

*National Data Collection Programme under
Council Regulation (EC) N° 1543/2000 and
Commission Regulation (EC) N° 1639/2001
as amended by
Commission Regulation (EC) N° 1581/2004*

National Programme 2007

31.5.2006

Ministry of Agriculture and Forestry
Finnish Game and Fisheries Research Institute

FINLAND

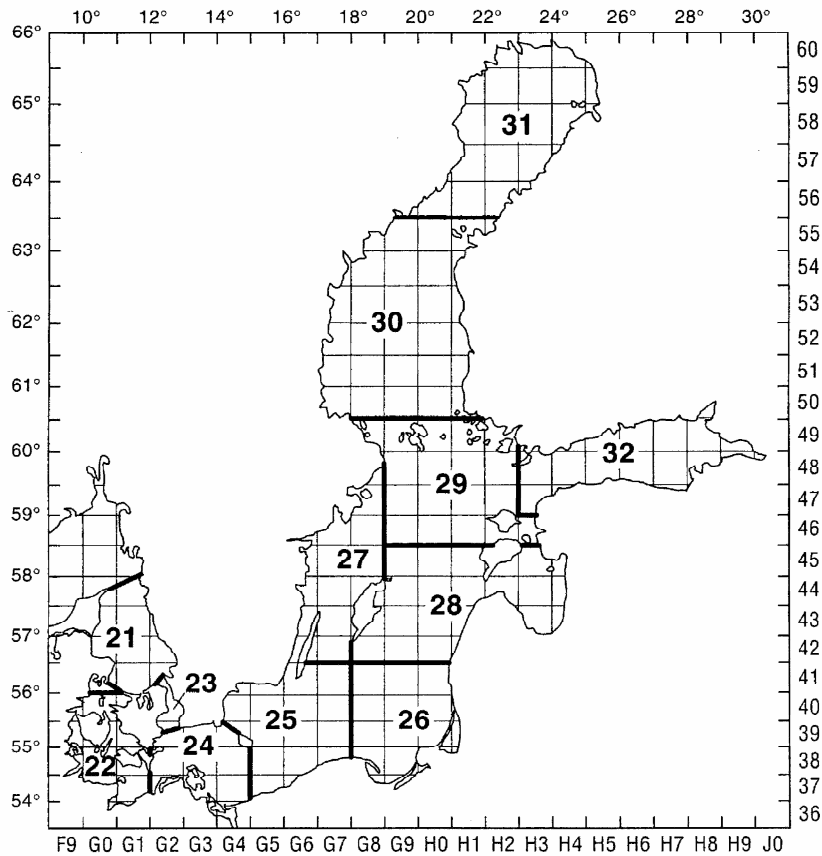


Table of contents

1	Introduction	1
1.1	<i>General framework</i>	1
1.2	<i>General description of the fisheries</i>	1
2	Participating institutes	2
2.1	<i>National correspondent</i>	2
2.2	<i>Participating institutes</i>	2
3	Module C - Fishing capacities	3
3.1	<i>MP – Planned sampling</i>	3
3.2	<i>MP – Derogations and non-conformities</i>	3
3.3	<i>EP – Planned sampling</i>	3
3.4	<i>EP – Non-conformities</i>	3
4	Module D - Fishing effort	4
4.1	<i>MP – Planned sampling</i>	4
4.2	<i>MP – Derogations and non-conformities</i>	4
4.3	<i>EP – Planned sampling</i>	5
4.4	<i>EP – Non-conformities</i>	5
5	Module E -Collection of data related to catches and landings	6
5.1	<i>MP - Landings – Planned sampling</i>	6
5.2	<i>MP – Landings – Derogations and non-conformities</i>	6
5.3	<i>EP - Landings – Planned sampling</i>	6
5.4	<i>EP – Landings – Non-conformities</i>	6
5.5	<i>MP& EP - Discards – Planned sampling</i>	6
5.6	<i>MP & EP – Discards – Derogations and non-conformities</i>	7
5.7	<i>MP - Recreational – Planned sampling</i>	9
5.8	<i>MP – Recreational – Derogations and non-conformities</i>	10
5.9	<i>EP - Recreational – Planned sampling</i>	10
5.10	<i>EP – Recreational – Non-conformities</i>	11
6	Module F - Catches per unit effort	11
6.1	<i>MP - Planned sampling</i>	11
6.2	<i>MP – Derogations and non-conformities</i>	13
6.3	<i>EP - Planned sampling</i>	13
6.4	<i>EP – Non-conformities</i>	13
7	Module G - Scientific evaluation surveys	14
7.1	<i>MP – Planned Priority 1 surveys</i>	14
7.2	<i>MP – Derogations and non-conformities</i>	15
7.3	<i>EP – Planned Priority 2 surveys</i>	15

7.4	<i>EP – Non-conformities and priority upgrades</i>	15
8	Module H - length and age sampling	16
8.1	<i>MP – Landings – Planned sampling</i>	16
8.2	<i>MP – Landings – Derogations and non-conformities</i>	25
8.3	<i>EP – Landings – Planned sampling</i>	26
8.4	<i>EP – Landings – Non-conformities</i>	30
8.5	<i>MP & EP - Discards – Planned sampling</i>	30
8.6	<i>MP & EP – Discards – Derogations and non-conformities</i>	30
9	Module I - Other biological sampling	31
9.1	<i>MP – Planned sampling</i>	31
9.2	<i>MP – Derogations and non-conformities</i>	34
9.3	<i>EP – Planned sampling</i>	35
9.4	<i>EP – Non-conformities</i>	35
10	Module J - Economic data on fishing vessels	36
10.1	<i>MP – Planned sampling</i>	36
10.2	<i>MP – Derogations and non-conformities</i>	38
10.3	<i>EP – Planned sampling</i>	38
10.4	<i>EP – Non-conformities</i>	38
11	Module K - Data concerning the fish processing industry	39
11.1	<i>MP – Planned sampling</i>	39
11.2	<i>MP – Derogations and non-conformities</i>	40
11.3	<i>EP – Planned sampling</i>	40
11.4	<i>EP – Non-conformities</i>	40
12	Data bases	41
12.1	<i>Database development and data management</i>	41
13	National and international co-ordination	42
13.1	<i>National co-ordination</i>	42
13.2	<i>International co-ordination</i>	42
13.3	<i>Follow-up of RCM recommendations and initiatives</i>	42
14	List of acronyms and abbreviations	46
15	Comments, suggestions and reflections	47
16	References	48
Annexes		49
ANNEX I.	<i>COLLECTION OF THE DATA CONCERNING COMMERCIAL MARINE CATCHES</i>	49
ANNEX II.	<i>Recommended number of samples for evaluating proportions of wild and reared Baltic salmon in Baltic Sea Main Basin</i>	50

<i>ANNEX III. Transect plan of herring acoustic survey 2006 (preliminary)</i>	<i>51</i>
<i>ANNEX IV. Data accumulating from river monitoring of Baltic salmon stocks</i>	<i>52</i>

1 Introduction

1.1 General framework

This is the Finnish National Programme proposed for 2007 (NP 2007). The work will be done under DCR: Council Regulation (EC) N° 1543/2000 and Commission Regulation (EC) N° 1639/2001 as amended by Commission Regulation (EC) N° 1581/2004.

The proposed National Programme does not have any major changes in comparison to year 2006.

1.2 General description of the fisheries

In the beginning of 2005, the Finnish fishing fleet numbered 3393 registered vessels. Most of the vessels (3237) were less than 12 meter (LOA), and they were used in coastal fishing. The overall capacity of the vessels in the beginning of 2005 was 18 000 GT and power 179 000 kW. There has been some reduction in fleet size during the last years. The fleet is divided into four segments: pelagic trawlers (142 vessels), demersal trawlers (2) and vessels with passive gears (51) that use nets and lines. The remaining vessels belong to a segment of small scale coastal fishing vessels under 12 meters.

A big part of the vessels are used seasonally only. One should keep in mind too, that depending on the winter and latitude, the coastal waters in Finland are ice covered over many months, and fishing vessels are not in use. Regardless that, fishing can be conducted under ice cover. Then fishing vessels can be replaced for instance by snow vehicles.

The total fish catch level in Finland has been 120-160 000 tons in the previous years. In 2004 commercial marine catch was about 92 000 tons. The bulk of the catch consisted of Baltic herring, 71,000 tons, followed by sprat, 17,000 tons. Commercial catch in inland waters was 5 000 tons in 2002. Half of that consisted of vendace. Total catch of recreational fishermen in 2002 was 39 000 tons, of which 8 000 tons was caught in the Baltic Sea and the rest in the inland waters.

2 Participating institutes

2.1 National correspondent

The administration of this national data collection programme is in the responsibility of the Ministry of Agriculture and Forestry (MAF), who will designate a national correspondent in charge of the implementation of this programme and the DCR.

The contact information of the Ministry of Agriculture and Forestry and the national correspondent is as follows:

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2.2 Participating institutes

MAF will be assisted by the Finnish Game and Fisheries Research Institute (FGFRI), which will designate two contact persons responsible to take care practical issues between the Ministry and Research Institute.

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3 Module C - Fishing capacities

Fishing capacity and fishing effort describe the total capacity, and the volume and capacity of different fishing techniques as well as operation amounts of different fishing techniques.

3.1 *MP – Planned sampling*

Data

The number of vessels according to segments is available in fishing vessel register. All vessels, even non-active vessels, and auxiliary vessels are included in the vessel register. The maintenance and continuous update of the register is allocated regionally to the Fishery Units of the Employment and Economic Development Centres (EEDCs). Following information is available in fishing vessel register that consists of all vessels used in commercial marine fishing irrespective of the vessel length:

- Tonnage in gross tonnage (GT).
- The continuous maximum output of main engine (kW) independently of possible delimitation of the main engine output.
- Age of the vessel

Reliability

- Information will be collected completely.

Costs included in Finland_Budget-Proposal_2007_31-May-06.xls, Worksheet C. Fish cap.

3.2 *MP – Derogations and non-conformities*

None

3.3 *EP – Planned sampling*

No extended programme

3.4 *EP – Non-conformities*

None

4 Module D - Fishing effort

4.1 MP – Planned sampling

4.1.1 Fuel consumption

Data

The information on consumption of fuel and fuel costs are collected alongside the economic data collection, see Module J.

Time scale and delay

As it is stated in the regulation, fuel consumption is considered as a part of the economic evaluation, and so it is assumed that the data on fuel consumption will be ready by the end of the year following the referred year.

4.1.2 Fishing effort and specific fishing effort

Data

Fishing effort data and specific fishing effort data for minimum programme will be obtained besides the collection of catch data. Target population of fishing effort data consists of all the vessels that are used in commercial fishing and, of all professional fishermen, who have a personal reporting obligation. Fishing effort will be collected by fishing occasion-based reports (logbooks) and so called coastal fishery reports. Fishing effort will be collected according to categorisation corresponding to the regulation.

Exceptions

For small-scale coastal fishing (vessels of under 10 meter) fishing effort can be calculated by gear, not by vessel. Therefore fishing effort can be presented only by fishing days not multiplied by tonnage or power. It should be noted that the tonnage of vessels would not necessary correlate with fishing effort of fixed gears at all, for example if fixed nets are kept under ice cover in winter fishing. Then fishing is not carried out by a fishing vessel at all.

Reliability

The data is basically complete, and required precision and confidence levels will be achieved.

Time scale and delay

Preliminary data for the reference year will be available in January-March next year. Final data will be available correspondingly by June.

Costs included in Finland_Budget-Proposal_2007_31-May-06.xls, Worksheet D. Fish eff.

4.2 MP – Derogations and non-conformities

None.

4.3 *EP – Planned sampling*

No extended programme.

4.4 *EP – Non-conformities*

None.

5 Module E -Collection of data related to catches and landings

5.1 MP - Landings – Planned sampling

Data

Target population of catch and landings data for minimum programme consists principally of all the vessels used in commercial fishing and, of all the fishermen who have a personal reporting obligation. This means that even for vessels <10m, the data is basically complete. Catches and landings will be reported according to DCR.

Catches and landings of vessels over 10 meters will be collected by fishing occasion-based reports (logbooks). Catches and landings of vessels under 10 meters (so called coastal fishery) will be collected by monthly reports. In addition, catches and landings of salmon in coastal fishery will be collected by fishing occasion-based reports. The landings of Finnish vessels abroad, as well as foreign vessel landings to Finnish ports are surveyed by logbooks, landings declarations and sales notes, and by the crosschecking of the different data. There is a landings data exchange between the relevant foreign authorities.

Reliability

The data is basically complete, and required precision and confidence levels will be achieved.

Time scale and delay

Yearly data on catches and landings will be available during the 3rd quarter of the year that follows the referred statistical year. Preliminary data for the fish stock assessment is available in the 1st quarter.

Costs included in Finland_Budget-Proposal_2007_31-May-06.xls, Worksheet E. Catch&Land.

5.2 MP – Landings – Derogations and non-conformities

None

5.3 EP - Landings – Planned sampling

No extended programme.

5.4 EP – Landings – Non-conformities

None

5.5 MP& EP - Discards – Planned sampling

There are six species in the Finnish catch that are included in the list of stocks for landings and discards monitoring (MP) in DCR: herring, sprat, cod, flounder, salmon, and sea trout. Norway lobster that does not live in the Baltic Sea is thus not caught by the Finnish vessels, and this also applies to plaice that is found in the ICES area IIIb-d, but not in the northern Baltic Sea.

Discards data is available in the logbooks/landings declarations (landings (net catch) + discards = catch (gross catch)). This data can be reported yearly. No additional discard sampling is planned within the Finnish National Programme 2007 (Table 5.1; Standard table 5.2).

Table 5.1. Overview of activities dealing with discard sampling in Finnish NP 2007

Species	Actions in NP 2007	Basis for actions	STECF-SGRN
Baltic herring and sprat	Logbook/landing data collection Derogation applied for additional sampling	Catch used either for human consumption or for animal fodder	Agreed with NP's 2003-2006
Cod	Logbook/landing data collection Derogation applied for additional sampling	Pilot study carried out in NP 2003 showed discards to be negligible	Agreed with NP's 2004-2006
Salmon and sea trout	Logbook/landing data collection Derogation applied for additional sampling	Discard data (age/size) is not needed/used in assessment	
Flounder	Logbook/landing data collection Derogation applied for additional sampling	Discard data (age/size) is not needed/used in assessment	

5.6 MP & EP – Discards – Derogations and non-conformities

5.6.1 Baltic herring and sprat

According to the catch statistics, the Finnish catch of Baltic herring in 2005 was 66 457 tons and, as reported by the fishermen, total discards of herring 79 tons (0,12%). Of these herring discards, 15 tons (19%) were reported as seal eaten (pound net catch, Finnish Game and Fisheries Research Institute 2005). From the sprat discards of 26 tons in 2005, 4 % were also reported as seal eaten. Excluding the catches damaged by seals, all herring and sprat catches are usually valuable to the fishermen and are sold either for human consumption or for fodder markets. Therefore no need for fishermen to discard is anticipated and no separate discard sampling will be conducted for Baltic herring and sprat by Finland in 2007. This derogation has been applied and accepted already in earlier years.

5.6.2 Cod

Finnish vessels use log-books that include separately the landings and discards. The Finnish reported catches of cod in 2005 was 283 tons, and according to the reports by the fishermen, there were no discards. In the NP, Finnish authorities requested derogation for sampling discards of cod. The reason for this request was that Finnish vessels operate in the southern part of the Baltic Sea, and landings take place in Sweden and Denmark. It would thus be both difficult and expensive to organise the sampling using Finnish observers. Furthermore, cod catch sampling from similar gill-net and trawl fisheries is annually organized by Danish and Swedish institutes in

ICES Sub-divisions 24-27 in their fishing zone. Data from these fisheries most likely represent reasonably well also the Finnish cod fishery.

As a reasonable solution to this problem, STECF recommended a pilot study to be performed in co-operation with neighbouring countries for comparison of cod discards estimates. In 2003, such a comparison has been done as a pilot study as suggested by the STECF. The pilot study in 2003 contained analysis of the existing primary data of discarding practice in the southern Baltic in 2001-2002 in ICES Sub-divisions 25-28, where the main body of the Finnish cod catches are taken. In co-operation with Danish and Swedish scientist, an ad hoc group met and compiled information on catch composition and amount of discards. The effect of discarding in Finnish cod fisheries and fleets have been evaluated and shown to be negligible. Therefore no discard sampling will be conducted for cod by Finland in 2007. This derogation has been applied and accepted already in earlier years

5.6.3 Flounder

According to the catch statistics, the Finnish commercial flounder catch in 2005 was 26 tons, which is about 0,13 % of the total flounder catches in the Baltic. Most of the Finnish catches are non-commercial (estimated to be 87 t in 2005). Of the commercial catches, 0.1 tons (0,6 %) were reported as discarded in the log books or coastal catch reports.

Although the information is not used in assessment, it is assumed by the ICES WGBFAS (2005) that the amount of discarded flounder is high in the Baltic cod fisheries. Since Finnish catches of Baltic cod constitute on average only 1 % of the total catches, the assumed Finnish share of total flounder discards is negligible and thus inconsequential. However, the amount of the flounder discards in cod fishery can easily be estimated from the similar Swedish and Danish fisheries in the same area.

No discard sampling will be conducted for flounder by Finland in 2007.

5.6.4 Salmon and sea trout

Finnish vessels use log-books that include separately the landings and discards. However, in the salmon vessels the reported discards consist almost solely of the seal damaged fish (and to a little extent seagull damaged fish). The discards of undersized (<60 cm) salmon released from the gear back to the sea are usually not entered in the logbooks. All undersize salmon belong to the same year-class (the latest recruited). Fish released from the long-line the fish are assumed to die, meanwhile the salmon released from the trap nets mostly survive (>80 % survival assumed).

Finnish commercial salmon catch is mainly caught by trap nets and driftnets each gear having about half of the total commercial catch. Long line catches constitute less than 10% of the total catch (8 % in 2004 and 2005). Driftnets do not practically catch any undersized salmon. Trap nets do catch undersized salmon, but in these gear fish can mostly be released unharmed. Long lines catch occasionally some amounts of young salmon. The data on the discards in long-line fishery was collected from two Finnish vessels in Dec 2004 – Jan 2005, and the results indicated an average share of 0.6 % being undersized salmon. According to logbook data, discards constituted about 11 % and 9% of the total commercial salmon catch in year 2004 and 2005 respectively. About 99 % of the reported discards were seal mauled fish, mainly occurring in the coastal trapnet fishery.

For the present the assessment utilises the total coastal catches including the discards, meanwhile the offshore catches are excluded. However, the age composition data of the catches (or discards either) has not been used. The DCR 1581/2004 allows for the derogation in the discards sampling if discarded share of the total catch is less than 10 % or if the discard data (age/size) is not used in the assessment. Based on this the Finnish salmon discards will not be sampled in 2007.

Costs included in Finland_Budget-Proposal_2007_31-May-06.xls, Worksheet E. Discards.

5.7 MP - Recreational – Planned sampling

According to DCR (Appendix XI, section E) Baltic salmon has to be sampled also for recreational fishery.

Data

The pilot study on recreational fishery was conducted in 2003. The basic result of the pilot study was that a cost-efficient data collection strategy, with respect to the reliability, is to collect data on recreational fishing every second year. Therefore there was no survey for salmon in 2006, but the survey will be conducted in 2007 (referring to the year 2006). The process of collecting salmon catches of recreational fishing in 2007 will start in the end of 2006 by planning and a preparatory work of the survey. This includes planning the inquiry forms, commissioning the frame register and designing and extracting the sample.

The statistical unit in the Recreational Fishing Statistics was the household. The term recreational fishing includes all the fishing practised by Finnish households with the exception of that carried out by professional fishermen and their households.

The data will be collected by postal questionnaire using a sample drawn from the population register maintained by the Population Register Centre. The sample size will comprise about 600 households

The sample design will be stratified sampling. The strata will be formed taking into account for instance the location of the person's municipality of residence, the type of municipality (urban, densely populated or rural) and the location of the municipality in relation to the sea (archipelago, coast, inland).

For those who will not respond to the postal questionnaire, post-sampling will be conducted as a telephone interview. The purpose of the post-sampling is to establish the proportion of fishing households among non-responders

For more detailed information about estimation procedures, please look at the methods used in 2005 for the data of 2004. (For instance http://www.rktl.fi/www/uploads/pdf/tilasto2005_62.pdf)

Reliability

The results of the pilot study proved that, the accuracy of the estimates will increase, while the sample size gets larger. On the other hand, the marginal benefit will

decrease while increasing the sample size. Salmon is caught by relatively very few fishermen, and in addition, the variation of these uncommon catches by fishermen is relatively high. Because of these facts, the confidence intervals of salmon catch estimates are always quite wide, even in the case of large sample sizes (sample size several thousands) For instance in 2002 and 2004, the sample size was 6000 households. The 95 % confidence interval of the salmon catch estimate was +/- 29% in 2002 and 46% in 2004.

The post-sampling for non-respondents helps to correct the bias resulting from the differences between respondents and non-respondents. If the bias is not taken into account, the catch and number of fishermen would be overestimated.

No precision levels are required for the recreational fishing in the DCR.

Time scale

The data for the year 2006 will be available by the end of October 2007.

Costs included in Finland_Budget-Proposal_2007_31-May-06.xls, Worksheet E. Recr Fish.

5.8 MP – Recreational – Derogations and non-conformities

None

5.9 EP - Recreational – Planned sampling

Salmon catches in rivers

The annual scientific advice of ICES on the management of Baltic salmon fishery is based on stock assessment by state-space modelling of the salmon life cycle. Essential inputs of the abundance estimation are salmon catches and fishing effort on the whole distribution area of salmon. Riverine salmon catches and salmon fishing effort are used for estimating abundance of future recruitment.

Data concerning recreational catches of salmon in rivers will be collected using postal fishing questionnaires. Questionnaires will be carried out in two rivers with original wild salmon stocks (Rivers Tornionjoki and Simojoki). In Finland, only in these two rivers have significant production of wild Baltic salmon. Information on river catches is used for estimating the number of spawners entering these rivers annually, and for planning fisheries management actions needed to safeguard and enhance the stocks of wild salmon.

The samples for the fishing questionnaires will be drawn from the local registers on recreational fishermen. The compiled registers will cover at least 90% of all licensed fishing in each river. For Tornionjoki and Simojoki, the compiled registers will then be sampled (using simple random sampling) at a rate making it possible to estimate salmon catches at level 1 precision (a precision of $\pm 25\%$ for a 95% confidence level). In Simojoki the fishermen will acquire with their fishing licence a catch questionnaire, which is asked to be returned after the fishing is over. The fishermen,

who returned voluntarily the questionnaires (only ~10%), are not included in the postal questionnaire.

- River Tornionjoki: the compiled registers will include 5,000 – 10,000 recreational fishermen, covering 100% of all licensed fishing on the Finnish side of the river. Sampling rate 1:4.
- River Simojoki: ca. 3000 fishermen, covering 100% of licensed fishing in the river. Sampling rate 1:4.

Costs included in Finland_Budget-Proposal_2007_31-May-06.xls, Worksheet E. Recr Fish (EP).

5.10 EP – Recreational – Non-conformities

The collection of the data concerning recreational catches of salmon in rivers has been a part of the approved National Data Collection Programme in several years. Without the knowledge of the salmon catches the stock assessment by state-space modelling of the salmon life cycle is impossible causing e.g. problems to annual scientific advice of ICES on the management of Baltic salmon fishery.

6 Module F - Catches per unit effort

6.1 MP - Planned sampling

In Finnish fisheries CPUE data is obtained from the log-books and coastal fishery records. For stock assessments, CPUE is usually calculated according to effective fishing time of the gear, and weighting by engine power is normally not used in the Baltic Sea area as proposed in Annex, Chapter III in Council regulation.

The Finnish commercial fishing effort and catch per unit of effort (CPUE) data are regularly used in stock assessments for two Baltic herring stocks (SD 30 and 31 stock) and for two Baltic salmon stocks (SD 22-31 and SD 32 stock).

Within the MP of national programme, sampling covers 12 fleets, which are used for stock assessments. Some of these fleets are not active every year in certain areas due to low catches, fishing regulations or restrictive weather conditions. These CPUE data series are used for tuning the assessments of Baltic herring and as an input data of Baltic salmon life history model (mainly efforts).

Since the CPUE data piles up as a by-product of other modules, no budget is requested for this module.

6.1.1 Baltic herring

Stock assessment of Baltic herring in the Bothnian Sea (Sub-division 30) is based on catches, catch composition and information of fishing effort and Finnish CPUE information on pelagic single- and pair trawling, demersal trawling and trap net

fishery. When calculating and estimating total fishing effort by trawl gears, the increase in trawl size since 1980 as well as changes in catchability has been taken into account by using a correction coefficient for effort data in herring trawl fishery. The annual correction coefficient is derived using a model, which estimates the average size of fishing circle of trawl. (*Rahikainen and Kuikka 2002*). In most recent years about 3 % increase in effort has been taken into account in catchability.

In the Bothnian Bay (ICES Sub-division 31) we use total effort and CPUE data from pelagic trawling, demersal trawling and trap net fishery for stock assessment. In the Bothnian Bay area there has not been substantial changes in trawl size as in ICES Sub-division 30.

In the northern Baltic Proper (ICES Sub-divisions 28, 29 and 32; new exploratory assessment unit, stock assessed in ICES 2001), Finnish CPUE and effort data from trawl fisheries was used to estimate the dynamics of the northern part of the Baltic Main Basin herring stock. The results of this assessment indicated that the abundance indices from commercial CPUE data are in accordance with hydroacoustic indices.

In the Baltic Main Basin, Archipelago Sea and Gulf of Finland herring stock (ICES Sub-divisions 25-29 and 32 excluding Gulf of Riga) the assessment is mainly based on hydroacoustic survey indices, total catches and catch compositions. The stock is composed of large number of stocks/populations that have been identified on biological grounds.

6.1.2 Sprat

In the Baltic, there is one sprat assessment unit (ICES Sub-divisions 22-32). The main body of Finnish sprat catches come from mixed trawl fishery for herring and sprat. However, in sprat stock assessment fishery information is not used at all, and assessment is totally dependent on international hydroacoustic surveys.

6.1.3 Cod

In addition to research survey data, effort and CPUE data from Danish commercial fisheries are used to assess the western Baltic cod stock (ICES Sub-divisions 22-24). Fishery information originates from trawl-, gillnet and Danish seine fisheries.

In the stock assessment of the eastern Baltic cod stock (ICES Sub-divisions 25-32) both data from commercial fishery and information from first quarter BITS surveys have been used for tuning the VPA.

6.1.4 Salmon

For the assessment of Baltic salmon stock complex (ICES Sub-divisions 22-29, 30, 31 and 32), information on commercial fishery (catches, total effort by gears and CPUE) is collected annually. In addition the tagging data is used to estimate the fisheries specific catchability across the Baltic Sea. This information is included into the report of Working Group of Baltic Salmon Assessment. Time series covers at the moment years 1969-2005. Information on commercial fishery is, however used only in short-term predictions of the stock complex and to describe the development of fishery in recent years.

No budget is requested for this module.

6.2 *MP – Derogations and non-conformities*

None.

6.3 *EP - Planned sampling*

No extended programme.

6.4 *EP – Non-conformities*

None.

7 Module G - Scientific evaluation surveys

7.1 MP – Planned Priority 1 surveys

7.1.1 BITS survey

According to the spirit of Council regulation (Appendix XIV), Finnish scientists will participate and cooperate BITS 1st and/or 4th quarter surveys in Baltic Sea area IIIb-c for Baltic cod and other demersal species. This is useful and very practical and it is continuation of the co-operation between Danish and Swedish institutions and research activities established in 1983.

Costs included in Finland_Budget-Proposal_2007_31-May-06.xls, Worksheet G. Surveys 1.1.

7.1.2 Herring Acoustic Survey (Pilot study)

Finland will follow the considerations of STECF-SGRN and the Regional Coordination Meeting for the Baltic (RCMB) concerning the Herring Acoustic Survey in the Baltic. The coverage of this survey is extended to Finnish waters (ICES Subdivisions 29 N and 32, Gulf of Finland) since 2006 (ANNEX 3). For the first two years the survey will be included as a pilot study and its usefulness for the herring stock assessment will be evaluated based on the results of this pilot phase.

In order to carry out the survey in 2006 Finland participated the work of WGBIFS in April 2005. In WGBIFS meeting 2005, the statistical rectangles of Baltic proper and the Gulf of Finland were divided between countries in order to assess proper coverage of acoustic surveys and to ensure only one valid estimate of fish density at issue rectangle (ICES CM 2005/G:08). The working group recommended also that the coverage of the autumn hydroacoustic survey by different nations in the Baltic Sea should be maintained at the actual high level.

The main results of acoustic survey will be summarized and reported in standard report format, and will be stored on data bases BAD1 and BAD2 for further reporting in conjunction with international stock assessment (ICES WGBFAS). The acoustic survey will be conducted in coordination with other Baltic countries.

Costs included in Finland_Budget-Proposal_2007_31-May-06.xls, Worksheet G. Surveys 1.2.

7.2 *MP – Derogations and non-conformities*

Baltic herring and sprat acoustic surveys

For the two herring stocks in the Gulf of Bothnia (herring stock in SD 30 and herring stock in SD 31) the tuning series for assessment have been constructed from the excessive age and length sampling of catches and available commercial CPUE information. This will also be continued until adequate time series of acoustic indices are available.

Since year 2000, the commercial CPUE-tuned XSA-assessment of the main herring stock in Gulf of Bothnia (herring stock in SD 30, Bothnian Sea) has been accepted by ACFM (reports of ICES ACFM 2000-2005). In December 2005 STECF SGRN recommended to Finland and Sweden to start and include Gulf of Bothnia acoustic survey into their 2007 NP proposals. Finland will not include Gulf of Bothnia acoustic survey into the NP 2007 proposal, but is going to start a 2-year-pilot phase in 2008 in possible co-operation with Sweden. **Therefore no acoustic surveys are planned to be conducted for Baltic herring by Finland in SD 30 or in SD 31 during 2007.**

In case of sprat, Finland has historically not participated, nor carried out its own sprat acoustic surveys (second quarter survey in Appendix XIV of DCR). Furthermore, there has never been specific need for Finnish participation. The geographical distribution of the sprat is more southern than that of herring and therefore sprat is not abundant all year in Finnish fishing zone. The current sprat acoustic study of the Main Basin, performed by other Baltic institutes, covers fairly well most of the biomass of this stock.

Finland's opinion has been that there is no reasonable justification to include second quarter sprat survey into Finnish MP. This request for derogation has been annually endorsed by STECF.

7.3 *EP – Planned Priority 2 surveys*

No extended programme.

7.4 *EP – Non-conformities and priority upgrades*

None

8 Module H - length and age sampling

8.1 MP – Landings – Planned sampling

The total commercial catches of Baltic herring, sprat, cod, salmon, sea trout, flounder, whitefish, pikeperch and perch in Finnish fisheries in 1996-2005 are presented in Table 8.1. The mean volume of commercial catches by species in years 2003-2005 is used as a basis for sampling for length distributions and age compositions of catches. Sampling of Baltic herring and sprat are based on length stratified sub-sampling scheme and simple random sampling is not applied. Sampling of salmon, sea trout, and flounder, as well as the species included in extended programme, i.e. European whitefish, pikeperch, and perch, are based on Simple Random Sampling (SRS) design. Cod and eel samples are not collected because of negligible catches in the Finnish fishing zone. In comparison to our sampling intensity and sampling design presented in chapters 8.1-8.2, Table 8.2 summarizes the numbers of samples and the number of individual fish to be processed according to the regulation. These numbers are calculated according to recent catch rates for all those species, which are included either in our minimum programme or in extended programme.

Table 8.1. Commercial catches (tonnes) by species in minimum programme (Baltic herring, sprat, cod, salmon, sea trout, flounder, and eel) and in extended programme (whitefish, pikeperch and perch) in 1996-2005

Species	1996	1997	1998	1999	2000	2001	2002	2003 2004 2005 Reference period			Mean 2003-2005
MP											
Herring	93338	90334	85545	82237	80697	81916	75580	64508	70552	66457	67172
Sprat	14351	19851	27014	18886	23134	15742	17245	8951	16576	17883	14470
Cod	3132	1536	1034	1569	1817	1716	1044	1163	885	283	777
Salmon	975	1051	720	720	591	444	441	355	505	461	440
Sea trout	152	141	122	103	113	92	72	58	53	66	59
Flounder	99	86	80	83	75	130	77	43	34	26	34
Eel								*	1	0	0
*information not available											
EP											
Whitefish	1280	1157	1425	1246	1176	882	811	822	825	765	804
Pikeperch	594	748	491	438	450	412	607	847	546	440	611
Perch	546	759	848	821	782	803	885	1095	757	860	904

Table 8.2. Intensity of sampling by species according to DCR: The number of length- and age samples (A) and total number of samples (B) in 2007 according to catch rates in 2003-2005 in commercial fishery.

A) The number of length and age samples and number of individuals for mandatory (M) and optional (O) species according to catch rates based on Appendix XV of 1581/2004.

Species	Mandatory/ Optional species	Area/ Stock	Age-length sampling scheme of catch samples		Number of specimen for length and age per catch in tonnes	
			Length	Age	Length n/t	Age n/t
Herring	M	25-29, 32/ 39/ 31	F2	F2	100/1000	100/1000
Sprat	M	IIIb-d	G2	G3	100/2000	50/2000
Salmon	M	IIIb-d, 22-31/ 32	C3	C3	50/100	50/100
Sea trout	M	IIIb-d	C3	C3	50/100	50/100
Flounder	M	IIIb-d	C3	C3	50/200	50/200
Whitefish	O	III d	C3	C3	50/100	50/100
Pikeperch	O	III d	C3	C3	50/100	50/100
Perch	O	III d	C3	C3	50/100	50/100

B) The number of samples and number of individuals in length distribution and age distribution sampling based on average catches in 2003-2005 and on Appendix XV of 1581/2004.

Species	Mandatory/ Optional species	Catch 2003-2005	Number of samples		Number of individuals	
			Length	Age	Length	Age
Herring	M	67172	67	67	6700	6700
Sprat	M	14470	7	7	700	350
Salmon	M	440	4	4	200	200
Sea trout	M	59	1	1	50	50
Flounder	M	34	0	0	0	0
Whitefish	O	804	8	8	400	400
Pikeperch	O	611	6	6	300	300
Perch	O	904	9	9	450	450

8.1.1 Baltic herring (*Clupea harengus membras*)

Finnish herring fishery in the Baltic Sea is conducted mainly in ICES Sub-divisions (SDs) 29-32.

In 2005 the total Finnish herring landings were 66 457 tonnes, comprising about 35 % of the total Baltic herring landings in the Baltic Sea. From the total Finnish catches, 83 % have been taken from SD 30 (Bothnian Sea), 8 % from SD 29 (Åland Sea and Archipelago Sea), 7 % from SD 31 (Bothnian Bay), 1 % from SD 32 (Gulf of Finland) and about 0,1 % from SD's 24-28. More than 92 % of the catches were taken by trawl fisheries and 7 % from trap-nets during spawning time.

Finnish herring fishery is exploiting mainly three different Baltic herring stocks (assessment units): Baltic herring stock in SD 30 (Bothnian Sea), Baltic herring stock in SD 31 (Bothnian Bay) and Baltic herring stock in SDs 25-29 & 32 in the Baltic main Basin and Gulf of Finland.

Because all the main fisheries (pelagic trawls, demersal trawls and trap-nets) have different exploitation patterns, they also need to be sampled separately. Furthermore, in the two herring stocks in Gulf of Bothnia, these fisheries are used as separate tuning fleets in stock evaluations

Instead of following the DCR 1639 sampling scheme, which is based on simple random sampling of total annual catches by species, the primary requirement in Finnish herring sampling is to properly cover all the strata (3 stocks, 3 fleets and 4 year-quarters) in order to meet the assessment-criteria.

Since the study projects funded by DG XIV (International Baltic Sea Sampling Programs I & II) in 1998-2001, we have used length stratified sub-sampling scheme to estimate age compositions of Baltic herring. This sampling scheme is designed to support the development of international databases and standardized methodologies in data processing (e.g. Fishframe).

Compared to the simple random sampling, the advantage of this kind of sampling scheme is that it is rather fast to collect length distributions and there is no need to make as much age readings, which are more costly and time consuming. The results are, however, comparable and the quality and accuracy is similar. The sampling scheme for 2007 is presented in Table 8.3, is. This kind of sampling scheme has been in force since 1998 and will be implemented also in 2007. Sampling frequency will be modified during fishing season, depending on ice coverage, TAC, spatial and temporal fishing restrictions, catch rates and fishing activities.

The following text table shows 2003-2005 average catch rates regionally, number of samples required by regulation, planned number of samples according to data requirements and corresponding number of length measurements. The reference year for number of age readings (40 per length interval per year) is 2005.

HERRING

ICES Sub-divisions	SD 29	SD 30	SD 31	SD 32	Total
Average catch rates in 2003-2005 (tons):	9 756	50 470	4 816	1 851	67179 ¹⁾
Number of samples required by regulation	10	50	5	2	67
Number of samples in 2005	30	61	20	14	125
Number of length measurements in 2005	8382	28332	10350	3815	50879
Number of age readings in 2005	1151	1170	539	425	3285
Number of samples (planned for 2007):	20	54	28	20	122
Length measurements (planned according to N of samples in 2007):	9500	25650	13300	9500	57950
Age determinations (planned according to available length-classes in 2005; implementation in 2007 is dependent on existing future length-classes):	1200	1620	670	730	4220

¹⁾ including also 2003-2005 average catches from SD's 22-28

Baltic herring samples are collected mainly in fishing harbours and, if necessary, also onboard commercial fishing vessels. In sampling scheme we have taken into account the annual life cycle of Baltic herring and the presence of the ice coverage during the winter in the northern Baltic. Because of these conditions, all three fishing gears are not in use in all year quarters. Trap net fishery is conducted only in quarter 2 and 3, and in the Bothnian Bay (ICES Sub-division 31) fishing season covers 3 quarters.

Taking into account the exceptions for ICES Sub-division 31 and trap-net fisheries, the 2007 sampling plan is roughly based on the average catches of 2003-2005 in different regions and fisheries. Moreover, the sampling intensity in general is locally adjusted during the year according to temporal and regional changes in fisheries. The seasonal herring fishing intensity in each area is predominantly dependent on the TAC, which causes fishing restrictions in certain fisheries and/or seasons, as in 2003-2005, and may therefore influence the sampling intensity from the planned.

According to assumed catches by ICES Sub-divisions, gears in use, fishing intensity and taking into account the data needs for the tuning series, where regardless of the amount of catches, a minimum coverage requirement is one sample by fishery per month (or a minimum of 3 samples by fishery per quarter), the total number of samples in 2007 are as in Table 10.3 The sampling covers three stocks, which are distributed in two management units and included into the assessment units as follows:

- Assessment unit ICES Sub-divisions 25-29 and 32 (also SD's 28, 29 & 32 separately; not assessed in 2003-2006)
- Assessment unit ICES Sub-division 30 (tuning series)
- Assessment unit ICES Sub-division 31 (tuning series)

No separate discard sampling is regarded to be needed for Baltic herring, see chapter 5.6.1.

Table 8.3. Total number of Baltic herring samples according to area, year quarter and fleet in 2007 weighted by average catch rates in 2003-2005 and taking into account the minimum coverage requirement for each stratum.

Fleet	Year quarter	ICES Sub-division				Fleet / year quarter
		29	32	30	31	
Trapnet	1	0	0	0	0	0
	2	2	2	3	3	10
	3	2	2	3	3	10
	4	0	0	0	0	0
	Fleet / SD total:	4	4	6	6	20
Demersal trawl	1	2	2	6	0	10
	2	2	2	6	4	14
	3	2	2	6	4	14
	4	2	2	6	3	13
	Fleet / SD total:	8	8	24	11	51
Pelagic trawl	1	2	2	6	0	10
	2	2	2	6	4	14
	3	2	2	6	4	14
	4	2	2	6	3	13
	Fleet / SD total:	8	8	24	11	51
	GRAND TOTAL	20	20	54	28	122

Whole otoliths and thin cut slices of otoliths are used for ageing Baltic herring. The preparing of otoliths for microscopic determinations is contracted out to a subcontractor, and the staff of FGFRI conducts the age readings microscopically.

Costs included in Finland_Budget-Proposal_2007_31-May-06.xls, Worksheet H. A&L Land.

8.1.2 Sprat (*Sprattus sprattus*)

The total catch of sprat in 2005 in the whole Baltic Sea was about 405 000 tonnes. Finnish sprat catch totalled 17 900 tonnes in 2005, and it was about 4 % of the total catches. Finnish sprat catches are taken entirely by trawl fisheries. The main body of Finnish sprat catches is taken in the northern parts of the Baltic Main Basin, southern parts of the Bothnian Sea and in the Gulf of Finland. The distribution of catches in 2005 were: In the Gulf of Finland (ICES Sub-division 32) 23 %, Åland Sea and Archipelago Sea (ICES Sub-division 29) 50 % and in the Bothnian Sea (ICES Sub-division 30) 18 % of the total catches. In 2005, 9 % of the Finnish sprat catches were taken from Baltic Main Basin or Southern Baltic (Sub-divisions 24-28) and landed outside Finland.

Sprat sampling is carried out in Finnish fishing harbours together with Baltic herring sampling from herring trawl fishery and mixed trawl fishery for herring and sprat. Whenever sprat is present in these samples, it has to be separated from herring. Consequently, and as a benefit, the share of sprat in catches can thus be estimated, and if the number of individuals is sufficient for defining length distributions, length measurements are carried out with almost negligible additional costs. Moreover, in length-stratified sampling for quarterly compiled age-length-keys, a sufficient temporal length-class coverage has to be ensured, and the need for age readings exceeds the requirements of simple random sampling, but it is, however, in

compliance with the requirement of 40 individuals aged within each (existing) length interval per year, as given in paragraph (d) in appendix XV of DCR 1581.

Sampling intensity in 2007 is planned to cover various year quarters, relevant areas and gears.

The text table below shows our length-stratified sampling practice of sprat from ICES Sub-divisions off the Finnish coast in reference year 2005

SPRAT

ICES Sub-divisions	SD 29	SD 30	SD 31	SD 32	Total
Average catch rates in 2003-2005 (tons):	7651	2572	3	2393	13910 ¹⁾
Number of samples required by regulation:	4	3	0	2	9
Number of samples in 2005	20	20	2	9	51
Number of length measurements in 2005	8018	4741	124	2847	15730
Number of age readings in 2005	552	370		288	1210
Number of samples planned for 2007	24	24	2	16	66
Length measurements (planned according to N of samples in 2007)	6600	6600	550	4400	18150
Age determinations (planned according to available length classes in 2005; implementation in 2007 depends on available length classes in catch)	620	520	170	370	1680

¹⁾ including also 2003-2005 average catches from SD's 22-28

In 2007 our intention is to cover all the strata, which corresponds to collecting about 64 samples. Depending on trawl fishing activities and the abundance of sprat in the catches, the sampling intensity will be modified during the fishing season. The sampling scheme presented in Table 8.4 for 2007 corresponds to our minimum requirements.

No separate discard sampling is regarded to be needed for sprat, see chapter 5.6.1.

Table 8.4. The distribution of sprat samples to areas, year quarters and fleets, planned for 2007.

Fleet	Year quarter	ICES Sub-division				Fleet /year quarter
		29	30	31	32	
Demersal trawl	1	3	3		2	8
	2	3	3		2	8
	3	3	3	1	2	9
	4	3	3		2	8
	Fleet /SD total:	12	12	1	8	33
Pelagic trawl	1	3	3		2	8
	2	3	3	1	2	9
	3	3	3		2	8
	4	3	3		2	8
	Fleet /SD total:	12	12	1	8	33
	GRAND TOTAL	24	24	2	16	66

Costs included in Finland_Budget-Proposal_2007_31-May-06.xls, Worksheet H. A&L Land.

8.1.3 Cod (*Gadus morhua*)

The abundance of cod in the northern Baltic is very low. Finnish fishing vessels operate in the southern Baltic in ICES Sub-divisions 24-28. The total catch of Finnish fishing fleet was about 283 tonnes in 2005. Finnish catches represented 0.4 % of the total reported cod catches in Sub-divisions 22-32. In the northern Baltic (ICES Sub-divisions 29, 30 and 32), where the abundance of cod is presently zero, we will not organize special sampling in 2007. Cod catch sampling from gill-net and trawl fisheries in the southern Baltic will be organized by Danish and Swedish institutes in ICES Sub-divisions 24-28 and this data is applied to Finnish catches operating in same fishing grounds.

There will be no discard sampling for Finnish cod catches, see chapter 5.6.2.

Although cod samples are presently not collected in the northern Baltic, our intention is to preserve the potential and possibilities for sampling and sample analysis, assuming that the stock will recover in incoming years.

8.1.4 Salmon (*Salmo salar*)

The Finnish commercial catches of salmon in the Baltic Sea are taken from two IBSFC management units, the Gulf of Bothnia – Baltic Main Basin (ICES Sub-divisions 22-31) and the Gulf of Finland (ICES Sub-division 32), both having their own annual TACs. In both areas, two principal types of fishing are engaged, with totally different catch age and length compositions. In the offshore fishery, driftnets and long-lines are used to capture feeding salmon in autumn and winter months (IX-V). Technical measures are taken to manage both these fisheries. In the coastal fishery, trap-nets and anchored gillnets are used to capture mature salmon returning to home rivers in spring and early summer (V-VII).

The ICES Baltic Salmon and Trout Working Group (WGBAST) have dealt with the international collaboration of salmon sampling under the DCR, and gives the guidelines for the for the river surveys, sampling of the catches as well as for the collection of genetic data to fulfil the data requirements for the Baltic Salmon stock assessment (WGBAST 2005 and ICES 2006).

For samples at the Main Basin (subdivisions 22-28) the group recommends a stratified random sampling design in terms of nation, subdivision, gear and time. In total 1680 salmon need to be sampled from the Main Basin by all participating countries (ANNEX II). From this Main Basin sample 500 fish will need to be resampled for the DNA analysis (see chapter 9.1.5).

Sampling for offshore fishery

The sampling of the Finnish offshore salmon catches will follow the WGBAST recommendations and based on the Finnish catches in the Main Basin 350 salmon will be sampled in subdivisions 25-28. In addition 400 salmon will be sampled optionally in subdivisions 30 and 32 depending whether fisheries will take place in these areas. The Finnish sampling stratification is presented in Table 8.5.

Table 8.5. Number of salmon individuals to be sampled by season, fishery, gear and ICES Sub-division

Fishery	Months	ICES Sub-division					Fishery/year
		25-28	29	30	31	32	
Off-shore long line	1-4 and 9-12	70				200	270
Off-shore driftnet	1-4 and 9-12	280		200			480
Coastal driftnet	5-8		400				400
Coastal trapnet	5-8				200	400	600
River	5-9						650
	GRAND TOTAL	350	400	200	200	600	2400

Samples marked with gray are optional

Sampling for coastal fishery

Coastal salmon fishery targets on spawning migrants. In a given coastal area, the fishing season lasts only about 2 months (from V-VII), but during these 2 months changes occur in terms of age, length and stock composition of the catches. Due to these changes, weekly sampling is needed to get representative samples. 800 salmon need to be sampled from the coastal fisheries in subdivisions 29 and 31 in order to obtain catch composition data of spawn migrating salmon entering the Gulf of Bothnia and Bothnian Bay.

Along the long coast-line of the Gulf of Bothnia, sampling will be disaggregated regionally. The catch sampling will take place in three key areas, which are 1) Åland Sea (ICES Sub-division 29), providing the overall composition of fish schools entering the Gulf; 2) the Quark area (ICES Sub-division 31), providing the overall composition of fish schools entering the Bothnian Bay, and where fish from Swedish salmon stocks have partly departed from the schools; and 3) Gulf of Finland, providing the overall composition of the catches in the area.

The WGBAST recommends a target sample of 400 salmon to be sampled from the Finnish catches in the Åland Islands and 200 salmon in Quark area for the DNA-analysis. Because Finland is the only country fishing on migrating salmon at the Åland Islands, the samples, which need to be taken there, will have to be collected entirely by Finland. In practice the catch sampling, however, may result in a slight oversampling to meet requirement of the temporal coverage. Afterwards this will permit a stratified resampling for the final analysis. In addition 400 salmon will be sampled from the Gulf of Finland trapnet fishery (Table 8.5.).

Catch samples from rivers

Catch samples of salmon will be collected from the fishery in the wild salmon rivers of the Gulf of Bothnia (River Tornionjoki and River Simojoki). This data collection is a part of the assessment of spawning run composition and the effects of fishery, and it is linked to the corresponding sampling from the Finnish coastal fishery. The monitored variables include smolt age, sea-age, sex, origin (wild/reared) and size at capture (weight and length). The planned sample size is 650, of which majority are from the River Tornionjoki. Organization of the sampling as well as analysis and data treatment is similar to those of the catch samples from the sea fishery.

Costs included in Finland_Budget-Proposal_2007_31-May-06.xls, Worksheet H. A&L Land.

8.1.5 Sea trout (*Salmo trutta*)

Sea trout is present along the entire Finnish coastline in ICES Sub-divisions 29, 30, 31 and 32. Commercial fisheries take sea trout mainly as by-catch in fisheries targeting whitefish, pikeperch and salmon. The structure of the fishery taking sea trout varies considerably from one sea-area to another, and between spring, summer, autumn and winter seasons. Due to the short migration of the species, different stocks are exploited in different sea-areas. Local technical regulations are used to manage the fisheries. There is no catch quota.

The mean catch rate in 2003-2005 in Finnish commercial fisheries of sea trout was 59 tonnes, corresponding to only one sample of 50 fish according to requirements of DCR. By-catch sampling does not, however, result in a sufficient amount of samples. For example in 2005 only about 50 sea trout were collected with the other sampling in the harbours. As pointed out in earlier programme proposals, tagging is an appropriate and cost effective method to gather sufficient data on sea trout stocks for the assessment and management purposes.

The average number of tag returns from a regular tagging lot of 1000 individuals is about 100. Releasing 2 tagging lots annually in each ICES Sub-division thus provides the basic data needed to evaluate the composition of trout catches in length and age (in total about 200 tag returns). The tagging scheme is as follows:

- Archipelago Sea (ICES Sub-division 29): 2 tagging lots * 1000 fish = 2000 fish
- Bothnian Sea (ICES Sub-division 30): 2 tagging lots * 1000 fish = 2000 fish
- Bothnian Bay (ICES Sub-division 31): 2 tagging lots * 1000 fish = 2000 fish
- Gulf of Finland (ICES Sub-division 32): 2 tagging lots * 1000 fish = 2000 fish

Costs included in Finland_Budget-Proposal_2007_31-May-06.xls, Worksheet H. A&L Land.

8.1.6 Flounder (*Platichthys flesus*)

Flounder fishery is regulated by the fishing rules of IBSFC and in revised data collection regulation 1581/2004 flounder was moved to minimum programme. The commercial flounder catches are annually low: In 2005 the reported commercial catch in Finnish fisheries was 26 tons. Catches in recreational fisheries were about 87 tonnes in 2005. In 2005 we collected altogether 912 individual flounder samples from ICES Sub-divisions (SDs) 29, 30 and 32.

In 2007 our intention is to collect flounder samples from commercial gill-net catches in total 20 samples of at most 50 specimens, corresponding to not more than 1000 length measurements and age-readings (Table 8.6). Part of the samples in the Gulf of Finland is collected in co-operation with City of Helsinki. Sampling is most intensive in August-October in Archipelago Sea, southern Bothnian Sea and Gulf of Finland. The sampling scheme is simple random sampling.

Costs included in Finland_Budget-Proposal_2007_31-May-06.xls, Worksheet H. A&L Land.

Table 8.6. Total number of flounder samples according to area and year quarter in 2006 weighted by the mean catch rates in 2003-2005 (1 sample = 50 individuals).

Gear	Year-quarter	ICES sub-division			Gear/year quarter
		29	30	32	
	1	0	0	0	0
Gill-net	2	2	2	2	6
	3	3	2	6	11
	4	1	1	1	3
	Total	6	5	9	20
	Grand total	6	5	9	20

8.1.7 Eel (*Anguilla anguilla*)

The Finnish commercial catch of eel was 0.68 t in 2004 and 0.43 t in 2005, which, because of its insignificance, is not adequate for collecting a sample.

8.2 MP – Landings – Derogations and non-conformities

8.2.1 Cod

The abundance of cod in the northern Baltic is assumed to be negligible. Finnish fishing vessels operate in the southern Baltic in ICES Sub-divisions 24-27. The total catch of Finnish fishing fleet was about 283 tonnes in 2005. Finnish catches represented less than 0.4 % of the total reported cod catches in Sub-divisions 22-32 in 2005. In the northern Baltic (ICES Sub-divisions 29, 30 and 32), where the abundance of cod was presently zero (2005), no special sampling is planned to be organized in 2007 for cod by Finland. Cod catch sampling from gill-net and trawl fisheries in the southern Baltic is planned to be organized by Danish and Swedish institutes in ICES Sub-divisions 24-27 and this data will be applied to Finnish catches operating in same fishing grounds. **Therefore no special sampling will be organized for cod by Finland in 2007. This derogation has been applied and approved already in earlier years.**

8.2.2 Eel

The Finnish commercial catch of eel was 0.68 t in 2004 and 0.43 t in 2005, which, because of its insignificance, is not adequate for sampling. Finnish Game and Fisheries Research Institute makes national enquiries on the catches of recreational fishermen in Finland every two years. In the recent enquiries for the years 2002 and 2004, eel catch was included in the group 'Others', this because of extremely infrequent and totally small catch. When planning the enquiry of the catch for the year 2006 implemented in 2007, FGFRI will evaluate the possibility to include the eel catch measurement to the inquiry.

In Finland, eel is on its North-eastern limits of natural geographical distribution. Natural eel stocks have probably always been very sparse, and the overall importance of the species has been low. Only in a few areas in southern parts of the country, eel has been a target in the recreational fisheries. Almost all rivers running to the Baltic Sea are closed by hydroelectric power plants. In 1979–1988, it was prohibited to

import live eels to Finland. From 1989 to 2005, altogether 1.290.000 glass eels (in 1989–1995 100.000 and in 1996–2005 59.000 specimens per year, on the average) have been imported through a Swedish quarantine and re-stocked in almost one hundred lakes and the coastal areas of southern Finland. For most fishermen, both recreational and professional, eel is a surprising by-catch.

8.3 EP – Landings – Planned sampling

8.3.1 European whitefish (*Coregonus lavaretus*)

There is significant commercial fishing for whitefish in the Archipelago Sea, and in the Gulf of Bothnia (ICES Sub-divisions 29, 30 and 31). In the Archipelago Sea (SD 29), gill nets are the main gear type in the whitefish fishery. In the Gulf of Bothnia (SDs 30 and 31), drift nets, set gillnets and trap nets are used as well. There are 2 whitefish forms in the sea area of Finland: river-spawning migratory whitefish and sea-spawning whitefish. Both forms have different growth rates in different ICES sub-divisions. The migratory whitefish is more common in the catches, the share of the sea-spawning whitefish being about 20-25 %. In some cases the catch consists of both whitefish forms.

In recent years, the commercial whitefish landings have been 800 tonnes/ year. In addition, there is the recreational catch that was estimated at 357 tons in 2004. The biological sampling should cover both whitefish forms and all gear types, including different mesh size classes of gill nets (27-30 mm, 36-45 mm, and 46-50 mm bar lengths because of the different selectivity of the different gear types and differences of the whitefish forms in e.g. their growth.

The sampling effort needed for successful assessment of whitefish stocks, given the different gear types and whitefish forms, should be the following:

- ICES Sub-division 29: 8 samples, 400 individuals
- ICES Sub-division 30: 17 samples, 850 individuals
- ICES Sub-division 31: 17 samples, 850 individuals

Simple random sampling is applied. The numbers of individuals sampled per year quarter and gear type are presented in Table 8.7. Each individual will be measured for length and aged.

Costs included in Finland_Budget-Proposal_2007_31-May-06.xls, Worksheet H. A&L Land (EP)

Table 8.7 Number of whitefish individuals to be sampled by ICES Sub-division, gear type and year quarter. (1 sample = 50 individuals).

Gear type	Year Quarter	ICES Sub- division			Sampling per gear and year quarter
		29	30	31	
	1	0	0	0	0
Gill net 27-30 mm	2	0	0	50	50
Bar length	3	0	0	50	50
	4	0	0	150	150
	Total	0	0	250	250
	1	0	100	0	100
Gill net 36-45 mm	2	150	150	150	450
Bar length	3	150	100	150	400
	4	0	150	0	150
	Total	300	500	300	1100
	1	0	0	0	0
Gill net 46-50 mm	2	50	0	0	50
Bar length	3	50	0	0	50
	4	0	0	0	0
	Total	100	0	0	100
	1	0	0	0	0
Set gillnet	2	0	150	0	150
	3	0	0	0	0
	4	0	0	0	0
	Total	0	150	0	150
	1	0	0	0	0
Drift net	2	0	0	0	0
	3	0	50	0	50
	4	0	0	0	0
	Total	0	50	0	50
	1	0	0	0	0
Trap net	2	0	0	100	100
	3	0	150	200	350
	4	0	0	0	0
	Total	0	150	300	450
	Grand total	400	850	850	2100

8.3.2 Pikeperch (*Sander lucioperca*)

The commercial pikeperch catch is taken for the most part with gill nets in autumn, late winter and spring. In spring, pikeperch is caught also with trap nets.

In recent years, the commercial Finnish pikeperch landings have been between 400 and 850 tonnes / year. In addition, there is recreational pikeperch catch that was estimated at 380 tons in 2004, i.e. 41% of the total catch. On the average of 2002-2004, 44% of the commercial catches have been taken from ICES Sub-division 29 (Archipelago Sea), 27% from ICES Sub-division 32 (Gulf of Finland) and 29% from ICES Sub-division 30 (Bothnian Sea). In the very good years of 2002 and 2003, exceptionally high percentage (28–29%) of the catch was caught in the SD 30, where the proportion has usually been 10–20%. More than 97 % of the catches are taken by gillnets.

The mesh size of gill nets plays an important role in the management of the pikeperch fishery. In order to assess the effect of mesh sizes on the pikeperch stocks and the proportions of different mesh sizes in the fishery (the official statistics on used mesh sizes is insufficient for fisheries purposes), the biological sampling of pikeperch catch should adequately cover the different mesh sizes mostly used (43 mm, 45 mm, 50 mm bar length) in each pikeperch stock. The pikeperch stocks in different ICES sub-divisions have different growth rates and population dynamics, including maturity size. The sampling in different year quarters is needed to give information of different parts in the populations and for catch predictions. Trap nets have a different, probably lower selectivity pattern than gillnets, and a different length and age distribution in the catch. The sampling schedule based on DCR (seven samples, 350 individuals) is not adequate for these purposes.

Simple random sampling is applied. The samples needed for the assessment of pikeperch stocks in the ICES Sub-divisions 29, 30 and 32 are the following:

ICES Sub-division	29	30	32
Gill nets, randomly different mesh sizes (see text above)	12	12	12
trap nets	3	3	0

The annual sampling schedule consists of 42 samples and 2 100 individuals, which will be measured and aged (Table 8.8.).

Table 8.8. Number of pikeperch individuals to be sampled by ICES Sub-division, gear type and year quarter. (1 sample = 50 individuals).

Gear type	Year Quarter	ICES Sub-division			Sampling per gear and year quarter
		29	30	32	
	1	150	150	150	450
Gill net , randomly different mesh sizes (see text above)	2	150	150	150	450
	3	0	0	0	0
	4	300	300	300	900
	Total	600	600	600	1800
	1	0	0	0	0
Trap net	2	150	150	0	300
	3	0	0	0	0
	4	0	0	0	0
	Total	150	150	0	300
	Grand total	750	750	600	2100

Costs included in Finland_Budget-Proposal_2007_31-May-06.xls, Worksheet H. A&L Land (EP)

8.3.3 Perch (*Perca fluviatilis*)

Most of the commercial perch catch is taken in April - June with trap nets and gill nets, and in summer and autumn with gill nets.

In recent years, the total commercial perch catch has been 750–1100 tonnes/ year. In addition, there is the recreational catch that was estimated at 2560 tonnes in 2004, i.e. 77% of the total catch. On the average of 2002-2004, 57% of the commercial catch was taken from ICES Sub-division 30 (Bothnian Sea) and 28% from ICES Sub-division 29 (Archipelago Sea). In 2004, 71 % of the catches were taken by gillnets and 28 % by trap nets.

The number of samples based on DCR (nine samples, 450 individuals) is not adequate, because the perch from trap net and gill net catches represent different parts of the populations with e.g. different growth rates. Both the trap net and gill net catch should be representatively sampled, including at least two mesh size classes of gill nets. Simple random sampling is applied. The adequate sampling schedule for perch is for both ICES Sub-divisions, 29 and 30, the following:

Gill nets < 38 mm bar length:	5 samples,	250 individuals
Gill nets 38-50 mm bar length	10 samples,	500 individuals
Trap nets	4 samples,	200 individuals

Annually this totals 38 samples and 1 900 individuals, which will all be measured and aged (Table 8.9.). To calibrate the age determination that is mostly conducted from opercular bones, a part of the specimens (circa 400 specimens) will be aged from otolith cross-sections, as well. The perch ageing workshop held in Riga 15–17 Feb 2005 agreed that otolith cross-sections give more reliable age estimates than opercular bones. The making of the otolith thin cut preparations, i.e. placing the otoliths in rows on polyester resin bases, moulding the otoliths in polyester resin blocks, sawing and staining them and preparing preparations for microscopic determinations, is contracted out to a trained subcontractor.

Table 8.9. Number of perch individuals to be sampled by ICES Sub-division, gear type and year quarter. (1 sample = 50 individuals).

Gear type	Year quarter	ICES Sub-division		Sampling per gear and year quarter
		29	30	
	1	0	0	0
Gill net <38 mm bar length	2	200	200	400
	3	0	0	0
	4	50	50	100
	Total	250	250	500
	1	0	0	0
Gill net 38-50 mm bar length	2	300	300	600
	3	0	0	0
	4	200	200	400
	Total	500	500	1000
	1	0	0	0
Trap net	2	200	200	400
	3	0	0	0
	4	0	0	0
	Total	200	200	400
	Grand total	950	950	1900

Costs included in Finland_Budget-Proposal_2007_31-May-06.xls, Worksheet H.
A&L Land (EP)

8.4 *EP – Landings – Non-conformities*

None

8.5 *MP & EP - Discards – Planned sampling*

No discard sampling is planned to be conducted by Finland in 2007. Derogation is requested (see Standard table 8.2 and chapters 5.5 and 5.6).

Results of the pilot study on salmon and sea trout discards conducted in 2004-2005 indicated that discards occurred only in the long-line fisheries and discards were less than 1 % of the catch. In addition all discarded salmon were less than A1+ old fish. The renewed international fishing rule in the Baltic Sea will extend the fishing time of long-lining from year 2006 potentially increasing the long-line effort. This development will be followed and necessary actions in monitoring will be adopted accordingly.

8.6 *MP & EP – Discards – Derogations and non-conformities*

No discard sampling is planned to be conducted by Finland in 2007. The reasons for this are presented in chapters 5.5 and 5.6 and in Standard table 8.2.

9 Module I - Other biological sampling

9.1 MP – Planned sampling

The data concerning 'Other biological parameters' (length at age as an index for growth, sex ratios and sexual maturity) will be collected annually and compiled every third year, as requested by DCR (Appendix XVI). The compilation of the data will be partly carried out in co-operation with other Baltic countries. Standard table 9.1 give an overview of the long-term sampling strategy with respect to 'Other biological parameters' in years 2002-2007.

9.1.1 Herring and sprat

For annual assessment purposes, information concerning growth and age/length are collected quarterly on length stratified random sampling from Finnish fisheries in ICES sub-divisions 29-32. From late March to early June, an extra sampling for maturity (and sex ratios) is conducted before spawning time, which differs depending on e.g. latitude and sea-area.

During the period for maturity sampling, the sex ratios of herring and sprat are recorded concurrently from the individuals that are normally sampled for quarterly age-length keys in ICES sub-divisions 29-32.

9.1.2 Cod

The growth curves age/length relationship as well as maturity are not available for the northern Baltic Sea, because of cod presently being non-existing in ICES Sub-divisions 29-32, which cover Finnish fishing zone. The information collected by other member countries will cover these aspects in the main distribution area of Baltic cod.

The sex-ratio of cod is not available for the northern Baltic Sea, because of cod presently being non-existing in ICES Sub-divisions 29-32, which cover Finnish fishing zone. The information collected by other member countries will cover these aspects in the main distribution area of Baltic cod and there is no need to organize additional sampling for this parameter.

9.1.3 Flounder

The data for growth (weight, length and age) as well as sex-ratios and maturity will be recorded routinely from all individuals in the basic catch sampling. The compilation of data will be done according to the requirements of DCR.

9.1.4 Salmon and sea trout

Data to derivate growth curves and relations between age/length for salmon and sea trout accumulate from the basic catch sampling programme and tag recapture data.

In sampling of salmon landings gender of fish is determined and recorded routinely from each individual fish. This will enable the derivation of the sex ratio for the whole duration of the programme. For the sea trout landings gender data is generally

impossible to compile by harbour sampling due to low catches and high scattering of the landings to the numerous fishing harbours and private docks. Therefore the sex ratio of the sea trout landings will be mainly derived from the tag recapture data.

Costs included in Finland_Budget-Proposal_2007_31-May-06.xls, Worksheet I. Oth Bio

9.1.5 Minimum Programme - Proportions of wild and reared fish in the landings of salmon

According to the regulation (Annex, Chapter III, Section I), a biological sampling programme of the landings must be implemented to estimate the share of wild and reared salmon. The data should be provided quarterly and following the fishing techniques typology described in Appendix IV. The estimates should reach level 1 precision (i.e. $\pm 25\%$ for a 95% confidence level).

The ICES Baltic Salmon and Trout Working Group recommends including the DNA analysis of salmon in the DCR in order to improve the assessment (WGBAST 2005). The group has estimated the minimum sample sizes for the DNA analysis to obtain the stock and stock group proportions in the Main Basin and Gulf of Bothnia. The calculations have been based on the uncertainty in the stock proportion estimates of stock groups from different assessment units. WGBAST recommended the following amounts of samples to be analysed:

- a. Baltic Main Basin driftnet and long line fisheries: 500 samples
- b. Åland Island coastal driftnet fishery: 400 samples
- c. Gulf of Bothnia: 400 samples

WGBAST also recommended pooling of the small national samples from the Main Basin to make one representative sample for the total catch taken from the area. Concerning the share of the work in DNA-analysis it has been preliminary agreed that Sweden will analyse the Main Basin samples (500 specimen) and Finland will analyse the samples from Åland Island and Gulf of Bothnia (800 specimen) as presented in Annex II.). Since Sweden is not including their share in Swedish NP 2007 proposal, Finland is ready to take the whole task for NP 2007 (1300 specimen). Thus the costs for the DNA based catch composition estimation in the Baltic Sea are applied solely in the Finnish budget, although it serves all Baltic countries.

The costs consist of chemicals and subcontracted laboratory work for DNA analyses of 1300 fish.

Genetic catch composition analysis has been conducted now for 5 years since 2000, and it has been financed under DCR in years 2002, 2003, 2004 and 2006. Results for annual variation in wild stock proportions over five years are published in ICES Journal of Marine Science (Koljonen 2006). Continuation of genetic catch composition analyses has been recommended by ICES Advisory Committee on Fishery Management (ICES 2005).

Costs included in Finland_Budget-Proposal_2007_31-May-06.xls, Worksheet I. Oth Bio

9.1.6 Minimum Programme - Monitoring of salmon in wild salmon rivers

The former International Baltic Sea Fisheries Commission (IBSFC) has adopted long-term management goals for the Baltic salmon fisheries (Salmon Action Plan, SAP). The most important operational management objective is to gradually increase the natural smolt production of wild Baltic salmon to attain at least 50 % of the natural production capacity of every individual river before the year 2010 (<http://www.ibsfc.org>). To evaluate the achievement of this goal two type of information are needed:

- The smolt production capacity of each Baltic river
- The current smolt production of each Baltic river

This is carried out by collection of data on spawning runs and juvenile populations. This information forms the basis of stock projections and management advice for Baltic salmon and ICES Working Group (WGBAST) has explicitly described these data as necessary for assessment of Baltic salmon.

There are two wild Baltic salmon rivers in Finland: River Simojoki and River Tornionjoki. Both of these were chosen by the IBSFC's Salmon Action Plan (SAP) as index rivers, where monitoring is recommended to include electrofishing and counts of spawners and smolts.

The data collection from the River Tornionjoki was included in the NP 2006 for the first time. The Tornionjoki flows along the border of Finland and Sweden, and it is clearly the largest of the current Baltic salmon rivers.

Monitoring of salmon stock of the river Tornionjoki is organised in close co-operation with Sweden. Finland has a large share of the total programme in this river and also higher monitoring costs than Sweden has. In particular Finland operates a large-scale smolt trapping to estimate the present production. This division of the monitoring is recognized and supported by both countries. Besides the smolt trapping in early summer, the Finnish NP for 2007 includes also electrofishing of about 80 sites in the late summer/early autumn (Table 9.1). The planned volume of data collection follows earlier years' volume carried out on national basis.

Although counting of salmon spawners is desirable in the salmon index rivers, no counting is planned in the Tornionjoki in the NP for 2007. The reason for this is the current lack of methodology applicable with reasonable costs (e.g., absence of fish ladders in conjunction of which to establish counting) for such a large river like the Tornionjoki.

The data collection from the River Simojoki has been included already in the NP 2005. The planned volume of salmon juvenile monitoring (smolt trapping and eletrofishing) in the River Simojoki follows earlier years' monitoring, with about 30 electrofishing sites and the setup of a smolt trap and a smolt screw (the screw is preferred for marking in mark-recapture trials). The counting of spawners by echo sounding consists of a set-up of two transducers (one on each bank), weirs guiding salmon to pass the site at appropriate range from the transducers, data collection and post-processing of data (identification and counting of fish traces). Expansion of the counts by a statistical treatment of the data is needed to cover unsampled periods of time/unsampled parts of the river transect (Table 9.1).

River monitoring data are stored on databases for further reporting in conjunction with national and international stock assessment (ICES WGBAST). River monitoring is conducted in coordination with other Baltic countries with wild salmon rivers.

It is important to notice, that data collection costs depend very much on the size of the river and also, whether the river in question is an index river or not. The northern Baltic rivers located in Finland and Sweden are much larger than the salmon rivers in the middle and southern Baltic. Thus, costs for data collection per river (and per nation) are clearly highest in the northern Baltic Sea.

Table 9.1 Monitoring of the wild salmon rivers in the Finnish Baltic Sea. Smolt trapping period covers the smolt migration season in both rivers and electrofishing sites are selected along the whole reach of the rivers. Echo sounding covers the ascending period of adult salmon.

	River Simojoki	River Tornionjoki
Smolt trapping	May-June with smolt trap and smolt screw	May-July with smolt trap
Electrofishing	30 sites	80 sites
Echo sounding	May-September	

Costs included in Finland_Budget-Proposal_2007_31-May-06.xls, Worksheet I. Oth Bio

9.2 *MP – Derogations and non-conformities*

Monitoring of salmon in wild salmon rivers

The long-term management goals for the Baltic salmon fisheries (Salmon Action Plan, SAP), adopted by the former International Baltic Sea Fisheries Commission (IBSFC), include e.g. a gradual increase of the natural smolt production of wild Baltic salmon to at least 50% of the natural production capacity. Electrofishing and smolt trapping are the only cost-effective methods to monitor the development of the stocks and have already been included in the previous data collection programmes. Overview of the different types of data available for the different Baltic salmon stocks and the usage of these data in the current ICES assessment in estimating smolt abundance, spawner abundance and associated stock-recruit function is presented in Annex IV. Justification for having at present two index rivers (Tornionjoki and Simojoki) in the same ICES WGBAST assessment unit (unit 1) is that they represent two different river categories and both data are essential for the current assessment inputs. In addition the river Simojoki data has had a particularly important role as a representative of weak stock in stock projections of current ICES WGBAST stock assessment.

9.3 EP – Planned sampling

9.3.1 Extended programme - Monitoring of juvenile salmon in potential salmon rivers

There are three Baltic rivers in Finland, which are nationally selected for attempts to re-establish wild salmon stocks: River Kuivajoki, River Kiiminkijoki and River Pyhäjoki. Re-establishment efforts include stocking of salmon juveniles, habitat restoration/improvement, water quality improvements and management of fisheries. Monitoring of parr densities by electrofishing is suggested here in these rivers. The volume of sampling is related to the size of the rivers so that the relative intensity of sampling is roughly similar to the sampling carried out in the wild salmon rivers (see chapter 9.1.6).

Depending on the annual variation in the river conditions (the most critical variable being discharge), in some year's occurrence of extraordinary conditions may lead to failure of some data collection. On average, this happens on every 5th or 6th year.

Costs included in Finland_Budget-Proposal_2007_31-May-06.xls, Worksheet I. Oth Bio (EP)

9.4 EP – Non-conformities

The most important operational management objective is to gradually increase the natural smolt production of wild Baltic salmon to attain at least 50 % of the natural production capacity of every individual river before the year 2010 (<http://www.ibsfc.org>). Another agreed management objective of the Baltic Salmon Action Plan is that wild salmon populations shall be re-established in potential salmon rivers. This objective calls for collection of data on reproduction success of salmon in the rivers, where actions aiming at re-establishment of salmon population are taking place.

Data from this monitoring is stored on data bases for further reporting in conjunction with national and international (ICES WGBAST) stock assessment. The monitoring is conducted in coordination with other Baltic countries.

10 Module J - Economic data on fishing vessels

10.1 MP – Planned sampling

Collection of economic data is based on register survey that combines information from several data sources. For the register survey the main data sources are Business Register of Statistics Finland and data on catches and fishing vessels from Finnish Game and Fisheries Research Institute (FGFRI). This will be supplemented with a survey to fishermen to update the register and enquire additional information concerning the fishing operation and employment. Also a sample survey will be carried out to collect cost and earnings information according to the regulation.

The target population for evaluation of the economic situation in the fishing sector are all fishing vessels/units, dormant units excluded. (In business statistics firms are considered operational when the annual turnover/catch value exceeding € 9,134.) The determination of fishing sector follows the one used in statistics. All operational firms with fishing as their main branch should be listed in the Business Register of Statistics Finland. This data is supplemented with fishing units with corresponding activity in the fishing registers of FGFRI. These registers are combined to create the frame population for economic data collection.

Economic data is based on a survey on fishing firms and financial statements collected by Statistics Finland. Data on catches and vessels are based on data in FGFRI. These will be linked to firms in the Business Register and classified according to the segmentation presented in the regulation. At the same time the coverage of the data will be checked. Data collected will cover the parameters in the regulation (Annex, Chapter IV and Appendix XVII; see table 10.1) according to the segmentation included in Appendix III as presented in Standard table 10.1.

Table 10.1 Economic information per fleet segment as defined in Appendix XVII.

Parameter (per fleet segment)	Source of data
Income (turn-over) - Total, per species	Total turnover is available from the survey and data on financial statements. Income per species calculated from data on financial statements, data on fish landings and data on fish prices.
Production costs -Crew, fuel, other operational costs	Total production costs and labour costs will be available from data on financial statements. Fuel and other operational costs estimated based on survey.
Fixed costs	Will be calculated from investments
Financial position - Share of own/borrowed capital	Available from data on financial statements.
Investments (asset)	Insurance value from survey or replacement value.
Prices per species	Available from data on fish prices.
Employment - Full time/part time/ FTE	Number of fishermen and FTE will be estimated.
Fleet, - No, GT, kW, age, gear used	Available from fishing fleet registers.
Effort	Available from data on fishing effort.

Collection of economic data

The cost and earnings data will be collected by a sample survey on fishing firms. Account data will be surveyed by stratified survey to detect the cost structure of fishing firms by fleet segments. This data will be combined with financial statement data collected by Statistics Finland. Primary sources of financial statements data in Statistics Finland are direct inquiries and business taxation material supplemented by Business Register data. Data is based on corporate balance sheet and profit and loss account data. Statistics Finland will check for the validity of the data. Cost and earnings data will be linked and combined to data on landings, effort and capacity data in FGFRI. Missing data will be imputed using additional information by stratum. Data will be classified according to segmentation in the regulation. Employment will be presented in number and FTE. In the survey, insurance value will be inquired.

The information gathered by means of the survey will be optional of success of the effort. Participating the survey is obligatory for fishermen and thus results cannot be guaranteed in advance. If the survey is not successful fuel and other costs will be estimated based on earlier survey.

Gathering price data

The price data on fish subject to quota (Baltic herring, sprat, salmon, and cod) are calculated from the purchasing notifications submitted by the first hand purchasers of the fish to the Regional Employment and Economic Development Centres. The price data are checked with the book keeping of 20 fish wholesalers in coastal areas. The prices on other fish species are calculated from that data. The prices are calculated by species, size-class, degree of processing and by month.

Reliability

The survey of cost and earnings data will not be done by random sampling and thus the unbiased error estimators for the parameters will not be available. Also the precision required will not be guaranteed. Financial statements in Business Register are collected exhaustively from the fishing firms. Also the information of capacity and landings and effort data covers all vessels. However, there is under-coverage in the Business Register (compared to target frame population) that has to be estimated. This kind of register survey gives a good coverage in terms of number of vessels and proportion of value, but does not allow calculating unbiased error estimators for the parameters.

Time scale and delay

Information of the economic situation of fishing sector will be provided not earlier than one year after the period investigated. Landings and price information of year 2006 will be finalised by June 2007. Fishing vessel register is updated constantly. Preliminary information on financial statements from year 2006 will be available on the 4th quarter of 2004.

Costs of collection of economic data by groups of vessels in 2007

Majority of the costs is labour costs. Some travels to collect data from various sources will be made. Subcontracting includes costs of getting access to databases in Statistics Finland and outsourced updating of the frame register. The survey on cost and earnings data will be collected by purchasing the data from fishermen's accountants. Also the costs of wholesalers and processors of providing price data are compensated.

Costs included in Finland_Budget-Proposal_2007_31-May-06.xls, Worksheet J. Eco Vess.

10.2 MP – Derogations and non-conformities

None.

10.3 EP – Planned sampling

No extended programme.

10.4 EP – Non-conformities

None.

11 Module K - Data concerning the fish processing industry

11.1 MP – Planned sampling

Collection of economic data concerning the processing industry will be carried as a register survey that combines information from several data sources. The main data sources are Business register and Structural business statistics of Statistics Finland and data on processing in Finnish Game and Fisheries Research Institute (FGFRI).

The target population are all fish processing firms. All operational firms, with fish processing as their main branch, should be listed in the Business Register of Statistics Finland. This data will be supplemented with the data in FGFRI.

Economic data of fish processing firms are gathered from financial statements collected by Statistics Finland. Fish processing data will be estimated by the data and information in FGFRI. Collected data will cover the parameters mentioned in Article 13 and Annex XIX according the table 11.1.

Collection of economic data

Financial statements are based on data collected by Statistics Finland. Primary sources of information are direct inquiries and business taxation material supplemented by Business Register data. Data is based on corporate balance sheet and profit and loss account data. Statistics Finland will check for the validity of the data. Missing data will be interpolated. Use of raw material will be estimated based on information in SF and FGFRI.

Table 11.1 Economic information from processing industry as defined in Appendix XIX.

Parameter	Source of data
Raw material - Total and per species	Survey on fish processing
Income - Total and per product	Total turnover is available from data on financial statements. Income per product not available.
Production costs - labour, energy, raw material, packaging, other running costs	Total production costs available from data on financial statements. Production costs by cost groups available data on financial statements and structural business statistics.
Fixed costs	Available from data on financial statements
Financial position - share of own and borrowed capital	Available from data on financial statements
Investment (asset)	Available from data on financial statements
Prices per product	Not available
Employment - Numbers, FTE	Available from data on financial statements
Capacity utilisation	Not available

Reliability

Financial statements are collected exhaustively from the fishing firms in Business Register. The precision of the estimation procedure cannot be assessed in advance.

Time scale and delay

Information of the economic situation of fish processing sector will be provided not earlier than one year after the period investigated. Preliminary information on Financial statements from year 2006 will be available on the 4th quarter of 2007.

Costs of Collection of data concerning the processing industry

Majority of the costs is labour costs. Some travels to collect data from various sources will be made. Subcontracting includes costs of getting access to databases in Statistics Finland and a survey on fish processing firms.

Costs included in Finland_Budget-Proposal_2007_31-May-06.xls, Worksheet K. Eco Ind

11.2 MP – Derogations and non-conformities

None.

11.3 EP – Planned sampling

Aquaculture production has a significant role in Finnish fishery sector. Aquaculture production dominates the fishery market in the primary production and also as a raw material in processing industry. We will examine the importance of aquaculture production as a part of primary production.

Target population is all fish farming firms in Finland. The frame population is based on the Business Register in Statistics Finland and the fish farming register updated by Finnish Game and Fisheries Research Institute. All the firms will be surveyed by a mail inquiry that is supplemented with a survey by telephone. In this survey it will be enquired the volume of the production by species and the use of the production. The job creation capacity will also be examined.

Costs of Collection of data concerning aquaculture production

Survey will be done by a postal survey supplemented with a telephone survey. Telephone survey will be outsourced and postal survey causes mailing and survey form service costs.

Costs included in Finland_Budget-Proposal_2007_31-May-06.xls, Worksheet K. Eco Ind (EP)

11.4 EP – Non-conformities

None

12 Data bases

12.1 Database development and data management

The database built-up work started with planning phase of the proto system in the last quarter of the year 2005. At the moment schemes and plans are made for the first version of the proto system. This phase will be accomplished till the end of the year 2006. After approval the proto version will be converted into the development version.

The planned proto is constructed using light program tools and therefore some parts have to build-up from the scratch for the development version. Additionally, the old EU-data (years 2002-2005) will be converted as a part of the new system for the comparability reasons of long-term analyses. The development version will be accomplished till the end of the year 2007. After the stakeholders' tests and approval the development version will be converted in the production mode till the end of the year 2008. The production will start in the beginning of the year 2009.

The build up work for the development version of the central database system based on the proto system will be started in the beginning of the year 2007. The phase includes a program, conversion and test phases. This means defining and building up the whole data management system i.e. building up the database tables, indexes, views and triggers, making user accounts, roles, and grants, converting old data for to test and benchmark the final system implementation. The result will be an integrated data management system with easy access over the Internet, and a flexible output delivery system for aggregated level of data. The database system will also allow links to other databases. The data management system will help us to effectively fulfil the demands of data requests from the Commission in the near future.

During the planning of the proto version, estimations in the budget for the development and test versions can be done. Hardware approximations are based on the similar projects on the other business area and the budget attached will carry the development and test phases. Oracle licenses for database management system (Oracle DBMS 10g and Oracle IAS) and data tools (SqlNavigator/TOAD, XML-tools, XMLSpy) will be purchased.

Costs containing both the software and database facilities for the development and test phases are included in FinForms Finland NP 2007.xls, Worksheet Data Base. Part of the conversion work (PL/SQL - programs) will be carried out as a subcontract work.

Costs included in Finland_Budget-Proposal_2007_31-May-06.xls, Worksheet Data Base

13 National and international co-ordination

13.1 National co-ordination

A national co-ordination meeting will be organised yearly at FGFRI by the national correspondent and the contact persons from FGFRI. The meeting will be attended by persons from those FGFRI offices (10) that are involved in the national programme on data collection in order to properly co-ordinate the tasks for the year 2007. The national correspondent will inform the Commission about time and place of this meeting when the date has been agreed.

Costs included in Finland_Budget-Proposal_2007_31-May-06.xls, Worksheet co-ordination.

13.2 International co-ordination

Regional co-ordination will mainly take place within the framework of Regional Coordination Meeting for Baltic Area (RCM-B), including one annual meeting (4 persons). Our plan is to participate in the work of ICES-PGCCDBS, including plenary meeting in March (2 persons) and workshop on discard raising procedures (2 persons). We are also planning to participate in the workshops on sexual maturity sampling (2 persons), on using fishermen to sample catches, and on age reading on flounder. In addition, we will take part in ICES-WGBIFS in April (2 persons).

Finnish-Swedish-Estonian co-ordination meeting of sampling of whitefish, pikeperch, and perch is also scheduled for year 2007 (not eligible under DCR).

Costs included in Finland_Budget-Proposal_2007_31-May-06.xls, Worksheet co-ordination.

13.3 Follow-up of RCM recommendations and initiatives

The follow-up on relevant recommendations by RCM is listed below.

RCM Baltic recommendations:

January 2005, Gdynia, Poland

3.1 Recommendation

Baltic RCM recommends that the each MS on monthly basis update the "Real Time Monitoring Spreadsheet" giving the actual sampling status in each country and giving the coverage as defined according to the DCR. The spreadsheet is available at <http://www.dfu.min.dk/samplingstatus/>.

The Real Time Monitoring Spreadsheet has been provided and available, but has not been used by any of the Baltic countries.

3.2 Recommendation

Baltic RCM recommends in case where more than 5 percent of the national quota is landed in a foreign country, bilateral agreements should be made.

Based on oral agreement, Denmark sampled Finnish cod fishery in 2005, because most of the catches are landed in Denmark.

4.1.1 Recommendation

RCM recommends that a redesign of surveys should be handled by WGBIFS. It is of great importance that Finland and Estonia will participate in the forthcoming WGBIFS meeting in Rostock in primo April 2005.

Two Finnish scientists have participated WGBIFS in Rostock in 2005 and also in Copenhagen in 2006.

6.1 Recommendation

The RCM recommends that sampling should be carried out through out the entire tri annual period.

Finland has carried out sampling annually throughout the entire tri-annual period.

8.1 Recommendations

The group recommends further analysis on the linkage between the vessel unit and family/company income.

We have studied this topic, and we can conclude, that vessel is not a basic unit in economic sense. Sometimes, vessel could be an economic unit, but often the economic actor is fishermen, fisherman household, fishing co-operative or fishing enterprise. For instance if a coastal fisherman owns and uses several small vessels, it is not useful to split the economy by vessels. In fact, in many cases it is impossible for the fisherman to report his economy by vessels, and splitting it afterwards by scientists would produce virtual figures, but not measures of the reality

Other recommendations of that RCM would not arise comments or are irrelevant for comments here

RCM Baltic recommendations:

October 2005, Tallinn, Estonia

Section 2 (Agreement on fleet segmentation for the Baltic Sea and Kattegat)

2. RCM Baltic concludes that MS must conduct analysis of stability on the national fleet.

3. The RCM Baltic concludes that MS must conduct analysis of national data on which length groups yield the most homogenous economic structure.

4. RCM Baltic concludes that the two analyses should be conducted before 1st of January 2006. The results of the analysis should be sent to Jenny Nord at the Swedish Board of Fisheries: (jenny.nord@fiskeriverket.se) before this date. The combined

results from the Baltic will then be presented at the next workshop on fleet based approach in the beginning of 2006.

Comment for 2,3 & 4 above. We made an analysis of the fleet segmentation with respect to a suggested more detailed segmentation. ("Analysis of the appropriate vessel length classes with respect to the homogeneity of the categories in Finland"). It concluded that because the sampling rate of Finnish economic data collection is high, we can produce the results in a more detailed level as suggested. Nevertheless, the suggested segmentation is poor and it deteriorates the sampling and precision of the results. There is a natural stochasticity in fishing. The suggested segmentation, though, is artificial. Cost structure of the fleet follows different reasoning than small vessel length categories. It is rather determined by activity and strategy of skipper.

5. The RCM Baltic recommends that all member states attempt to fill in the matrix (see annex 4) with readily available effort data (by default expressed in days at sea and in number of vessels for 2004) with a view to defining the final version of the matrix before the 1st of January 2006. The data must be sent to Jenny Nord (Sweden) (jenny.nord@fiskeriverket.se) before this date.

More detailed analyses and matrix fillings on effort have been made in Nantes DCR working/training meetings in spring/summer 2006

6. The RCM Baltic recommends that in order to get cost effective and scientifically sound and robust biological sampling schemes some of the gear types at level 4 in the "Nantes matrix" needs to be merged. In the Baltic such gears are bottom trawl/multi rig trawl, which should be treated as one sampling unit instead of two. Further set gillnet, trammel net and tangle net should be one sampling unit instead of three. The RCM Baltic further recommends that all information on gear used in sampled fishing operations should be recorded, allowing post stratification into the different gears if necessary.

In Finnish sampling, the gear information is collected to the level of details that allow post stratification into different units if necessary.

9. Concerning "coastal" surveys: The RCM Baltic suggests that the inclusion of these surveys should be discussed at a national level in order to prepare a future discussion within DCR.

The issue of including coastal surveys in DCR is elaborated for the upcoming RCM

Section 5 (Plans of international co-ordinated trawl and acoustic surveys in the Baltic Sea in 2005 and 2006)

13. RCM Baltic notes that in order to ensure the compatibility of acoustic and hydrological background data, and the comprehensive coverage in the Sub-division 32, the use of one research vessel to cover this area is highly recommended.

Finland and Estonia have planned a survey and made a preliminary agreement with Poland of using Polish research vessel Baltica for the herring acoustic survey in 2005 and 2006.

18. RCM Baltic recommends providing aggregated maturity data to the assessment working groups on a yearly basis for those stocks that are sampled on a routine basis yearly, in a format agreed by the working group.

Finland has annually provided all requested and available data to relevant working groups

21. RCM Baltic recommends that MS upload landing statistics by fishing activity (level 6) and ICES statistical Rectangle from 2004 and 2005 starting from the beginning of 2006 and preferable can re-upload landing statistics on this low aggregation level a couple of years back.

Finland can adapt that recommendation if the data will be used for the scientific advice

14 List of acronyms and abbreviations

ACFM	Advisory Committee on Fisheries Management
BITS	Baltic International Trawl Survey
DCR	Data collection regulation i.e. 1639/2001, 1584/2004
DIFRES	Danish Institute for Fisheries Research
FGFRI	Finnish Game and Fisheries Research Institute
IBSFC	International Baltic Sea Fishery Commission
ICES	International Council for the Exploration of the Sea
MAF	Ministry of Agriculture and Forestry
NP 2006	Finnish National Programme 2006
NP 2007	Finnish National Programme proposal 2007
SAP	Salmon Action Plan
SD	ICES Sub-division
STECF	Scientific, Technical and Economic Committee for Fisheries
STECF-SGRN	STECF Subgroup on Research Need
WGBAST	Baltic Salmon and Trout Working Group
WGBFAS	Baltic Fisheries Assessment Working Group
WGBIFS	ICES Working Group on Baltic International Fish Surveys

15 Comments, suggestions and reflections

16 References

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Annexes

ANNEX I. COLLECTION OF THE DATA CONCERNING COMMERCIAL MARINE CATCHES

Commercial marine catch data collection is based on fishermen register and fishing vessel register maintained by the Fishery Units of the Employment and Economic Development Centres (EEDCs) and by the provincial government of Åland. All those who are engaged in professional fishing are obliged to report their catches to the EEDCs of their region. Depending on the fishery, the reporting is made by EU log books, or by coastal fishery reports. Salmon catches are reported in kilograms and in number. The data is recorded in the EEDCs and provincial government of Åland to a Access database. All the data is forwarded to the Finnish Game and Fisheries Research Institute, where the data is validated and cross checked with the abroad landings data.

The fishing data of the vessels at least 10-metres in length are entered in the EU-logbooks. The data entered are the dates on which catches were made, the type and amount of gear used in fishing, the volume of the catch by species and the catch area. The trawling time of the trawler is reported in hours. The fishing data of vessels under 10 meters are entered in a monthly coastal fishery report. The data entered are the size of the catch by species, the catch area, the type and amount of gear used in fishing, and the number of catch days. The salmon fishing data of vessels under 10 meter are entered in a salmon fishery report for coastal fishermen that has to be completed for each catch. The data entered are the size of the catch, the catch area, the type and amount of gear used in fishing, and the number of catch days.

The catch data covers all catches including those landed abroad. The catch is converted to be equal to live weight. Prepared catches in catch reports are converted to live weights with conversion factors by species. In the Finnish fishing vessels preparing of fish onboard is gutting, and very seldom filleting. Conversion factors are given in appendix in Standard table 5.1.

ANNEX II. Recommended number of samples for evaluating proportions of wild and reared Baltic salmon in Baltic Sea Main Basin

WGBAST recommendation for the minimum number of salmon caught in different subdivisions of the Main Basin that need to be sampled. These sample sizes were calculated based on the catches in 2005. The sample sizes correspond to 1 sample for every 50 tonnes of salmon caught and the sampling of 70 salmon (10 salmon of each size class) within each sample. DN: driftnet; LL: longline.

Country	ICES sub div	gear		Total numb of samples	Total numb of fish
		DN	LL		
DK	24		1	1	70
	25	1	2	3	210
	26		1	1	70
DK Total		1	4	5	350
FI	25	2	1	3	210
	26	1		1	70
	28	1		1	70
FI Total		4	1	5	350
LV Total	26	1		1	70
PL	25	1		1	70
	26	2	1	3	210
PL Total		3	1	4	280
RU Total	26	1		1	70
SE	24		1	1	70
	25	2	2	4	280
	26	1		1	70
	27	1		1	70
	28	1		1	70
SE Total		5	3	8	560
Grand Total		15	9	24	1680

ANNEX III. Transect plan of herring acoustic survey 2006 (preliminary)

Herring acoustic survey in ICES Sub-divisions 28 (part), 29 N and 32 (joint Estonian - Finnish survey)

