

Policy options

This section aims to identify feasible policy options that target key components identified in the Causal chain analysis in order to minimise future impacts on the transboundary aquatic environment. Recommended policy options were identified through a pragmatic process that evaluated a wide range of potential policy options proposed by regional experts and key political actors according to a number of criteria that were appropriate for the institutional context, such as political and social acceptability, costs and benefits and capacity for implementation. The policy options presented in the report require additional detailed analysis that is beyond the scope of the GIWA and, as a consequence, they are not formal recommendations to governments but rather contributions to broader policy processes in the region.

Definition of the problems

The GIWA concerns Pollution and Unsustainable exploitation of fish and other living resources were identified as most important to deal with within the Baltic Sea region. Eutrophication and overexploitation of fish were selected as GIWA priority issues which were highly urgent to consider. According to the findings presented in the Causal chain analysis as well as assessments made by Helsinki Commission (HELCOM 2002), the following key facts are important for the policy option regarding eutrophication and overfishing:

- Eutrophication remains the most pressing problem in the Baltic, as nitrogen and phosphorus inputs are still too high;
- Overexploitation of fish is considered as a severe problem due to the overutilisation of quotas, high exploitation rate and oversized fleet capacity.

Framework for implementing policy options

The policy options identified for this report are closely connected to the basic principles of the Helsinki Convention and EU Water Framework Directive to cater for a harmonised implementation of water protection measures in the Baltic Sea States.

With its origin in the 1970s, international cooperation is well developed in the Baltic Sea region. The legislation and economic base almost meet the needs of environmental protection. Environmental awareness in the Baltic Sea countries is well developed and at a high level in comparison to other GIWA regions (HELCOM, 2003). Educational programmes in progress are, amongst others:

- Baltic University Programme: a network of 180 universities and other institutes of higher learning (Baltic University Programme 2003, 2004);
- Baltic Sea Project (BSP): including about 300 schools (Baltic Sea Project 2004);
- Baltic 21: an Agenda 21 for Education for sustainable development in the Baltic Sea Region (Baltic 21 2002).

The Baltic Sea protection policy concerning eutrophication, overexploitation of fish and other issues was agreed upon at the Helsinki Commission and at the Baltic Sea Fishery Commission. In addition to these, a comprehensive policy for water issues was recently adopted in the EU Water Framework Directive (European Parliament and Council 2000). These activities are in line with Agenda 21 for the Baltic Sea region. Therefore, the identified policy options for protection of the Baltic Sea are well aligned with the above-mentioned policies and will support the implementation of the EU Water Framework Directive and the HELCOM recommendations to guarantee sustainable development in the Baltic Sea region.

All of the Baltic Sea region countries are signatories to the Helsinki Convention and all, but Russia, are members of the European Union since 2004. The Baltic Sea has become almost an internal sea of the European Union. Policies in order to protect the Baltic Sea were defined clearly in the text of the two main documents: the Convention on the Protection of the Marine Environment of the Baltic Sea Area (Helsinki Convention 1992) and in the EU Water Framework Directive (WFD) (European Parliament and Council 2000). Other conventions and international agreements are also taken into account but the Helsinki Convention and WFD are the most comprehensive (see Annex III).

The countries ratifying the Helsinki Convention are obliged to implement the requirements laid out in the Convention. In addition, the EU member states have to implement the EU Water Framework Directive before 2015.

According to the EU Water Framework Directive (European Parliament and Council 2000, introductory part, paragraph 18), the Community water policy requires a transparent, effective and coherent legislative framework; and the Community should provide common principles and an overall framework for action. This directive should provide for such a framework and coordinate, integrate, and, in a longer perspective, further develop the overall principles and structures for protection and sustainable use of water in the Community.

The Directive aims at maintaining and improving the aquatic environment, including rivers, lakes, coastal waters as well as groundwaters. The objective is to ensure that all waters meet "good status" by 2015. Control of quantity is an ancillary element in securing good water quality and therefore measures of quantity, serving the objective of ensuring good quality, should also, according to the Directive, be established (European Parliament and Council 2000, introductory part, paragraph 19). In addition to the Water Framework Directive, the implementation of other EU directives such as the Urban Wastewater Treatment Directive (European Council 1991b), the Nitrate Directive (European Council 1991a), the Drinking Water Directive (European Council 1980, 1998), the Habitats Directive (European Council 1992) cover the issues considered by GIWA.

More specific identification of the policy options for eutrophication and overexploitation of fish will be presented below. First the policy options for eutrophication will be presented and then the policy options for overexploitation of fish.



Figure 30 Concentrated bloom of blue green algae, most probably *Nodularia spumigena*, at the eastern coast of Sweden, 2003. (Photo: Johan Forssblad, IBL Bildbyrå)

Eutrophication

The immediate causes of eutrophication are aquatic load of nutrients and atmospheric deposition of nitrogen to inland water bodies and into the Baltic Sea. The main sectors responsible for eutrophication identified in the casual chain analysis are agriculture, urbanisation, energy production and transport. Agriculture is responsible mainly for the diffuse inputs of nitrogen compounds due to overfertilisation and uncontrolled manure and slurry disposal. Urban areas are responsible for nutrient inputs from municipalities and industrial enterprises discharging untreated or partly treated wastewaters to the environment. Energy production and transport are responsible for the high emission level of nitrogen, having a significant influence on the deposition rate.

A number of measures have been adopted over the years to halt the negative development of the environmental situation in the Baltic Sea area (HELCOM Recommendations, see achievements and targets below). Some actions have improved the situation, while others have



resulted in the status quo. Often appropriate spatial and temporal monitoring is lacking (especially relating to fisheries activities), making it difficult to detect changes in the environment. The following text will concentrate on measures proposed as well as measures taken by HELCOM and the International Baltic Sea Fishery Commission (IBSFC) regarding eutrophication and exploitation of fish stocks.

Achievements:

- Atmospheric deposition of nitrogen has been reduced by 40% during the last 15 years (HELCOM 2002).
- None of the nine Baltic Sea countries have been able to halve the total aquatic load of nutrients from all sources since the late 1980s by the end of 1995. However, Estonia, Latvia, Lithuania, Poland and Russia have come closer to the 50% reduction targets than the other Baltic countries (Lääne et al. 2002).

Targets:

- Discharge of polluting substances, including nutrients into the Sea, must be reduced, particularly from sewage, agriculture and transport.

The following root causes were identified in the causal chain analysis:

- Aquatic load of nutrients from intensive agriculture:
 - Technology: Inadequate adoption of modern agricultural technology.
 - Governance: Inadequate integration of environmental and agricultural practices.
- Aquatic load of nutrients from urbanisation:
 - Economy: Lack of investment in wastewater facilities.
 - Urbanisation: High urbanisation rate.
- Atmospheric deposition from energy production and transportation:
 - Population growth and urbanisation.
 - Transport: Increased sea and road traffic.
 - Governance: Ineffective laws and regulations to control emissions and Lack of adequate transport policy.

The aim of policy options is to list the different options that could mitigate or solve the problems of eutrophication; i.e. aquatic load of nutrients from agriculture and urbanisation and atmospheric deposition of nitrogen.

Aquatic load from agriculture

Agriculture was discussed at the World Summit Conference on Sustainable Development in Johannesburg in 2002, and was, together with water, energy, health and biodiversity, considered as one of the most important and urgent issues to deal with (WSSD 2002). The HELCOM Ministerial Declaration (1988) aimed at reducing total discharges into the Baltic Sea by 50% within a 10-year period. During the revision of the 1992 Helsinki Convention requirements to prevent and eliminate pollution from agriculture, Annex III of the Convention was revised and an obligation to use the best environmental practice (BEP) was included. Furthermore, new regulations concerning agricultural activity were inserted in Annex III. The new regulations comprise issues dealing with animal density, manure storage, agricultural wastewater and silage effluents, application of organic manure, application rates for nutrients and water protection measures and nutrient reduction areas. Specific requirements proposed by the Helsinki Commission are presented in Box 1. These requirements are minimum requirements for national legislation.

The EU Nitrates Directive (European Council 1991a) aims to reduce water pollution caused or induced by nitrates from agricultural sources and to prevent further pollution of this type. The various steps of implementing the directive include detection of polluted or threatened waters, designation of “vulnerable zones”, establishment of codes of good agricultural practice, action programmes within

Box 1 Specific requirements included in Annex III of the Helsinki Convention in order to decrease eutrophication.

Animal density

To ensure that manure is not produced in excess in comparison to the amount of arable land, there must be a balance between the amount of animals on the farm and the amount of land available for spreading manure, expressed as animal density. The maximum number of animals should be determined with consideration of the phosphorus and nitrogen concentration in manure and the crops requirements of plant nutrients.

Manure storage

Manure storage facilities must be of such a quality that losses do not occur. The storage capacity must be sufficiently large to ensure that manure will only be spread when the plants can utilise the nutrients. The minimum level should be a 6-month storage capacity. Urine and slurry stores should be covered or maintained by a method that efficiently reduces ammonia emissions.

Agricultural wastewater and silage effluents

Wastewater from animal housings should either be stored in urine or slurry stores or else be treated in some suitable manner to prevent pollution. Effluents from the preparation and storage of silage should be collected and directed to urine or liquid manure storages.

Application of organic manures

Organic manure (slurry, solid manure, urine, sewage sludge, composts, etc.) should be spread in a way that minimises the risk of plant nutrient loss and should not be spread on soil that is frozen, water-saturated or covered with snow. Organic manure should be applied as soon as possible after bare soils. Periods shall be defined when no manure application is allowed.

Application rates for nutrients

Application rates for nutrients should not exceed the nutrient requirements of crops. National guidelines should be developed with fertilising recommendations and they should take reference to: a) soil conditions, soil nutrient content, soil type and slope; b) climatic conditions and irrigation; c) land use and agricultural practices, including crop rotation systems; d) all external potential nutrient sources.

Winter crop cover

In relevant regions, the cultivated area should be sufficiently covered by crops in winter and autumn to effectively reduce the loss of plant nutrients

Water protection measures and nutrient reduction areas

a) Surface water: Buffer zones, riparian zones or sedimentation ponds should be established, if necessary. b) Groundwater: Groundwater protection zones should be established if necessary. Appropriate measures such as reduced fertilisation rates, zones where manure spreading is prohibited and permanent grass land areas should be established. c) Nutrient reduction areas: Wetland areas should be retained and where possible restored, to be able to reduce plant nutrient losses and to retain biological diversity.

(Source: The Helsinki Convention 1992)

designated vulnerable zones, and national monitoring. To limit the negative effects linked to agricultural activities, the Nitrates Directive promotes five main principles (European Council 1991a):

1. Crop rotation, soil winter cover and catch crops to limit leaching during wet seasons;
2. Use of fertilisers and manure, with a balance between crop needs, nitrogen inputs and soil supply; frequent manure and soil analysis, mandatory fertilisation plans and general limitations per crop for both mineral and organic nitrogen fertilisation;
3. Appropriate nitrogen spreading calendars and sufficient manure storage, for availability only when the crop needs nutrients, and good spreading practices;
4. "Buffer zones" that is, non-fertilised grass strips and hedges along watercourses and ditches;
5. Good management and restriction of cultivation on steeply sloping soils, and of irrigation.

Lack of modern technology and best agricultural practice (BAP), results high concentrations of nutrients entering the aquatic environment. Governmental financial support for improving the existing agricultural technology is urgently needed.

It is important to increase the cooperation between the countries around the Baltic Sea for attaining sustainable agriculture. According to Baldock et al. (2002) there are difficulties in applying a common agricultural policy. However, several initiatives towards a sustainable agriculture are taken, for example, work on a regional 'Virtual Research Institute on Sustainable Agriculture' has been initiated in the Nordic countries, and similar initiative has been taken in Poland (Baltic 21 2004b). There is a need for further supporting research and projects aimed at increasing knowledge in order to integrate environmental policies with agricultural and other policies.

Aquatic load from urbanisation

The identified root causes of urbanisation were lack of investments and high urbanisation rate. The main tools to control discharges connected to urbanisation in the Baltic Sea are described in the EU Water Framework Directive (European Parliament and Council 2000). Minimum requirements proposed by the European Commission in the Water Framework Directive are as follows:

1. Expanding the scope of water protection to all waters, surface waters and groundwater;
2. Achieving "good status" for all waters by the 2015 deadline;
3. Water management based on river basins;
4. "Combined approach" of emission limit values (ELV) and water quality objectives (WQO) shall be used;
5. Getting the prices right: charges for water and wastewater reflecting the true costs;
6. Getting the citizens involved more closely;
7. Streamlining legislation.

According to the Directive, rivers and lakes will need to be managed by river basin borders instead of administrative boundaries. These approaches mean that a transboundary aspect is clearly included in the Directive. The Directive also recommends that the charges for water and wastewater should reflect the true costs.

The implementation of the EU Water Framework Directive is one of the main measures to meet nutrient discharge targets in the Baltic Sea. Since the goal is to reduce nutrients in the whole catchment area and to adopt a transboundary approach, it is necessary that the EU Water Framework Directive is also implemented in Russia, even if Russia is not an EU member. One example of a transboundary

project including Russia in the work for implementing the EU Water Framework Directive is the European Baltic (ERB) cooperation. Nine neighbouring partner-regions in Denmark, Latvia, Lithuania, Poland, Russia (Kaliningrad) and Sweden established contacts on the political level in 1998.

In order to concretise the ERB cooperation, the EU-project SEAGULL was formed in 2002 with the aim of developing a Joint Transnational Development Programme (JTDP) for the entire region (Eurobalt 2004). One of the main objectives is to improve water management and prepare for implementation of the EU Water Framework Directive and the HELCOM Joint Comprehensive Action Programme. In-depth studies in special strategic areas, analyses, preparatory measures and exchange of knowledge are methods used. The project also aims to compare and evaluate different methods for enhanced dialogue and awareness among the citizens and other local stakeholders (Eurobalt 2004).

To further reduce nutrient loads from urban areas and to stop eutrophication of the Baltic Sea, additional measures must be implemented. According to the regulations of the Helsinki Commission, measures such as presented in Box 2 must be implemented. Such measures could prevent pollution from industries and from municipalities.

Box 2 Helsinki Commission, regulations to prevent pollution from industry and municipalities.

Regulation 1: General provisions

In accordance with the relevant parts of the Helsinki Convention, the Contracting Parties shall apply the criteria and measures in this Annex in the whole catchment area and take into account Best Environmental Practice (BEP) and Best Available Technology (BAT) as described in:

Regulation 2: Specific requirements

- Municipal sewage water shall be treated at least by biological or other methods equally effective with regard to reduction of significant parameters. Substantial reduction shall be introduced for nutrients.
- Water management in industrial plants should aim at closed water systems or at a high rate of circulation in order to avoid wastewater wherever possible.
- Industrial wastewaters should be separately treated before mixing with diluting waters.
- Wastewaters containing hazardous substances or other relevant substances shall not be jointly treated with other wastewaters unless an equal reduction of the pollutant load is achieved compared to the separate purification of each wastewater stream. The improvement of wastewater quality shall not lead to a significant increase in the amount of harmful sludge.
- Limit values for emissions containing harmful substances to water and air shall be stated in special permits.
- Industrial plants and other point sources connected to municipal treatment plants shall use Best Available Technology in order to avoid hazardous substances which cannot be made harmless in the municipal sewage treatment plant or which may disturb the processes in the plant. In addition, measures according to Best Environmental Practice shall be taken.
- Pollution from fish-farming shall be prevented and eliminated by promoting and implementing Best Environmental Practice and Best Available Technology.
- Pollution from diffuse sources, including agriculture, shall be eliminated by promoting and implementing Best Environmental Practice.

(Source: The Helsinki Convention 1992)

The Helsinki Commission regulations aim to prevent environmental damage made through discharge of urban wastewater and waste from industrial processes. Depending on their size and designated location, all newly built areas must have urban wastewater collection and treatment systems by the end of 1998, 2000 or 2005 (European Council 1991b). The level of treatment depends on the sensitivity of the receiving water and can be:

- Primary: removal of suspended solids by passing wastewater through settlement or flotation tanks.
- Secondary: biological treatment where wastewater passes through tanks where bacteria eat pollutants and transform them into sludge.
- Tertiary: more advanced treatment that involves nutrient removal or disinfection by means of chlorination, ultraviolet (UV) radiation or ozone treatment.

The Urban Wastewater Treatment Directive (European Council 1991b) concerns collection, treatment and discharge of urban wastewater from agglomeration and treatment and discharge of biodegradable wastewater from certain industrial sectors. Its objective is to protect the environment from the adverse effects of such wastewater discharges.

The EU Member States must ensure that urban wastewater is collected and treated prior to discharge according to specific standards and deadlines. In terms of the treatment objectives, secondary (i.e. biological) treatment is the general rule, with additional nutrient removal in what are considered sensitive areas (tertiary treatment). Implementation of the EU Water Framework Directive and other directives and regulations mentioned above, could raise awareness of the environmental situation and increase the responsibility for the Baltic Sea as a common resource.

Atmospheric deposition

The root causes of atmospheric deposition were identified as: population growth and urbanisation, increased sea and road traffic, ineffective laws and regulations to control emissions and lack of adequate transport policy. There is a need for improving laws and regulations in the region to control emissions. It is also important to implement an adequate governmental policy for transport.

The Air Quality Framework Directive (European Council 1996) covers a revision of previously existing legislation and the introduction of new air quality standards for previously unregulated air pollutants, setting the timetable for the development of daughter directives on a range of pollutants. The list of atmospheric pollutants to be

considered includes sulphur dioxide, nitrogen dioxide, particulate matter, lead and ozone.

The Convention on Long-Range Transboundary Air Pollution (UNECE 1979) was signed by 34 governments, including Russia and the European Community. The Convention entered into force in 1983, and has been extended by eight protocols.

In addition to the implementation of the Air Quality Framework Directive and the Convention on Long-Range Transboundary Air Pollution it is suggested that further reduction of nitrogen emission and consecutive reduction of depositions will take place through the implementation of the Kyoto Protocol by the EU countries. For implementation of the Kyoto Protocol in the Baltic Sea region, a harmonised policy should be formulated.

Identified policy options

Concerning the root causes related to eutrophication, the identified course of action involves:

For aspects concerning governance:

- Integrate agricultural, energy and transport policy with the environmental policy proposed by the European Commission, the Helsinki Commission, the International Baltic Sea Fishery Commission and other international conventions in order to reduce the discharge of nutrients to the Baltic Sea.
- Cooperate with countries outside the EU, such as Russia, Belarus and Ukraine, with the aim to harmonise their environmental legislation with the EU countries, such as adopting the EU Water Framework Directive.
- Support and develop existing agricultural cooperation projects and networks.

For economic aspects:

- The European Commission is invited further to support the implementation of transboundary environmental projects.
- Governments are invited to support economically the implementation of new environmentally friendly technologies in agriculture, transport and energy production.
- Governments, especially in the new EU countries and Russia, are invited to support investments in wastewater treatment facilities to reduce emissions from heat and electricity production units as well as from road and sea traffic.

Overexploitation of fish

High exploitation rates and excessive fishing quotas were identified as the main immediate causes of overfishing. The causal chain analysis identified that the root causes behind this issue were mainly poor landing statistics, overestimated quotas due to socio-economic factors and constant overfishing of the most popular commercial species. Despite continuously lowered quotas for cod, herring and salmon since the mid-1990s, the populations have not recovered.

Policy options concerning overfishing in the Baltic Sea region will be managed within the framework of the International Baltic Sea Fishery Commission (IBSFC) which is the main advisory body in the management of living resources in this region. All countries around the Baltic Sea are contracting parties of the Commission, and measures proposed for management of living resources are obligatory to them and have the potential for being of great influence. Other examples of international cooperation of importance in the question of overfishing include the European Union's Common Fisheries Policy and its Fisheries Action Plan, and the UN Food and Agriculture Organization (FAO) and its Code of Conduct for Responsible Fisheries. The policy options presented in this section are based on the work of these organisations.

Fishing subsidies and market failure

The UN Food and Agriculture Organization (FAO) have developed a code of conduct to set out principles and international standards of behaviour for responsible practices. The objective is to prepare guidelines for an effective conservation, management and development of living aquatic resources, with due respect to the ecosystem and biodiversity. Four fishing management measures related to overfishing in the Baltic Sea Region are stated in this context in Box 3.

Box 3 Fishing management measures related to overfishing proposed by FAO.

- States should ensure that the level of fishing permitted is commensurate with the state of fisheries resources.
- Where excess fishing capacity exists, mechanisms should be established to reduce capacity to levels commensurate with the sustainable use of fisheries resources so as to ensure that fisheries operate under economic conditions that promote responsible fisheries. Such mechanisms should include monitoring the capacity of fishing fleets.
- The efficacy of conservation and management measures and their possible interactions should be reviewed regularly.
- States and subregional and regional fisheries management organisations, all according to their respective competencies, should introduce measures for depleted resources and resources threatened with depletion that facilitate the sustained recovery of such stocks. They should make every effort to ensure that resources and habitats critical to the wellbeing of such resources, affected by fishing or other human activities, are restored.

(Source: FAO 1996)

Inappropriate assessment methods

The EC Biodiversity Action Plan for Fisheries includes requirements for the formulation and implementation of strategies that will enable the “conservation and sustainable use of biodiversity” across all policy sectors (Box 4). The overall objective is to define and identify, within the current legislative framework, coherent measures that will lead to the preservation or rehabilitation of biodiversity where it is perceived as being under threat due to fishing or aquaculture activities. Increased research and improved monitoring methods are emphasised.

Coordination of management, fishery control and fishery statistics

The International Baltic Sea Fishery Commission (IBSFC) has developed the Fisheries Rules for Fisheries Management. These rules include calculations concerning fishing behaviour such as Total Allowable Catches (TACs). The targets suggested by the IBSFC are (Baltic 21 1998b):

- The by-catch of mammals and birds, as well as discard of fish must be reduced;

Box 4 The Biodiversity Action Plan for Fisheries.

The Biodiversity Action Plan for Fisheries includes the following:

- Overall reduction in fishing pressure to promote the conservation and sustainable use of commercially important fish stocks.
- Technical measures with the objective of improving the conservation and sustainable use of commercially exploited fish stocks.
- Technical measures with the objective of reducing the impact on non-target species and habitat.
- Research priorities to secure traditional support for the EU Common Fisheries Policy (CFP).
- Research to provide enhanced knowledge related to biodiversity.
- Monitoring and assessment of the state of commercially important fish stocks.
- Monitoring of other organisms and habitats.

(Source: ECCHM 2004)

- Legal protection of threatened marine habitats is needed;
- Improved catch statistics are needed to accurately estimate the fish populations and determine the impact exerted by commercial fishing operations. No-take zones and restrictions in gear use are measures to be taken under consideration.

As a contribution to the Baltic Sea region application of Agenda 21, the IBSFC has also been appointed to develop action programmes for



Figure 31 Cod fishing in the southern Baltic Sea, 1994.

(Photo: Uno Andersson, Sydsvenskan Bild)

the fisheries sector in this region. Action programmes recognised as prioritised in the Agenda 21 for the Baltic Sea are (Baltic 21 1998b):

- Baltic Cod Strategy Plan implementation from 1999.
- IBSFC Salmon Action Plan 1997-2010 (in collaboration with HELCOM in 1997).
- Long Term Strategy for Pelagic Species implementation from 2000.

In addition to these priority action programmes according to the Baltic 21 (1998b) the targets are to:

- Improve the management resources in coastal areas.
- Increase cooperation in the field of control and enforcement.
- Improve the quality of stock and fisheries assessment.
- Increase sustainable use and preservation of freshwater fish stocks and species.
- Restore habitats that are important to fish and fisheries in inland waters.
- Achieve sustainable aquaculture.
- Improve economic and social stability of the fisheries sector.

As a member of the IBSFC, the EU supports policy measures agreed by the IBSFC, and has incorporated technical measures in its legislation, relating to gear meshes used by vessels and the minimum size of fish caught locally. The European Union's Common Fisheries Policy (CFP) can be divided into four main areas (CFP 2004):

- Conservation, in order to protect fish resources by regulating the amount of fish taken from the sea, by allowing young fish to reproduce, and by ensuring that the regulations are adhered to.
- Structures, in order to help the fishing and aquaculture industries to adapt their equipment and organisations to the constraints imposed by scarce resources and by the market.
- Markets, in order to maintain a common organisation of the market in fish products and to match supply and demand for the benefit of both producers and consumers.
- Relations with the outside world, with the objective of setting up fisheries agreements and to negotiate at the international fisheries organisations for common conservation in deep sea fisheries.

However, the CFP has met strong criticism for supporting structural problems in fisheries, in particular, when giving subsidies to oversized fishing fleets. In 2002, a reform was made in the fisheries policy to address these problems, resulting in new measures as follows (CFP 2004):

- A new policy for the fleets: (i) a simpler fleet policy that puts responsibility for matching fishing capacity to fishing possibilities with the member states; and (ii) phasing out of public aid, while keeping aid to improve security and working conditions on board.

- A better application of the rules, which implies further development in the cooperation among the various authorities concerned and a strengthening of the uniformity of control and sanctions.
- An increase in stakeholders' involvement, which implies that stakeholders, particularly fishermen, need to take a more central role in the CFP management process. Regional advisory councils will be established to integrate the knowledge of fishermen and scientists, together identifying ways of achieving sustainable fisheries.

Identified policy options

Concerning the root causes related to economy and governance, the identified course of action involves:

- An integration of fishery policies with economic and environmental strategies in order to strengthen sustainable fisheries.
- Development of comprehensive approaches combining decommissioning schemes and regulatory measures, and the construction of a stable system of taxation, prices of fuel and materials.
- Establish more stringent control over vessel documentation and fishing statistics.
- Ensure obligatory registration of all catches and all export transactions on land.
- Improve and unify a system of fish auctions for all Baltic countries.

For causes related to educational aspects the following actions were identified:

- A creation of appropriate assessment methods leading to the establishment of reliable total allowable catches (TACs).
- Improve the reporting of landings by introducing an electronic network and exchange of this information between Baltic countries.

For causes related to legal aspects:

- Support for the construction of appropriate fishery laws that can efficiently manage the new market conditions is emphasised.