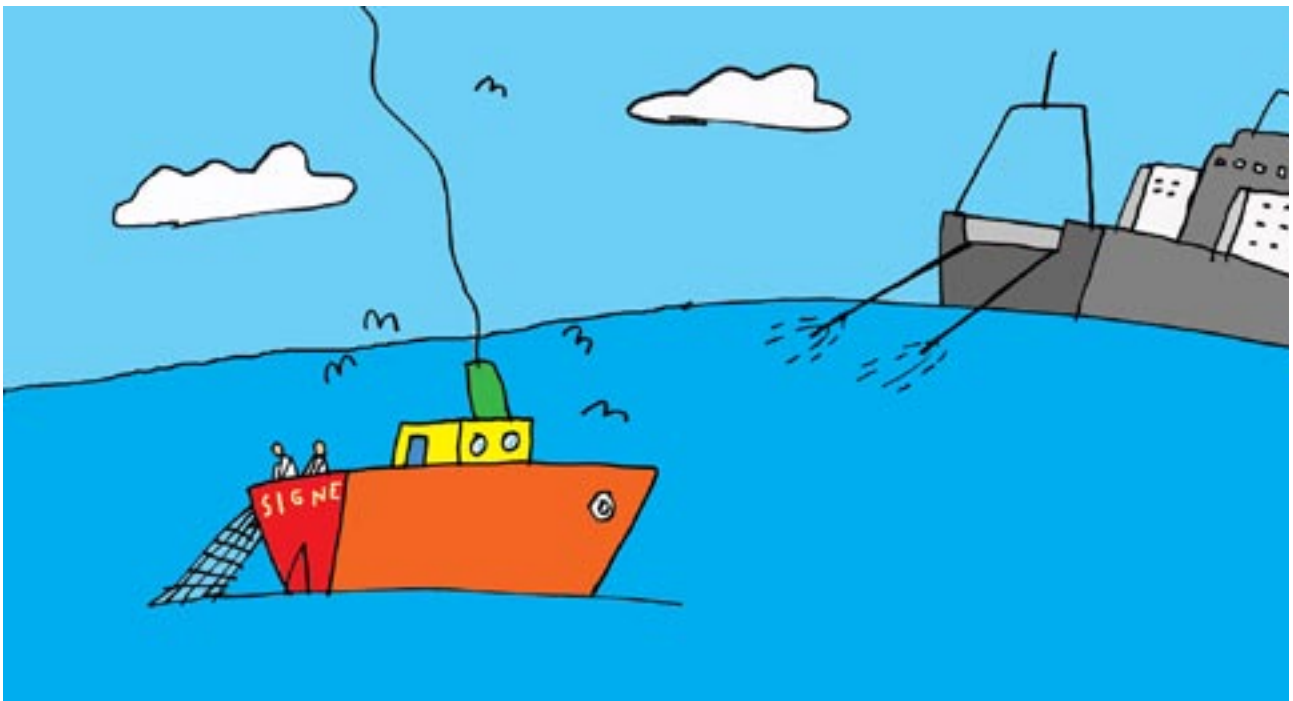


Sustainable Baltic Sea Fisheries – the way forward



JUNE 2004

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Foreword

Fisheries are in crises in most sea-areas of planet Earth. The fishing fleets and its capacity has constantly been expanding, and the technical development in fishing techniques has created extremely effective open-sea fisheries. Fish populations can no longer hide themselves in the sea. The fishermen will always find them, sooner or later. The result is overfishing.

The north-west Atlantic cod outside Newfoundland disappeared 10 years ago because of fishery activities, and this cod stock has still not returned. This marine eco-system has changed totally and other fish species and marine life are now dominating the area.

Baltic Sea governments have repeatedly decided on Total Allowable Catches (TACs) of Baltic cod that exceed the international scientific advice by ICES (International Council for Exploration of the Sea) up to 100 per cent the last years. ICES has advised against cod fisheries on the eastern Baltic cod stock for many years, but Baltic Sea governments have neglected such advice.

Baltic Sea cod fisheries kill 50-60 per cent of the cod every year. More than 50 per cent of the total cod stock is killed every year. If an industry would discharge pollutions to the Baltic Sea that kill 50 per cent of the cod stock, all citizens would be very upset. But when Baltic fisheries cause the same impact there is no protest, probably because this fact is not well-known. One of three Baltic cod is caught under 38 cm in length, which mean they never had a chance to spawn and reproduce.

Even a child can easily understand that such management of the fish stocks cannot be sustainable. A collapse of the Baltic cod stock can be foreseen if the management will not change.

Fisheries constitute the most important human impact on the marine ecosystems. No other factor, such as toxics, oil and nutrients, has had more far reaching impacts.

The result is serious mismanagement of common fish resources, damaging the fish stocks, the environment and both commercial and recreational fisheries.

The existing fishery management system, with yearly TACs and the “run for the catch”-approach, is driving the overfishing and illegal fishery. We have a “systematic error” in fisheries management.

An outcome of the World Summit on Sustainable Development, United Nations Conference on Environment and Development, in Johannesburg in September 2002 was the adoption of actions required to achieve sustainable fisheries. Examples of such actions are:

- maintain or restore stocks to levels that can produce the maximum sustainable yield with the aim of achieving these goals for depleted stocks on an urgent basis and where possible not later than 2015
- eliminate subsidies that contribute to illegal, unreported and unregulated fishing and to over-capacity

We hope that such goals very soon will be implemented in Baltic Sea fisheries management.

We also hope that this report, including many proposals for actions for sustainable fisheries and positive examples of fisheries practices, will contribute to constructive discussions on appropriate measures needed to develop Baltic Sea sustainable fisheries.

Thanks to sponsorship from COOP Sweden, a CCB-project could be started to study the fisheries in the Baltic Sea Region and produce this report.

Uppsala in May 2004

Gunnar Norén
Executive secretary
Coalition Clean Baltic

Introduction

The CCB project “Sustainable Baltic Fisheries – the way forward” is based on cooperation between CCB member organisations in Estonia, Latvia, Lithuania, Poland, Germany and Sweden. These organisations represent environmentalists across our common Baltic Sea, tired of years of the many failures of the fishery resource management.

The main idea is to analyse the possibilities for the road towards sustainable Baltic Fisheries and to give our views and recommendations to different levels of society of what needs to be done. This report is not the only output of the project, national reports, seminars and campaigns will be launched. For more analyses on the background to the Baltic fisheries crisis, there is several annexes to this report available for download on the CCB website (www.ccb.se) in particular descriptions on the key players on the national and international levels in the Baltic Sea fisheries arena, and an example of positive local management of fishery resources from Jurkalne, Latvia.

It is a long way to go and many hard decisions to make, but if the negative trends for the fish stocks and our long traditions of fishing in the Baltic Sea are to turn for the better we need to make the hard decisions. With these recommendations a new beginning can be found. The project has given the CCB member organisations an opportunity to identify common problems and solutions, an important opportunity in view of the EU accession and increased cooperation which hopefully will lead to a more responsible fishery management of the Baltic Sea.

Introduction to Baltic Sea fisheries management

Before we start to describe the fisheries management within the individual countries we want to give a brief overview of the overall management in the Baltic Sea.

One of the main criteria of different management system is the question of property rights. Today nearly all fish stocks are under the jurisdiction of the coastal states. The whole Baltic is divided in the Exclusive Economic Zones (EEZ) of the surrounding countries. Because of the small size of the Baltic Sea no EEZ reaches its maximal (length) of 200 nautical miles. Within a zone of 12 nautical miles the individual states are responsible for the management of their own coastal fisheries. Normally the coastal fleet mainly uses local fish stocks of freshwater species. But if they fish on stocks of cod, herring, sprat and salmon they must also comply with the overall quotas and the rules for the whole Baltic Sea.

To manage the fish stocks of the open sea the International Baltic Sea Fisheries Commission (IBSFC) was founded 1973. Since 1 May 2004 the 8 EU Member States in the Baltic region are represented by

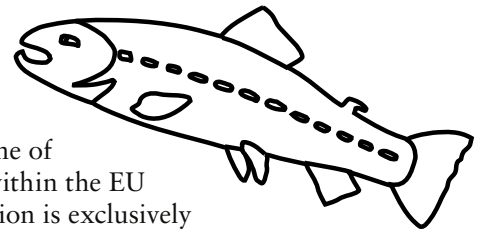
the EU Commission in the IBSFC.

Fisheries Policy is one of three policy areas within the EU where the Commission is exclusively responsible for the enforcement of the rules and decisions of the council of ministers. So within IBSFC the European Commission negotiate for their member countries. Today the EU covers nearly all of the Baltic Sea, Russia being the one exception. At the moment it seems that the EU will negotiate bilateral agreements with Russia about the fisheries management. The main decision body now will be the council of ministers, the EU Fisheries Council. The establishment of a Baltic Regional Advisory Council (RAC), in accordance with the new CFP, may change the procedure because of the implementation of stakeholder involvement in the decision-making process. Within the sessions of IBSFC Non-Governmental Organisations, NGOs, stayed more or less outside of the real negotiations within the sessions of IBSFC. Many negotiations took place only between the Heads of Delegation from Baltic Sea Region countries. Only in informal ways of lobbying NGOs could influence decisions. This will hopefully change now because all relevant groups, country representatives, fishermen, NGOs and other stakeholders will discuss management issues within the RAC. However, the RAC will only give advice, not decide on Total Allowable Catches, (TACs).

The main instruments within the IBSFC regulations are:

- catch quotas for the four main target species (herring, sprat, cod and salmon),
- additional technical measures like mesh sizes, minimum landing sizes etc.,
- some further regulations like the ban of trawls above the 10 m – depth on the ‘Oderbank’,
- closed seasons for fisheries.

Specially the technical measures were part of long processes with a lot of special meetings over the years to prepare the regulation for the IBSFC. The last big debate was about the BACOMA-net. With the help of a special exit window in the cod trawl nets fishermen should avoid by-catch of juvenile cod. But for a long time it was not clear which mesh size that would fulfil the requirements. Also decisions about catch quotas need a lot of effort. Firstly, the International Council for the Exploration of the Seas (ICES) prepares an advice/recommendation for the quota out of the national research results. IBSFC then scrutinize the advice and IBSFC decide upon the TACs. Over the next year national authorities must enforce the



new technical measures and the catch limits. The enforcement and control of rules are very expensive and not very popular among fishermen.

With an increase in sprat quotas there is also an increase in herring by-catch. The rules are often unclear and can be perceived as contradicting; on one hand strict regulation on by-catch in the cod fishery, on the other hand allowing for high by-catch of herring in sprat fisheries. *One of the main problems for the Baltic Sea Fisheries is the low acceptance of rules among fishermen.* This is the main reason for breaking the rules, like black landings or using illegal mesh sizes.

The new Regional Advisory Council with the involvement of fishermen can change this. Regulations discussed in the Advisory Council may become more acceptable for fishermen.

Basically the overall management system in the Baltic Sea fisheries is a centralized system with little involvement of stakeholders. Additionally the political pressure not to cut quotas is so heavy that nearly all quotas are set too high compared to the scientific advice. This means overfishing of some important stocks (cod and herring) and special problems with sprat.

One of the main problems for the Baltic Sea Fisheries is the low acceptance of rules among fishermen.



Tommy Svensson/prb

Cod fishing.

The scientists, the politicians and the fishermen

ICES assess the Baltic Sea fish stocks and give advice to the politicians in the IBSFC when negotiating the setting and distribution of the Total Allowable Catches (TAC). Year after year the scientific advice is disregarded by the IBSFC. A comparison between the advice, the TACs and the estimated landings tell its own story.

Units in tons, except for salmon, counted in individuals	2001	2002	2003	2004
Herring ICES recommendation	166 000	165 500	168 000	264 000
Agreed TAC	372 000	260 000	203 349	232 826
Landings*	252 000	221 000	195 000	
Sprat ICES recommendation	314 000	369 000	300 000	474 000
Agreed TAC	355 000	380 000	310 000	420 000
Landings*	342 000	343 000	308 000	
Cod ICES recommendation	87 600	36 300	28 800	42 600
Agreed TAC	105 000	76 000	75 000	75 000
Landings*	160 000	116 000	119 000	
Salmon ICES recommendation	410 000	410 000	410 000	410 000
Agreed TAC	520 000	510 000	510 000	495 000
Landings*	439 000	406 000	372 000	

From ICES ACFM report. *Reported landings including estimated illegal, unreported and unregulated landings. Discards not included.

General information on national fisheries

Estonia

Practically the Estonian fishery is divided into four parts:

- 1) Ocean fishery
- 2) Open-sea fishery
- 3) Coastal-fishery
- 4) Inland waters fishery

Today the Estonian ocean fishery takes place in the Atlantic (mainly in NAFO zone) and the main target species are shrimps. The open-sea fishery includes mainly herring and sprat trawling (to a small extent also cod and salmon) in the Baltic Sea deeper than 20 m, thus mostly quite far away from shore. In coastal waters fishery the main fishing gears are trap nets (among them pound nets) and gillnets, seines and long-lines to less extent. The boats are smaller (mainly 5-10 m length) than in the trawling fishery and fishing activities take place near the shore. The most important species in open-sea fishery are sprat and herring. The most important species for the small-scale fishery are herring, perch, pike-perch and flounder.

Latvia

According to a list published in 2003 there are 105 registered fishery enterprises in Latvia that have license for fishing offshore in the Baltic Sea and the Gulf of Riga. The economical activity of these enterprises is mainly connected to the operation of offshore fishing vessels. Those fishery enterprises own 198 fishing vessels (boats) and employ about 990 qualified fishermen. Besides, 18 more fishing enterprises (not included in the 105) are engaged both in the coastal fishing and in the offshore fishing in the Baltic Sea and the Gulf of Riga.

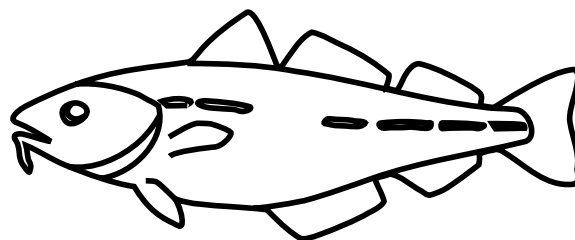
In coastal fishery (up to 20 meters depth) inhabitants of coastal regions have traditionally been involved. There are 101 fishery enterprises having licenses for coastal fishing employing more than 1000 fishermen. Those enterprises operate the whole Latvian coastline, which is more than 500 km long. In addition to the commercial fishing carried out by enterprises, so called fishing for own consumption is allowed for individual fishermen. Therefore the number of fishermen that perform coastal fishing increases up to 1500 people.

In 2003 there were 127 fish processing companies registered in Latvia, but just 50% of them comply with EU requirements and are permitted to sell their production in the countries of the European Union.

Lithuania

About 3% of all caught fish in the Exclusive Economic Zone and in the other territorial waters of Lithuania are caught in waters less than 20 meters deep (in the coastal zone). However, the main fish spawning grounds are located in the coastal zone; it is the main feeding area for young fish. The coastal zone is important both for migration of fish (e.g. salmon, sea trout, vimba, lamprey etc) and as feeding grounds for freshwater species (e.g. bream, perch).

The industrial fishery started its activities in the coastal zone in 1992. The number of fishery enterprises has increased from 19 in 1992 to 114 enterprises in 2003. The amount of caught fish has also increased from 42.1 t up to 536 t. The main part of the catch consists of cod, smelt, herring, European flounder, and turbot. The main part of the salmon and sea trout is caught by the fishermen in the open sea and in the Curonian lagoon.



Poland

The length of the Polish coast is 528 km, most of which is flat and sandy. There are altogether 59 fishing harbours and only 10 of them are used for Polish fishing fleet operating with vessels exceeding 15 m of total length.

The Polish Baltic Sea Waters cover 32 400 km², including territorial waters of 8 628 km². The area is considered to be one of the most productive marine/brackish ecosystem – fishing productivity amounts to 35.9 kg/ha, whereas the average for the entire Baltic is 18.5 kg/ha. Although the Polish fishery sector makes up 0.07% of the Gross National Products in Poland, it plays a significant role in coastal areas in economic and social terms. The employment in the fishery sector has been decreasing since the seventies; however it has affected the deep-sea fishery sector most. At present approximately 33 000 people are employed in the fisheries sector, half of them in the processing industry.

Baltic fisheries in Poland are indispensable elements forming the coastal society, which has strong historical and culture traditions, especially on the north-east coast. Here the fishery has built up a social group with a unique cultural heritage – Kaszubian region. The coastal region in general is considered dependent on fishery as most of inhabitants are employed in this sector. In the light of restructuring and further reduction in the fishing sector it is necessary to manage the fishery sector to preserve the Baltic fishery in Poland, as well as to develop special programmes of education and retraining for fishermen and plans of social subsidies.

Sweden

After the Second World War the amount of fishermen more or less depending on revenues from fishing decreased from more than 20 000 to less than 2 000 today. The amount of fishing vessels has also decreased, from 6 500 in year 1970 to 1 800 in 2002. At the same time the amount of fishermen and fishing

vessels decreased, the catches have increased. In the beginning of the 1940s, Swedish fishermen caught 100 000 tonnes, in the mid-1960s landings went up to 400 000 tonnes for both the Baltic Sea and the Swedish part of the North Sea. After that it has decreased somewhat to around 300 000 tonnes, except for the period of 1995-98, when the catches went up due to the increased catch of sprat for animal fodder production caused by the decrease and collapse of the cod stock in the Baltic Sea in the early 1990s. The main target species are sprat (mostly for animal fodder production), herring, cod and salmon. Cod constituted 20% of the total catch in the late eighties but are now down to 6%.

Recreational fishing is a very popular pastime nowadays. More than 3 million Swedes go angling at least once a year (more than 1/3 of the entire population). The turn-around value is more than 4 thousand million SEK annually, but fisheries management decisions rarely or never honour the importance of recreational fisheries.



Håkan Lindgren/prb

Large-scale herring vessels make it difficult for small-scale coastal fishermen, here on the Swedish coast on the Baltic Proper.

The systems of licensing and control and enforcement

The new EU plans for control and enforcement

The Green Paper of 2002 resulted in several initiatives, among them stricter control and enforcement procedures such as extended powers to the inspectors and better cooperation between authorities. The establishment of RAC, for better participation of stakeholders, is also part of the CFP reform. Ambitions for a more long-term approach to fisheries management are another.

The European Commission has proposed a new control and enforcement agency to ensure better fulfilment of the rules in the Common Fisheries Policy, CFP. The agency will organise the joint deployment of the national means of control and inspection (surveillance vessels, aircraft, vehicles and other equipment as well as inspectors, observers and other staff) according to an EU strategy. Joint deployment plans will be agreed by the agency and the EU Member States concerned on the basis of identified criteria, benchmarks, priorities and common inspection procedures.

Multinational teams will be set up for inspection at sea and onshore in identified areas and on identified fisheries and fleets at given times. The EU Member States concerned will adopt the necessary measures to undertake the joint control and inspection activities.

The agency will provide support to the EU Member States in meeting their responsibility not only in EU waters but also in relation to fisheries agreements concluded with non-EU countries. It will also be active on the high seas under international control and inspection schemes agreed within the framework of Regional Fisheries Organisations such as the North-west Atlantic Fisheries Organisation (NAFO) or the North-East Atlantic Fisheries Commission (NEAFC). The tasks involved will also include training of inspectors, provision of equipment and services for control and inspection, co-ordination of the implementation of joint pilot projects to test new control and inspection technologies, development of joint operational control procedures or establishment of criteria for the exchange of means of control and inspection.

In addition, the agency may offer contractual services which EU Member States will be able to request and for which they would be charged. These services may range from chartering and manning an inspection vessel to contracting observers on board fishing vessels.

To help the agency in its tasks, an EU fisheries monitoring centre using satellite tracking technology

to provide information regarding the location and movements of EU vessels will be established.

It is worrying and alarming that the fishing industry will be the only stakeholder, outside of government authorities, represented in the administrative board of the new EU Fisheries Control Agency.

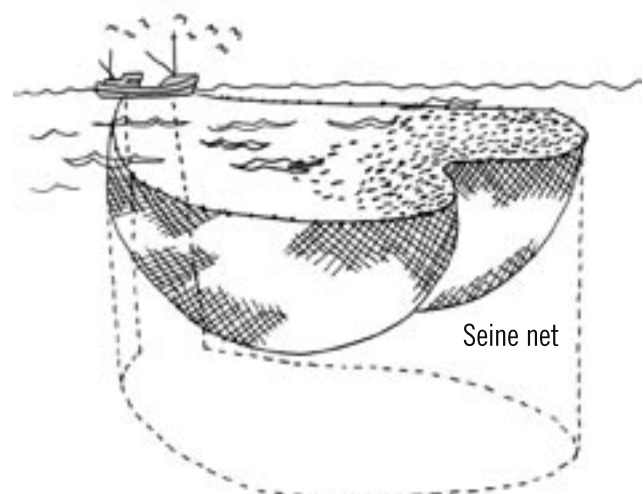
Estonia

System of licensing

Estonian fishing act says that fishing is an activity with the aim to capture fish, river lamprey, crayfish and other aquatic invertebrates by catching or killing them. In our overview we will focus only of the capture of fish. A fish is ownerless if it is free in nature. The right of ownership of a fish is created for the person who captures the fish. The system of licensing depends on the fishing gear used; a difference is made in terms of fishing rights between line fishing, recreational fishing, restricted fishing and commercial fishing.

Line fishing

Everyone may fish, free of charge and without having applied for the right to fish, with one simple hand line on a body of water belonging to the state or a local government or on a privately owned body of water which is designated for public use, taking into consideration restrictions concerning the permitted fishing seasons, fishing areas and species of fish.



Recreational fishing

On the basis of a fishing license, everyone may fish using fishing tackle on a body of water belonging to the state or a local government or on a privately owned body of water which is designated for public use, taking into consideration restrictions concerning the permitted fishing seasons, fishing areas and species of fish.

The following items are defined as fishing tackle:

- 1) spinning reels, trolling lines, pulling devices, fly hooks, bottom lines, unanchored trimmers, hand lines or more than one simple hand line;
- 2) harpoon guns and harpoons;
- 3) hooks, which may be used at sea and on Lake Peipus, Lake Lämmijärv and Lake Pskov
- 4) gill-net
- 5) longline consisting of up to 100 hooks

The right to fish for recreation shall be subject to a fee and will be determined by the Minister of the Environment.

Commercial fishing

The commercial fishing gears are mainly longlines, gillnets and entangling nets, traps, seine nets and trawls. The right to fish commercially is granted by a fishing permit, which may be either the fishing permit of a fishing vessel or a fisherman's fishing permit.

Fishing permit of fishing vessel – a fishing permit of a fishing vessel shall be issued to an undertaking registered in the commercial register regarding a fishing vessel in the legal possession thereof for which an Estonian certificate of a sea-going vessel or inland vessel or small craft and a fishing vessel certificate have been issued. Fishing permits of fishing vessels shall be issued by the Ministry of the Environment.

Fisherman's fishing permit – grants the right to fish, except fishing for flounder, with commercial fishing gear at sea up to 20 m dept, on Lake Peipus, Lake Lämmijärv and Lake Pskov, on Narva River and the Narva reservoir, or on an internal water body. A fisherman's fishing permit for the fishing of flounder grants the right to fish flounder at sea, irrespective of the depth of the sea. Fisherman's fishing permits shall be issued by the corresponding county environmental services.

Issue of commercial fishing permit

A commercial fishing permit shall be issued within the limits of the permitted annual quota allocation, number of fishing days, amount of fishing gear or number of fishing vessels (hereinafter fishing possibilities) for a specified term but for not longer than one calendar year. The fishing possibilities for the year for which the permit is applied for shall be

established by the Minister of the Environment. The permitted fishing gear, quota allocations, fishing seasons and/or the number of fishing days, and the fishing area shall be designated in the fishing permit.

Payment for fishing rights

The right to fish commercially is subject to a fee, except if the fishing possibilities in waters beyond the jurisdiction of the Republic of Estonia are not guaranteed by the Republic of Estonia. The size of the fee for each calendar year shall be determined by the Government of the Republic, based on the special characteristics of the fishing grounds, the type of fishing gear and its fishing capacity. The fee shall not exceed 4 percent of the normal value of the quantity of fish caught and not less than 15 Estonian crowns.

Restriction of commercial fishing possibilities

The Government of the Estonian Republic shall establish, depending on the state of fishery resources and pursuant to international agreements, the annual total allowable catch for internationally regulated fish species, and the permitted number of fishing days, the total allowable catch or the number of Estonian fishing vessels permitted to fish in waters beyond the jurisdiction of the Republic of Estonia.

The Minister of the Environment shall establish, depending on the state of fishery resources, the permitted annual amount of fishing gear and, if necessary, the quota allocation at sea up to 20 m dept, on Lakes Peipus, Lämmijärv and Pskov and on internal water bodies by county and local government.

If the permitted fishing possibilities do not enable applications for fishing permits to be satisfied fully, the fishing possibilities shall be divided between applicants who have been acquired fishing rights on the same waters during the previous three years, excluding fishing sprat and herring, in case of the fishing possibilities shall be divided between applicants who have been fishing on the same waters during the previous three years. It shall be ensured that the proportion of the fishing possibilities used by each applicant remains the same in relation to other persons (historical fishing rights).

Restricted fishing

A restricted fishing permit grants the owner of a registered immovable fishing gear extending to the sea coast the right to fish with restricted fishing gear in waters less than 20 m deep in marine waters. Restricted fishing gear in the sea means up to three entangling nets, one fykenet with a height of up to one meter, or a bottom longline consisting of up to 250 hooks. Restricted fishing permits shall be issued by the environmental service authorized by the Minister of the Environment. A restricted fishing permit shall set out the permitted fishing gear, the quota allocations, and the fishing seasons and areas.

If the annual permitted amount of fishing gear or the permitted quota allocation does not enable to satisfy applications and if the applicants do not come to a mutual agreement concerning the division of

fishing possibilities, the permitted fishing possibilities shall be divided equally between all applicants and, if necessary, the term of validity of the fishing permit shall be reduced.

Restricted fishing rights are subject to a fee

A person who fishes or collects aquatic plants on the basis of a fishing card or fishing permit is required to submit catch data pursuant to the procedure established by the Government of the Republic.



Fykenet

The maintenance of records on catch data shall be organized by the Ministry of the Environment. Information shall also be submitted concerning mammals and birds which die in fishing gear as by-catch. The first buyer of fish shall submit information on the purchase of fish from a person having the right to fish, pursuant to the procedure established by the Government of the Republic.

Supervision over fulfilment of the requirements of legislation regulating fishing and the conditions designated in a fishing permit, even in waters outside the jurisdiction of the Republic of Estonia, shall be exercised by the Ministry of the Environment.

Under the jurisdiction of the Ministry of Environment is the environmental inspectorate, implementing the supervision. Approximately 40 inspectors are working with fisheries issues. Recreational and coastal fishery supervision is carried out mainly on fishing grounds. The trawling fishery is controlled mostly in landing harbours. In both cases the inspectorate compare fishing data derived from fishers and purchasers.

Subsidies

The only subsidies the fishermen gets, is lowered diesel tax. The diesel gasoline tax in Estonia is 3 Estonian crowns per litre, but for farmers and fishermen 50 cents. Fishermen can also allocate financial compensation for seal damaged fishing gears, but the application process is so bureaucratic that mostly fishermen don't use it.

Germany

There is no "free access" to European waters. Coastal waters (until 12 nautical miles) belong to the responsibility of coastal states. In Germany the 12 nautical mile zone belongs to bordering federal states. The Federal Republic of Germany has given

the rights of the 12 – 200 nautical mile zone to the federal German states.

In coastal waters certain areas cannot be used by other states. Traditional fishing grounds in the waters of other members of the European Union (also within the 12 nautical mile zone) are considered: For example, it is possible, that Dutch fishermen fish in the German 12 nautical mile zone in the North Sea.

The regional governments (including the Regional Fisheries Authorities in Rostock and Kiel) are responsible for enforcement and controlling. Regional Fisheries Authorities also punish for offences of EU regulations referring to landings, fishing gear or fishing bans.

In every harbour a so-called "Fischmeister", a regional authorities employee, is responsible for controlling the landed catch. At sea the coastguard is controlling cutters and fishing boats.

Every fisherman has to hold a fishing license.

Latvia

The Ministry of Agriculture has established a special commission responsible for issuing of licenses. This commission is working at the National Board of Fisheries and it involves representatives from the Board, Ministry of Environment, Association of Latvian Fisheries, Federation of Latvian Fishermen, and Institute of Latvian Fisheries. So far 185 licenses have been issued to the fishing enterprises for fishing in the Baltic Sea and the Gulf of Riga. In excess of the 185 licenses, 19 enterprises perform industrial fishing both in coastal and offshore areas in the Baltic Sea and the Gulf of Riga.

– The license can be cancelled if the fishing company or the owner of the license has violated administrative acts on fishing.

– In case of necessity the inspections of the fishing companies related to licensing are carried out by not less than two persons, out of which one should be member of the Commission. It is obligatory that also the representative of the company being inspected takes part in the inspection. After completion of the inspection a statement shall be prepared that has to be signed both by the inspectors and by the representative of the company that was inspected. The results of the inspection are later analyzed in the meeting of the Commission. The statements on the inspections and the decisions of the Commission are recorded in a special journal.

Strict requirements of the licensing are understandable if we take into account the decrease of the fish stocks. Still the position of the state towards fishing companies is not understandable. There are 127 fish processing companies registered in Latvia. Only seven of them fulfil the requirements of the European Union. It is also obvious that such a big number of the fish processing companies does not correspond to the limits of the fish stocks. By not limiting the num-

ber of the fish processing companies the government creates the preconditions for distribution of illegally caught fish in the market and also decrease in quality of fish products.

In 2003 the state financing was allocated for following measures:

- 1) Development of coastal and inland fishery:
- 2) Modernization and improvement of fishing vessels, refrigerator ships and processing ships fishing in the offshore of the Baltic Sea and the Gulf of Riga, as well as for construction or acquisition of vessels and renovation of quaysides.
- 3) The development of aquaculture.
- 4) Compensation of losses aroused from natural disasters (storms, floods, fire) to persons that perform fishing in the coastal waters and inland waters (including individual fishermen) or are engaged in aquaculture. The compensations are foreseen for fishing gears, fishing vessels/boats, and hydrotechnic buildings for cultivation of fish/crayfish; grown up fish/crayfish and fish/crayfish bait.
- 5) Organizing of specialized trainings on fisheries and professional training for employees of the fishery sector at specialized educational establishments or special courses for qualifying or increasing of qualification in fishery, aquaculture and fish processing.
- 6) Identification of dioxin concentration in fish, fish products intended for human consumption and production auxiliary materials.

The problem with the allocation of subsidies arises from the fact that no project selection criteria are applied, there is no evaluation done on economic development of enterprises and their viability. Thus extensive fishery was supported and less effort was put for increase of its quality. Similarly to other neighbouring countries (e.g. Denmark, Sweden) in Latvia no calculations are made on the long-term economic efficiency of subsidies to the fishery sector. The income from relatively modest catches usually do not allow paying off of the public subsidies and private investments in fishing fleet, therefore the fishing companies make losses (according to official accounting statistics) and use the income from illegal fishing or become bankrupt in strong competition. The allocation of subsidies is also not directly connected to the national policy of fishery e.g. development subprogramme.

According to the Law on Agriculture (paragraph No 16) there are annual subsidies provided from the state budget for increase of the competitiveness of agricultural products in the internal and external

markets. The Law of Agriculture also provides for subsidies for the fishery sector. The annual support to the Latvian fishery sector exceeds 500 000 lats (approximately 900 000 euro). Subsidies are aimed to ensure the increase of the competitiveness of the fisheries sector and implementation of the EU requirements, while ensuring also further development of the entrepreneurship in the fisheries sector and preservation of the working places in the coastal villages.

The current system of control of fishing can not be considered as wholesome. For instance the Law on Fishing provides that National Board of Fisheries (Article 5, part 3) manages the fish stocks in inland waters, territorial waters and economic zone waters. While in the statutes of National Board of Fisheries there is no reference given on these duties.

At the same time the Article 18 of Law on Fishery provides that protection and monitoring of the fish stocks in inland waters, territorial waters and economic zone waters should be carried out by State Environmental Inspectorate, Marine Environment Board and Regional Environmental Boards, as well as the authorized person from municipality if the fishing issue touches the administrative territory of respective municipality. If one state institution 'manages' the fish resources and the other institution 'ensures' the protection and monitoring of them, then this kind of distribution of duties can not fully ensure the management and protection of the fish resources.

Full responsibility on management, use and protection of the fish stock could be entrusted just to one state institution namely to the National Board of Fisheries.

Latvian fishery receives state subsidies since 1998 and they are small in comparison with subsidies to other agricultural sectors. Fisheries sector receives on average 400 000 Latvian lats annually, but in 2003 the amount of subsidies reached 550 000 Latvian lats (including 30 000 for dioxin analysis).

Another problem has to be stressed here – Latvian fishery administration has made no analysis on the optimal size of Latvian fishing fleet. The only estimations on the necessity to reduce the fishing fleet are based on the available financing from FIFG and necessary co-financing from Latvia e.g. the number of the vessels by which the fishing fleet would be reduced depends on the available financing. There are no modulation and research done on the size of the fleet that would satisfy the needs of Latvia and whether broader reduction of the fleet is necessary or keeping of the most effective vessels in order to ensure sustainability of fishery.

The criteria for allocation of financing from FIFG in fishery sector (scrapping of fishing vessels, modernization and renewal of the fleet and development of coastal fishing) are not elaborated enough. The problem seen here is that the financing would be granted to those projects that would be submitted first.

The socio-economic role of the coastal fishing in the development of coastal regions is not reflected in the planning document. This conclusion can be drawn when comparing the financing in percentage allocated for the fleet operating in the offshore of the Baltic Sea and the Gulf of Riga and for development of coastal fishery. The management of the National Board of Fisheries has excluded from the measure “Development of small-scale coastal fishing” possibility to organise trainings, seminars and other activities that are allowed with the Council regulation 2792/1999 that prescribes the rules of European Community and order for receiving structural assistance in fisheries sector. Thus clause 11.4 of the Article 11 “Small-scale coastal fishing” states that “Hereafter mentioned projects *inter alia* can be regarded as integrated collective projects: 1) Safety facilities on board of fishing vessels and improvement of hygiene and working conditions; 2) Technological innovations (more selective fishing methods); 3) Organisation of production, processing and marketing chain (promotion of added value to the products); 4) Professional education and retraining.

In the near future this would negatively affect the life of the coastal fishermen. Hopefully this mistake would not be repeated when planning the use of the FIFG financing from 2007 (next programming period), although there is high probability that structural assistance in the EU from public funds for fisheries and agriculture may be stopped.

Lithuania

The main criterion to appoint the exact amount of quota is the capacity of the enterprise – how many ships the enterprise has. The preference is given to the enterprises which do not have any violations of fishery rules and is attempting to modernize their old fishery equipment. But this is the official version of how quotas are distributed. There are certain fears of the existence of bribing ministry officials, in order to receive better quotas.

The review of the EC on the implementation of EU fishery regulations and guidelines in Lithuania showed in spring 2004 that EC had serious concerns on the quality of fishery control and inspection in Lithuania. According to the EC review, Lithuania must substantially strengthen the implementation of control and inspection of fisheries in order to fulfil EC requirements before 1 May 2004. The Commission report warned that Lithuania must take “immediate and decisive action” to improve inspection and control of Lithuania’s fisheries.

Poland

Detailed regulations in form of orders are issued by the minister responsible for agriculture (thus fisheries) on:

- Management and Protection of Living Resources of the Sea,
- Catch Reports,
- Fishing Licenses,
- Fish Catch Quotas
- The procedure and way of Sea Fisheries Inspectors’ co-operation with local maritime administration and other state services like e.g. Police and Border Guard.

The last one, issued in June 2003, caused fierce protest among fishermen.

They all regulate in details:

- general conditions and obligations in the Polish sea fishery,
- the structure of the Polish fisheries administration, its rights and obligations,
- basic documents (fishing licenses) and special fishing permits necessary in sea fishery,
- procedures of catch reporting (catch records in log books, landing and transshipment declarations),
- permitted minimum fish length,
- permitted by-catch,
- prohibited periods of fishing,
- areas closed for fishing,
- order during fishing operations,
- allocation of TAC of regulated species in Polish waters,
- individual catch quotas of the regulated species (now cod and salmon).

The local authority in charge of conducting fishery inspections in Poland are entitled and obliged to regulate sea fishing accordingly to above outlined law by:

- own orders pertinent to the conservation of living resources and defining the ways of conduct when fishing at sea waters,
- control and enforcement of sea fishery related laws,
- co-operation with other state guards and inspections, including Polish Border Guard, Police, Environmental Protection Inspection, and Food Quality Inspection,
- exchange and of information and joint enforcement activities with foreign sea fisheries administrations, especially from Denmark, Germany and Sweden,

- co-operation with scientific institutions oriented on sea fisheries,
- conducting administrative cases against legal and physical persons who break the sea fishery related law,
- ordering fines accordingly to the above,
- confiscating and auctioning the unmarked fishing gear deemed to be used for illegal sea fishing.

Regional Inspectors are also entitled and obliged to issue orders regulating minimal allowed length and fishing closure time periods related to the Polish inland waters considered as sea waters for purposes of fishing (e.g. Lake Dabie in Szczecin).

Measures for the verification of catches and landings: Catch data recorded in the logbooks and landings declarations are collected from fishing vessels and sent to the Regional Sea Fishery Inspectorates (RSFI) where they are summarized. E. g. for 2003, the following measures for the verification of cod catches and landings were scheduled in Poland to avoid misreporting of catches and other infringements related to cod fishery:

- cross check between the quantities of cod landed and the quantities recorded in the logbooks of fishing vessels,
- verification of catch composition by species and by weight (counting boxes and/or weighing),
- verification of minimal legal cod size,
- verification of fishing activities targeted on other species and fish landings, during the summer bun on cod fishing (period 1 June – 31 August).

Mutual exchange of inspectors between Poland and Germany took place in 2003.

Regarding the cod fishery, implementation of the following technical measures is controlled in Poland:

- permitted size of the gear used in cod fishery, including construction elements (exit windows) of trawling gear,
- permitted length of nets used in cod fishery,
- permitted soak time of nets used in cod fishery,
- minimum legal size (total length) of cod,
- permitted by-catch of cod in herring and sprat fishery,
- permitted by-catch of undersized cod.

The tasks and duties of RSFI include mainly controls at sea, in ports and fishing harbours, and also at store facilities and fish processing plants. The control is carried out with the cooperation of the police, border guard, customs and veterinary services, port services of Maritime Offices.

In 2002/2003, inspection and surveillance in ports took place not only in earlier designated Priority Ports: Swinoujscie, Dziwnow, Kolobrzeg, Darlowo, Ustka, Leba, Wladyslawowo, and Hel (16 inspectors, plus 2 inspectors from Szczecin that can be sent

to the Pomeranian Bay and/or the Szczecin Lagoon for conducting controls, work there), but also in Mrzezyno, Jastarnia and Gdynia (here another inspector is based). All together there are 39 persons employed by RSFI involved in control activities along the Polish coast. In the Polish territorial waters four inspection ships operate, while routine fishery inspections in the Polish EEZ can be carried out by the Polish Border Guard vessels.

In the Polish territorial waters 4 inspection ships operate, while routine fishery inspections in the Polish EEZ can be carried out onboard Polish Border Guard vessels.

The RSFI carries out the control and supervision over the fishing and unloading in ports. The most important ports from the point of view of the quantity of unloaded fish, the number of serviced fishing cutters, available facilities and equipment are the following: Kolobrzeg, Darlowo, Ustka (central coast), Wladyslawowo and Hel (east coast).

Subsidies

Currently Polish legislation provides for the following forms of State aid to fisheries:

- exemption from VAT and excise tax on fuels for fishing vessels [the Act of 8 January 1993 on the tax on goods and services and the excise tax. On its accession to the EU, Poland will undertake obligations similar to those in force in EU Member States in the area;
- subsidising loans taken for the purchase and storage of sea fish [the Act of 5 January 1995 on subsidising interest on some bank loans.
- subsidising interest rates on investment loans under the framework of the 'Sectoral Programme for the development of Fisheries in Poland for the years 2000-2006 BR/12'. The aid is granted pursuant to the Act of 29 December 1993 establishing the Agency for Restructuring and Modernization of Agriculture and Regulation of the Council of Ministers of 30 January 1996 on detailed lines of action of the Agency for Restructuring and Modernization of Agriculture and modes of their implementation.

EU subsidies

Financial support is available to the EU fisheries sector under the Financial Instrument for Fisheries Guidance (FIFG). For the period 2004-2006, 201.83 million have been programmed from the FIFG for the restructuring of the Polish fisheries sector. The aim is to achieve a better balance between the fishing capacity of the fleet and available fish resources, thus contributing to sustainable fisheries. This will mainly be achieved through the scrapping of fishing vessels. Significant investments in aquaculture, processing and port facilities as well as aid for socio-economic measures to cushion the effects of the reduction of the fishing fleet have also been envisaged. The measures that can be funded are e.g. fleet restructuring,

modernizing port facilities, developing environmentally friendly techniques in aquaculture, improving quality and sanitary conditions of fish products and promotion of market.

Sweden

As an EU member, the rules and regulations of the CFP apply. In the Swedish case, the National Board of Fishery is responsible for the implementation of the CFP, including issuing of permits, gathering of statistics and declaring of fishing moratoria when the quotas are filled. To ensure quotas are not exceeded, several measures can be taken such as a temporal or a special ban.

Coastal recreational fishing is unregulated with handheld tools along the Swedish coastline.

Subsidies are calculated to sum up to 423.5 million SEK annually, around 40% of the production value. After entering the EC, the Governments expenses for the fisheries has tripled, caused by EU subsidies but also due to the national costs has

increased by 80%. The subsidies benefit the intensive large-scale fisheries to the detriment of the coastal small scale fisheries.

Control measures are taken accordingly to CFP regulations. The Coast Guard carries out inspections at sea; about $\frac{1}{4}$ of the available Coast Guard ships are carrying out inspections but the number of ships in sometimes increased. The inspections focus on if the fishing is carried out in the correct time and place. Often, but not always, are the following parameters checked: fishing method, if the gear fulfils the legal requirements, by-catch, size of the target species and that the log is correct. The Coast Guard also carries out landing inspections. The cost for inspections is 140 million SEK annually.

Estonia is the only Baltic region country where the Ministry of Environment are responsible for fishery regulations. It may be time for the other Baltic region countries to try this approach.

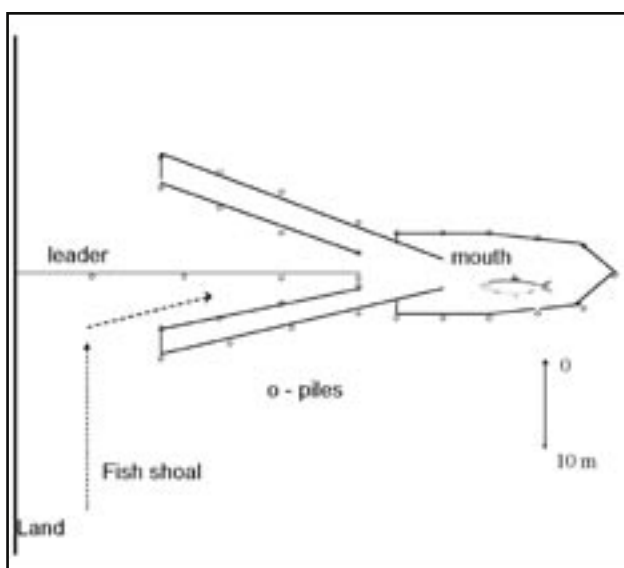


Fig. 1: Trap net
(after Döring, 2001)

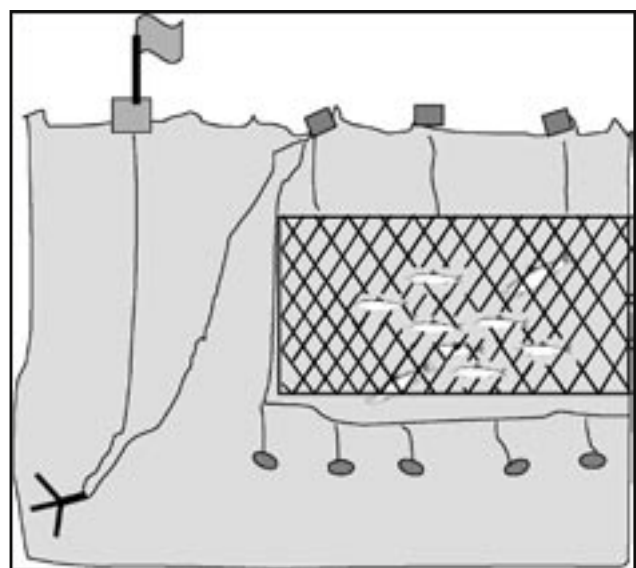


Fig. 2: Gillnet
(after Döring, 2001)

Ecological consequences of some fishery practices

Table 1: Different fishing methods and their ecological consequences

(Based on Döring, 2001)

	by-catch of undersized individuals of the target species	by-catch of non-target species	by-catch of birds and marine mammals	negative consequences for the whole ecosystem
gillnet	low	low, if good fishing places chosen	partially high – research with pingers hardly successful	low, because in the open water
trap net	low, but higher than with gillnets	no real problem because by-catch survives	traps must be covered, little information about by-catch of marine mammals	low, because of fixed position
long-lines	low	low in most cases	in some fisheries a great problem	low
pelagic trawl	depends on mesh sizes, problems with survival rate of escaped fishes ¹	great problem in some areas, e.g. cod by-catch in the Baltic Sea	low	low
bottom trawl	high, because escape windows or mesh sizes are not adequate to avoid by-catch	high, because all fishes in front of the ground rope are startled (up to 95%)	low	high, destruction of seabed, plowing of ocean floors, levelling of structural elements etc.

Gillnets and traps are very selective in the case of juveniles and non-target species and the by-catch could be released alive out of the traps.

The problem is that this type of fishing gear is labour intensive and not so effective as big pelagic trawl nets. Therefore this inshore fishing is in a bad business situation and will disappear over the next decades if things do not change. If the big industrial ships have to pay for their environmental impacts things would probably change immediately.

In autumn 2002 the Estonian Marine Institute made an experimental trawling in the Gulf of Riga to get information about the impacts of different fishing gear to the herring stock. The results were that 1000 tonnes of herring, which is caught with pound nets, consist of 39.1 millions individuals, but 1000 tonnes of herring caught with trawls on the contrary consists of 62.2 millions individuals. So for every 1000 tonnes of herring caught with trawls, 23.1 million (37.1 %) more individuals of herring are caught than with trawl compared with pound nets. Additionally one has to consider, on comparing impact of different fishing gears, the hidden death rate. In pound nets it is marginal (estimably 1-2 specimens per kilogram).

But calculations say that the hidden death rate in case of using trawlers of more than 300 horse power will be near to one, using trawls less than 300 horse powers will be approximately 1/3. *Trawling can be viewed as more harmful than netting, as much as 60-70% more detrimental.*

It has to be stressed here that trawling always is less selective than fishing with nets. The design of nets itself helps to create greater selectivity in the fishing process. Trawls with small size of meshes are particularly dangerous. *New technologies for more selective fishing need to be developed, because the current trawling method does not allow separating the by-catch of undersize fish.*

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Examples of less harmful practices

The herring fishery has been and is still most important fishery in Estonia, Latvia and Lithuania. In older times coastal fishermen caught herring mainly with gillnets. They fished near the coastline where the main spawning areas are. In several Baltic region countries small-scale fishermen use pound nets in the herring fisheries today. These static gears have very low by-catch rates. The big mesh sizes of pound nets lead to catches of big fishes out of the shoals only and very few individuals of other species (e.g. perch, pike-perch and cod). By-catch out of pound nets has a relatively high survival rate. The coastal fisheries have long traditions in coastal regions with lots of job opportunities in the past, but less and less in recent years. This trend is observed in all Baltic region countries. Coastal herring fisheries use less fuel, due to the use of static gears. *Herring fishery with pound nets is a very sustainable and good example.*

Small-scale fishing for flounder, except for when fished by bottom trawling, shows good sustainability. Small-scale coastal perch and pike-perch fisheries also show good sustainability, particularly in the Bothnian Bay where perch stocks are still in good conditions.

Trawling gives much smaller specimens compared to the use of passive gear. Trawls catch a lot of juveniles and unwanted species, which will usually be discarded. *The trawler by-catch of juveniles and unwanted species, which do not survive the catch, are causing sharp stock mortality increase.*

To this day a restriction of using engines stronger than 300 horse-power trawlers in the Gulf of Riga is in effect so as to protect Baltic herring stocks; bigger trawlers using bigger trawl nets cause bigger damage. In several Baltic region countries big trawler owners are lobbying the authorities to remove this restriction.

Herring fishery with pound nets is a very sustainable and good example.

Small-scale fishing for flounder, except for when fished by bottom trawling, shows good sustainability. Small-scale coastal perch and pike-perch fisheries also show good sustainability, particularly in the Bothnian Bay where perch stocks are still in good conditions.

The trawler by-catch of juveniles and unwanted species, which do not survive the catch, are causing sharp stock mortality increase.



Harmful practices

Economists talk a lot about economical efficiency. In the past it has affected Baltic fisheries policy, leading to big trawlers (vessels over 300 horse power). 11 big trawlers were sold to Estonia alone during last 10 years from western countries (Sweden, Denmark) (approximately 600-800 horse power). Big trawlers have much larger trawls, causing higher by-catch rates of juveniles. In an experimental trawling in Riga Bay the proportion of undersized herring in big trawls catch was 20% and in smaller trawls 5%.

During the last 4-5 years the coastal-fishery has lost 20% of its fishing opportunities to trawling fishery due to fishing rights auctions in Estonia. The herring price in spring when the coastal fishermen are catching herring is very low. One of the reasons is that owners of refrigeration plants are usually owners of trawlers also and they are interested to appropriate the coastal fishery herring quota. Therefore the situation of the coastal fishermen is very bad at the moment. Low income prevents net investments and many fishermen are giving up their business in the last years. Could coastal herring fishery with static gear survive?

After the Second World War fishing with trawls developed in the Gulf of Riga, wherewith endangering the stock of the sprat. Particularly dangerous was trawling in the Irbe strait when the fish population from eastern part of Baltic Sea prepared itself for spawning in the coastal waters of the Gulf of Riga. Those days the scientists were convinced that it did not matter when and under what circumstances the permitted fish quota was caught. Thanks to the efforts of fishermen trawling in the Irbe strait was prohibited.

The fishermen also repeatedly kept warning that fishing in large quantities of at that moment still unprotected fish species, like sculpins and eelpouts, in the Gulf of Riga and flatfishes in the Baltic Sea should not be allowed. Unfortunately the consequences of ignoring these warnings can be observed even nowadays, because the stock of sculpins and eelpouts in the Baltic Sea has not been regenerated up to previous level and the stock of flatfishes in the territorial waters of Latvia is still endangered. Though the damaging impact on environment of bottom trawling is well known, the fishing with the bottom trawls is still not prohibited in the Gulf of Riga and the Baltic Sea.

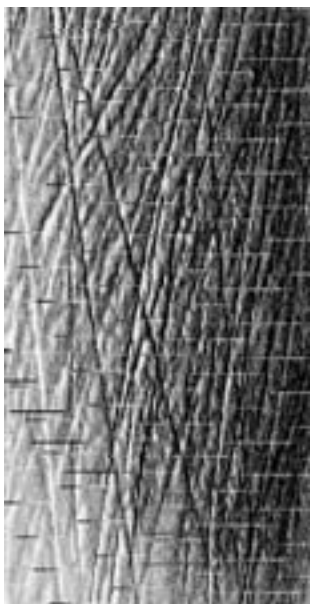
Ecological effects of non-sustainable fishing practices

The catch volumes in the Baltic Sea have sharply decreased as a result of bad fishing praxis, pollution and eutrophication of the Baltic Sea. Interviews with the fishermen fishing in the offshore areas of the Baltic Sea for herring and sprat verify the sharp decrease of fish stocks, because their fishing vessels have to look for fish stocks for several hours or even days.

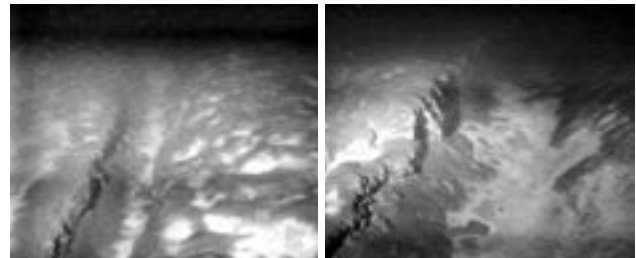
Bottom trawling

The Baltic Sea's cod stocks are in a crisis. This is due to the excessive capacity of the fishing fleets coupled with the main deployed gear—bottom trawls—that has inherent weaknesses. This conclusion has been reached by ICES, which has categorized both the western and eastern cod stocks of the Baltic Sea as being outside 'safe biological limits'. However, a viable stock of cod is found in the Öresund, due to the use by professional fishers of gill nets since a trawling ban was imposed there in 1932.

A bottom trawl acts as a sack hauled over the seabed. It has a poor selective ability to separate between both different species and sizes/ages of fish. Trawling is responsible for 50–60 per cent of all non juvenile cod in the Baltic Sea being caught every year. One of three cod is caught under 38 cm in length, before it is able to spawn. Bottom trawling also harms or kills other bottom living species and physically impacts the bottom substrate. Larger fishing boats, more powerful engines and new technology have facilitated the exploitation of previously untrawled areas. The responsibility for the Baltic Sea's cod stocks lies with the region's coastal countries and the EU. Denmark, Germany, Sweden and Poland have a special responsibility, as together they account for 84% of the trawled catch of cod in the Baltic Sea.



A sonar image of trawl-door tracks in the Koster-Väderö area in Bohuslän county. Image produced by Marin Mätteknik AB (Göteborg) in collaboration with Tjärnö Marine Biological Laboratory. Picture: Tomas Lundälv.



Tracks from trawl-doors at 60 m depth south of Karlskrona, Sweden. The tracks are approximately 0.5 meter deep and 1 meter wide. Image from the department of Engineering Geology at Lund University.

Besides the target species—cod and flatfish—bottom trawling kills and harms other bottom-living animals. Inventories of animal species from frequently trawled soft-bottom areas of the Swedish west coast have shown that certain species are scarce in these areas compared with untrawled areas.

Studies have also shown that the composition of communities in trawled areas takes a long time to recover even on soft-bottoms. In reality, recovery is effectively prevented in repeatedly trawled areas. Even animals on hard bottom areas can be impacted, for example when trawls inadvertently scrape underwater rocks and reefs.

Due to scouring and abrasion by trawl-doors and the underside of the trawl, smaller stones on the bottom are moved and other important structures are altered. Intensive trawling year after year in the same area results in the seabed becoming less varied and a less attractive habitat, for example, as refuges for small fish and shellfish.

The trawl-doors dig into the bottom and, together with abrasion and turbulence caused by the passage of the trawl, result in large clouds of sediments being raised from the bottom. This can result in hard-bottom areas being smothered by deposits, and remobilization of pollutants that have accumulated in sediments. As organic material is also resuspended from the sediments, oxygen is required to break it down thereby contributing to the risk for oxygen deficiency in the sea.

By-catch

By-catch of other non-target species of marine organisms other than fish is of great concern in the Baltic. Sea birds and marine mammals get entangled in fishing gears every year in high amount. A minimum 800 of grey seals are taken in nets yearly. This happens mostly in the coastal waters of Sweden, Finland and Estonia, where grey seal occur in higher number than in the south-western part of the Baltic.

By-catch causes significant mortality amongst Baltic population of harbour porpoise, which used to be abundant only at the beginning of 1900s, and is considered now to be close to extinction.

The only successful estimation of the population size carried out in 1995 gave the results of approximately 600 individuals left in the western Baltic.

Porpoises are by-caught in fishing net mostly in coastal, very shallow waters, in their natural habitat. Set gillnets, including Peter nets (salmon gillnets used by Polish fishermen in the area of the Puck Bay), usually set with one anchor, or sometimes even used as driftnets, are documented to pose the threat to porpoises. Only in Poland a minimum of 5-6 individuals are taken annually in nets, which are, taken into consideration the precautionary approach of reducing by-catch of porpoises below 1% of population size, too high for survival of those cetaceans in the Baltic.

The Recovery Plan for Baltic Harbour Porpoises elaborated in 2001 by representatives of science, fishery, environmental NGOs, and governments of Baltic region countries recommends to develop in close co-operation with fishermen the measures of reducing by-catch in areas where the occurrence and by-catch of porpoises has been reported. In Puck Bay, chosen as a "hot spot" for hydroacoustic

monitoring, studies are carried out to observe the harbour porpoise seasonal occurrence and the efficiency of

using acoustic deterrents.

Pound nets and trap nets have low by-catch frequencies of birds. On the contrary, by-catch of birds associated with gillnets fishing is unfortunately a quite frequent phenomenon. Especially species which are under water for longer time will entangle in the gillnets. The most common by-caught species is the long-tailed duck (*Clangula hyemalis*).

1.5 million wintering seabirds inhabit the Western part of the Gulf of Riga, the Irbe Strait and the Baltic Sea coastal zone. The first data concerning seabird by-catch in Latvian coastal fisheries was obtained in 1994 but more a detailed analysis was possible in 1995. The estimation of drowned seabird species composition and number in different years, seasons and fishing gears based on information from coastal fishermen voluntary logbooks. The total number of seabirds caught in coastal fishing gears (Latvian logbook data) was 576 in the period of 1995 -1999. More than 95% of the seabirds drowned. The number of caught seabirds varied. 54 seabirds were noted in 1995, 59 in 1996, 175 in 1997, and 81 in 1998 but in 1999 as high as 153.

Those differences by years mainly were connected with meteorological conditions in period from autumn to spring. More than 98% of the waterfowl were found in fish gillnets with different mesh size (18-100mm). Only 7 seabirds were caught in fish traps or eel fykenets. 38% of drowned seabirds were long-tailed ducks (*Clangula hyemalis*) and 29% not identified "diving ducks".



Seabird species	Gulf of Riga		Baltic Sea		Total	
	%,by number	number	%,by number	number	%,by number	number
Long-tailed ducks	35.4	128	42.5	88	38	216
Diving ducks	22.9	83	39.6	82	29	165
Divers	20.2	73	8.2	17	15.8	90
Mergansers	3.6	13	1.9	4	3	17
Cormorants	3.3	12			2.1	12
Auks	5.2	19			3.3	19
Gulls	0.8	3	3.9	8	1.9	11
Others	8.6	31	3.9	8	6.9	39
Total	100	362	100	207	100	569

Species composition of waterfowl by-catch in Latvian gillnet coastal fishery in 1995-1999.

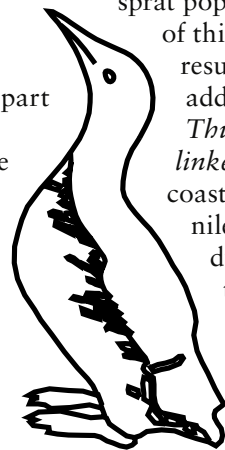
The most frequently by-caught bird is the long-tailed duck. Red-throated divers (*Gavia stellata*) and black-throated divers (*Gavia arctica*) also often got tangled in fishermen nets (15.8% by number). Auks (*Alca torda*) were mostly found in nets during autumn migrations along the Riga Gulf eastern coast but cormorants (*Phalacrocorax carbo*) in the southern part of the Gulf near their nestling areas. During the period of observations from 1995 several other bird species drowned in fishing gears were mergansers (*Mergus spp*), goldeneyes (*Bucephala clangula*), velvet scoters (*Melanitta fusca*), great crested grebes (*Podiceps cristatus*), among others.

The number of drowned seabirds taken from nets in coastal areas of the Gulf of Riga was 1.3 times higher than in the open Baltic Sea. Also species diversity of by-caught seabirds was higher here. The net fishery in the Latvian coastal waters of the Gulf was more active compared to the high seas fisheries. The total allowed gillnet limit in 1999 in the Gulf of Riga was 1740 nets, each up to 100 m long but in the shallow waters of Latvian Baltic Sea restricted to 900 nets. At the same time the total number of days without storms and suitable for fishing at Baltic coast was 1.5-2 times less than in Riga Gulf.

At the end of 20th century materials used for production of nets have improved. Thin 0.15 – 0.2 diameter monofilament gillnets were introduced instead of thick capron nets. Invisibility and disposal of net sets increased entangling and drowning of diving seabirds. The use of monofilament gillnets in Latvian coastal fishery in the period 1992 – 2000 sharply increased and their part today is 50 – 70%. The impact of the coastal fishery on migrating or wintering seabird populations in Latvia will probably increase in the nearest future.

The local fishermen who registered by-catch in voluntary logbooks were only about 5% of all Latvian coastal fishermen. The obtained information would also be limited because each fisherman had reasons for not reporting by-catch: killing birds is not furthering good public relations and to protect the fishery from further restrictions. Although the Latvian coastline is 500 km long, the intensity of coastal fisheries is high, especially in the southern part of the Gulf of Riga. The estimated seabird mortality in gillnets in the period 1995 –1999 fluctuated between 2500 and 6500 birds per year.

In 1996 and 1997 registered drowned auks was only 1% but in 1998 their part of the by-catch reached 7%. Six auks from the southern part of the Gulf of Riga were ringed in Sweden and Finland. The increase of auk by-catch would be connected with changes of their population size in the Baltic. The gillnet fishery in the southern areas of the Latvian Baltic Sea potentially endangers the migration of rare species such as Steller's Eider (*Polysticta stelleri*).



The gillnet fishery in the southern areas of the Latvian Baltic Sea potentially endangers the migration of rare species such as Steller's Eider (*Polysticta stelleri*).

By-catch causes significant mortality amongst Baltic population of harbour porpoise, which used to be abundant only at the beginning of 1900s, and is considered now to be close to extinction.

Ecosystem effects

The main ecological effect of fishery is the removal of large quantities of fish, in particular target species. Fishing always leads to a decrease in the mean size of fish within a stock as well as a decrease in biomass and sometimes numbers.

The effect of fishing on non-target species is clearly of great importance if the ecosystem effects of fishing are considered.

Remarkable changes have taken place in the fish community in several parts of the Baltic Sea. The abundance of predatory fish has been low during the 1990s and further decreased as a result of removal of large (predatory) perch during the late 1990s. This and partly also favourable environmental conditions (warm summers, progressing eutrophication) have resulted in sharp increase in the share of cyprinids like herring and sprat in the local fish community, in some areas from <10% during the beginning of the 1990s up to ca 90% in 1998-1999.

Fishery statistics are based on reported catches. Catch quotas are based on fishery statistics. If the real catches are not equal to the reported catches, problems occur. If the real catches are above the reported catches, stocks will further dwindle due to too high quotas. The stock developments of cod and sprat are good examples of ecosystem effects. Mature cod feed on sprat, but sprat feed on cod eggs and immature cod. A big cod population controls the sprat population, but sprats exert a certain pressure on juvenile cod, a kind of population control.

When the cod population crashed in the beginning of the nineties, there is little surprise that the sprat population increased dramatically. As an effect of this trophic level change, fewer zooplankton resulted in a situation where algae could thrive, adding to the problem with eutrophication. *Thus, overfishing and eutrophication are linked.* A recent Swedish study found that the coastal population in the Baltic Proper of juvenile perch, pike and pike-perch had collapsed, due to the very low frequency of zooplankton. This finding further strengthens the theory of ecosystem change.

Illegal, unregulated and unreported fisheries (IUU)



Tommy Svensson/prb

The ICES Baltic Fisheries Assessment Working Group estimates the level of IUU to be as high as 35–40% in the Baltic cod fishery, around 20% in the Baltic sprat fishery, ca 35% in the Baltic herring fishery (2004) and about 10% of reported landings in the salmon fishery.

Estonia

In 2002 Estonian environmental inspectorate found 3442 violations of fishery acts. In most of the cases (40%), the lawbreaker was unknown. 31% of violations were committed by recreational fishermen, 20% by commercial fishermen, 6% by restricted fishermen and 3% by purchasers.

Germany

All fishermen polled in a recent questionnaire are convinced that illegal landings in German professional fishing are absolutely no problem because of extensive controls. Bans are obeyed and good net qualities preserve manipulations. One fisherman supposes problems only exist in landing the catch: there would be an opportunity of illegal marketing by selling the catch where controls are not strict. Fishermen admit that the bad business situation could be an illegal fishing appeal. According to one fisherman the quota-regulations combined with a huge demand on fish cause a lack of supply. That means that demand is bigger than official supply.

Further reasons for illegal fishing are seen in the lack of incentives for long-termed catches – fishing rights respectively exist for one year – and in frequent changes for prescribed fishing nets.

Because of their high costs such regulations do not have sufficient acceptance within the fishermen.

There is no government control of the catch of the numerous anglers. Against this background for fishermen and some “no-fishermen” the landings of anglers is an increasing problem. Sometimes anglers even deplete the nets of professional fishermen.

Like the “no-fishermen” the German professional fishermen believe that illegal catch landings represent a much bigger problem in Eastern Europe.

Assessment of certain reasons for illegal fishing

The following reasons have to be emphasized:

- “Bad economic situation – this way better prices are possible”
- Management rules are not acceptable (“Brussels has no idea!”)
- “I do not get advantages by long-termed catches – if I do not catch the fish, someone else will do.”

All fishermen assess the following statements as incorrect: “All fishermen are doing it that way.” and “Why should I show consideration – there won’t be anyone after me”. Some “no-fishermen” consider these statements being correct. One fisherman announces that illegal catch does not get higher prices. Two fishermen think, that the statement “I do not get advantages by long-termed catches – if I do not catch the fish, someone else will do.” is partly correct. They suggest that Danish industrial trawl fishing impedes all German efforts for a sustainable use of cod. Four fishermen do not see “too poor inspections” as the reason for illegal fishing. Supervision in Germany would be good and accurate, so illegal landings would be prevented. However, the fifth fisherman points out that German inspections are conducted too rare and not accurate enough.

Lithuania

1. Too many ships. The quotas are too small for each individual ship.
2. Too many fishery enterprises and fishing gear in the coastal area.
3. Insufficient control throughout the fishery, from the landing to the primary market.
4. Unregulated primary market.
5. Inefficient use of the VMS, Vessel Monitoring System
6. Illegal transfer of fish to the other vessels and illegal landings in foreign ports (for example in Sweden).
7. Shortcoming of the legislation regulating fisheries.

Poland

Illegal (forbidden) practices in fishery according to the Polish Sea Fishery Law:

- Destroying spawning areas, spawn and fry
- Catch of marine organisms within the protected areas
- Catch of marine organisms under the limit size or during the protection season
- Catch of marine organisms over the limit
- Throw all caught organisms overboard the fishing vessel excluding those under the limit size or caught during the protection season
- Landing, trading, storing, transporting and reloading at sea of all marine organisms caught with infringement of fishing law

Illegal fisheries in Poland concern mostly:

1. Fishing over the limits
2. Catch of marine organisms under the limit size
3. Catch of cod out of closed season
4. Use of forbidden fishing gears (trawling in the coastal area)

Fishermen seem to understand the limitation in the catch of cod according to the need of the species protection, however overfishing of cod has been reported. The decreasing quota for salmon seems to find no reasonable justification in the eyes of fishermen. In their opinion taking into account the high number of fish caught in recent years, the population of salmon in the Baltic has recovered successfully thanks to intensive stocking. Their urge for higher TACs is due to their relatively high financial participation in this activity. In consequence the salmon is being overfished considerably; numbers are not known however the limits might be exceeded even several times. At the same time fishermen complain about the imports of Norwegian farmed salmon which compete with the Polish salmon successfully.

2002 – Planned - Target Inspections: 10-12%, 40 days in Polish Exclusive Zone, 50 days in Polish Territorial Waters, Result – 800 controls in ports, infringements – 87 penalties, 301 confiscated gears.

Sweden

A Swedish Government report found the following indications of illegal fisheries and/or dishonest reporting.

1. The possibilities for illegal fishing are, in spite of government control activities, numerous, and it is difficult to prove illegal fishing.
2. The bookkeeping of fishing companies often show serious shortcomings.
3. A tendency not to accept management decisions and to disbelief authorities exists among the fishermen.
4. Shortcomings of the fishery statistics.
5. The financial situation for fishermen is suspiciously poor. Tax records show unreasonably low incomes.
6. The regulations for the unemployment benefit system for fishermen are somewhat an incentive for dishonesty.

Two relatively recent cases of illegal fishing and dishonest reporting have received attention, one case in Västervik, Swedish coast on the Baltic Proper, where the culprit was found guilty of untruthful reporting and bookkeeping. It turned out that the fisherman had taken a bigger landing than reported, revealed by tax authorities in an audit. The other case, in the Sound between Denmark and Sweden where e.g. a board member of the SFR, the Swedish Fishermen's Association, was caught red-handed by the Coast Guard when fishing in a closed zone of the Sound between Denmark and Sweden. The Sound area is repeatedly fished illegally with the use of cod trawls by Danish and Swedish fishermen. A Swedish Government study has suggested that tax audits may be the key to decrease the amount of illegal fishing (Hultcrantz 1997).

Much harder surveillance is needed in the Sound between Denmark and Sweden than the current level.

The Sound is closed for fishing, but both Danish and Swedish boats are violating the ban. Since this is the only area with healthy Baltic cod stocks, it is really needed for the recovery of adjacent fishing grounds. Therefore surveillance in The Sound is urgently needed.

Summary conclusions

- The numbers of fishing companies and fish processing companies have expanded significantly in Estonia, Latvia, Lithuania and Poland since the early 1990s. This expansion has resulted in a stronger fishing pressure on the Baltic fish resources. This development is probably also a reason for the expansion of illegal fisheries in the Baltic Sea.

- The intensive large-scale fisheries have benefited from the EU-subsidies to the fisheries sector to the detriment of coastal small-scale fisheries.

- Basically the overall management system in the Baltic Sea fisheries is a centralized system with little involvement of stakeholders.

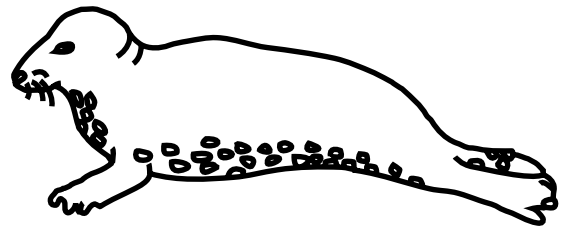
- The political pressure not to reduce quotas is so heavy that nearly all quotas are set too high compared to the scientific advice. This results in overfishing of important stocks (cod and herring), special problems with sprat and threatening the naturally spawning salmon.

- One of the main problems for the Baltic Sea Fisheries is the low acceptance of fishery rules and regulations among fishermen.

- Gillnet fishery in the southern coastal areas of the Latvian Baltic Sea potentially endangers the migration of rare species such as Steller's Eider (*Polysticta stelleri*).

- By-catch in gillnets and driftnets causes significant mortality amongst Baltic population of harbour porpoise, which used to be abundant only at the beginning of 1900s, and is considered now to be close to extinction with a Baltic population estimated today at a mere 600 individuals.

- It is worrying and alarming that the fishing industry will be the only stakeholder, outside of government authorities, represented in the administrative board of the new EU Fisheries Control Agency.



- Estonia is the only Baltic region country where the Ministry of Environment are responsible for fishery regulations. It may be time for the other Baltic region countries to try the same approach.

- Trawling can be viewed as more harmful for herring stock than pound netting, as much as up to 60-70% more detrimental (see page 27).

- New technologies for more selective fishing need to be developed, because the current trawling method does not allow separating the by-catch of juvenile fish.

- Herring fishery with pound nets is a sustainable and good example of sustainable fishery practices.

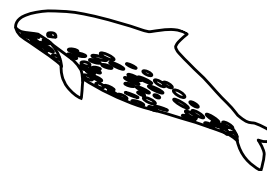
- Small-scale fishing for flounder, not using bottom trawling, show good sustainability when local stocks are not overfished. Small-scale coastal perch and pike-perch fisheries can also show good sustainability, particularly in the Bothnian Bay where perch stocks are still in good conditions.

- Significantly improved surveillance of fishing vessels is needed in the Sound between Denmark and Sweden, an area closed for cod fishery.

- The use of marine protected areas and no take zones as an important tool in fisheries management has been neglected in the Baltic Sea. Recent studies show significant beneficial results (http://www.reefrelief.org/benefit_evidence.html).

Recommendations with highest priority

Recommendations for actions of the Baltic Region Governments and of the European Union, to develop a more sustainable Baltic Sea fishery.



- 1** Introduce resources on the national level, for tracking of fish after landing by cross-checking of both sales and landing documents. Such control should immediately be introduced regularly, and be fully developed for all landings and sales within a few years.
- 2** Mandatory comparison of tax records, landing catches sales records and allocated quotas for each individual fishery-sector enterprise.
- 3** Introduce new regulations to stop the “run for the catch” approach (which means to fish as much as possible of the national TAC as quick as possible, as soon as the national TAC has been announced), which promotes overcapitalization and intensification.
- 4** Establish permanent closed areas for open-sea fisheries the whole year like in the Sound area between Denmark and Sweden, e.g. the Bornholm deep. A network of marine protected areas totally closed for fishing also needs to be put in place.
- 5** Consider the introduction of long-termed “fishing rights” for coastal fisheries in coastal areas inside the 6 nautical mile limit, for stationary fish (e.g. flatfish, pikeperch, perch, pike etc.) and for pelagic fish (sprat, herring, cod, salmon), adapted and adjusted to annual stock assessments.
- 6** Political and fishery administration decisions that in the long run replaces fishing with bottom-trawling with more selective fishing gear, e.g. gillnets and longlines.
- 7** Keep the summer ban for Baltic cod fisheries, 1 June until 31 August.
- 8** Development, on the national level, of procedures for proper consultation with stakeholders to the fishery sector (such as fishermen’s NGOs, environmental NGOs, anglers etc) before decision-making of rules and regulations for the national fishery sector. Roundtable discussions with all players in different levels could be a tool to overcome the general distrust between the players. The distrust for fishery management by fishermen must be overcome. The planned Regional Advisory Council (RAC) for Baltic Sea fisheries, could possibly become such an international forum, but national and local fora are also needed.
- 9** Development of an EU fisheries subsidies plan, for the new EU member states in the Baltic Sea region, which will safeguard the coastal small-scale fisheries in the Baltic Sea region countries. The mistakes that have been made in the former EU-countries of the Baltic Sea region, where all subsidies mainly benefited the intensive large-scale fisheries, must not be repeated.
- 10** Keep the size and capacity limitations regulating trawlers in the Gulf of Riga. The current engine power limit for trawlers is 221 kW.
- 11** Limit the number and capacity of fish-processing industries in the Baltic region countries to adapt to available fisheries resources.
- 12** Allocation of substantially more financial resources from Denmark and Sweden, to strengthen the control of Sound area (between Denmark and Sweden), a closed area for cod fishery, but with a high level of illegal trawling.
- 13** Establish NATURA 2000 sites, nature conservation areas, for all Baltic Sea river catchment areas with naturally spawning Baltic salmon, to safeguard the favourable conservation status of the Atlantic salmon populations in the Baltic Sea region.
- 14** Establish a new structure-institution for the management of the Baltic salmon, in connection with the closing of the IBSFC (International Baltic Sea Fishery Commission) in 2004-2005. The new institution, the Baltic Sea Salmon Conservation Organisation, must have at least the same openness and transparency for NGOs as within NASCO (North Atlantic Salmon Conservation Organisation).
- 15** Phase out the harpoon fishery in the Baltic Sea region, where such fishery does not have special traditional cultural heritage values.
- 16** Implement full the EU regulation of 1 Jan 2002, for marking or labeling of fishery and aquaculture products.
- 17** Phase out the largest fishing vessels in the Baltic Sea, e.g. with the main engine power over 611 kW and an overall length over 30 meters. Such restrictions will stop the largest otter-trawls, with heavy otter-boards ploughing the sea-bottom.

Recommendations with secondary priority:

18 Development of national fishery policies that primarily support coastal regions, where fishery is the most important sector that generates employment, in accordance with EU-policies.

19 Development of a credible tracking system for each fish, from the sea to the consumer, is an important part of a future sustainable fisheries certification scheme.

20 Implementation of national studies on allocation of existing and coming subsidies to the fishery sector, including calculations made on the long-term economic efficiency of subsidies to a fishery sector with a true ecological sustainable approach.

21 Introduction of a new model of total allowed gillnet limits for sustainable fisheries, in different coastal areas, to avoid over fishing.

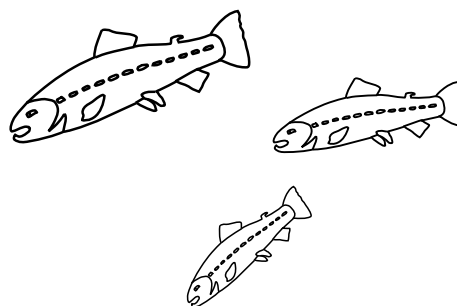
22 Introduce coastal seasonal closed areas, for fishing with certain gears in order to protect rare bird species, e.g. for the Steller's Eider (*Polysticta stelleri*), from by-catch risks. A part of the southern Latvian Baltic coast is one example of such areas.

23 Reform the Common Fisheries Policy (CFP) to support coastal fisheries primarily. CFP subsidies should primarily be used to reduce capacity, develop more selective alternative gear, improve working conditions for fishermen and to establish marine protected areas.

24 Decentralise the management of coastal fishery resources within 6 nautical miles as much as possible and introduce local management councils where local fishermen, authorities and NGOs can participate.

25 Continue the fishing-gear development in order to ultimately have no by-catch whatsoever.

26 Strict rules not allowing fish from recreational fisheries to be sold on the market.



EU accession

1 May 2004, Latvia, Lithuania, Estonia and Poland joined the EU. The only other country with contact with the Baltic Sea now is Russia. EU has exclusive competence concerning fisheries, so all member states will be part of the EU Common Fisheries Policy. This will lead to several changes in the accessions countries fisheries policies. The amount of EU subsidies in the CFP is substantial and goes in to fisheries in new EU countries which for quite a long time have enjoyed a relatively low level of subsidies. The effects of the subsidies are yet to be seen, but experiences from other member states suggest that this development needs to be closely followed. We recommend that the system of subsidies should be totally reformed.

The main fishery issue in the accession negotiations is that the Gulf of Riga is provided with special regulations. Trawlers with over 221 kW engine power are not allowed, and catches are not to exceed current levels. So far, only Estonia and Latvia are allowed to trawl in the gulf of Riga, and hopefully it will stay that way. Otherwise only minor exceptions from the CFP are found in the accession agreements, somewhat surprisingly.

The provisions in the CFP for establishing marine protected areas should be much better utilized.

In the future it is important to look out for the how the use of third country fishery agreements will be used by new EU member states (and the other EU Member States).

The Latvian accession

After acceding to European Union Latvia will benefit from Financial Instrument for Fisheries Guidance (FIFG). The information on the foreseen use of this financing is included in the Single Programming Document (SPD) for Latvia that was approved by European Commission.

The elaboration process of the planning document for the use of financing from FIFG, because not all drafts of the document (both the draft SPD and programme complement) prepared by the National Board of Fisheries were discussed with fishermen NGOs. The fishermen NGOs were just involved in the discussions of some of the initial drafts, while there have been no consultations held at all with environmental NGOs.

The fisheries administration needs to be improved significantly (the possibilities for reorganization of

the administration need to be evaluated) in order to ensure that the decisions on fisheries policy are not taken by those persons who will later implement the policy. That would lead to a situation when activities, of which the implementation is more difficult, are not implemented at all or are implemented just partly. It has to be pointed out here that institutions of state administration are created with the aim to assist the representatives of the concrete sector in all possible ways and not act as if the state institution has to exist on its own.

More efforts could be put in developing of quota system when the total available catch (TAC) for a fishing vessel or a company would be recalculated on the basis of fishing days without reference to the catch. This way there would less incentive for fishermen to unload fish illegally. Number of fishing days can be calculated from the moment when vessel leaves the port and it's easy to control. The transformation of total available catch (TAC) into fishing days is not easy task, but it's possible.

Before allocation of subsidies more evaluation needs to be done on their economic effects in all Baltic countries. The results have to be reported to some common organisation that would provide information to other countries. Unless the basic criteria for national subsidies and private investments in fisheries would not be based on similar principles in surrounding countries, the extensive fishing would continue.

One of the solutions is to assign more public financing for scrapping of fishing vessels or permanent reassignment of fishing vessels for other purposes than fishing, but on the other hand the fishermen can join quotas and buy them from other fishermen thereby the number of older and less effective fishing vessels would decrease in the fleet and the rest would have more favourable economic conditions for entrepreneurship.

Changes will come from the EU accession in Poland

The provision in the CFP to reduce fishing capacity by scrapping vessels may be used by Poland. The Polish Programme for Fishery Sector plans to scrap up to 40% of fishing vessels in years 2004-2006. A questionnaire was sent out in autumn 2003 amongst ship-owners showed that 70% of all respondents expressed willingness to scrap their vessels.

Acronyms

APES	The agency of environmental protection of the sea (Lithuania)
CFP	Common Fisheries Policy
EC	European Community
EU	European Union
EEZ	Exclusive Economic Zone
FIFG	Financial Instrument for Fisheries Guidance
IBSFC	International Baltic Sea Fisheries Commission
ICES	International Council for the Exploration of the Sea (www.ices.dk)
IUU	Illegal, unregulated and unreported
NM	nautical mile(s)
R&D	Research and Development
RAC	Regional Advisory Committee
SEPA	Swedish Environmental Protection Agency
TAC	Total Allowable Catch

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Coalition Clean Baltic

CCB was established in 1990, when non-governmental environmental organisations from nine countries of the Baltic Sea Region united in order to co-operate on activities for the protection of the Baltic Sea Environment.

CCB is a politically independent, non-profit organisation. Currently CCB unites 27 member organizations from Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Poland, Sweden and Russia.



CCB is gathering, producing and distributing information about environmental solutions for the Baltic Sea Area.

CCB co-operative projects help member organisations to combine their efforts in an attempt to restore the Baltic Sea. Development of sustainable Baltic Sea fisheries is a priority area for CCB.

THE CCB SECRETARIAT

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