In the context of the EU Strategy for the Baltic Sea Region, a proposal will be made that the reception capacity of the ports of EU countries by the Baltic Sea be developed and EU countries’ practises be harmonised as regards wastewater from passenger vessels and voluntary action by shipping companies.*

### *Reducing nitrogen emissions from ships*

The International Maritime Organization (IMO) has striven to alleviate the adverse effects of emissions from ships. Reducing nitrogen emissions from the exhaust gases of ships is important in terms of eutrophication; for instance, blue-green algae can use nitrogen that has dissolved from air into water. According to surveys, a considerable reduction of nitrogen emissions from ships plays an important role in decreasing the Baltic Sea’s nitrogen load. Besides eutrophication, air quality is also affected when nitrogen emissions are cut.

Annex VI to the International Convention for the Prevention of Pollution from Ships (MARPOL) was revised by IMO in 2008. The goal of the revised Annex is to reduce nitrogen oxide (NO<sub>x</sub>) and sulphur oxide (SO<sub>x</sub>) emissions from ships. Among other things, the new regulations enable the establishment of NO<sub>x</sub> Emission Control Areas. In these special areas, the engines of new ships should emit 80 per cent less nitrogen oxides as from 2016 than they do at present. Shipping accounts for about 6 per cent of the total nitrogen load in the Baltic Sea, but owing to the ever brisker marine traffic, this percentage will increase in the future. According to studies, nitrogen emissions from ships can be reduced as from 2030 only if ships are required to cut their nitrogen emissions by 80 per cent of the present level.

Under Finland's leadership, HELCOM is currently preparing a proposal, to be submitted to IMO, that would designate the Baltic Sea as a NOx Emission Control Area. To achieve this end, the necessary actions are charted and the costs involved are estimated, including the competitive standing of new, low-emission vessels when compared against older vessels. A report on the preparations will be submitted to HELCOM in November 2009.

It is important that the decisions are made in good time so that shipping companies can be informed of the changes and timetables as early as possible and the new requirements can be taken into account when new acquisitions are made. Some vessels in operation, for instance in the Gulf of Finland, already meet the nitrogen oxide reduction requirements.

According to new requirements for nitrogen oxide reduction, treatment equipment, such as catalytic converters, is to be installed on vessels built after 2016. The development of new technology has already started in Finland, and the requirements also create new markets for Finnish industry.

Taking into consideration the long-range transport of nitrogen oxide emissions and the development of uniform technical requirements for vessels, it would be important that not only the Baltic Sea, but also the North Sea and the English Channel, would be designated as special areas for reducing nitrogen oxide emissions. The United States and Canada are establishing NOx Emission Control Areas in their coastal waters.

*11. Active efforts will continue at HELCOM for drawing up a proposal for IMO on designating the Baltic Sea as a NOx Emission Control Area. Measures will be taken to ensure that the preparatory work includes a wide-ranging assessment of the impacts of the proposal.*

*12. Efforts will be made to the effect that not only the Baltic Sea, but also the North Sea and the English Channel, would be designated as special areas for reducing nitrogen oxides. This would decrease the volumes of nitrogen transported by air to the Baltic Sea and would create a wider market area for the acquisition of new, low-emission vessels.*

*13. Studies will be conducted on the use of economic means of steering in marine traffic, for instance, to promote the adoption of advanced environmental technology in vessels operated in the Baltic Sea.*

## *Participation in efforts taken in other Baltic Sea countries to reduce nutrient loads in the Baltic Sea*

### **Treatment of municipal wastewaters from Northwest Russia**

Wastewaters from St. Petersburg have been a problem in the Gulf of Finland for decades, but the situation has now started to improve quickly.

Large environmental projects have been carried out in the St. Petersburg area within the Northern Dimension Environmental Partnership. The support by Finland, Sweden and other donors has provided significant seed funding to the projects, and investments in wastewater management in St. Petersburg, for example, have resulted in considerable improvements in the state of the Gulf of Finland.

The ongoing construction of the Neva collector sewer is the last large wastewater treatment project carried out as an Environmental Partnership project within the Northern Dimension in St. Petersburg. When it is complete, most of the municipal wastewater from the St. Petersburg region will be treated before discharge into the Gulf of Finland via the Neva River, and the goals set for the St. Petersburg region in the HELCOM Baltic Sea Action Plan will be met. Finland has supported wastewater projects in St. Petersburg and the Leningrad Region both through the Northern Dimension Environmental Partnership and bilaterally.

Chemical removal of phosphorus has meant a major improvement as regards the treatment of wastewaters in St. Petersburg. It has been a cost-effective method for reducing the phosphorus load of the Gulf of Finland. Finland has supported the adoption of chemical phosphorus removal at treatment plants in St. Petersburg and is also making efforts to promote its adoption in the neighbouring cities.

The City of Kaliningrad, with nearly half a million inhabitants, in practice still discharges its wastewaters untreated into the Baltic Sea. This region would have the potential of reducing the phosphorus load by as much as 400 tonnes per year. Renovation of the wastewater treatment plant of the City of Kaliningrad has been under preparation as an Environmental Partnership project within the Northern Dimension for years, but the start of the project is still unclear.

## **Nutrient loads arising from agriculture in the Leningrad Region**

The rapid growth of agricultural production in the Leningrad Region is a new threat to the nutrient balance of the Gulf of Finland. The expansion of animal husbandry in the Leningrad Region is a major concern. Animal farms do not have large enough fields for spreading the manure generated. In fact, there are not enough fields for this purpose in the whole of Leningrad Region. The manure generated yearly by 18 large poultry farms alone contains about 4,600 tonnes of phosphorus. If some of this phosphorus ends up in water bodies, it means a marked addition to the phosphorus load of the Gulf of Finland.

Measures to reduce the burden on water bodies generated by animal husbandry in the Leningrad Region have been initiated in cooperation with the Nordic Environment Finance Corporation (NEFCO). Part of the support takes the form of Finland's bilateral cooperation with the neighbouring areas. The objective is to provide support to projects also through the Northern Dimension Environmental Partnership.

The Finnish Ministry of the Environment has initiated measures for determining the nutrient load in the catchment area of the Gulf of Finland and for developing cost-effective investments and cooperation projects.

## **Treatment of Poland's municipal wastewaters**

Poland has been granted a transitional period extending up to 2015 for implementing the EU Directive concerning urban wastewater treatment. Only after that will the requirements of the Directive be fully met.

The John Nurminen Foundation of Finland and the Baltic Sea 2020 Foundation of Sweden have a joint project plan for reducing the phosphorus content of Polish municipal wastewaters by means of small additional investments and increments in operating costs. The foundations are currently negotiating with Poland in order to launch the project.

## **Including Belarus in environmental cooperation**

Belarus belongs to the catchment area of the Baltic Sea. Finland has initiated action to include Belarus in the Northern Dimension Environmental Partnership. The country's participation in Environmental Partnership projects is currently under preparation.

*14. Effort is made to improve the exchange of information with Russia concerning the state of the Gulf of Finland, the sources of pollution and the methods of diminishing pollution, such as environmentally beneficial utilisation of manure as a fertiliser and as a source of energy.*

*15. Cost-effective water protection investments and the introduction of chemical phosphorus removal at wastewater treatment plants in St. Petersburg and cities in the Leningrad Region are supported, and the arrangement of international funding for the necessary investments is promoted, particularly within the Northern Dimension Environmental Partnership.*

*16. The rapid starting of renovation work at Kaliningrad's wastewater treatment plant is promoted within the Northern Dimension Environmental Partnership.*

*17. Cooperation is intensified for the adoption of environmentally beneficial agricultural practices. Effort is made to launch cooperation in the measurement and assessment of environmental impacts arising from agriculture, especially from large animal farms in the Leningrad Region. Measures to improve conditions for investment and projects that promote technological cooperation and the launching of commercial cooperation between Finnish and Russian companies are supported.*

*18. Contributions are made to the technical assistance fund of the Nordic Investment Bank (NIB) and the Nordic Environment Finance Corporation (NEFCO), which has been established for the preparation of projects aimed at reducing eutrophication and for the promotion of investments.*

#### 1.4 Minimising the load arising from agriculture

According to the Resolution on Water Protection Policy Outlines to 2015, adopted by the Government in 2006, nutrient loads from agriculture should be cut by one-third by the year 2015, when compared against the level in 2001–2005.

In its review conducted in 2008, the National Audit Body of Finland concluded that a reduction of 30 per cent, specified in the Government's resolution, cannot be achieved with the present measures. The review also pointed out that, by different targeting of the agri-environmental support, nutrient discharges from

agriculture can be reduced even when the support remains at the present level.

Measured using all the main indicators, the potential environmental load caused by agriculture in Finland between 1990 and 2004 has fallen clearly more than the average in the Organisation for Economic Co-operation and Development (OECD) or among the EU Member States. For example, the surplus nitrogen and surplus phosphorus calculated by means of nutrient balances fell by 65 per cent and 42 per cent, respectively, whereas the corresponding figures in the OECD countries were on average 4 per cent for nitrogen and 19 per cent for phosphorus.

The changing environmental conditions make it more difficult to attain the water protection targets. Climate change is expected to increase nutrient loads from agriculture, since there will be more rainfall and the ground will not freeze in winter. This will intensify the leaching of nutrients into water bodies, especially outside the growing season, if fields have no vegetal coverage. It is important to target investment support so that the manure yards of animal sheds are covered. Covering manure yards also prevents rainwater from entering liquid manure tanks. Climate change will introduce a new, growing challenge for water protection in agriculture.

### *Means and tools for improving water protection*

#### **Agri-environmental support**

The principal tool for reducing the burden caused by agriculture on water bodies is the agri-environmental support, which has been in use since Finland's accession to the European Union. In Finland, the funds used for agri-environmental support, and the commitment of farmers, are of exceptional magnitude when compared against those in other EU Member States. Altogether 90 per cent of farmers are committed to agri-environmental support, which encompasses 95 per cent of the arable land in use. Agri-environmental support allocated for water protection averages EUR 295 million per year. In the whole of the EU, about 23 per cent of the field area is encompassed by some type of environmental support.

The agri-environmental support system is voluntary for farmers. The support is based on costs and loss of income arising from the measures taken. The basic requirement that farmers committed to environmental support must meet is 'cross compliance' (such as statutory management requirements and good agricultural and environmental conditions), for which no payments are made.



In order to receive payments, farmers implement compulsory measures, such as margins around major ditches, buffer strips by water bodies, and parcel-specific limits on phosphorus and nitrogen fertilisers. In the environmental support scheme, farmers may also choose optional additional measures, such as intensified hibernal vegetal coverage or more precise application of nitrogen fertilisation on field plants. In addition, farmers may take voluntary agri-environment measures, such as wider protection zones, that entitle them to specific support.

Farmers are committed to the basic and additional measures of environmental support for five years at a time. Programme changes to environmental support can be made yearly, but in order to achieve sufficient coverage, any changes to basic and additional measures, such as supplementing the basic measures with the nutrient balance, shall be timed so that they start in 2012. Major changes affecting the entire support system cannot be made until the new programming period starts in 2014, because the financing of the coming programming period and the associated EU rules are not known yet. When changes are made to environmental support, it must be ensured that effective measures are also cost-effective and viable at farm level so that farmers at large can be committed to them.

The effectiveness of environmental support has been followed since 1995 (MYTVAS survey projects). For instance, the nitrogen balance, indicating the amount of nitrogen remaining in the soil after the growing season, fell by 45 per cent during the ten-year period from 1995 to 2005. The main reason contributing to this change is a roughly 25 per cent decrease in the use of nitrogen contained in commercial fertilisers. During the corresponding period, the phosphorus balance fell by 64 per cent. Above all, this is an indication of more efficient utilisation of nutrients contained in farmyard manure, and of a shift to the kind of phosphorus fertilisation suggested by the findings of the soil analysis. Even though many different measures have been taken to reduce the burden caused by agriculture on water bodies – especially through agri-environmental support – and the sales of phosphorus fertilisers fell by 60 per cent and the sales of nitrogen fertilisers by over 25 per cent between 1995 and 2007, the follow-up material on water bodies does not yet show any signs of reduction in the nutrient load from agriculture, owing to the long time-lags in the impact chain. The conclusions of the MYTVAS surveys emphasise the importance of a good soil structure, well-functioning water management in the field, and sufficient liming as factors reducing the burden of agriculture on water bodies. The surveys have recommended more limited and more efficient use of manure, avoiding the application of phosphorus fertilisers on grass, parcel-specific fertilisation determined by nutrient balances, and full-scale

utilisation and targeting of protection zones and wetlands. It is important to increase vegetal coverage, especially near water bodies. Farm-specific plans and the associated training and advisory services play a key role. Most of the recommendations of the MYTVAS surveys have been taken into account in the preparation of environmental support, and the measures are already widely adopted. In 2008, agreements were introduced on specific support for the application of liquid manure on fields and for more efficient reduction of nutrient loads in fields rich in phosphorus. In 2009, water protection was improved in nature management fields included in the environmental support system, thereby promoting the application of grass cover on the fields.

At present, agreements on protection zones within the environmental support scheme – and support measures for the construction and management of wetlands with multiple functions – are targeted at Southern Finland, on the basis of water protection factors. In order to improve the effectiveness of environmental support, measures should be targeted more accurately at the most risk-prone areas. Targeting should be based on grounds relating to water protection and the state of waters. At farm level, too, measures should be targeted at field parcels that contribute to the environmental load the most.

Most of the environmental load caused by agriculture develops outside the growing season; for this reason, the vegetal coverage of soil and tilling methods affect the leaching of nutrients. When tilling is shifted to spring and lighter tilling methods are adopted, it is possible to reduce erosion and the discharge of phosphorus contained in soil to water bodies. Perennial grass, other hibernal vegetal coverage, and growing without tilling should be applied, in particular, in sloping fields bordered by water bodies.

The phosphorus and nitrogen contained in manure are not taken into account in full in the present agri-environmental support when calculating the fertilisation volumes that meet the criteria. Eighty-five per cent of the soluble phosphorus in manure, and 75 per cent of the nitrogen in manure spread in autumn, are taken into account. This may mean that crops receive more fertilisers than they need and that phosphorus is accumulated in soil. Spreading of manure in autumn may also become more common; this increases the risk of leached nitrogen. According to the MYTVAS survey, concentration of animal husbandry results in regional and local overproduction of manure and in rising nutrient balances. This is another factor adding to the environmental load. Manure should be applied to a wider area than before, and adjustments should be made in the feeding of animals.

Commissioned by the Ministry of Agriculture and Forestry, a working group led by Permanent State Secretary Raimo Sailas reviewed the environmental impacts and steering mechanisms of agriculture in 2008. Among other things, the working group proposed that a competitive bidding model should be tested as a pilot project to reduce nutrient loads. The farms with the best cost-benefit ratio would be selected on the basis of parcel-specific environmental benefit indices and the farmers' bids for measures to be taken. In 2009, the Ministry of Agriculture and Forestry has funded a research project to study the implementation potential and practical arrangements of this type of competitive bidding.

Several projects are in progress for developing measures within environmental support. A three-year TEHO project (2008–2010) to promote more efficient water protection in agriculture is being carried out in Southwestern Finland. The goal of this pilot project is to test the most efficient water protection measures in agriculture as well as their applicability, efficacy and cost-effectiveness, in practice at farm level. The goal of the three-year Hyötylanta research programme, carried out in 2008–2010, is to produce information and techniques and to find new technical solutions and innovations (e.g. biogas plants) for more effective utilisation of manure than at present. The topics of study in the programme include more efficient recovery of nutrients from manure, fertilisation practices, and manure processing methods. In addition, the MYTVAS research project conducts a comprehensive assessment of the impacts of environmental support on water protection and the economy.

### **Additional funding for water management**

As of 2010, additional funding will be available for the Rural Development Programme from the modulated funds. Water management is a central strategic area in rural development. Finland's Rural Development Strategy and Rural Development Programme will be revised for the adoption of additional funding in June 2009.

### **Development of national legislation**

Most statutory measures associated with the storage and use of manure for fertilisation, and with the use of nitrogen fertilisers, are based on the EU Nitrates Directive, which has been implemented in Finland through the Government Decree on the Restriction of Discharge of Nitrates from Agriculture into Waters (931/2000). In particular, the Decree restricts environmental loads arising from nitrogen. The Decree contains provisions, for instance, on the storage

of manure and on the application, application times, and volumes of nitrogen fertilisers. The present Nitrates Decree should be revised and clarified.

### *Measures reducing nutrient loads from agriculture*

The following measures are taken in order to meet the target, set in the Government's Resolution, on decreasing nutrient loads from agriculture by one-third from the level in 2001–2005 by the year 2015.

*19. Water management is a central strategic area in rural development. In consequence, funds available for agri-environmental support are targeted at measures promoting water management.*

*20. New means to advance water protection will be taken into use in 2010. The construction of wetlands is accelerated in accordance with the outlines presented by the working group on the need to revise agri-environmental support.*

*21. The new agreements on agri-environmental support to be concluded in 2012 will be increasingly efficient in that measures will be targeted regionally at the most risk-prone areas in terms of water protection, for instance, by using parcel-specific nutrient balances and by adjusting the conditions for compulsory and additional measures. The agreements on specific support will also be targeted better with respect to water protection.*

*22. The bulk of the water protection measures during the new period of agri-environmental support starting in 2014 will be targeted, geographically and at farm level, at the areas and parcels with the greatest loads. The amount of targeted specific support shall increase. In order to guarantee as comprehensive impacts on water bodies as possible, all parties involved in environmental support should also take certain compulsory basic measures. Effort is made to enhance the impacts of these measures on water protection. When the agri-environmental support system is revised, it is ensured that the compensation paid for efficient water protection measures is adequate to encourage farmers to commit themselves to water protection measures.*

*23. Measures associated with agri-environmental support are developed at the level of individual farms in order to reduce erosion and runoff, especially in sloping fields by water. The principal measures in*

*environmental support are the correct fertilisation level and the utilisation of nutrient balances, hibernal vegetal coverage and reduced tilling of fields, and protection zones and wetlands. Fertilisation is adjusted by means of nutrient balances to provide plants with the amount needed. The introduction of competitive bidding is investigated, for instance, on the basis of findings from the research project conducted. At farms with domestic animals, the pivotal factor is the efficient and environmentally sustainable use of nutrients contained in manure. The goal is that, as of 2014, fertilisation calculations take the nutrients in manure into account in full. The attainment of this goal requires that measures and technical solutions for processing manure and for promoting the utilisation of manure are developed for farms. Water management is promoted also by improving the water economy of fields.*

*24. The targeting of agri-environmental support is made more efficient through information campaigns and education. 2010 will be a theme year for the dissemination of information on the environmental aspects of agriculture. Together with stakeholders, an information campaign will be launched to increase farmers' awareness on issues such as nutrient discharges and prevention of eutrophication.*

*25. When investment support is planned for agriculture, attention is also paid to water protection goals, and investment support is steered towards new measures promoting water protection in animal husbandry.*

## 2 Other environmental protection associated with the state of the Baltic Sea

### 2.1 Toxic substances

The Baltic Sea and human health are threatened not only by eutrophication but also by environmental toxic substances and other harmful substances. These may enter the Baltic Sea from many sources, such as cooling waters and wastewaters discharged by municipalities and industry, pesticides, consumer products, including pharmaceuticals, traffic, and airborne deposits. Owing to environmental loads over the years, harmful substances have accumulated in the bottom sediment of the Baltic Sea and the catchment area soil; these may start moving and end up in the food chain. Not enough is known about the releases, prevalence and impacts of dangerous and harmful substances. Combating dangerous and harmful substances is not possible without international cooperation and EU-level regulation.

Persistent organic pollutants (POP compounds, such as dioxins, PCBs, DDT) are the most dangerous substances for the environment. They may have adverse effects on health even at low concentrations. Owing to high dioxin levels, it has been necessary to set limits for the use of fatty fish from the northern Baltic Sea, such as Baltic herring, salmon, trout and vendace.

Because of long-range transport and long-lived compounds, effort has been made to restrict the use of dangerous and harmful substances by means of international conventions, including the UN Convention on Long-Range Transboundary Air Pollution and the international Stockholm Convention on Persistent Organic Pollutants. The obligations of these conventions have been included in EU Regulations and Directives. The EU Regulation on Chemicals (REACH) emphasises the responsibility of industry, in particular, in studying the properties of dangerous chemicals and in risk assessment.

The International Maritime Organization has set a global ban on the use of paints containing organic tin compounds (especially tributyltin, TBT) in all vessels as of 2008. In the EU, the use of such paints has been banned under a regulation. TBT paints have been used for ships' hulls as an antifouling agent. In addition, organic tin compounds have been used for slime and mould prevention in the pulp and paper industry, for wood preservation and at fish farms. TBT is highly harmful in the aquatic environment, and the organic tin compounds that have settled on the sea bottom may be released in connection with extensive dredging. In the EU, use of organic tin compounds is also

prohibited in the equipment of fish farms and in the treatment of industrial coolants and wastewaters.

Finland is committed to the targets for reducing dangerous substances set in international conventions and directives. The EU Water Framework Directive lists harmful substances and substance groups that are pivotal for the protection and water management of the Baltic Sea. In practice, the list covers substances that may have an adverse effect on the aquatic environment or, through the aquatic environment, on human health.

In Finland, harmful substances and their environmental quality norms have been defined nationally in the Government Decree (1022/2006). In 2006, Finland also adopted a national programme on dangerous chemicals that stresses the precautionary principle to minimise unpredicted adverse effects when new products are launched on the market. The programme takes account of the risks posed to consumers, public health, workers' health, and the environment during the entire life cycle of the chemicals.

HELCOM plays an important role in assessment of the risks and concentrations of dangerous and harmful substances and in limiting their use in the Baltic Sea region. The concentrations of some substances known to be hazardous (such as lead, mercury, cadmium, PCBs, DDT) have fallen in the Baltic Sea as a result of restrictions on discharges and bans on use. Attention has recently also been paid to many new hazardous substances, such as fire retardants and finishing agents.

*26. More information will be amassed on the concentrations, prevalence, behaviour and impacts of dangerous and harmful substances, and follow-up methods are developed.*

*27. Concentrations and impacts of harmful substances in contaminated sediments are studied, for example in connection with dredging, and adverse effects arising from these substances are eliminated.*

*28. Measures to reduce the releases of harmful and dangerous substances into the air and into water, and to ban their use, are promoted in international cooperation.*

## 2.2 Reducing sulphur emissions from ships

The new regulations issued by the International Maritime Organization (IMO) help reduce harmful sulphur emissions that affect the health of ships' crews and people living in coastal areas and that promote marine acidification. By placing more stringent requirements on fuel quality, it is possible to cut particle emissions that are especially harmful for health. It is estimated that sulphur discharges from international marine traffic will exceed land-based emissions by the year 2020 if the present trend is allowed to continue.

The revised air protection annex to the International Convention for the Prevention of Pollution from Ships (MARPOL), approved by IMO in 2008, is an important step for improving air quality. According to the Convention, the sulphur content of fuel at global level will be reduced from the present 4.5 per cent to 3.5 per cent as of the beginning of 2012, and to 0.5 per cent as of the beginning of 2020.

IMO's regulations also enable the use of sulphur scrubbers, which allows the use of fuels exceeding the above sulphur content limits, including heavy fuel qualities. A sulphur scrubber based on a closed cycle has been developed in Finland, enabling use also in the brackish waters of the Baltic Sea.

In Sulphur Emission Control Areas (the Baltic Sea, the North Sea, the English Channel), the sulphur level will fall to one per cent in July 2010 and will be 0.1 per cent as of the beginning of 2015. The current cap for the sulphur content in the Baltic Sea is 1.5 per cent. In addition, the United States and Canada are about to establish a SO<sub>x</sub> Emission Control Areas around their coasts.

Regulations on sulphur content are within the competence of the EU. The European Commission is currently drafting an amendment to the Sulphur Directive (1999/32/EC) in order to implement the new regulations approved by IMO. According to the Sulphur Directive, ships coming into port in the EU must already use fuel with a sulphur content of no more than 0.1 per cent when in port in 2010. To reduce emissions and improve air quality, vessels' access to shore-side electricity in ports needs to be developed.

Finnish industry has been concerned about the impacts that the requirement for low-sulphur fuels will have on rising transport and fuel costs and on competitiveness. In spring 2009, the Ministry of Transport and Communications commissioned a study which indicated that a shift from the present-day heavy fuel oils to cleaner light fuel grades in marine traffic in the Baltic Sea and the North Sea in 2015 will increase the fuel costs of ships considerably, thereby



adding to cargo costs. The calculations made are based on current products. Estimates of the price trends of fuel involve a number of uncertainties regarding the availability and demand for low-sulphur fuels. The results of the study carried out in Finland will be taken to EU level. The European Commission is also conducting a study on the availability of fuels.

*29. At national level, the price trends of low-sulphur fuel, as well as the studies on the availability and price trends of low-sulphur fuel in progress at EU level, are followed actively. If the situation so requires, it will be decided what measures should be taken in order to alleviate any unreasonable consequences that may ensue. Further measures will be considered in close cooperation with representatives of industry, shipping companies and NGOs.*

### 2.3 Reducing the impacts of shipping on climate change

In view of the coming climate conference in Copenhagen, the International Maritime Organization (IMO) is making preparations for the participation of shipping in the joint efforts to combat climate change. IMO is drafting technical measures to reduce carbon dioxide (CO<sub>2</sub>) emissions from ships; such measures include the Energy Efficiency Design Index, economic means of steering and voluntary actions. At present, shipping accounts for less than 3 per cent of all CO<sub>2</sub> emissions, but since it has been estimated that shipping volumes will increase steeply in the long term, the figure will rise to nearly 17 per cent by 2050.

Greenhouse gas (GHG) emissions from national marine traffic are already included in the Kyoto Protocol and therefore also in the country-specific emission reductions.

*30. Active effort is made to enable IMO to prepare and adopt binding targets and measures to reduce GHG emissions from shipping by the end of 2011.*

*31. Influence is exercised to ensure that the requirements for energy efficiency stemming from the additional engine power and thicker steel hulls of ice-strengthened ships are taken into account in the preparatory work. This aspect will be brought up in IMO, in particular with other Northern countries that have similar winter conditions.*

## 2.4 Preventing the spread of invasive species

During the past few decades, over one hundred alien species have been discovered in the Baltic Sea, the latest discoveries being the warty comb jelly (*Mnemiopsis leidyi*) and the fishhook waterflea (*Cercopagis pengoi*). Alien species may be transported in the bottom structures of ocean-going vessels or in ballast water.

IMO approved a new Convention on ballast water in 2004, which has not yet entered into force. Finland has signed the Convention. It requires that ships have equipment for ballast water management that would destroy plant and animal species spreading with water. Such technology already exists. During a transitional period, the spread of invasive species will be limited by exchanging ballast water at open sea. There are no areas suitable for exchanging water in the Baltic Sea. The Convention's entry into force and the adoption of management systems are important for the protection of the Baltic Sea, as Russia's growing oil exports from the ports by the Baltic Sea increases the amount of ballast water discharged in the Gulf of Finland.

*32. In cooperation with HELCOM, active effort is made to promote the entry into force of the Convention on ballast water. The Convention will be ratified in Finland as soon as possible.*

## 2.5 Use and biodiversity of maritime areas

Maritime spatial planning is an important tool for the development of the European integrated maritime policy. Within the framework of the EU's maritime policy, common principles are being elaborated for maritime spatial planning by taking into consideration the different uses of maritime areas, such as transport, energy production, fisheries and environmental protection. Maritime spatial planning is an instrument for improved decision-making, and it requires the support of extensive research and knowledge.

With respect to the biological diversity of the Baltic Sea, eutrophication is the greatest problem, but also offshore economic activities, including wind power generation, gravel extraction, transport and infrastructure projects, are on the increase. This further enhances the importance of planning the management and use of maritime areas in an integrated manner. Integrated planning is being developed within regional and EU cooperation. The assessment of the impact of economic activities and the integrated planning of management and use call for good basic information on underwater nature. For this purpose, the

Finnish Inventory Programme for the Underwater Marine Environment (VELMU) was launched in 2004. The objective is to compile the required overview of the underwater biodiversity of the Finnish coast by the year 2014.

The creation of a network of protected maritime areas requires information about underwater nature. The Convention on Biological Diversity and the EU's biodiversity strategy involve the aim to set up an ecologically coherent and well-managed network of coastal and maritime protected areas by the year 2012. Furthermore, a decision has been made to create a coherent network of protected areas for the Baltic Sea by 2010. The Natura 2000 network covers areas which are significant in terms of coastal and maritime natural habitats and species. The need to expand the Natura 2000 network in high seas areas has been investigated, and five new areas have been suggested. These are to be brought to the Government for decision during 2009.

*33. Active participation is conducted in the development of maritime spatial planning and related principles at the national level, within EU cooperation, especially in the application of the EU's maritime policy, and within regional cooperation.*

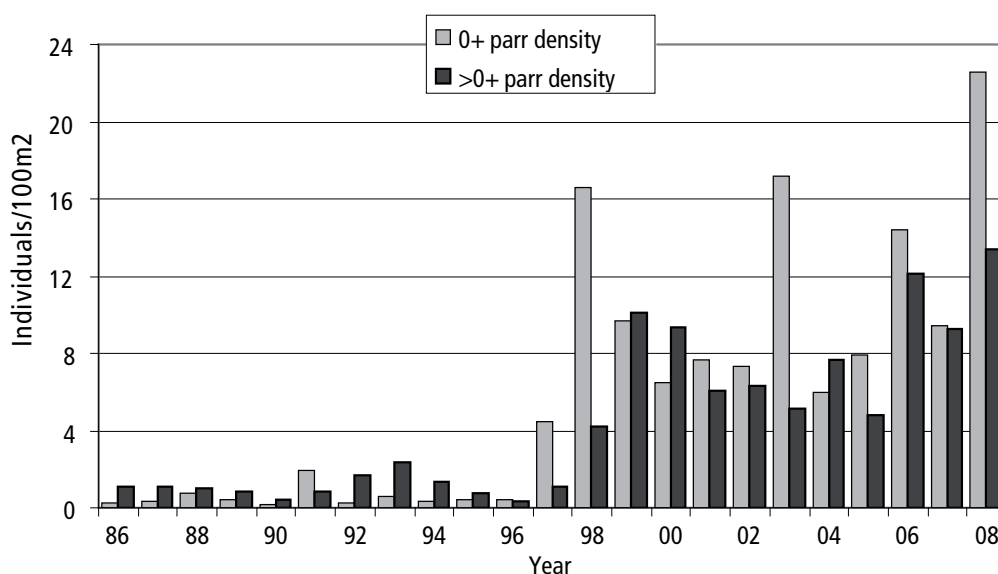
*34. The Finnish coastal underwater biodiversity will be ascertained by completing the VELMU programme by 2014. The network of maritime protected areas will be complemented, and the management and use of those areas will be developed.*

### 3 Sustainable fisheries and fish farming

The promotion of sustainable fisheries creates opportunities for utilising the fishery resources in the Baltic Sea also in the future. Strong fish stocks form the basis for high-quality and healthy local food produced by commercial fishing, as well as for leisure fishing and fishing tourism. Through the remediation of water bodies, the use of the reproduction potential of fish can be enhanced.

The smolt production in the river Tornionjoki has increased to the level of 700,000–800,000 in the 2000s, reaching the record-high level of 1,200,000 in 2008. The state of the Baltic salmon stocks has improved, in particular, owing to the EU ban on driftnet fishing. Also the parr densities and river catches are unprecedented.

**Figure 4** The mean densities of salmon's autumn fry (0+) and older fry (>0+) in the river Tornionjoki from 1986 to 2008. (Source: Finnish Game and Fisheries Research Institute)



The vigorous growth of grey seal populations has increasingly caused problems for coastal fishing and aquaculture. The strong increase in grey seal and cormorant populations is seen as a significant threat to the development of the maritime fishing industry. One possibility of reducing the harm to fisheries is using such fishing equipment that seals cannot get at the fish.

The pollution load on water bodies caused by fish farming has diminished as a result of water protection measures and decreasing production volumes in

such a manner that the objectives set for 2005 were achieved even better than expected. The goal of the National Aquaculture Programme 2015 prepared jointly by the Ministry of Agriculture and Forestry and the Ministry of the Environment is to create a sustainable and internationally competitive national environment for the aquaculture industry, thereby also bringing about the prerequisites for sustainable growth in production.

Fishing is one of the effective and low-cost methods to decrease the nutrient content in the Baltic Sea and water bodies. Finnish commercial fishing reduces over 500 tonnes of phosphorus from the Baltic Sea annually and should thus be regarded as an effective means of water management.

*35. Measures are taken to achieve and maintain a good state of commercially utilised fish stocks and to ensure sustainable fishing in the Baltic Sea. Sustainable commercial fishing, leisure fishing and fishing tourism are advanced in an equal and mutually supportive manner.*

*36. The rise of natural salmon to the rivers where they spawn, the positive development of the salmon stock and the highest possible level of alevin supplies are safeguarded while ensuring the prerequisites for coastal commercial fishing. The impacts of regulating the fishing of salmon are assessed on the basis of the best available research information and in the future, the regulation will be modified in accordance with the Government statement given in conjunction with the Decree on the Limitations Concerning Salmon Fishing in the Gulf of Bothnia and in the Simojoki River (190/2008).*

*37. A national fishway strategy will be drafted for important water bodies involving migratory fish in order to promote the natural reproduction of the migratory fish stocks. Spawning areas will be remedied in order to restore the good state of migratory fish stocks.*

*38. The possibilities of introducing fisher-specific quotas for fishing will be investigated, taking into account experiences in other Baltic Sea countries, for instance Sweden, Denmark and Estonia.*

*39. In order to reduce the damage caused to fisheries, new intensifying measures will be taken within the framework of the sustainable management of grey seal stocks and the sealing quota. The directions harmonising the exceptional permission procedure pertaining to the cormorant will be specified further. The directions state that measures intended to decrease the damage caused by cormorants in verified specific*

*problem areas are possible in accordance with the principles agreed upon in the Government Programme and within the EU.*

*40. The operational preconditions for fish farming are developed and the water protection involved in this industry is intensified in accordance with the principles set out in the National Aquaculture Programme 2015. The adoption of new, economically, socially and ecologically sustainable aquaculture techniques and measures is promoted. Regional location guidance plans are used to steer the establishment of this industry so that industrial policy and environmental policy form a harmonious whole. The use of fish feed made from Baltic fish and of fish feed of vegetal origin is promoted.*

*41. Measures will be taken to implement a system of removal fishing of underutilised fish species by commercial fishers. The system is intended for the removal of nutrients in water bodies by thinning the overly dense cyprinid stocks. The use of the currently non-utilised catch as food or as raw material for feed and bioenergy production will be promoted, and the potential raw material flows will be taken into account in the development of fishery infrastructure and logistics. The possibilities of introducing a start-up support system related to removal fishing, targeted at commercial fishers, will be investigated.*

## 4 Improving the safety of shipping

Marine traffic in the Baltic Sea and the Gulf of Finland has increased in the past few years, and it is predicted that the volumes will keep rising in the long term. At present, the recent economic recession has decreased traffic to Finnish ports.

The growth in traffic has recently been particularly strong in oil and chemical transports and in passenger traffic. In 2008, oil transports in the Gulf of Finland totalled over 140 million tonnes, which is over seven times more than in 1995. The main reasons behind this remarkable increase are the decision of the Russian authorities to concentrate oil transports in Russia's export ports and the establishment of new ports.

Higher traffic volumes are one factor increasing accident risks. Moreover, accidents at sea always involve the risk of personal injury and environmental damage of one type or another. If a large tanker runs aground or is damaged in a collision, the resulting environmental damage may be considerable.

If a tanker or a cargo vessel is damaged, it might be necessary to tow the vessel to a port of refuge. According to existing EU provisions (amendment to the Directive establishing a Community vessel traffic monitoring and information system), due arrangements on the responsibilities and decision-making processes regarding above-mentioned accident situations need to be made in order to prevent compromising the launch of rescue operations and further damage to the environment. Advance arrangements should also be made with the neighbouring countries to ensure that accidents in international waters can be managed in an efficient way.

Many passenger vessels also sail on the Gulf of Finland, and their regular routes intersect with the course taken by large tankers. Collision of a passenger vessel and a tanker could cause a severe major accident.

The shallow coasts and archipelagos of the Baltic Sea and the harsh winter conditions are a demanding navigation environment; this also increases the risk of accidents and hazardous situations.

Accidents can be prevented in advance by setting requirements and by taking measures that affect the structure of the vessel, the competence of the crew and the manoeuvring of the ship. However, advance provision must be made for potential accidents, and there must be sufficient preparedness for saving human lives and for combating oil and chemical spills.

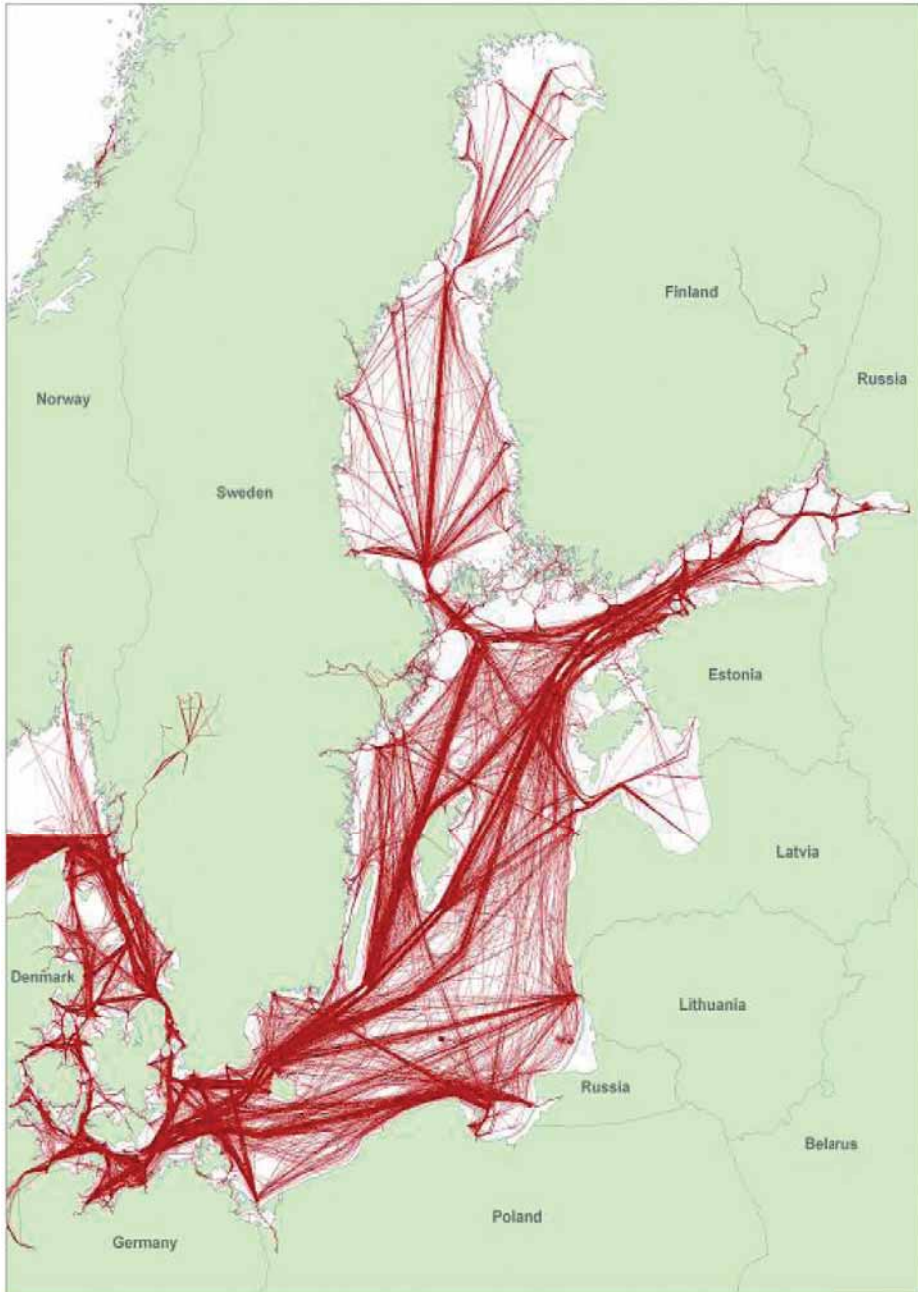
The International Maritime Organization (IMO) designated the Baltic Sea, except for Russian territorial waters, as a *Particularly Sensitive Sea Area (PSSA)* in 2005. The Baltic Sea coastal states have the possibility to implement Associated Protective Measures in the PSSA area. Based on the risk analysis, Finland could consider the need to apply for Associated Protective Measures to improve the maritime safety on the Gulf of Finland, the Archipelago Sea and the Gulf of Bothnia.

#### 4.1 Effective prevention of accidents

Owing to the international character of seafaring, international agreements are the most effective way of promoting maritime safety primarily in IMO. Because of the extensive Community legislation, the European Union is an internationally important actor in matters concerning shipping. About 41 per cent of the world's merchant fleet is owned by shipping companies in the EU, Norway and Iceland. Issues pertaining to the environmental impact of shipping and to accident risks in the Baltic Sea region are discussed in the expert working groups of HELCOM. The ministers of transport in the Baltic Sea countries do not have a specific forum of their own, and various solutions are being weighed to correct this situation.



**Figure 5** Vessel traffic in the Baltic Sea. The lines represent the routes of vessels during one week in 2007. Data is based on the Automatic Identification System (AIS) database maintained by HELCOM.



The Baltic Sea Maritime Safety Programme 2009–2014, included in the Government Programme, was completed in April 2009. The programme defines the central policies and measures that the Government will implement in order to improve maritime safety in the Baltic Sea. The basic premise of the Programme is increasingly effective advance prevention of accidents. The safety of shipping has been investigated through four main themes: prevention and minimisation of accidents; saving of human lives; combating hazardous substances released into the sea; and investigation of accidents and hazardous situations, and utilisation of the findings in preventive work.

The programme has paid special attention to the human factor, which according to statistics, is the greatest single cause of accidents. The accident risk can be reduced by improving the competence and practices of seafarers. Very important factors are up-to-date training, the seafarers' state of alertness, and the working routines and automation of technical systems and the bridge.

At ministerial level and at all levels of administration, the Maritime Safety Programme helps improve the efficiency of the national preparation and coordination of international issues concerning safe shipping. In addition, cooperation between the ministries of transport in the Baltic Sea countries will be intensified as concerns measures enhancing the safety of shipping, including the surveillance and control of ship traffic.

### *Maritime safety measures in progress*

In December 2008, the EU adopted the third package of legislative measures on maritime safety. Of the eight legislative instruments included in the package, the most important are the Directive on the port State control of vessels sailing under foreign flags and coming to port in the Member States and the Directive on traffic surveillance. The legislative instruments also cover shipping in winter and entitle the setting of structural requirements and traffic restrictions for vessels operated in icy conditions. Efficient implementation of the package requires cooperation among all Baltic Sea coastal states; it would also be important if Russia could be committed to corresponding actions. At present, this cooperation is carried out under the leadership of the European Commission within the EU–Russia transport dialogue.

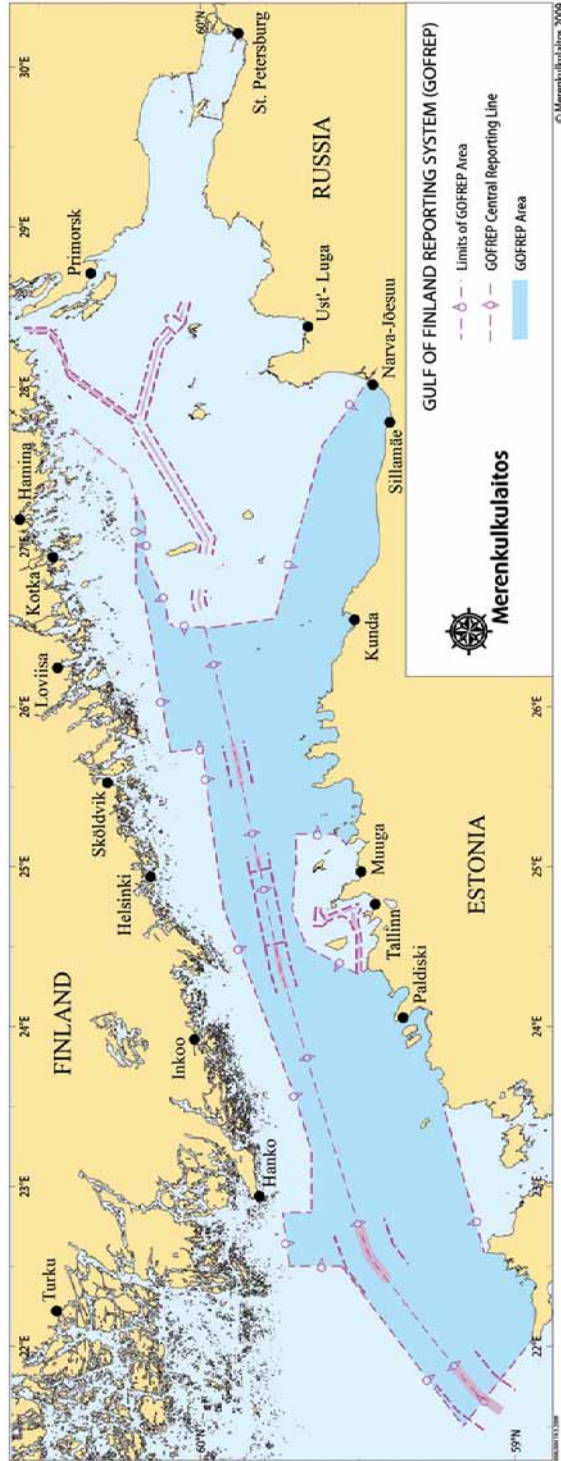
The maritime safety package also includes a Directive on the responsibility of the flag States, which contains the obligation to have the administration of maritime safety audited by the International Maritime Organization (IMO). The IMO audit gives the contracting States an impartial assessment of how efficiently they ratify and implement IMO's conventions. The audit focuses

on the Member State's activities as a flag State, as a coastal State and as a port State. The bodies to be audited in Finland are the Ministry of Transport and Communications and the Finnish Maritime Administration, as well as the ministries and their subordinate bodies that are responsible for tasks based on the provisions of IMO conventions, such as rescue operations at sea, monitoring for illegal discharges, and investigation of accidents.

A coastal State can make vessel traffic service (VTS) compulsory only in its own territorial waters. Participation in vessel traffic service is compulsory in Finland's territorial waters. Vessel traffic services comprise information service, traffic organisation service, and navigational assistance service. Through the VTS system, merchant ships sailing in Finland's territorial waters are under surveillance, and the VTS centre has a real-time picture, based on radio communications and radar observations, of merchant ship traffic in its area. The service is maintained in the main coastal fairways used by merchant vessels and in the deep channel of Lake Saimaa.

Systems for reporting and routing can be established in international water areas; these systems are used to guide traffic to their own lanes. This requires that the coastal States submit an application to IMO, which then approves it. Since July 2004, Finland, Estonia and Russia have together maintained a mandatory ship reporting system (GOFREP) in the international waters of the Gulf of Finland. This system has meant a marked improvement in the maritime safety of the Gulf of Finland and has increased the predictability of traffic. The arrangement has been implemented through an agreement between the ministries of transport, and IMO's approval has been sought for it. Estonia is monitoring the southern areas and Finland the northern areas of the Gulf of Finland, while Russia is responsible for the Gulf bottom. According to the traffic separation system, eastbound vessels report to the Tallinn VTS centre, while westbound vessels report to the Helsinki VTS centre. Vessels and their routes are monitored by means of radar and the Automatic Identification System (AIS). Vessels are informed of factors affecting the safety and fluidity of traffic.

Figure 6 Gulf of Finland Reporting System GOFREP. (Source: Finnish Maritime Administration)



In December 2008, IMO approved the proposal made by Finland and Sweden concerning the establishment of a traffic separation system in the Sea of Åland. By means of the traffic separation system, vessels heading in different directions are guided to use different lanes. The intention is to take the system into use at the beginning of 2010.

In the Gulf of Bothnia, the Kvarken is a heavily trafficked channel, which at present does not have separate lanes for northbound and southbound ships. The routing of ship traffic and the development of surveillance have been agreed on with Sweden.

Surveillance of merchant shipping within the EU is based on Community legislation. The projects under way in this sector include further development of SafeSeaNet, the data exchange system concerning the movement and cargos of merchant vessels in the EU, and the establishment of the LRIT data centre, which enables the long-range identification and tracking of vessels. When the EU LRIT data centre and the 24-hour Maritime Support Service, maintained by the European Maritime Safety Agency (EMSA), start their operations in July 2009, it will be possible to receive real-time data on vessels, including their dangerous cargo, and on single-hull tankers. Other relevant EU projects include the development of the EUROSUR border surveillance system as well as the MARSUR project led by the European Defence Agency, the aim of which is to build a maritime surveillance network covering the whole of Europe. Finland has a national expert in the Commission to prepare issues pertaining to maritime surveillance.

Finland has well-functioning cooperation between the various actors in the maritime sector (the Finnish Border Guard, the Finnish Maritime Administration, the Navy). In this cooperation, known by the acronym METO, each official body is responsible for its own statutory duties. The central feature is joint use of technical systems. The cooperation has also led to considerable financial savings, thanks to joint acquisitions. Several countries have used Finland's METO cooperation as a model in various projects undertaken to develop cooperation in the maritime sector.

The surveillance of sea areas in Finland is based on a comprehensive surveillance system, which generates a national maritime picture. It incorporates data provided by the competent authorities of neighbouring countries, as well as information on the marine area collected by national actors. Since spring 2006, Finland and Sweden have been exchanging information within the SUCFIS network (Sea Surveillance Cooperation Finland Sweden). At present, this project is being expanded into multinational cooperation in the Baltic Sea (SUCBAS),

encompassing the authorities of Finland, Sweden, Denmark, Germany, Estonia and Lithuania. Finland supports the expansion of cooperation concerning the exchange of information on the maritime picture so that it would eventually cover all Baltic Sea countries.

### *Principal measures for improving maritime safety*

*42. Maritime safety issues important to Finland are promoted at the early stages of preparation bilaterally, within the European Union, in regional organisations and internationally in IMO. In particular, the special conditions of the Baltic Sea and the importance of shipping to Finland are stressed.*

*43. A more specific implementation plan for the Baltic Sea Maritime Safety Programme will be drawn up during 2009. The plan will apply, for instance, to the following pivotal measures mentioned in the Maritime Safety Programme:*

- National objectives in the revision of the Convention on Standards of Training, Certification and Watchkeeping for Seafarers;*
- Development and utilisation of accident investigation and reporting on hazardous situations;*
- Development of national training for seafarers.*

*44. A request is submitted to IMO for having the administration of maritime safety audited in 2010.*

*45. Effort is made to maintain and further develop the mandatory ship reporting system in the Gulf of Finland (GOFREP) (coordination and compatibility between various systems, improved communications, and assessment of the need for new measures in traffic control and mandatory reporting practices) together with Russia and Estonia. The authorities have been preparing a modification to the traffic separation systems in the Gulf of Finland; this would improve the predictability and safety of intersecting traffic in the Gulf of Finland. The intention is that Finland, Russia and Estonia would take this proposal to IMO for approval so that it would enter into force in summer 2010.*

*46. A plan to develop the routing and guidance of ship traffic in the Kvarken is prepared together with Sweden.*

*47. Cooperation concerning sea surveillance, including EU-wide exchange of information on the maritime picture between the authorities, is developed.*

*The activities of the various authorities are synchronised nationally and internationally (Sea Surveillance Cooperation in the Baltic Sea, SUCBAS), and maritime surveillance cooperation within the EU is advanced actively. The METO cooperation between the Finnish official bodies in the maritime sector (the Finnish Border Guard, the Finnish Maritime Administration, the Navy) is presented to other Baltic Sea countries as an efficient model on how to organise national cooperation.*

## 4.2 Improving oil-spill response capabilities

The modern surveillance and control of marine traffic reduce the risk of accidents at sea, but the threat of serious accidents still exists, especially in the Gulf of Finland, which has become an important oil transport route even on an international scale and which has much intersecting passenger traffic. The most challenging scenario for rescue operations is one where a passenger vessel and a tanker have collided. It would then be necessary to save human lives and to prepare for environmental damage prevention at the same time.

The Government Programme makes a commitment to improve oil-spill response capabilities and to establish a centre of excellence focusing on oil-spill prevention in Porvoo.

### *Improving oil-spill response capabilities in Finland's neighbouring areas*

An essential element of preparing for accidents is to practise situations and cooperation among various parties. Baltic Sea countries arrange oil-spill response exercises yearly both within HELCOM and as bilateral and trilateral cooperation. Regular oil-spill response exercises are necessary to maintain preparedness.

In the HELCOM Baltic Sea Action Plan, the Baltic Sea countries are committed to closer regional collaboration concerning actions to combat environmental damage. Working in cooperation, these countries must assess the risk of environmental damage and the adequacy of oil recovery equipment in each sea area. The response authorities are about to launch an EU-funded cooperation project (BRISK). On the basis of this assessment, the countries will draw up concrete plans so that any shortfalls in equipment can be eliminated by 2016. When assessing the capacity, it is noted that countries could also share oil recovery vessels. Moreover, attention is paid to the goal expressed by the European Maritime Safety Agency (EMSA) to conclude a service agreement with a private company. On the basis of this agreement and through EMSA, the

countries around the northern Baltic Sea would then have access to a vessel or vessels provided with oil recovery equipment, whenever necessary.

The EU Strategy for the Baltic Sea Region enables the strengthening of oil recovery cooperation in the Baltic Sea region.

### *Improving national oil-spill response capabilities*

The goal of the Internal Security Programme (2008) is to improve the capabilities of the existing oil recovery equipment, to enhance oil recovery cooperation between the Ministry of the Environment, the Ministry of the Interior and the Ministry of Defence, and to set up a system of oil recovery depots that would ensure an oil recovery operations chain from the open sea to the mainland.

The authorities responsible for oil-spill response have assessed the adequacy of the oil recovery capacity in three sectors: recovery in the open sea; preparedness on the coast of the Gulf of Finland; and the preparedness of municipal regional rescue departments. An overall assessment of the need to develop Finland's oil recovery preparedness until 2015, including the costs involved, has been drawn up on the basis of the studies and plans. The most significant shortfalls have been discovered in the recovery capacity on the Gulf of Finland as well as in the open sea and shore-side recovery.

The targets set for Finland's oil recovery capacity in the open sea are 30,000 tonnes in the Gulf of Finland, 15,000 tonnes in the Archipelago Sea and 5,000 tonnes in the Gulf of Bothnia within three days in the open water and within ten days in icy conditions. To reach the target level, it has been proposed that the core of the Finnish oil recovery fleet – which will remain the responsibility of the Finnish Environment Institute – would consist of vessels that are used jointly by the Navy, the Finnish Border Guard and Finstaship.

In its stimulus budget of 2009, the Government has granted about EUR 7 million for overhaul of the oil recovery vessel Halli in order to improve oil-spill response capabilities. To increase the capacity of oil recovery vessels, the Ministry of the Environment has proposed that two new multi-purpose patrol vessels be ordered: the first in 2011 and the second in 2013 (EUR 50 million/vessel). The planning, authorisation and competitive bidding for these multi-purpose vessels should be launched and funded in the years 2009–2010. Overhaul and modification of the Merikarhu is planned to take place in 2015 (EUR 20 million). The multi-purpose vessel that is currently being built for the Navy can also be used for the recovery of oil spills and chemicals even in icy conditions; it will be ready for use at the beginning of 2011.



In addition to the oil-spill response capabilities needed at sea, it is necessary to maintain and improve the preparedness of regional rescue departments and other authorities to combat oil damage on the coast and in the archipelago. The present capabilities of the departments are sufficient for ordinary oil spills but not for any major accidents. Maintenance of the existing oil recovery equipment requires the replacement or renovation of the aging equipment. The capabilities of regional rescue departments and other authorities on the coast of the Gulf of Finland must be improved to the level required by potential major accidents.

An oil damage fee is collected on all oil imported to Finland or transported through Finland. In order to ensure the liquidity of the Oil Pollution Compensation Fund, a legislative amendment is being drafted to triple the oil damage fee from the present level (from EUR 0.5 to EUR 1.5 per tonne). The higher oil damage fee would cover rescue departments' costs for the acquisition and maintenance of equipment and about half of the State's costs for the acquisition of equipment.

The decision to locate the centre of excellence on oil-spill prevention in Porvoo was made in late 2008. The Budget for 2009 has an appropriation (EUR 600,000) for starting the centre's operations. The plan for the use of the area reserved for the centre will probably be completed in summer 2009. It is likely that operations cannot start until late 2010.

The Finnish Border Guard and the Finnish Environment Institute together operate two surveillance aircraft to monitor illegal discharges in the Finnish waters. In addition, the helicopters of the Border Guard monitor oil spills when they patrol the sea areas. It would seem that the amount of illegal oil discharges has diminished in the Baltic Sea and the Gulf of Finland after the oil discharge penalty was introduced. A prerequisite for imposing the oil discharge penalty is that the oil discharged can be linked to a certain vessel. The Border Guard investigates discharges and imposes the penalty. Satellite images transmitted by the European Maritime Safety Agency provide support for the surveillance of oil spills from vessels.

In 2009, the observation instruments for environmental damage will be upgraded in two surveillance aircraft. The new system is also important for the operating capacity of Finnish oil recovery vessels in the event of major oil damage. Effort is made to ensure the efficient collection and utilisation of evidence needed for imposing the oil discharge penalty. HELCOM has approved the "no-special-fee" system where ports receive waste irrespective of whether the ship disposes of oily wastewater or not. This, and the obligation

to discharge oily waste into port reception facilities in Finland, has helped improve the situation.

### *Measures to improve oil-spill response capabilities*

*48. In international contexts, the idea is taken up that all Baltic Sea countries should improve their preparedness for oil-spill response so that it would correspond to the risks arising from increased oil transports; this can be accomplished by acquiring new oil recovery vessels and other equipment for this purpose.*

*49. On the basis of the transport data available and the BRISK risk assessment, concrete plans will be drawn up together with Sweden, Estonia and Russia in order to guarantee oil-spill response capabilities in the Baltic Sea and to correct shortfalls in equipment by 2016.*

*50. Two new, fairly large multi-purpose vessels that can be navigated in the open sea and amidst ice will be acquired by 2015.*

*51. When the ferry fleet is renewed, the vessels to be acquired should also be suited for oil combating tasks whenever necessary.*

*52. The preparedness of regional rescue departments and other authorities for major oil accidents is improved, especially on the coast of the Gulf of Finland.*

*53. Effort is made to overhaul and modernise the present fleet and to raise the readiness of the vessels in order to increase the recovery capacity.*

*54. By the end of 2010 it will be studied how the vessels owned by the Finnish Defence Forces, the Finnish Border Guard, the Finnish Maritime Administration and Metsähallitus and suitable for oil damage prevention – containment with booms, recovery with seines, transport – can be utilised in combating oil spills.*

*55. Through research and development, it should be ensured that Finland possesses cutting-edge competence in situations such as combating oil spills in challenging weather and ice conditions and in shallow coastal waters.*

*56. The proposal to raise the oil damage fee will be presented to Parliament in summer 2009.*

*57. The operations of the centre of excellence on oil-spill prevention will be started as soon as possible. From this perspective, it is also important that regional planning will be completed and the building of facilities will begin according to schedule.*

*58. Illegal oil discharges are reduced by actively promoting more effective means for discharge monitoring and improvements in the ports' reception systems for oily wastewaters. The forums used for this purpose are cooperation between neighbouring countries and cooperation within the EU and HELCOM.*



## PART II THE ECONOMIC POTENTIAL OF THE BALTIC SEA REGION

### 5 Business environment of the Baltic Sea region

Owing to the developments that have taken place during the last few decades, the Baltic Sea economic area – an area important to Finland – has become the domestic market of Finnish companies. In 2008, trade with countries around the Baltic Sea accounted for 40 per cent of Finland's exports and 45 per cent of Finland's imports. Finland's three biggest trading partners are located by the Baltic Sea: Germany, Sweden and Russia. The bulk (70%) of direct investments made by foreign investors in Finland come from the region, and a considerable part (40%) of Finland's investments abroad are made in the Baltic Sea region.

For Finland, enlargement of the EU meant a substantial increase in business opportunities in the Baltic Sea region. At the same time, new types of enterprises relying on strong Nordic ownership came to the scene. As industry diversified in the Baltic states and in Poland, new openings were created for Finnish business in countries adjacent to the region, such as Ukraine and, to some extent, Belarus. This internationalisation emphasised the importance of competence and services.

The international financial crisis has had major reverberations in some Baltic Sea countries and has caused economic instability throughout the region.

Prerequisites for future economic growth and success are created by deepening economic integration and by improving the operating environment of enterprises. Stiffer global competition, keeping protectionism at bay, and the aging of the population are challenges that must be met with efficiency and determination. Protectionism is warded off, for instance, by harmonising the regulation associated with international trade, by eliminating barriers to trade, and by developing infrastructure and logistics. When innovative clusters are promoted, even small innovation enterprises can be offered a wider operating environment supporting the development of business.

Most issues in the sphere of trade and economy do not concern the Baltic Sea region alone and cannot be agreed on without EU-wide regulation or international conventions.

On the growing Baltic Sea markets, the economic relations between Finland, Sweden and Estonia are strong proof of the importance of geographic and cultural proximity. Latvia and Lithuania, which have bigger economies than Estonia, are supplementary actors in Finland's trade. There is untapped commercial potential especially in Poland, but also in Latvia and Lithuania. For this reason, special attention needs to be paid to the further development of the north–south axis of the Baltic Sea. Poland has capacity for growth in areas where Finnish companies have experience, such as the food and technology industries.

Russia has great economic importance for Finland. Boosted by the rising energy prices, Russia became Finland's most important trading partner in 2008. It is estimated that Finnish investments in Russia total over five billion euros. Investments by Russian companies in Finland have been smaller; the challenge in this respect is how to turn Finnish special know-how and services into products that interest Russia.

St. Petersburg and the Leningrad Region have increased their economic importance. Factors associated with this trend include sizable investments in ports and logistics, and the expansion of production and trade near Finland's southeastern border. Competition will be stiffer, especially in transports, but at the same time there will be new cooperation opportunities, as well as trade and investments. The fast train connection that will be launched in autumn 2010 between Helsinki and St. Petersburg will be a major factor facilitating links to St. Petersburg and promoting the operations of enterprises. It will be one of the first steps towards the creation of a real neighbouring market area between Finland and Northwest Russia.

Russia's membership of the World Trade Organization (WTO) would promote and intensify economic cooperation in the Baltic Sea region. The WTO would bring the desired stability, transparency and predictability to the operating environment of enterprises. The new EU–Russia agreement under negotiation will also contribute to deeper economic cooperation. The negotiations strive to reach an agreement that would be wide in scope, legally binding and would include a mechanism for the settlement of disputes. The goal of economic cooperation between the EU and Russia is to improve the prerequisites for trade and investments, for instance by developing the regulation of industrial products, financing services, protection of intellectual property rights, investments, and public procurement.

Improving the efficiency of the European internal market and completing it also in terms of services are important for the economic development of the

entire Baltic Sea region. Services account for two-thirds of the Union's domestic product, but the free movement of services is considerably less developed than that of goods. In implementing the EU Services Directive, it would be important to apply uniform practices in the Member States around the Baltic Sea. At the same time, this would be an opportunity to investigate the possibilities of more far-reaching cooperation.

Economic growth in the Baltic Sea region is grounded in high-level competence and innovation. Increasing the appeal of regional mobility among students, teachers and researchers is also a natural way for universities to engage in cooperation. Promotion of research and development projects and securing their financing, utilisation of the best know-how in the Baltic Sea region, and creation of market conditions encouraging innovation are important factors for strengthening economic growth.

Environmental protection and the economy have many points in common. Both can be advanced through combination and more efficient coordination. An example of this is renewable energy sources. Finland and many enterprises in the Baltic Sea region have solid expertise of energy efficiency and energy technologies. Finland has cutting-edge know-how and technologies in environmental protection and maritime safety, such as vessel traffic surveillance systems, phosphorus removal technologies, and treatment methods for soluble manure; these should be made into products and marketed efficiently. Apart from the Baltic Sea, there could also be demand for this know-how and products in other sea areas.

In addition to large companies, small and medium-sized enterprises seeking international markets have also benefited from the opportunities for trade, subcontracting and investment offered by the Baltic Sea. As enterprises are becoming increasingly active across borders, it is important to deepen the common market area covering the whole Baltic Sea region so that the rules and procedures applied to trade in goods and services are as uniform as possible and the labour market and free mobility also work in practice.

Economic cooperation and free trade would benefit if the national rules regulating business could be made more compatible with each other. In particular EU Directives, which are meant to eliminate barriers to trade and economic cooperation, are implemented in different ways in different countries, which in turn may lead to new barriers. Uniform implementation of the Directives should be promoted.

For increased trade and closer economic cooperation, it is important to further entrepreneurship and the predictability and transparency of administration, to reduce bureaucracy and to ease the establishment and location of enterprises. Companies have expressed the hope that they would receive more customer-oriented consultancy and binding advance information, especially in matters concerning the customs, competition, taxation and the environment.

Realisation of the rule of law in practice as well as in theory is essential for the encouragement of cross-border business. Further, it has been discovered that a well-functioning legal system and economic growth support each other. More rapid settlement of disputes in the judicial system is important. Measures to reduce bureaucracy and to develop administration are crucial for the eradication of corruption.

Companies also see expansion of the euro area to include the EU Member States on the Baltic Sea as one of the most important reforms that would support trade and would help minimise currency risks and facilitate risk assessment. Now only two countries out of eight have the euro as their currency.

*59. The creation of a stimulating business environment is continued in the Baltic Sea region, including the completion of the internal market and its expansion to encompass services, research, product development and cluster activities. Rule of law and efficient measures against corruption are promoted.*

*60. A study will be prepared on practical barriers to trade and investments and on procedures concerning public procurement in the Baltic Sea region. The intention is to promote best practices in the field and to present proposals on how the Baltic Sea economic area could work better to support trade, investment and the growth potential of SMEs.*

*61. The impact assessment of EU legislation will be developed together with the Commission so that the impacts on the operating environment of enterprises of proposals under preparation can be evaluated .*

*62. Development of a neighbouring market area between Finland and Northwest Russia is promoted.*



## 6 The Baltic Sea – a transport route with good connections

For Finland, the Baltic Sea is a central transport route, but at the same time it poses a challenge to communications and to Finland's competitiveness. Finland is situated far from Central European markets, and therefore lacks the alternative land routes available to competitor countries. For all transports other than transport by air, Finland is located two to three days further from the main markets when compared against Finland's Central European competitors.

A principal challenge for Finland is how to guarantee reliable and reasonably priced transport routes for the main export and import markets. The logistics costs to Finnish industry are one-third higher than those of Central European companies. In particular, transport costs have risen. In relation to the gross domestic product, logistics costs amount to about 19 per cent, whereas the corresponding figure in other industrialised countries is 10–17 per cent.

The reliability and speed of transports are increasingly important factors in competition and are pivotal with regard to logistics costs. Besides well-functioning transport connections, information and communications technology must be utilised to develop intelligent transport solutions, systems and applications. Intelligent transport solutions aim at optimised transports; these reduce the impacts of traffic on the environment and on climate change, and enhance the safety of transport, including the control of road, railway and marine traffic.

Smooth marine traffic is important for industry, which already needs to pay high transport costs owing to the long distances and the use of ice-strengthened tonnage. Out of all of Finland's foreign trade, 75 per cent of the value and 80 per cent of the tonnage are transported on ships via the Baltic Sea. Transit traffic has secured both regular shipping routes and a sufficient number of containers for Finland's imports and exports. The safety of marine transports is an essential element of workable transports and logistics. Cooperation between ports and operations at ports are important for improving the fluidity of traffic and transports.

For Finland, it is important that ice breaking is seen as part of the transport infrastructure and is perceived as an element of efficient marine traffic in northern regions. Icebreaker services are indispensable for ensuring merchant shipping and for Finnish business. Finland and Sweden have agreed to start negotiations about a new treaty that would supplement and enhance the efficiency of the two countries' icebreaker services through cooperation. Such

a treaty would ensure the need of both countries for icebreakers in the Gulf of Bothnia without necessarily requiring that a new icebreaker be ordered.

The objective should be that a network of major links encompassing all transport forms can be defined for the Baltic Sea region. In this system, each country would be committed to build and maintain the network for its own part. The current TEN priority projects consist of individual projects and do not make up a uniform European priority network. The idea underlying a priority network of this type should be a uniform Europe-wide network where goods and people move smoothly and safely, utilising intelligent transport solutions.

The Commission is currently revising the TEN transport policy after 2010. Finland considers it important that the revision takes into account Finland's special circumstances and accessibility and, as a new element, intelligent transport solutions. Transport links in the Baltic Sea region and their functioning should be analysed as a whole, and this analysis should also include the EU's neighbouring countries and their neighbours. In the future, it would also be important to develop closer links between northern regions and the European markets, including the exploitation of natural resources in the north and the development of tourism. For Finland, it is important to include ice breaking in the new TEN guidelines.

A TEN project under development in Finland is the Nordic Triangle, where roads and railways link the capitals of Finland, Sweden, Norway and Denmark with each other and with Central Europe and Russia. Finland considers it important to bring this project to conclusion. Another TEN project under development is the motorways of the sea. The motorways of the sea would link major ports and their surrounding areas. The objective is to achieve high-quality transport routes that would function without disturbances at sea and on land. The actions taken by the authorities with respect to transports should also be uncomplicated, and the flow of information between the parties of the transport chains should be uninterrupted. The current TEN priority projects include Rail Baltica, which would link Helsinki and Tallinn through the Baltic states to Central Europe.

As one solution to northern transport challenges, Finland has promoted the idea of a Northern Dimension Transport and Logistics Partnership. Several years of work is now leading to concrete results; according to plans, the document establishing the partnership will be signed in the near future and operations will start at the beginning of 2010. In this partnership, Finland stresses, in particular, the elimination of logistic bottlenecks, the promotion of maritime safety, and the development of cooperation between ports. Logistic bottlenecks

include the lack of compatible data communications links between ports, which means that documents need to be delivered on paper. The goal of maritime safety is to establish closer cooperation with Russia, especially as concerns regional cooperation associated with implementing the European Union's third package on maritime safety. The measures involved include surveillance of vessel traffic and accommodation of ships in places of refuge.

For the development of trade and transit traffic with Russia, it would be important to apply uniform and predictable rules on both sides of the border. Finland is an important transit country for Russia: 30 per cent of Russia's foreign trade is transported via the Baltic Sea into Finnish ports and further to Russia. The importance of transit traffic will remain high even though the current economic recession has cut back trade and transports. It is important to speed up border formalities and to increase the ease of flow fluency, e.g. by developing a system of electronic documents, and to improve the condition of frontier posts and the roads leading to the border.

*63. Measures are taken to support implementation of cooperation and projects within the Northern Dimension Transport and Logistics Partnership.*

*64. As part of the promotion of the Rail Baltica priority project, a study will be conducted on a train ferry link between Helsinki and Tallinn and on its economic feasibility.*

*65. It is ensured that Finland's special circumstances are taken into account in the revision of TEN guidelines. Influence is exercised so that, in addition to the development of transport networks, the scope of the revision would also include system projects, such as intelligent transport solutions, traffic control, monitoring and control of goods traffic, and border crossing formalities.*

*66. Work is done to designate the Baltic Sea region a pilot area for intelligent transport systems and applications, as part of the implementation of the EU Intelligent Transport Systems Action Plan.*

*67. The idea of a common Europe-wide priority network, where goods and people move smoothly and safely utilising intelligent transport solutions, is promoted.*

*68. The negotiations conducted with Sweden on a new treaty for improving the efficiency and scope of ice breaking services in cooperation will be brought to conclusion.*

## 7 Energy links in the Baltic Sea region

Securing the supply of energy is one of the principal goals of EU energy policy. Improving this security requires measures to be taken at EU level, even though each Member State is primarily responsible for the security of its own energy supply. Finland sees the security of energy supply as a broad concept: energy security is also improved by actions that alleviate climate change and help develop the internal energy market.

Finland considers it important that the European energy market is developed and transmission links are built to connect isolated areas to European electricity and natural gas networks. The situation of the Baltic states is special because, with the exception of Estlink between Finland and Estonia (350 MW), the Baltic states are only connected to Russia's electricity and gas networks. The dependence of the Baltic states on electricity and gas imports from Russia will increase when the Ignalina nuclear power plant is closed (late in 2009) and in consequence of the climate policy decisions taken by the EU. The natural gas markets of the Baltic states and of Finland are the only isolated markets in the EU area; in other words, their gas networks are not linked to the interconnected EU network.

As an answer to the concerns raised by the Baltic states, a plan on the energy links needed in the Baltic Sea region and on the development of the electricity market is being prepared under the Commission's leadership. The plan examines the building of transmission links for electricity and gas between the Baltic states, Finland, Sweden and Poland; it covers electricity generation, electricity and gas transmission links, and gas storage. The plan is intended to be ready in June 2009.

The projects important to Finland in the Baltic Sea region are the second power cable, Estlink 2 (650 MW), between Finland and Estonia and the natural gas pipeline project *Balticconnector* undertaken by the gas companies of Finland and the Baltic states. EUR 100 million of EU stimulus money has been reserved for Estlink 2.

### *Electricity networks*

Finland considers that the Baltic states' electricity market, electricity infrastructure and connections to other Member States should be developed as one comprehensive whole where the long-range objective is to achieve an interlinked electricity infrastructure in the Baltic Sea region that operates

under sufficiently uniform rules. Finland considers it necessary that the Baltic states' electricity market operates according to the rules set by the EU for the internal electricity market and in a manner that is sufficiently uniform with the principles of the Nordic electricity market, before it can be connected with new transmission links to the Nordic electricity market. In its Treaty of Accession to the EU, Estonia has been given a transitional period, lasting until the end of 2012, for opening its electricity market.

### *Gas pipelines*

The building of a gas pipeline link between Finland and Estonia is studied in the ongoing *Balticconnector* project. The project has studied the alternative routes for the underwater gas pipeline and the locations where the pipeline could come ashore on the Finnish and Estonian coasts. The technical surveys have been supplemented with studies of the seabed along the selected routes.

The gas pipeline would improve the security of the natural gas supply to Finland, because Finland would have a direct link to Latvia's gas storage. The pipeline would serve as an additional channel for importing gas to Finland and, correspondingly, as an export channel from Finland to Estonia.

The gas companies of Finland and the Baltic states will make the decisions on new transmission links for natural gas and on any terminal that might be built for liquefied natural gas in the Baltic Sea.

### *Nord Stream*

The Nord Stream gas pipeline project under preparation would connect Russia via the Baltic Sea to Germany.

Because the route of the Nord Stream pipeline passes through the territorial waters and/or exclusive economic zones of Russia, Finland, Sweden, Denmark and Germany, permits for building and operating the pipeline must be sought from these five countries. An international environmental impact assessment (EIA) in line with the Espoo Convention and Finnish national legislation is being conducted on the project. The assessment is expected to be completed within the next few months. Russia has not ratified the Espoo Convention. In Finland, the Nord Stream gas pipeline is treated above all as an environmental issue, and the authorities have required a thorough study on the environmental impacts of the gas pipeline project.

*69. An active contribution is made to the implementation of the Baltic Energy Market Interconnection Plan.*

*70. Measures are taken to promote the strengthening of energy infrastructure, the improvement of transmission links, the development and deepening of energy markets, and the securing of sufficient production in the Baltic Sea region.*

*71. The merging of the Nordic electricity market with the Baltic states' electricity market is supported. Drawing up and implementing the Baltic Energy Market Interconnection Plan will speed up the opening of the Baltic states' electricity markets. Electricity markets operating according to sufficiently uniform principles in the Baltic states and in the Nordic countries are a prerequisite for building Estlink 2.*





## PART III EUROPEAN UNION POLICY FOR THE BALTIC SEA REGION

### **8 The EU Strategy for the Baltic Sea Region and the Northern Dimension**

#### 8.1 The EU Strategy for the Baltic Sea Region to intensify the EU policy within the region

The restoration of the Baltic Sea, the improvement of maritime safety and the utilisation of the economic opportunities within the Baltic Sea region call for national measures and the efficient use of the toolkit available to the European Union. As regards cooperation in the Baltic Sea region, the situation has changed, for many of the initiatives involved were taken in the early 1990s, before the accession of the majority of the Baltic Sea coastal states to the European Union. Therefore, it is natural to chart the possibilities that the EU's policies, programmes and legislation can provide for attaining the objectives concerning the Baltic Sea and for intensifying regional cooperation.

Within the European Union it has already been acknowledged in many matters related to the content of policy that the regional perspective and the consideration of special circumstances are significant for the efficiency of operations. The Nordic countries have engaged in cooperation, for example, in order to implement the Services Directive as equally as possible in the region. Creating a pan-European electricity market will not succeed unless the isolation of some areas is removed by building transmission connections; this would at the same time increase security of supply. Within research financing, the projects of organisations from several Member States have long been favoured and, for example, the new BONUS 169 research programme covers the entire Baltic Sea region. The importance of the agri-environmental support for water protection is especially significant in the catchment area of the environmentally vulnerable Baltic Sea. The increasing environmental load caused by shipping motivates an earlier and more stringent application of environmental obligations in the Baltic Sea than in other areas.

The European Parliament took the initiative in November 2006 to draw up a strategy for the Baltic Sea region. Preparations for the EU Baltic Sea strategy were started by the European Council of December 2007, which assigned the Commission to draw up a special EU strategy for the Baltic Sea region by June

2009. On the initiative of Finland, the Northern Dimension was referred to in the mandate, whereby the external dimension of the Baltic Sea cooperation, especially Russia, is included. The Commission will present the EU Strategy for the Baltic Sea Region and the Action Plan to the European Council of June 2009. The strategy should be approved during the Swedish Presidency in autumn 2009.

### *The EU strategy and action plan for the Baltic Sea region*

In accordance with the mandate given by the European Council, the Commission commenced preparations for the EU Strategy for the Baltic Sea Region, and the Commission's Directorate General for Regional Policy is responsible for the work. In its preparations, the Commission has acted in a transparent manner and leaned on the expertise and proposals of the states and other actors in the region when drawing up an action plan for the strategy.

Finland has participated actively in the preparations for the EU Strategy for the Baltic Sea Region and has made concrete proposals, in particular, for the improvement of the marine environment and the enhancement of maritime safety. Finland has also provided the Commission with material on innovation policy, on strengthening the internal security in the region, and on the external dimension of the strategy.

Many Member States, including Finland, have emphasised to the Commission that with regard to the region's needs it is not sufficient to develop a general strategy only; instead, it has to be accompanied by a concrete action plan. The Member States in the region bear special responsibility in implementing and monitoring the strategy. However, it is important that the Commission maintains a central role in monitoring and managing the strategy. One of the reasons for this is that many of the proposed policies and actions fall within the competence of the Community.

The Commission will publish the strategy in June 2009. The proposal consists of a Commission communication for a strategy for the Baltic Sea region and an action plan appended thereto. The action plan comprises four operational sections and about 15 priorities. Under these, there are some 50 flagship projects that have been evaluated as the best-functioning and that are feasible in the near future. The EU Member States will consider the strategy during the Swedish EU Presidency in autumn 2009.

The Commission has formulated its basic view on the EU Strategy for the Baltic Sea Region as follows: to create a regional framework within which the Union

and Member States can define their needs and adjust them to the existing financial resources, and thus generate sustainable environmental protection as well as profitable economic and social development in the Baltic Sea region.

Many of the Union's general policies and programmes are also essential for the Baltic Sea region, and they will be part of the implementation and financing of the EU Baltic Sea strategy. One of the most important is the structural and regional policy, by virtue of which considerable funds have been targeted at the region and which the Commission plans to target in the future according to the priorities specified in the Baltic Sea strategy. Other important policy sectors include the EU's Integrated Maritime Policy and the implementation of the Marine Strategy Framework Directive, rules pertaining to the functioning of the internal market, the Lisbon strategy on growth and employment, and the TEN policy on transport and energy networks.

The strategy outlines four operational sections: 1) the Baltic Sea as an environmentally sustainable area; 2) as an economically prosperous area; 3) as an attractive and accessible area; and 4) as a safe and secure area. According to the Commission, this division is to a certain extent theoretical, and has been made to facilitate analysis. For example, shipping is a topic that could form a separate entity of its own, but the Commission has distributed it to be part of all of the four areas and dealt with it separately from the viewpoints of the environment, economy, transport and safety.

The EU Strategy for the Baltic Sea Region assigns much weight to environmental protection and acknowledges the vulnerability of the Baltic marine environment. The Commission has defined that the objective of the aggregate of measures is to make the Baltic Sea region into a region of sustainable environmental policy. Central measures include reducing the nutrient load into the sea, preserving the protected areas and biodiversity, decreasing the use of hazardous and harmful substances, making the Baltic Sea region into a model region for clean shipping, and improving the adaptation of the region to climate change. The environmental measures in the EU strategy are constructed on the basis of the action plan of the Baltic Marine Environment Protection Commission (HELCOM), and the starting point is to make the implementation of HELCOM's action plan more efficient.

The aim of the section concerning economic prosperity is to utilise the opportunities and expertise provided by the Baltic Sea region. Among the most important objectives is to promote trade and innovations. Central measures include elimination of barriers to the internal market, such as customs duties and taxation, utilising the region's possibilities in innovations and research,

promoting entrepreneurship, strengthening SMEs, using human resources efficiently, and supporting sustainable agriculture, forestry and fisheries.

The central objective of the aggregate of measures for an attractive and accessible area is to improve the region's transport and energy connections. Owing to the long distances and challenging natural circumstances, the transport connections in the region are not as well organised as in the Union on average. The proposed measures are intended to improve the functioning of the energy market, enhance the transmission connections, efficiency and safety, develop the internal and external transport connections, and increase the region's attractiveness, including tourism.

Energy production and security of energy supply present a special challenge in the region. A plan concerning the development of electricity and gas transmission connections in the Baltic region will be prepared in a high-level working group of the Commission and the EU Member States in the Baltic Sea region by the summer of 2009. The *Baltic Energy Market Interconnection Plan* will be implemented as part of the Baltic Sea strategy. The two central new electricity transmission connections, Estlink 2 between Finland and Estonia, and SwedLit between Sweden and Lithuania, are receiving funding from the European Union's economic stimulus budget.

The fourth pillar and aggregate of measures in the EU Strategy for the Baltic Sea Region is safety and security, which covers the region's internal security and maritime safety. The growing marine traffic and the increasing transportation of oil and chemicals pose demands on maritime surveillance, maritime safety and the prevention of accidents. As regards internal security, cross-border crime is a challenge to which the location of the region at the Union's external border adds a special aspect. The most important actor in the Union's external border surveillance is the FRONTEX Agency. Planned measures include reducing cross-border crime, making the region a forerunner in maritime safety, improving protection in potential catastrophes, such as oil disasters, and preventing the spread of contagious diseases.

### *Management and monitoring of the EU Strategy for the Baltic Sea Region*

It is suggested that the political decision-making on the EU strategy should be managed, on the one hand, at the European Council, where the strategy, after its adoption, could be discussed in conjunction with mid-term reviews, possibly every second year; and on the other hand at the General Affairs Council. Matters pertaining to the content of the strategy can also be dealt with by other compositions of the Council, for example the Environmental Council.

The action plan to be appended to the strategy has been designed flexibly, and it is intended to be updated regularly so that the needs and challenges arising in the region can better be met.

The Commission hopes that the states and actors in the region assume responsibility for the implementation and coordination of entire priority areas as well as of individual projects included in the action plan. Project implementation could be facilitated by relying on the regional organisations in the Baltic Sea region, such as HELCOM. The European Commission is currently conducting discussions with the Member States on their interest and readiness to take responsibility for leading and monitoring the different measures laid out in the action plan. Finland has expressed its preliminary interest in assuming monitoring responsibility within the priority areas related to maritime safety and surveillance, internal security and eutrophication. However, Finland emphasises the Commission's overall responsibility for the monitoring of the strategy.

The Commission has the intention to continue consulting with key actors in the region – a method that proved good and functioned well during the preparatory stage. The Commission is planning to organise an annual conference at which the stakeholders can present their views and give recommendations for the implementation of the strategy.

It is not the purpose of the EU Strategy for the Baltic Sea Region to create new institutions for the region, nor is new funding sought for the region at this stage. This is likely to make it easier to win the support of other EU Member States for the project. As regards financing, Finland pursues the same model as with respect to the Northern Dimension: using the Union's existing funds and programmes together with assistance funds from Member States and private sources, and having recourse to international financial institutions such as the Nordic Investment Bank, the European Bank for Reconstruction and Development and the European Investment Bank. The challenges within the Baltic Sea region are so great that it is not realistic to build the strategy solely on the basis of funds from the Union budget. Major environmental investments and transport and energy networks are always implemented using various forms of funding. This has also been the case with the Northern Dimension Environmental Partnership.

Finland regards the timing of the EU Strategy for the Baltic Sea Region as good. Conveniently, the strategy will be ready before the term of the new Commission begins, so the Baltic Sea strategy can be taken into account in the Commission's priorities and programmes. The strategy can also contribute to

the Commission's preparations for the Union's next financial framework after 2013, as the Union's programmes can be planned taking the priorities and the regional viewpoint of the Baltic Sea strategy into consideration.

On the initiative of the European Parliament, the EU budget includes a Baltic Sea budget line from 2009 onwards; however, the extent and use of the funding are still open. The budget line belongs to external relations funding, and therefore Finland finds reason for investigation into whether funding could be steered in this way to projects to be carried out with Russia and Belarus in the Baltic Sea region.

The European Union must have sufficient resources to implement projects supporting its strategic objectives in the Baltic Sea, in cooperation with neighbouring countries.

## 8.2 The Northern Dimension as an external dimension of the EU Strategy for the Baltic Sea Region

By definition, the EU Strategy for the Baltic Sea Region is an internal strategy, but the achievement of concrete results, especially in the enhancement of the protection and maritime safety of the Baltic Sea, calls for parallel and simultaneous measures and close cooperation with non-member countries. As far as the attainment of the objectives of the Baltic Sea strategy requires cooperation with third countries, such measures should be negotiated upon within the framework of the cooperation structures of the Northern Dimension or in some other appropriate forums. The status of the Northern Dimension within the implementation of the EU Baltic Sea strategy was defined in the mandate assigned by the European Council in 2007.

The Northern Dimension and the EU Baltic Sea strategy are not mutually exclusive; on the contrary, they support each other and strengthen the policy implemented in the Baltic Sea region both within the Union and in cooperation with third countries.

### *The Northern Dimension and partnerships*

The Northern Dimension was defined at the summit meeting held during the Finnish EU Presidency in 2006 as a common policy of four equal partners: the EU, Russia, Norway and Iceland. The summit meeting adopted the jointly negotiated, new documents concerning the Northern Dimension: political declaration and framework document. The objective of the Northern Dimension

is to continue to support practical cooperation in order to promote wellbeing, stability and sustainable development in Northern Europe. The Northern Dimension covers Northwest Russia, the Baltic Sea and Arctic areas, including the Barents region.

The Northern Dimension cooperation is implemented through partnerships. There are two partnerships in operation: the Northern Dimension Environmental Partnership and the Northern Dimension Partnership in Public Health and Social Wellbeing. Preparations are currently underway to launch the Northern Dimension Partnership on Transport and Logistics and to establish a Northern Dimension Cultural Partnership.

The northern regional councils (the Council of the Baltic Sea States, the Barents Euro-Arctic Council, the Nordic Council of Ministers, the Arctic Council) play an important role within the Northern Dimension policy. They identify the development and cooperation needs in their own areas of operation and support project activities in various ways. Finland regards the Northern Dimension policy as a useful umbrella policy that provides the regional operations with jointly adopted fundamental principles and a connection to the objectives of EU–Russia cooperation. After the reforms, the Northern Dimension has been the most dynamic area of the relations between the EU and Russia, and thus it is a natural and functional forum for cooperation regarding the implementation of the EU Baltic Sea strategy.

The principle governing the funding of the Northern Dimension is co-financing, which covers, in addition to the financing available from the EU, national budget financing, private financing and financing by international financial institutions. Finland sees the EU's cross-border cooperation programmes as an important source of EU funding; these realise, for the first time, Finland's long-pursued goal of combining both structural and regional policy funds and external relations funds to finance EU's external border programmes. After the cross-border cooperation programmes have been launched, Finland's next objective is that they should be developed further during the next financing period after 2013. Especially the management procedures of the programmes should be more flexible. The programmes should also better respond to the special circumstances in the regions concerned, for instance the Baltic Sea region.

In addition to national and EU financing, the role of international financial institutions is very important, particularly in major infrastructure projects. Cooperation and coordination between international financial institutions should be further intensified. The Northern Dimension partnerships, especially

the Environmental Partnership, provide a good example of how regionally important projects can be created and expedited through international financial cooperation. These projects have also functioned as models for cooperation at other external borders of the European Union.







PRIME MINISTER'S OFFICE  
FINLAND

SNELLMANINKATU 1, HELSINKI  
PO BOX 23, FI-00023 GOVERNMENT,  
FINLAND  
Tel. +358 9 16001, +358 9 57811  
Fax +358 9 1602 2165  
julkaisut@vnk.fi  
www.vnk.fi/english

Distribution and sale:  
Helsinki University Print Bookstore  
<http://kirjakauppa.yliopistopaino.fi/>  
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P.O. Box 4 (Vuorikatu 3 A)  
FI-00014 HELSINKI UNIVERSITY, FINLAND  
Tel +358 9 7010 2363 or 7010 2366  
Fax +358 9 7010 2374

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