

MEMORANDUM

Date 2008-10-10

SWEDISH NATIONAL PROGRAMME FOR
COLLECTION OF FISHERIES DATA 2009 and 2010

in accordance with

Council Regulation (EC) No 199/2008

Commission Regulation (EC) 665/2008

Council Decision 2008/XXX/EC

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I. General framework

This document describes the Swedish Programme for 2009 and 2010 for the collection of data in the fisheries sector. Sweden has actively participated in the outline of the new DCR legislation and during the past three months intense discussions have been held at national level in order to facilitate a smooth transition into the new programme structure.

II. Organisation of the national Programme

II.A. National organisation and coordination

In Sweden, the Swedish Board of Fisheries is the administrative authority responsible for fisheries and fisheries issues. The collection of information on fishing capacity, fishing effort, economics and landing statistics is concentrated to the Department of Resource Management (RF-dep) and the Department of Fisheries Control (K-dep.) while biological data are gathered and analysed at the Institute of Marine Research (IMR), the Institute of Freshwater research (IFR) and the Institute of Coastal Research (ICR). Biological information about catches, information gathered by research vessels and information about discards are co-ordinated internationally in most cases and carried out in close cooperation with research institutes in Member States as well as third countries. IT-issues fall within the responsibilities of the IT-unit of the Swedish Board of Fisheries. All national coordination is led from the Institute of Marine research in Lysekil. However, since all parts of the programme fall within the responsibility of the Swedish Board of Fisheries, national coordination is comparatively simple and participating institutes and units are frequently connected through electronic communication techniques. For issues needing more thorough discussions, meetings are arranged and there is also a yearly presentation of the programme to the Ministry of Agriculture.

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II.B International coordination

Table II.B.1. and Table VI.B. illustrate the Swedish participation in international meetings and workshops. These tables are by no means complete as they will be updated in connection with the announcement from the Commission on December 15 of eligible meetings.

II.C Regional coordination

Sweden is an active participant in the Regional Coordination Meetings for the North Sea and the Baltic Sea. Sweden is also represented in specific working groups of the RACs. Bi-lateral and multi-lateral cooperation on issues like survey design, age-reading, intercalibrations and data-base design is also common for both the North Sea and the Baltic region. Details on coordination within the RCM:s can be found in each relevant module.

Formal agreements for cooperation on sampling have been signed with both Denmark and Germany and these are anticipated to be renewed for 2009-2010 in connection with the RCM-meetings.

III. Module of evaluation of the fishing sector

III.A. General description of the fishing sector

In late 2006 there were 1564 Swedish vessels with licences for commercial fishery and 1880 licensed fishermen. The average age of the fishermen was 52 years. The Swedish fleet consists of many small vessels using passive gear and a smaller number of larger ships mainly using trawls. Most demersal trawlers have their home port on the Swedish west coast as do the larger pelagic trawlers. Most pelagic trawlers from the east coast are targeting vendace. Vessels using passive gears are spread along the entire coastline. Geographically, the activities are concentrated to ICES divisions IIIa and III d and to some extent, divisions IVa and IVb.

The fleet can roughly be divided into:

- Pelagic (trawl/seine) e.g. herring/sprat, mackerel, blue whiting, sandeel, vendace
- Demersal (trawl) e.g. gadoids, witch flounder, shrimp, Norway lobster
- Passive gear (gillnets, fyke-nets, longlines, creels) e.g. cod, herring, salmon, eel, plaice, flounder, turbot, perch, pike, pike-perch, Norway lobster

The number of pelagic trawlers <24 m was 54 in 2007, those >24 m 56, the number of cod trawlers <24 m was 50, those >24 m were 12, those targeting Norway lobster were 86, the shrimp trawlers were 47 while those using passive gears were 472 (figures limited to boats with earnings above 79 400 SEK).

Table III.A.1. illustrates the geographical areas where the fleet is operating and the broader species assemblages.

III.B Economic variables

The Baltic Sea, the North Sea and East Arctic, and the North Atlantic

III.B.1 Data acquisition

Supra region: Vessels will be allocated to the supra region by their fishing days. In 2007 Swedish vessels only operated in one supra region, the Baltic Sea, the North Sea and Eastern Arctic and the North Atlantic. If, by the end of 2008, it can be shown that Swedish vessels have operated in more than one supra region the concerned vessels will be attributed to the supra region in which they had 50 % or more of its fishing days. If vessels are attributed to a different supra region than the Baltic Sea, the North Sea and Eastern Arctic and the North Atlantic, data will be collected for those vessels separately.

Reference years for collection of economic data are 2008 and 2009. Final and validated economic data on 2008 will be available in mid December 2009 and final and validated economic data on 2009 will be available in mid December 2010.

The non-active fleet will not be covered by the survey to be carried out by the Swedish Board of Fisheries (described below) since it by definition does not have any costs related to fisheries. Data are however gathered on effort, which by definition is zero, and capacity (fleet indicators). By experience, the capital value of the non-active vessels is similar to capital costs of active vessels. Therefore capital costs and capital value will be estimated from data of active vessels with the same main gear type as the non-active vessels used when they were last active and fishing. For the indicator financial position, data from company accounts will be bought from Statistics Sweden for a random sample of vessels.

Company accounts: Economic data on costs based on company accounts of all registered fishing companies will be bought from Statistics Sweden. This method results in a close to exhaustive collection of the overall profitability in the fishery. Missing data are due to companies not having sent in their income declaration. Value of landings is compared to the variable “main revenue of the enterprise”. Deviations up to 25 % higher and 20 % lower from “main revenue of the enterprise” are accepted. For enterprises owning more than one vessel the data are separated by using the value of landings per vessel.

When the “main revenue of the enterprise” is more than 25 % of value of landings the data in the tax declarations are multiplied by the quota between the vessels value of landings and “main revenue of the enterprise”. This is based on the assumption that the remaining revenue comes from some other source of income than fisheries and that the distribution of costs are the same as in the fisheries. If the “main revenue of the enterprise” is less than 80 % of the value of landings and where it seems reasonable to assume that there are revenues from the activity that are distributed to a person that we do not have knowledge of, the data are multiplied by the quota between the vessels value of landings and “main revenue of the enterprise”. This results in the data being consistently increased to cover the missing persons' tax declarations.

The data are also corrected for any missing data by a quota between the average value of landings for all vessels in the segment divided by the average value of landings for vessels with tax declarations that are ok.

Questionnaire survey, sampling strategy: All economic parameters listed in Appendix VI cannot be distinguished from the company accounts. Therefore a questionnaire survey will be conducted. For segments containing less than 25 vessels or where the achieved sample rate has been low previous years, the questionnaire will be sent out to all vessels, for larger segments the questionnaire will be sent out to a random sample of vessels. The selected vessels provide additional information on insurance value, investments in physical capital, employment, repair & maintenance and fuel. This additional information will be used to distribute the total variable costs compiled by Statistics Sweden on the company accounts into Repair and maintenance costs, Variable costs, Non-variable costs and energy costs. The insurance value will be used to estimate Capital value and Capital costs according to the proposed PIM methodology in the capital valuation report.

Clustering: Sweden will look into the possibility of clustering segments where the number of vessels is less than 10. If scientific evidence can be shown justifying clustering of segments, this will be carried out and explained in the technical report. Due to limited amount of time to compile the national programme Sweden has not yet examined if there is scientific evidence to justify any clustering of segments.

Definition of variables and sources:

As defined in Appendix VI of the Commission regulation (EC) no 665/2008.

Income: Gross value of landings is compiled from sales notes, landing declarations, logbooks and monthly journals (Swedish Board of Fisheries, SBF). Direct subsidies and other income are compiled from company accounts (bought from Statistics Sweden).

Personnel costs: Wages and salaries of crew are compiled from company accounts (bought from Statistics Sweden). For compilation of imputed value of unpaid labour wages and salaries it will be estimated from data on employment and data on wages and salaries of crew that will be gathered from a panel of vessels.

Energy costs: Are compiled from the questionnaire survey and exclude lubrication oil. Data will not be broken down by type.

Repair & maintenance costs: Compiled from the questionnaire survey. Include all gross costs of repair and maintenance to vessel and gear.

Other operational costs: Variable costs and non-variable costs will be distributed from the gross operational costs compiled from company accounts by Statistics Sweden through the questionnaire survey. At the moment, there is no system of individual transferable quotas. However, the Swedish government is looking into the possibility of making the individual quotas in the pelagic segments transferable and if this will be put into action, data on lease/rental payments for quota or other fishing rights will be gathered in the questionnaire survey.

Capital costs: Capital costs will be calculated according to the PIM methodology documented in the capital valuation report (No FISH/2005/03). Templates available on the DCR website will be applied. Based on age of each vessel, the average service life of vessels from the respective segments will be estimated by conducting a Kaplan-Meier survival analysis for each segment. A survival analysis is a number of statistical procedures that analyse data in order to find the time until an event occurs, in this case the time until a vessel is retired from commercial fisheries. The average service life will be needed in order to distribute the life of the hull, engine, electronics and other equipment over the service life of the vessel. Age will be collected for all vessels from the Swedish fleet register. Calculations of capital costs will be based on the replacement values of the vessels. Replacement values for all vessels are to be estimated in SPSS using insurance values collected through a questionnaire from a randomised sample of vessel owners.

Capital value: Value of physical capital will be based on the depreciated replacement value of the hull, engine, electronics and other equipment. Depreciation is set to: hull 7 %, engine 25 %, electronics 25 % and other equipment 25 %. A digressive depreciation will be used. The replacement value will be assumed to consist of hull 60 %, engine 20 %, electronics 10 % and other equipment 10 %. Calculations of capital value will be made using the outcome of calculations made of capital costs.

Investments: Investments in physical capital i.e. improvements made to existing vessel/gear during the given year will be compiled from the questionnaire survey.

Financial position: data on the debt/asset ratio will be compiled from company accounts (bought from Statistics Sweden).

Employment: FTE National and FTE harmonised will be calculated according to the methodology presented in Study No FISH/2005/14. According to national standards in Sweden, the national reference level for FTE working hours of one crew member, including onboard the vessel and onshore, will be fixed to a total of 1800 hours. The harmonised reference level for FTE working hours will be set to 2000 hours in accordance with the Commission Regulation (EC) No 665/2008 Appendix VI. Data on working hours onshore and number of crew members' onboard (incl. and excl. rotation) will be collected through a questionnaire. Vessel owners (random sample) from all segments will be asked to give information. Estimations will be made in SPSS in order to make data representative for the population of vessels in each segment respectively. The number of working hours on board the vessel will be based on data collected from logbooks on days at sea (exhaustive survey) and the assumption that one day at sea consists of 12 working hours. Total employment is calculated as average number of persons employed by the vessel.

Fleet: Data on number of vessels, mean length over all (LOA), mean vessel tonnage, mean vessel power and mean age will be compiled from the fleet register.

Effort: Data on days at sea will be compiled from logbooks and monthly journals. All fishing operations of a commercial nature conducted either by vessels reporting in logbooks or by fishermen holding professional fishing licenses fishing with smaller vessels reporting in coastal journals are covered. Data on energy consumption will be compiled from the questionnaire survey.

Number of fishing enterprises/units: Data will be compiled from the fleet register by size category.

Production value per species: Value of landings per species will be compiled from logbooks, landings declarations and sales notes. Average price per species will be compiled from sales notes and stated as prices in euros per kilo, live weight.

The data will be analysed in database programmes (Excel/Access) and a programme for data management and statistical analysis (SPSS).

III.B.2 Data quality

Sweden will in the technical report give a thorough quality report of the data. For data from company accounts bought from Statistics Sweden, the aim is to have an exhaustive survey. If, by any reason, there are missing data this will be described in the quality report. Where a random sample shall be carried out the coverage rate of the population in the segment is given in table III.B.3. The planned target is to cover at least 10 % of the segment or at least 10 vessels.

III.B.3 Regional coordination

Sweden will participate in the RCMs and implement their recommendations.

Source	RCM Recommendations	Planned responsive actions
RCM Baltic & RCM North Sea & East Arctic (2007)	<i>THE RCM BALTIC AND RCM NS&EA RECOMMEND A WORKSHOP ON OPTIMIZING SAMPLING STRATEGY FOR ECONOMIC DATA.</i>	IF A WORKSHOP WILL BE ORGANIZED SWEDEN WILL PARTICIPATE.
RCM Baltic (2007)	<i>THE RCM BALTIC RECOMMENDS THE DESCRIPTION OF THE SOURCE OF THE INFORMATION, AND WHEN APPLYING A SAMPLING PROCEDURE, A DESCRIPTION OF METHOD AND STRATEGY HAS TO BE CLEARLY DESCRIBED IN THE NATIONAL PROGRAMME TO GIVE USEFUL INFORMATION ON QUALITY OF THE OBTAINED DATA. IN THE TECHNICAL REPORT THERE SHOULD THEN BE A QUALITATIVE QUALITY REPORT CONTAINING A THOROUGH DESCRIPTION OF THE METHODS AND STRATEGIES USED AND THE CHARACTERISTICS OF THE GATHERED DATA. THE RCM BALTIC RECOMMENDS NOT TO USE THE PRECISION LEVEL AS AN INDICATOR OF HETEROGENEITY BUT RATHER USE THE MEAN VALUE AND STANDARD DEVIATION.</i>	INFORMATION IS GIVEN ON THE SAMPLING PROCEDURE IN THIS NP. SWEDEN WILL PROVIDE A THOROUGH QUALITY REPORT IN THE TECHNICAL REPORT.
RCM North Sea & East Arctic (2007)	<i>THE RCM NS&EA RECOMMENDS A DEDICATED WORKSHOP BY THOSE COUNTRIES THAT HAVE ECONOMIC FLEET DATA AVAILABLE FOR SEVERAL YEARS TO EXAMINE IF THE DATA ON THE LESS ACTIVE AND INACTIVE SECTOR ARE STABLE.</i>	IF A WORKSHOP WILL BE ORGANIZED SWEDEN WILL PARTICIPATE.
RCM North Sea & East Arctic (2007)	<i>THE RCM NS&EA RECOMMENDS SETTING UP A WORKSHOP TO CLARIFY ALL OUTSTANDING ISSUES CONCERNING THE FLEET-BASED APPROACH WITH REGARD TO ECONOMIC DATA COLLECTION.</i>	IF A WORKSHOP WILL BE ORGANIZED SWEDEN WILL PARTICIPATE.

III.B.4 Derogations and non-conformities

There are no planned derogations or non-conformities with the requirements of the DCR.

III.C Biological - metier-related variables

THE BALTIC SEA

III.C.1 Selection of metiers to sample

The main input data for the ranking of metiers and the subsequent choice of metiers to sample is information from the logbooks and in the case of small scale fisheries, information from monthly fishing journals. The Swedish logbook is extended compared to the EU logbook. Valuable additional information in the Swedish logbook is the data on a haul to haul basis and detailed geographical information as to where the fishing takes place (lat, long). The fishermen also provide more detailed information of the gears used and the species targeted. Sweden has, for example, for the “Bottom Otter Trawl (OTB)”, 19 national codes, all describing different gear characteristics (incl. selectivity devices) and target species assemblages. Furthermore, it is mandatory for Swedish vessels not carrying logbooks to report their gear, number of fishing days, fishing areas and catches (by species) in monthly fishing journals.

When assigning fishing trips to metiers, the national gear codes have been assigned to a metier if the national code in combination with the mesh size clearly falls within one DCR metier (level 6). For example, there is a national gear code for fyke nets targeting eel. All fishing trips registered with this gear code have been assigned to FYK_CAT_0_0_0. If the definition of the national gear code allows fishing trips to be allocated to more than one DCR metier (level 6) the fishing trip have been assigned to a metier using the national gear code in combination with the catch composition in weight.

The ranking of metiers have been done by region and not by fishing grounds. The reason for this is that region is the relevant spatial unit for some metiers (such as PTM_SPF_16-31_0_0) while fishing ground is more accurate for others. National metiers taking the fishing ground into account have been established for metiers where the fishing grounds are considered important.

The bottom trawl fishery targeting cod is, for example, considered to be two metiers (subdivision 22-24 and subdivision 25-32) since they target cod from different stocks and have a different seasonal exploitation pattern. All selected metiers, including national metiers taking fishing ground (and in a few cases target species), are listed in table III.C.3.

Total value of a metier is calculated by using mean values (and weight by species) of the different species.

The value is given in EUR.

Effort is reported as days at sea.

All metiers for which trips have been allocated to are presented in table III.C.1

III.C.2 Data acquisition

The extended Swedish logbook and the mandatory monthly fishing journals for vessels not carrying logbooks, give Sweden the opportunity to have complete information of species composition and weight by species in landings from all metiers. Information from sales slips will further, in relevant cases, provide us with information on composition of commercial size categories in the different metiers. Size categories in Sweden are harmonised to the EU standard.

For the metiers selected for sampling, the sampling scheme will further provide us with information on length frequencies of the landed part of the catch and volumes of discards. For G1 and G2 species, length (and age) composition will also be obtained from the discarded part of the catch.

Sweden will apply different sampling strategies on different metiers depending on the different characteristics of the metiers. At all sampling occasions, information on vessel and gear characteristics as well as place, date, time and duration of the fishing operations will be collected.

Main sampling strategies

Concurrent sampling of catches at sea

This sampling scheme will be applied for metiers where discard rates are expected to be above 10%. In the Baltic this sampling strategy will be the primary strategy applied to trawls targeting demersal fish (OTB_DEF_>=105_1_110 and OTM_DEF_>=105_1_110).

Data will be collected by staff from Swedish Board of Fisheries (SBF) by sampling on board randomly chosen commercial fishing vessels.

Sampling scheme 1 will be applied.

Information to be collected is:

- Total weight of discard and landing by all species caught
- Separate length distributions of discard and landings by all species caught. If the retained part of the catch is landed in commercial weight categories, separate length frequencies are obtained by category
- Otoliths per cm group of discard part of the catch of G1 and G2 species for which Sweden conducts age sampling of landings.

For some metiers, sampling will be performed as self-sampling by fishermen. Unsorted random subsamples of the total catch, including by-catches and discard, are purchased directly from the vessel. Samples may also be collected by the Swedish Coast Guard. All the samples are transported to the Swedish Board of Fisheries research laboratories for analysis where information is registered as described above (PTM_SPF_16-31_0_0, GNS_SPF_<110_0_0 and OTB_SPF_16-31_0_0 in SD 30 and GNS_DEF_>110_0_0 flatfish). The sampling procedure will be validated by SBF staff on a regular basis-

Concurrent sampling of landings at markets

This sampling scheme will be applied for metiers where discard rates are expected to be low. In the Baltic this sampling strategy will be the primary strategy applied for trawls targeting small pelagic fish (PTM_SPF_16-31_0_0 and OTB_SPF_16-31_0_0) and for gillnetters and longliners targeting demersal fish (GNS_DEF_>=110_0_0 and LLS_DEF_0_0_0).

Data will be collected by staff from Swedish Board of fisheries by randomly sampling landings in harbours.

Sampling scheme 1 will be applied.

Information to be collected is:

- Total weight of landing by all species caught
- Length distributions of landings by all species caught. If the landed in commercial weight categories, separate length frequencies are obtained by category

For metiers some targeting small pelagic fish (PTM_SPF_16-31_0_0 and OTB_SPF_16-31_0_0 (sub 22-29)) the information will be based on unsorted sub-samples of the total landing purchased from the fishermen, purchased at different landing ports. All these samples

are transported to the Swedish Board of Fisheries research laboratories for analysis where length measurements of all species included in the sample are taken.

Sweden will during 2009, for some metiers (GNS_DEF_>=110_0_0 and LLS_DEF_0_0_0), as a complement to the market based concurrent sampling, carry out a pilot project to evaluate if discards in these metiers could be assessed by fishermen bringing the discards ashore.

Other – Stock specific sampling based on commercial size categories

In Sweden all information for landings required by metier are available in the official catch statistics except length distributions. The distribution of landed size categories by metier is however available through sales slips. Commercial size categories in Sweden are well defined and harmonised to EU standards.

In order to improve precision of the length distribution for the landed part of the catch, Sweden will for some metiers (ex. OTB_DEF_>=105_1_110) and stocks, carry out complementary stock specific sampling based on commercial size categories.

Other-Stock specific sampling combined with survey data

In the metier of fyke net fisheries targeting catadromous species (FYK_CAT_0_0_0) sampling of discards at sea is not considered feasible in all fishing grounds (North Sea SD 20-21, Baltic SD 22-24), due to a high rate of consumption of the discard by shore crabs. Concurrent sampling at sea will be replaced by analysis of data from existing test fishing surveys using fyke nets. Survey data on catch composition and length distributions are available. As a complement, stock-specific sampling of the length distribution of landings will be performed by staff at SBF.

Other- detailed journal by fishermen

For metiers in which daily catches are expected to be low or irregular, concurrent sampling of catches at sea will partly be performed by contracted fishermen, who are asked to keep a more detailed journal of their catches (FPO_ANA_0_0_0). The information will serve as an addition to stock-specific sampling of the length distribution of catches being performed by staff at SBF, in order to increase precision.

Allocation of sampling effort to metiers

Sampling effort has been allocated to the metier based on prior sampling, knowledge of variation in the different metiers, importance of different metiers (Swedish share of the metier / stocks at an international level) and precision targets. Sampling effort is allocated ensuring that the number of trips sampled is at least one per month and metier throughout the fishing season. However, so far, no thorough analysis has been made to optimise number of samples and sample sizes for sampling all the Swedish metiers. Sweden has been waiting for the finalisation of the COST project to initialise this work. Optimisation of sampling and sampling schemes will be a prioritised issue in Sweden the forthcoming years. Planned number of sampled trips by metier is presented in table III.C.3.

For small-scale coastal fisheries, conducted from vessels < 10 m length, presenting fishing effort as total number of trips (table III.C.3) is not applicable. Statistics from these fisheries are available at the level of effort per month in the obligatory national fishing forms, and the relevant measure of effort will vary with gear applied. For these fisheries, sampling effort is allocated ensuring that the number of sampling occasions is at least one per month and metier throughout the fishing season, although relevant measures of total effort are currently lacking.

Table III.C.4 shows sampling intensity of length measurements of all G1 and G2 species listed in Appendix VII. The sampling strategy for metiers is aiming for a certain number of trips (≥ 1 trip per month) and/or number of hauls, rather than targeting a certain number of individuals to be measured. In the sea sampling programme, Sweden as a “rule of thumb” takes random subsamples containing approximately:

for species with a large occurrence at the trip/haul:

Discards; 100 individuals / haul for cod and other species with a wide length frequency; 50 ind/haul for other species.

Landings; 100 individuals / size category for cod and other species with a wide length frequency; 50 ind /haul for other species.

for other species:

all available individuals within the trip/haul/sample

The catch composition and volume in catch is not known beforehand and therefore, numbers of length measured individuals are impossible to predict and plan exactly. In table III.C.4 number of length measured individuals sampled in 2007 are listed to give an idea of sampling levels. Cells containing “0” means that the species was not caught and length measured in 2007 but could appear in future catches. Knowledge of CV levels in length measurements are not calculated for all stocks and the sampling approach described above has been used. Column “No.of fish necessary to achieve the precision target”, has therefore been left blank, except for one stock.

Merging of metiers for sampling

Metiers with equal or very similar catch composition have been merged for sampling purposes. All merged metiers are presented in table III.C.2. Information on gear characteristics will however be collected at all sampling occasions to identify the “original” metier sampled.

The merging of metiers is for the planned sampling in 2009-2010 not always based on a thorough scientific analysis but on the knowledge of the exploitation pattern, management of the fisheries and “common sense”. Scientific analysis of the metiers and the possibilities to merge them based on scientific analysis will be a prioritised issue during the programme period. Rationale for merging of metiers is expressed below within the description of the different metiers.

Description of Swedish metiers that will be sampled.

Descriptions of fisheries picked by the metier ranking system but not chosen for sampling are found in III.C.5 “Derogations and non-conformities”

Trawl fisheries targeting small pelagic fish (PTM_SPF_16_31_0_0), subdivision 22-29, 32

In 2007 the total annual landing from the metier was 137 000 tonnes. The landings constitutes exclusively (>99%) of the target species herring and sprat. The majority of the landings are for industrial purposes but there are also landings for human consumption. The fisheries are conducted all year around but are less intense during summer. The fishery is nationally managed by yearly rations, limiting the allowed landing by vessel. The majority of the catches (94% in 2007) are taken by pair trawlers using a mesh size 16-31 mm. However, to some extent other trawls and mesh sizes are used within the fisheries. The metiers PTM_SPF_32-69_0_0, PTM_SPF_16-31_0_0, OTM_SPF_32-69_0_0, OTM_SPF_16-31_0_0, OTB_SPF_32-69_0_0 and OTB_SPF_16-31_0_0 are thereby merged.

The metier was included in the sea sampling programme 1996-2001. Discard rates are estimated to be below 10%. The metier will be sampled concurrently in harbours/at markets by purchasing unsorted samples. Sampling scheme 1 will be applied. Sampling will be stratified by quarter and subdivision. The assumption for the planned number of trip is that the fishery is conducted all year around in the main subdivisions (SD 24, 25, 27, 28, 29).

Trawl fisheries targeting small pelagic fish (OTB_SPF 16 31 0 0) , subdivision 30-31

The herring fishery in SD 30 and 31 is regulated by TACs within Management Unit 3 of International Baltic Sea Fishery. Fishing data of the trawl fisheries are entered in the Swedish logbook, which conforms with the EU fishing logbook but provides information on hauls, positions and applied gear on a more detailed basis.

Total landings of herring (*Clupea harengus* spp. *membrans*) in sd 30-31 amounted to 2650 tonnes in 2005-2007. The main fishing season on trawl fisheries targeting herring for human consumption is in quarter 2, but some fishing takes place throughout the year. The fishery is clearly concentrated to subdivision 30, where all of the landings are normally taken. The estimated amount of by-catch is low, as evident from previous sampling within this metier. Sampling scheme 1 will be applied. Samples will be collected by purchasing a random sample of about 20 kg of the unsorted catch, including by-catches and discard, directly from the fishing vessel. Sampling will be performed from three different vessels in each quarter (1-4) in subdivision 30. Samples are analyzed by staff at ICR in Öregrund. The catch is sorted and weighted by species and commercial category, and the lengths of all individuals are registered.

Bottom trawl fisheries targeting demersal fish (OTB_DEF >=105 1 110) , subdivision 22-24

The bottom trawl fisheries targeting demersal fish in subdivision 22-24 is almost exclusively a cod fishery, exploiting the western Baltic cod stock. In 2007 the total landing from the metier was 1620 tonnes of which 1520 tonnes (94%) were cod. The fisheries are managed in accordance with the Management plan for Baltic Sea cod (1098/2007) which includes a closed season (April) during the spawning season. The metier is also limited by allowed number of days at sea in accordance with the TAC regulation (1404/2007 annex II). Sweden practices temporal closures on a national basis to fulfill the effort limitation in the regulation. The fishery is further nationally managed by rations, limiting the allowed landing for a 14 day period by vessel. The fishing pattern (exploit effort) in subdivision 22-24 is strongly linked to regulations limiting the fisheries in area 25-32 since the same vessels are involved in both fisheries and thereby varies over year.

The metier has been included in the sea-sampling programme since the mid 1990ies. Discard rates of cod fluctuates between years but the overall discard rate is estimated to be above 10%. The metier will be sampled concurrently at sea throughout the main fishing season. Sampling scheme 1 will be applied. Sampling will be stratified by quarter.

The majority of the fisheries are conducted with otter bottom trawls even though some fishermen are using twin trawls. The exploitation pattern of the gears is the same and the metiers OTB_DEF_>=105_1_110 and OTT_DEF_>=105_1_110 are therefore merged.

Bottom trawl fisheries targeting demersal fish (OTB_DEF >=105 1 110) , subdivision 25-32

The bottom trawl fishery targeting demersal fish in subdivision 25-32 is almost exclusively a cod fishery, exploiting the eastern Baltic cod stock. In 2007 the total landing from the metier was 6215 tonnes of which 6105 tonnes (98%) were cod. The fishery predominantly takes place in subdivision 25. The fisheries are managed in accordance with the Management plan

for Baltic Sea cod (1098/2007) which includes a closed season during July-August. The metier is also limited by allowed number of days at sea in accordance with the TAC regulation (1404/2007 annex II). Sweden practices temporal closures on a national basis to fulfill the effort limitation in the regulation. The fishery is further nationally managed by rations, limiting the allowed landing for a 14 day period by vessel. During springtime the bottom trawl fishery is some years replaced by a mid-water trawl fishery (see OTM_DEF_>=105_1_110).

The metier has been included in the sea-sampling programme since the mid 1990ies. Discard rates of cod fluctuate between years but the overall discard rate is estimated to be above 10%. The metier will be sampled concurrently at sea throughout the main fishing season. Sampling scheme 1 will be applied. Sampling will be stratified by quarter.

The majority of the fisheries are conducted with otter bottom trawls even though some fishermen are using twin trawls. The exploitation pattern of the gears is the same and the metiers OTB_DEF_>=105_1_110 and OTT_DEF_>=105_1_110 are therefore merged.

Midwater trawl fisheries targeting demersal fish (OTM_DEF_>=105_1_110), subdivision 25-32

In 2007 the total landing from the metier was 1225 tonnes. The landings consist of more than 99% of cod. The fishery is conducted in the springtime when the cod leaves the bottom to spawn or when the oxygen concentration in the bottom water is low. The importance of the midwater trawl fisheries in comparison with the bottom trawl fisheries vary considerable (0-20% of the trawl catches of cod) between years. The fishery is managed the same way as the bottom trawl fisheries (OTB_DEF_>=105_1_110) in the area.

The metier has been included in the sea-sampling programme since the mid 1990ies. Discard rates of cod fluctuate between years but the overall discard rate is estimated to be above 10%. The metier will be sampled concurrently at sea throughout the main fishing season if the fishery will be of importance during the programme period. Sampling scheme 1 will be applied. Sampling will be stratified by quarter.

Set gillnet targeting small pelagic fish (GNS_SPF <110_0_0)

A small-scale gillnet fishery targeting herring (*Clupea harengus* spp. *membrans*) for human consumption is conducted in near-shore areas. The major proportion of the fishery is conducted in SD 30 and 31. The fishery mainly takes place during the peak reproductive period of herring in the spring and in some cases also during a second reproductive peak in the autumn. Landings are recorded in monthly fishing journals, which provide information of species composition and weight by species. Average landings in 2006-2007 in the Baltic Sea were 1000 tonnes per year, and the amount of by-catch is estimated as low. The metier was selected due to high effort (5878 days per year).

Sampling will be performed in SD 30-31, where main part of the fishery within this metier is conducted. Sampling scheme 1 will be applied. Samples will be collected by purchasing a random sample of about 20 kg of the unsorted catch, including by-catches and discard, directly from the fishing vessel. Because of restricting weather conditions, gill net fishing is limited in quarters 1 and 4, and sampling will be conducted in the quarters of relevance for the fishery (2-3). Sampling will be performed from three different vessels in each quarter (2-3) and subdivision. Samples are analyzed by staff at ICR in Öregrund. The catch is sorted and weighted by species and commercial category, and the lengths of all individuals are registered.

Set gillnet fisheries targeting demersal fish (GNS DEF >=110 0 0)

Gillnet fisheries targeting demersal fish could be divided into two national metiers based on target species- A gillnet fishery targeting cod and a gillnet fishery targeting flatfish. The gillnet fishery targeting cod is predominantly taking place in subdivision 23, 24 and 25 while the targeted flatfish fishery is conducted further north (subdivision 27 and 28). A variety of mesh sizes are used in both fisheries as well as a mixture of set gillnets and trammel nets. Set gillnets and trammel nets as well as the different mesh sizes have therefore been merged for sampling purposes. The gillnet fisheries targeting cod have been divided into two metiers based on fishing ground.

i) cod, subdivision 22-24

In 2007 the total landing from the metier was 1445 tonnes of which 1227 tonnes (85%) were cod. The Swedish fisheries take place in subdivision 23 and 24. The fisheries are managed in accordance with the Management plan for Baltic Sea cod (1098/2007) which includes a closed season (April) during the spawning season. The metier is also limited by allowed number of days at sea in accordance with the TAC regulation (1404/2007 annex II). Sweden practices temporal closures on a national basis to fulfill the effort limitation in the regulation. The fishery is further nationally managed by rations, limiting the allowed landing for a 14 day period by vessel.

The metier has been included in the sea-sampling programme during 1996-2005. The discard rate was found to be well below 10% in subdivision 24 but higher in subdivision 23. One reason for this is that subdivision 23 borders to the Kattegat which houses a more complex marine fauna. Sampling will, due to the differences in exploitation pattern, be stratified by subdivision. The metier will be sampled concurrently at harbours (markets) throughout the main fishing season. Sweden will during 2009, as a complement to the market based concurrent sampling, carry out a pilot project to evaluate if discards in the metier could be sampled after fishermen bringing the discards ashore. Sampling scheme 1 will be applied. Sampling will be stratified by quarter.

i) cod, subdivision 25-32

In 2007 the total landing from the metier was 1700 tonnes of which 1600 tonnes (94%) were cod. The Swedish fisheries predominantly take place in subdivision 25. The fisheries are managed in accordance with the Management plan for Baltic Sea cod (1098/2007) which includes a closed season (July-August) during the spawning season. A limited fishery (5 days a month) is allowed for vessels below 12 meters during the closed season. The metier is limited by allowed number of days at sea in accordance with the TAC regulation (1404/2007 annex II). Sweden practices temporal closures on a national basis to fulfill the effort limitation in the regulation. The fishery is further nationally managed by rations, limiting the allowed landing for a 14 day period by vessel.

The metier has been included in the sea-sampling programme during 1996-2005. The discard rate was found to be well below 10%. The metier will be sampled concurrently in harbours (markets) throughout the main fishing season. Sweden will during 2009, as a complement to the market based concurrent sampling, carry out a pilot project to evaluate if discards in the metier could be sampled after fishermen bringing the discards ashore. Sampling scheme 1 will be applied. Sampling scheme 1 will be applied. Sampling will be stratified by quarter.

ii) flatfish

A seasonal set-gillnet fishery targeting flounder (*Platichthys flesus*) is conducted at the Swedish coast in the central Baltic. The quantitative focus of the fishery is within SD27. The fishery is regulated by minimum landing size, closure-time during spawning and technical measures (minimum mesh-size). Because of the restrictions in minimum mesh size, discard rate is expected to be low. Sampling will be conducted by the ICR.. Sampling scheme 1 will be applied. Samples will be collected by purchasing unsorted random samples of the catch, including by-catches and discard, directly from the fishing vessel. Sampling will be done monthly in SD 27 and will be temporally focused on the most intensive fishing period (July-August), which covers more than 70% of the fishery. The sampled catches will contain at least 300 flounders every month.

Longline fisheries targeting demersal fish (LLS DEF 0 0 0), Subdivision 25-32

In 2007 the total landing from the metier was 560 tonnes. The landings consist of more than 99% of cod. The Swedish fisheries predominantly take place in subdivision 25. The fisheries are managed in accordance with the Management plan for Baltic Sea cod (1098/2007) which includes a closed season (July-August) during the spawning season. A limited fishery (5 days a month) is allowed for vessels below 12 meters during the closed season. The metier is limited by allowed number of days at sea in accordance with the TAC regulation (1404/2007 annex II). Sweden practices temporal closures on a national basis to fulfill the effort limitation in the regulation. The fishery is further nationally managed by rations, limiting the allowed landing for a 14 day period by vessel.

The metier has been included in the sea-sampling programme during 2003-2005. The discard rate was found to be below 10%. The metier will be sampled concurrently in harbours (markets) throughout the main fishing season. Sweden will during 2009, as a complement to the market based concurrent sampling, carry out a pilot project to evaluate if discards in the metier could be sampled after fishermen bringing the discards ashore. Sampling scheme 1 will be applied.

Sampling will be stratified by quarter.

Fyke net fisheries targeting catadromous species (FYK CAT 0 0 0)

Fishing for yellow eel (*Anguilla anguilla*) with small fyke nets is concentrated to the Öresund area (ICES SD 23). A minor fishery also exists on the central Baltic coast in ICES SD 27. All areas target the same subpopulation of eel, based on a common recruitment of glass eel to the Swedish west coast. Peaks in landings normally occur in May-September. The total annual landings in this fishery were 68 tonnes in 2006-2007. Discards in the central Baltic are estimated to be small, and non-target species and individuals can be returned live with a high probability of survival. Discards in the Öresund area are estimated to be above 10%, due to a high abundance of shore crabs eating most of the fish by-catch. Due to the high level of shore crab consumption, sampling for discard in the Öresund area is considered impossible within reasonable costs. Survey data on catch composition exist for long time-series in that area that will provide a good proxy for discards in the fyke net fishery. Concurrent sampling at sea is proposed to be replaced by analysis of data from existing test fishing surveys using fyke nets, from which data on catch composition and length distributions of all species is available. As a complement, stock specific sampling of yellow eel will be applied on a quarterly basis in quarters 2 and 3. Sampling of this fishery will be coordinated with sampling of the fyke net fishery targeting yellow eel in the North Sea and East Arctic region. The metier was selected due to high effort.

Pound net fisheries targeting catadromous species (FPN CAT 0 0 0)

This fishery targets silver eel (*Anguilla anguilla*) in the early phase of their migration towards the spawning grounds in the Sargasso sea. It is the basis of small scale coastal fisheries in many areas along the Swedish coast in ICES subdivisions 23, 24, 25 and 27, i.e. from Öresund into the Baltic proper. The total annual landings in this fishery were 254 tonnes in 2006-2007. It is a seasonal fishery, starting at midsummer in the easternmost parts. Peaks in landings normally occur in August-October in SD25 and 27 and the latest in October-November in the Öresund area. A seasonal span from summer to late autumn reflect plausible differences in the composition of by-catches and discards, with freshwater species being more abundant at higher water temperatures in summer in the Baltic Proper and marine species more plausible in the autumn and in the south-western parts of the area. Discards are estimated to be above 10% and a concurrent sampling of catches at sea is proposed, based on monthly samples during the peak of the season in ICES SD 23, 24, 25 and 27. The metier will be sampled using sampling scheme 1. The metier was selected due to high effort.

Trawl fisheries targeting freshwater species (PTB_FWS_16-31_0_0)

A seasonal small-meshed trawl fishery with small-sized pair-trawlers is conducted in Sub-division 31 (Bothnian Bay). The fishery occurs within the Swedish territorial zone and is nationally regulated by effort (license permits), area closures and technical measures (selective grids). The fishery is only allowed during six weeks each autumn. Target species is vendace (*Coregonus albula*). Average landings 2006-2007 of all species were 1114 tonnes per year. The major by-catch consists of herring (*Clupea harengus*) (20% in weight) but minor catches of whitefish (*Coregonus lavaretus*) (2%) and other fresh-water species (3%) are common. Catches including by-catches are landed unsorted and recorded by census methods (logbooks and specific fishing journals). The metier is sampled following sampling scheme 1. Unsorted samples of the catch are sampled twice during the fishing season (September-October) using a randomized design by vessel and landing date. The metier was selected due to high economical value.

Trap net fisheries targeting anadromous species (FPO ANA 0 0 0)

Coastal fishery for anadromous species in the Baltic is heavily dominated by the metier FPO_ANA_0_0_0 with different kinds of traps having similar catch composition. The metiers FYK_ANA_0_0_0 and FPN_ANA_0_0_0 are merged with this metier, due to strong similarities in catch composition. The metier mainly targets salmon (*Salmo salar*) and whitefish (*Coregonus lavaretus*). The fishery is nationally regulated by effort (permit, area and seasonal closures). This fishery targeting anadromous fish takes place almost exclusively in Sub-division 30-31 (94.4% of total catch) even though it also occurs to a very low extent in Sub-division 22-29. Fishing takes place mainly in quarters 2 and 3. A sampling of this metier was motivated by the high proportion of the total fishing effort. Anadromous species made up in total 92.5% of the total catch of 202 tonnes fished by commercial fishermen in 2007 with freshwater species contributing to most of the remainder. This catch figure does not cover the recreational fishery with similar gear operated in Sub-division 30-31. Sampling of this metier takes place partly by selecting particular fishermen who are considered representative of the fishery. They are asked to keep an extra journal with more detailed records of their fishery than the normal logbook (strategy "other" in Table III.C.3). Sampling of length distribution of catches from these fishermen will take place by observers either at sea or in harbours at least monthly dependent on local conditions and the schemes of local fishermen. Discards and total landings will be checked by sea sampling.

Set gillnet fisheries targeting anadromous and freshwater species (GNS ANA <110 0 0)

The coastal gillnet fishery targets both anadromous and freshwater species. The metier GNS_FWS_<110_0_0 is merged with this metier, due to strong similarities in catch composition. The most important target species are common whitefish (*Coregonus lavaretus*) and perch (*Perca fluviatilis*). The total landings in the Baltic region were approximately 230 tonnes in 2007, of which over 60% was whitefish and perch. Set gillnet fishing is common along the entire Swedish Baltic coast, however, more than half of the total landings arise from SD 30-31. Pike (*Esox lucius*) and pikeperch (*Sander lucioperca*) are other species caught with set gillnet with mesh-size 110 mm or smaller. These freshwater species are generally caught in specific areas and during short periods of the season. The level of discard is estimated to be low in the catches. Even though the recorded catch of sea trout is low in this metier, it may be sufficient to have a negative impact on weak stocks. Set gillnet is a fishing method being selective regarding size structure (confirmed by national and regional survey data). Concurrent sampling at sea following sampling scheme 1 will be performed on a monthly basis during the main fishing season in the quantitatively most important areas (SD 30 and 31). The metier was selected due to high effort.

III.C.3 Data Quality

Detailed information on the metiers (including national metiers) and stratification planned for sampling the metiers are available in section III.C.2 and table III.C.3. During the forthcoming years, after the finalisation of the COST project, Sweden will prioritise analytical work to increase quality and knowledge of quality in sampling.

The work will include

Scientific analysis of possibilities to merge metiers

Scientific analysis of necessary sampling levels (no. of trips and length measurements) to reach certain precision levels (length frequencies, discards etc)

Cost-benefit analysis of sampling allocation to different metiers

III.C.4 Regional Coordination

Regarding bilateral agreements with Denmark and Germany for the Baltic, this has been done for previous years and the intention is to follow up this for the period 2009-2010, during the RCM meeting in December 2008.

Recommendations made in the RCM Baltic are listed below starting with 2007 back to 2005. Recommendations concerning 2008 can only be included after the RCM meeting which will be held in December 2008.

The bilateral agreements and recommendations for 2008 have to be submitted in an updated version of the programme. From 2007 Sweden conducts an extended hydro-acoustic herring survey in the Baltic Sub-division 30 within the ICES WGBIFS framework. The extended survey as a part of the P1 hydro-acoustic survey in Sub-divisions 25-29 has been endorsed by both ICES, RCM Baltic and COM. From 2008 the survey is coordinated between Finland and Sweden. A formal bilateral agreement on survey calibration and biological sampling of the herring fishery (RCM Baltic 2006) is expected to be signed in 2009. The issue will be discussed during the RCM Baltic 2008 December meeting.

The bilateral agreements and recommendations for 2008 will be submitted in an updated version of the programme.

Source	Recommendation	Action
RCM Baltic (2007)	<i>THE RCM BALTIC RECOMMENDS THAT ALL MS SUBMIT DATA IN THE AGREED FORMAT WHEN REQUESTED. THE COMPILED REGIONAL DATA SHOULD BE DISTRIBUTED TO THE MEMBERS OF RCM BALTIC WELL BEFORE THE MEETING</i>	SE COMPILED THIS DATA TO THE MEETING IN 2007 AND WILL PREPARE REQUESTED DATA FOR FUTURE MEETING TO GAIN COOPERATION BETWEEN MS IN THE RCM.
RCM Baltic (2007)	<i>THE RCM BALTIC RECOMMENDS THAT ALL MS UPLOAD DATA (EFFORT, LANDINGS-ALL SPECIES, SEA-SAMPLING, SAMPLING OF LANDINGS) FOR THE TRAWL FISHERIES TARGETING COD IN THE BALTIC IN ORDER TO ALLOW ANALYSIS OF THE FISHERIES FACILITATING FUTURE TASK SHARING OF DISCARD SAMPLING</i>	DONE
RCM Baltic (2007)	<i>REGIONAL SAMPLING 4.1 UNTIL ROBUST INTERNATIONAL GUIDELINES FOR ANALYSIS OF LOGBOOK DATA IS AVAILABLE RCM BALTIC MADE A FEW RECOMMENDATIONS HOW TO DEAL WITH ALLOCATION RULES.</i>	SE HAS COMPLIED WITH INTERIM ALLOCATION RULES MADE UP IN THE RCM
RCM Baltic (2007)	<i>THE RCM BALTIC RECOMMENDS THE DESCRIPTION OF THE SOURCE OF THE INFORMATION AND WHEN APPLYING A SAMPLING PROCEDURE A DESCRIPTION OF METHOD AND STRATEGY HAS TO BE CLEARLY DESCRIBED IN THE NATIONAL PROGRAMME TO GIVE USEFUL INFORMATION ON QUALITY OF THE OBTAINED DATA. IN THE TECHNICAL REPORT THERE SHOULD THEN BE A QUALITATIVE QUALITY REPORT CONTAINING A THOROUGH DESCRIPTION OF THE METHODS AND STRATEGIES USED AND THE CHARACTERISTICS OF THE GATHERED DATA. THE RCM BALTIC RECOMMENDS TO NOT USE THE PRECISION LEVEL AS AN INDICATOR OF HETEROGENEITY BUT TO RATHER USE THE MEAN VALUE AND STANDARD DEVIATION.</i>	SE WILL DESCRIBE SAMPLING METHOD AND STRATEGY IN NP FOR 2009-10. A QUALITY REPORT IN TR FOR 2009 WILL BE PRESENTED IN 2010.
RCM Baltic (2006)	<i>THE RCM BALTIC RECOMMENDS THAT FINLAND AND SWEDEN WILL EVALUATE THE COLLECTION OF BIOLOGICAL DATA OF THE HERRING FISHERY IN THE GULF OF BOTHNIA IN ORDER TO ELABORATE CONGRUENT PROCEDURES. THE POSSIBILITIES TO HARMONIZE THE COLLECTION OF CORRESPONDING ECONOMIC DATA SHOULD BE EVALUATED.</i>	IN 2007 FINLAND AND SWEDEN HAVE CONDUCTED INTER-CALIBRATION IN BOTH AGE READING (COMPARING METHODS) AND MATURITY STAGING OF HERRING. HARMONIZATION OF SAMPLING METHODS ARE UNDER DISCUSSION. IMPROVEMENT OF ALL ASPECTS REGARDING THE JOINT ACOUSTIC SURVEY IN SD30 ARE ALSO DISCUSSED AND A MEETING IN END OF MAY 2008 IS PLANNED FOR SUCH DISCUSSIONS. HOWEVER IT IS A GOAL OF SWEDEN TO CONTINUE THE WORK ON HARMONIZING BOTH THE BIOLOGICAL AND ECONOMICAL COLLECTION OF DATA.
RCM Baltic (Jan 2005)	<i>3.1 BALTIC RCM RECOMMENDS THAT EACH MS ON MONTHLY BASIS UPDATES "REAL TIME MONITORING SPREADSHEET" GIVING THE ACTUAL SAMPLING STATUS IN EACH COUNTRY AND GIVING THE COVERAGE AS DEFINED ACCORDING TO THE DCR.</i>	NOT USED, AND THEREFORE SE HAS NOT FILLED IT IN.
RCM	<i>3.2 BALTIC RCM RECOMMENDS IN CASE WHERE MORE</i>	BILATERAL AGREEMENTS HAS BEEN

Baltic (Jan 2005)	THAN 5 PERCENT OF THE NATIONAL QUOTA IS LANDED IN A FOREIGN COUNTRY, BILATERAL AGREEMENTS SHOULD BE MADE.	DONE YEARLY. AND FOR 2005 THIS WAS DONE BETWEEN SWEDEN AND DENMARK IN JANUARY 2005 AND SWEDEN AND GERMANY IN MAY 2005.
RCM Baltic (Jan 2005)	3.3 BALTIC RCM RECOMMENDS THAT AN ANALYSIS REVEALING AND COMPARING THE CONSEQUENCES OF DIFFERENT RAISING METHODS IS MADE AS SOON AS EFFORT INFORMATION AND MATCHING RAISING PROCEDURES ARE INCLUDED IN THE FISHFRAME DATABASE.	SWEDEN WILL UPLOAD EFFORT INFORMATION TO FISHFRAME DATABASE IN ORDER TO BE ABLE TO ANALYZE DIFFERENT RAISING PROCEDURES.
RCM Baltic (Jan 2005)	5.1 THE RCM RECOMMEND THAT BOTH EASTERN AND WESTERN BALTIC COD, OTOLITHS WEIGHT SHOULD ON A ROUTINE BASIS BE COLLECTED AS A COMPLEMENT TO AGE READING. THIS MUST START FROM 2005.	SWEDEN IS RECORDING WEIGHT ON COD OTOLITHS ON A ROUTINE BASIS.
RCM Baltic (Jan 2005)	6.1 THE RCM RECOMMENDS THAT SAMPLING SHOULD BE CARRIED OUT THROUGH OUT THE ENTIRE TRI ANNUAL PERIOD.	SWEDEN IS SAMPLING DATA ON OTHER BIOLOGICAL PARAMETERS EVERY YEAR.
Baltic RCM (Oct 2005)	2.2. RCM BALTIC CONCLUDES THAT MS MUST CONDUCT ANALYSIS OF STABILITY ON THE NATIONAL FLEET.	IN ORDER TO TEST WHETHER THE SEGMENTATION OF THE NANTES PROPOSAL RESULTS IN A MORE STABLE FLEET IT IS IMPORTANT THAT MS CONDUCT ANALYSIS ON STABILITY (IN THE WAY A VESSEL CHANGE BETWEEN SEGMENTS BETWEEN THE YEARS) ACCORDING TO THE PRESENT DCR AND ACCORDING TO THE NANTES PROPOSAL.
Baltic RCM (Oct 2005)	2.3. THE RCM BALTIC CONCLUDES THAT MS MUST CONDUCT ANALYSIS OF NATIONAL DATA ON WHICH LENGTH GROUPS YIELD THE MOST HOMOGENOUS ECONOMIC STRUCTURE.	TO COMPILE ACCURATE AND USEFUL ECONOMIC DATA IT IS IMPORTANT THAT MS ANALYZE WHICH LENGTH CATEGORIES THAT ACHIEVE THIS GOAL.
Baltic RCM (Oct 2005)	2.4. 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.	THE RESULTS FROM THE BALTIC REGION WERE COMPLIED IN ORDER TO SHOW THE SITUATION OF THE COUNTRIES IN THE REGION. THE BALTIC RESULTS WERE PRESENTED AT THE NANTES TRAINING WORKSHOP, 13-17 MARCH 2006
Baltic RCM (Oct 2005)	2.5. 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.	THE TABLE WERE TO BE FILLED IN ORDER TO IDENTIFIED POSSIBLE PROBLEMS AND ERRORS OF THE MATRIX PROPOSED BY IFREMER.
Baltic RCM (Oct 2005)	3.9. 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.	NATIONAL DISCUSSIONS HAVE TAKEN PLACE AND WILL BE FORWARDED TO THE NEXT RCM MEETING IN OCTOBER 2006, AND TO THE MEETING REGARDING REVISION OF THE SURVEYS IN DECEMBER.
Baltic	7.15. RCM BALTIC RECOMMENDS THAT THE WORKSHOP	SWEDEN WAS REPRESENTED BY TWO

RCM (Oct 2005)	<i>OF WGBIFS SUBGROUP FOR ESTIMATING ANNUAL BASED MATURITY OGIVES OF COD BASED ON TRAWL SURVEY DATA CONVEINE IN THE LAST WEEK OF JANUARY 2006 AT MIR, GDYNIA, POLAND.</i>	PARTICIPANTS.
Baltic RCM (Oct 2005)	7.16. THE RCM BALTIC STRONGLY RECOMMENDS ALL BALTIC COUNTRIES TO UPLOAD OR RE-UPLOAD QUALITY CHECKED CA DATA (SMALK DATA) TO THE ICES DATRAS DATABASE BEFORE 1. JANUARY 2006.	SMALK DATA FROM 1991 TO 2005 WAS QUALITY CHECKED AND RE-UPLOADED INTO DATRAS IN JANUARY 2006.
Baltic RCM (Oct 2005)	7.18. 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.	SWEDEN PREPARE MATURITY DATA ON A YEARLY BASIS WHICH ARE PROVIDED TO THE DIFFERENT WORKING GROUPS.
Baltic RCM (Oct 2005)	8.21. 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.	SWEDEN WILL UPLOAD THE REQUIRED DATA WHEN THE DEFINITION OF FISHERIES IS READY.

III.C.5 Derogations and non-conformities

Fisheries picked by the metier ranking system but not chosen for sampling

Pots and traps fisheries targeting freshwater species (FPO FWS 0 0 0)

The fishery with pots and traps targeting freshwater species is restricted both geographically and over time. The main part of the landings is taken in SD 31 by a few fishermen using one specific gear type. Small sized perch (*Perca fluviatilis*) is the only targeted species in this fishery. The total landings in 2007 for the whole fishery were 8 tonnes of which 75% were perch landed in SD 31. Thus, total landings both in tonnes and value is low, but the metier was selected due to high effort. No sampling is planned during the period 2009-2010.

Longline fisheries targeting demersal fish (LLS DEF 0 0 0), Subdivision 22-24

In 2007 the total landing from the metier was 54 tonnes. The landings consist of more than 99% of cod. The fisheries are managed in accordance with the Management plan for Baltic Sea cod (1098/2007) which includes a closed season (April) during the spawning season. The metier is also limited by allowed number of days at sea in accordance with the TAC regulation (1404/2007 annex II). Sweden practices temporal closures on a national basis to fulfill the effort limitation in the regulation. The fishery is further nationally managed by rations, limiting the allowed landing for a 14 day period by vessel. The metier was been included in the sea-sampling programme during 2003-2005. The discard rate was found to be below 10%.

The ranking of metiers was done at the regional level and the metier was picked by the ranking system (effort, value) due to the importance on fishing ground 25-32. Sweden will not sample the metier in subdivision 22-24 due to the very limited landings and asks for a derogation.

THE NORTH SEA AND EAST ARCTIC

III.C.1 Selection of metiers to sample

The main input data for the ranking of metiers and the subsequent choice of metiers to sample is information from the logbooks and in the case of small scale fisheries, information from monthly fishing journals. The Swedish logbook is extended compared to the EU logbook. Valuable additional information in the Swedish logbook are the data on a haul to haul basis and detailed geographical information as to where the fishing takes place (lat, long). The fishermen also provide more detailed information of the gears used and the species targeted. Sweden has, for example, for the “Bottom Otter Trawl (OTB)” 19 national codes, all describing different gear characteristics (incl. selectivity devices) and target species assemblages. Furthermore, it is mandatory for Swedish vessels not carrying logbooks to report their gear, number of fishing days, fishing areas and catches (by species) in monthly fishing journals.

When assigning fishing trips to metiers the national gear codes have been assigned to a metier if the national code in combination with the mesh size clearly falls within one DCR metier (level 6). For example, there is a national gear code for fyke nets targeting eel. All fishing trips registered with this gear code have been assigned to FYK_CAT_0_0_0. If the definition of the national gear code allows fishing trips to be allocated to more than one DCR metier (level 6) the fishing trip have been assigned to a metier using the national gear code in combination with the catch composition in weight.

The ranking of metiers have been done by region and not by fishing grounds. The reason for this is that region is the relevant spatial unit for some metiers (such as PTM_SPF_16-31_0_0) while fishing ground is more accurate for others. National metiers taking the fishing ground into account have been established for all metiers where the fishing grounds are considered important.

The bottom trawl fisheries targeting demersal fish is, for example, considered to be three metiers (IIIaS, IIIaN and IV) since the catch composition at the different fishing grounds are different due to different environmental characteristics (depth, vicinity to the brackish Baltic Sea) and Swedish TAC shares. All selected metiers, including national metiers taking fishing ground (and in a few cases target species), are listed in table III.C.3.

Total value of a metier is calculated by using mean values (and weight by species) of the different species.

The value is given in EUR.

Effort is reported as days at sea.

All metiers for which trips have been allocated to are presented in table III.C.1

III.C.2 Data acquisition

The extended Swedish logbook and the mandatory monthly fishing journals for vessels not carrying log-books give Sweden the opportunity to have complete information of species composition and weight by species in landings from all metiers. Information from sales slips will further, in relevant cases, provide us with information on composition of commercial size categories in the different metiers. Size categories in Sweden are harmonised to the EU standard.

For the metiers selected for sampling the sampling scheme will further provide us with information on length frequencies of the landed part of the catch and volumes of discards. For G1 and G2 species length (and age) composition will also be obtained from the discarded part of the catch.

Sweden will apply different sampling strategies on different metiers depending on the different characteristics of the metiers. At all sampling occasions information on vessel and gear characteristics as well as place, date, time and duration of the fishing operations will be collected.

Main sampling strategies

Concurrent sampling of catches at sea

This sampling scheme will be applied for metiers where discard rates are expected to be above 10%. In the North Sea region this sampling strategy will be the primary strategy applied to trawls targeting demersal fish and crustaceans (such as OTB_DEF_90-119_0_0 and OTB_CRU_90-119_0_0).

Data will be collected by staff from Swedish Board of Fisheries (SBF) by sampling on board randomly chosen commercial fishing vessels.

Sampling scheme 1 will be applied.

Information to be collected is:

- Total weight of discard and landing by all species caught
- Separate length distributions of discard and landings by all species caught. If the retained part of the catch is landed in commercial weight categories, separate length frequencies are obtained by category
- Otoliths per cm group of discard part of the catch of G1 and G2 species for which Sweden conducts age sampling of landings.

In 2009, as a pilotproject, sampling will be performed as self-sampling by fishermen in one metier (OTB_CRU_35-69_1_18). Unsorted random subsamples of the total catch, including by-catches and discard, will be purchased directly from the vessel. Samples are transported to the Swedish Board of Fisheries research laboratories for analysis where information is registered as described above. The sampling procedure will be validated on a regular basis by observers onboard.

Concurrent sampling of landings at markets

This sampling scheme will be applied for metiers where discard rates are expected to be low. In the North Sea area this sampling strategy will be the primary strategy applied for trawls and seines targeting small pelagic fish (PTM_SPF_16-31_0_0 and PS_SPF_16-31_0_0) and for gillnetters targeting demersal fish (GNS_DEF_120-219_0_0).

Data will be collected by staff from Swedish Board of Fisheries by randomly sampling landings in harbours.

Sampling scheme 1 will be applied.

Information to be collected is:

- Total weight of landing by all species caught
- Length distributions of landings by all species caught. If the landed in commercial weight categories, separate length frequencies are obtained by category

For metiers targeting small pelagic fish (PTM_SPF_16-31_0_0 and SN_SPF_16-31_0_0) the information will be based on unsorted sub-samples of the total landing purchased from the fishermen, or purchased at different landing ports All these samples are transported to the

Swedish Board of Fisheries research laboratories for analysis where length measurements of all species included in the sample are taken.

Sweden will during 2009, for some metiers (GNS_DEF_120-219_0_0), as a complement to the market based concurrent sampling, carry out a pilot project to evaluate if discards in these metiers could be assessed by fishermen bringing the discards ashore.

Other – Stock specific sampling based on commercial size categories

In Sweden all information for landings required by metier are available in the official catch statistics except length distributions. The distribution of landed size categories by metier is however available through sales slips. Commercial size categories in Sweden are well defined and harmonised to EU standards.

In order to improve precision of the length distribution for the landed part of the catch, Sweden will for some metiers (such as OTB_DEF_90-119_0_0 and OTB_CRU_90-119_0_0) and stocks, carry out complementary stock specific sampling based on commercial size categories.

Other-Stock specific sampling combined with survey data

In the metier of fykenet fisheries targeting catadromous species (FYK_CAT_0_0_0) sampling of discards at sea is not considered feasible in all fishing grounds (North Sea SD 20-21, Baltic SD 22-24), due to a high rate of consumption of the discard by shore crabs. Concurrent sampling at sea will be replaced by analysis of data from existing test fishing surveys using fyke nets. Survey data on catch composition and length distributions is available. As a complement, stock-specific sampling of the length distribution of landings will be performed by staff at SBF.

Allocation of sampling effort to metiers

Sampling effort has been allocated to the metier based on prior sampling, knowledge of variation in the different metiers, importance of different metiers (Swedish share of the metier/ stocks at an international level) and precision targets. Sampling effort is allocated ensuring that the number of trips sampled is at least one per month and metier throughout the fishing season. However, so far, no thorough analysis has been made to optimise number of samples and sample sizes for sampling of all the Swedish metiers. Sweden has been waiting for the finalisation of the COST project to initialise this work. Optimizing sampling and sampling schemes will be a prioritised issue in Sweden in the forthcoming years. Planned number of sampled trips by metier is presented in table III.C.3.

Table III.C.4 shows sampling intensity of length measurements of all G1 and G2 species listed in Appendix VII. The sampling strategy for metiers is aiming for a certain number of trips and/or number of hauls, rather than targeting a certain number of individuals to be measured. In the sea sampling programme, Sweden as a “rule of thumb” takes random sub-samples containing approximately:

Discards; 100 individuals / haul for cod and other species with a wide length frequency; 50 ind/haul for other species.

Landings; 100 individuals / size category for cod and other species with a wide length frequency; 50 ind /haul for other species.

The catch composition and volume in catch is not known beforehand and therefore, numbers of length measured individuals are impossible to predict and plan exactly. In table III.C.4 we

have listed number of length measured individuals sampled in 2007 to give a hint of what could be sampled in future trips. Knowledge of CV levels in length measurements are not calculated for all stocks and the sampling approach described above has been used. Column “No. of fish necessary to achieve the precision target”, has therefore been left blank.

Merging of metiers for sampling

Metiers with equal or very similar catch composition have been merged for sampling purposes. All merged metiers are presented in table III.C.2. Information on gear characteristics will however be collected at all sampling occasions to identify the “original” metier sampled.

The merging of metiers is for the planned sampling in 2009-2010 not always based on thorough scientific analysis but on the knowledge of the exploitation pattern, management of the fisheries and “common sense”. Scientific analysis of the metiers and the possibilities to merge them based on scientific analysis will be a prioritised issue during the programme period. Rationale for merging of metiers is expressed below within the description of the different metiers.

Description of Swedish metiers that will be sampled.

Descriptions of fisheries picked by the metier ranking system but not chosen for sampling are found in III.C.5 “Derogations and non-conformities”

Trawl fisheries targeting demersal fish (OTB_DEF_90-119_0_0), IIIaS

In 2007 the total landing from the metier was 238 tonnes. The main targeted species is cod of which 107 tonnes were landed in the metier. The bottom trawl fisheries targeting demersal fish in area IIIaS was historically important but its extense is nowadays very limited due to the poor situation of the Kattegat cod stock. The fishery is predominantly conducted in the first quarter where the catchability of cod is highest. The gears used are managed in accordance with the Cod recovery plan (423/2004) including limitations in allowed number of days at sea in accordance with the TAC regulation (40/2008 annex IIa). At the national level, the landings of the fishery are managed by weekly rations, administered by the Swedish fishermen federation. The fishery is conducted by a variety of different trawls of which some are equipped with selection panels (OTB_DEF_90-119_0_0 OTB_DEF_>120_0_0 OTT_DEF_90-119_0_0 OTB_DEF_90-119_1_120 OTB_DEF_>120_1_120). The relative importance of the different trawls is to a large extent dependent on the trawl specific number of days allowed in the fisheries defined in 40/2008, annex IIa. The annex is however under revision with a clear intention to be simplified but it is difficult to foresee what trawls to be used in the programme period. More scientific analysis is needed on the detailed exploitation pattern for the different trawl but initial analyses show that the overall exploitation pattern is similar. The different trawls will thereby be merged to one metier.

The metier has been included in the sea-sampling programme since the mid 1990ies. Discard rates are estimated to be well above 10%. The metier will be sampled concurrently at sea throughout the main fishing season (quarter 1). Sampling scheme 1 will be applied.

Trawl fisheries targeting demersal fish (OTB_DEF_90-119_0_0), IIIaN

Trawl fisheries targeting demersal fish in the Skagerrak (IIIaN) could be divided into two national metier based on target species- A trawl fishery targeting cod, saithe and haddock and a trawl fishery targeting witch flounder. The trawl fishery targeting witch flounder is conducted in the deeper part (> 100 m, Norwegian trench) of the Skagerrak.

Both fisheries are conducted with a variety of different trawls of which some are equipped with selection panels (OTB_DEF_90-119_0_0 OTB_DEF_>120_0_0 OTT_DEF_90-119_0_0 OTB_DEF_90-119_1_120 OTB_DEF_>120_1_120). The relative importance of the different trawls is to a large extent dependent on the trawl specific number of days allowed in the fisheries defined in 40/2008, annex IIa. The annex is however under revision with a clear intention to be simplified but it is difficult to foresee what trawls to be used in the programme period. More scientific analysis is needed on the detailed exploitation pattern for the different trawl but initial analyses show that the overall exploitation pattern is similar. The different trawls will thereby be merged to one metier (by target species).

i) national metier targeting gadoids and saithe

In 2007 the total landing from the metier was 670 tonnes. The landings consisted to 80% of the main targeted species saithe, cod and haddock. The fishery could be conducted during the entire year but the main season is usually the 2nd and 3rd quarter. The gears used are managed in accordance with the Cod recovery plan (423/2004) including limitations in allowed number of days at sea in accordance with the TAC regulation (40/2008 annex IIa). At the national level, the landings of the fishery are managed by weekly rations by species, administered by the Swedish fishermen federation. The poor condition of the North Sea cod stock and the corresponding low TACs have the last 5 years led to depletion of quota and repeated landing prohibitions of cod during parts of the year, with considerable amounts of discards as a consequence. Periods with prohibition to land saithe have also been common during the last few years.

The metier has been included in the sea-sampling programme since 2002. Discard rates are estimated to be above 10% (discarding predominantly occur for quota reasons). The metier will be sampled concurrently at sea throughout the main fishing season. Sampling scheme 1 will be applied.

Sampling will be stratified by quarter.

ii) national metier targeting witch flounder

In 2007 the total landing from the metier was 310 tonnes of witch 50% consisted of witch flounder. Important by-catch species are cod, saithe and Nephrops. The fisheries are taking place in the deeper part of the Skagerrak which have an impact on the exploitation pattern, especially concerning more infrequent by-catch species and the discarded part of the catch. The main season for the fishery is the first and to some degree the second quarter of the year. Witch flounder is not a TAC regulated species but the gears used are managed in accordance with the Cod recovery plan (423/2004) including limitations in allowed number of days at sea in accordance with the TAC regulation (40/2008 annex IIa). At the national level, the landings of cod and saithe in the fishery are managed by weekly rations by species, administered by the Swedish fishermen federation. The poor condition of the North Sea cod stock and the corresponding low TACs have the last 5 years led to depletion of quota and repeated landing prohibitions of cod during parts of the year, with considerable amounts of discards as a consequence. Periods with prohibition to land saithe have also been common during the last few years.

The metier has been included in the sea-sampling programme since 2002 but has until now not been regarded as a unique metier. Discard rates are estimated to be above 10%. The metier will be sampled concurrently at sea throughout the main fishing season. Sampling scheme 1 will be applied.

Sampling will be stratified by quarter.

Trawl fisheries targeting crustaceans (OTB_CRU_90-119_0_0), IIIaS

Trawl fisheries targeting crustaceans (OTB_CRU_90-119_0_0), IIIaN

The bottom trawl fisheries targeting crustaceans with mesh size ≥ 90 mm is a fishery targeting *Nephrops* in connection with economically important by-catch species such as plaice and cod. In 2007 the total landing of the metier in area IIIaS was 720 tonnes and in area IIIaN 650 tonnes. The total share of *Nephrops* in the catches is slightly more than 50%. The fisheries are conducted all year. Exploitation pattern differs to some extent between the metiers, especially concerning by-catch species. The gears used are managed in accordance with the Cod recovery plan (423/2004) including limitations in allowed number of days at sea in accordance with the TAC regulation (40/2008 annex IIa). At the national level, the landings of the fishery are managed by weekly rations, administered by the Swedish fishermen federation. The fishery is conducted by a variety of different trawls of which some are equipped with selection panels (OTB_DEF_90-119_0_0 OTB_DEF_>120_0_0 OTT_DEF_90-119_0_0 OTB_DEF_90-119_1_120 OTB_DEF_>120_1_120). The relative importance of the different trawls is to a large extent dependent on the trawl specific number of days allowed in the fisheries defined in 40/2008, annex IIa. The annex is however under revision with a clear intention to be simplified but it is difficult to foresee what trawls to be used in the programme period. More scientific analysis is needed on the detailed exploitation pattern for the different trawl but initial analyses show that the overall exploitation pattern is similar. The different trawls will thereby be merged to one metier. The poor condition of the Kattegat and North Sea cod stocks and the corresponding low TACs have the last 5 years led to depletion of quota and repeated landing prohibitions of cod during parts of the year, with considerable amounts of discards as a consequence.

The metiers have been included in the sea-sampling programme since the mid 1990ies (IIIaS) and late 1990ies (IIIaN). Discard rates are estimated to be well above 10% for both metiers. The metiers will be sampled concurrently at sea throughout the fishing season. Sampling scheme 1 will be applied.

Sampling will be stratified by quarter.

Trawl fisheries targeting crustaceans (OTB_CRU_70-89_2_35), IIIaS

Trawl fisheries targeting crustaceans (OTB_CRU_70-89_2_35), IIIaN

Trawl fisheries using sorting grids and a mesh size between 70-89 mm are exclusively targeting *Nephrops*. In 2007 the total landing of the metier in area IIIaS was 100 tonnes and in area IIIaN 420 tonnes. The total share of *Nephrops* in the catches was 95%. The fisheries have unlimited number of days at sea in accordance to regulation 40/2008 annex IIa. In accordance with the regulation, catches further need to be composed by at least 70% *Nephrops* (maximum 5% cod). It is according to Swedish national legislation, mandatory to use sorting grids inside 4 nautical miles (3 in the IIIaS) in the *Nephrops* fisheries. The fisheries are conducted all year around.

The majority of the fisheries are conducted with otter bottom trawls even though some fishermen are using twin trawls. The exploitation pattern of the gears is the same and the metiers OTB_CRU_70-89_2_35 and OTT_CRU_70-89_2_35 is thereby merged.

The metiers have been included in the sea-sampling programme since 2004 when the gear was introduced. Discard rates are estimated to be above 10%, mainly due to capture of undersized *Nephrops*. The metiers will be sampled concurrently at sea throughout the fishing season. Sampling scheme 1 will be applied.

Sampling will be stratified by quarter.

Trawl fisheries targeting crustaceans (OTB_CRU_35-69_0_0), IIIa, IV

The bottom trawl fisheries targeting crustaceans with mesh size 35-69 mm is a fishery targeting *Pandalus*. In 2007 was the total landing of the metier 2120 tonnes of which the total share of *Pandalus* in the catches was 80%. The fishery is conducted all year around. At the national level, the landings of the fishery are managed by weekly rations, administered by the Swedish fishermen federation. The metiers have been included in the sea-sampling programme on a triannual basis since 1999. Discard rates are estimated to be above 10%. The metiers will be sampled concurrently at sea throughout the fishing season. Sampling scheme 1 will be applied.

Sampling will be stratified by quarter.

Trawl fisheries targeting crustaceans (OTB_CRU_35-69_1_18), IIIa, IV

Trawl fisheries using sorting grids and a mesh size between 35-69 mm are exclusively targeting *Pandalus*. In 2007 was the total landing of the metier 615 tonnes of which the total share of *Pandalus* in the catches was 99%. It is according to Swedish national legislation, mandatory to use sorting grids inside 4 nautical miles (3 in the IIIaS) in the *Pandalus* fisheries. The fisheries are conducted all year around.

The metiers have been included in the sea-sampling programme on a triannual basis since 1999 but has until now not been regarded as a unique metier. Discard rates are estimated to be above 10%, mainly due to capture of undersized *Pandalus*. Sweden will during 2009 as a complement to concurrent sampling at sea, carry out a pilot project to evaluate if discards in the metier could be assessed by fishermen bringing the discards ashore. Sampling scheme 1 will be applied.

Sampling will be stratified by quarter.

Pot and trap fisheries targeting crustaceans (FPO_CRU_0_0_0), IIIa

The fishery is conducted in coastal waters along the Swedish west coast (area IIIaN and IIIaS). The total annual landing was 400 tonnes in 2007. The major target species is *Nephrops* but there are also fishermen targeting crabs (*Cancer pagurus*) and lobsters (*Homarus gammarus*). The fisheries for *Nephrops* and crabs are taking place all year around while the lobster fishery is concentrated to the autumn.

Survival rates of discards are high and the discard rates (in terms of fishing mortality) are estimated to be below 10%. The pot and trap fishery targeting *Nephrops* will be sampled concurrently at sea throughout the year. Sampling scheme 1 will be applied.

Sampling will be stratified by quarter.

Trawl fisheries targeting small pelagic fish (PTM_SPF_32-69_0_0), IIIa

In 2007 the total annual landing from the metier was 29370 tonnes. The landings constitutes exclusively (>99%) of the target species herring and sprat. The fisheries are conducted all year around except for a closed period during summer. The fishery is nationally managed by yearly rations, limiting the allowed landing by vessel. The majority of the catches (94% in 2007) are taken by pair trawlers using a mesh size ≥ 32 mm. However, to some extent other trawls and mesh sizes are used within the fisheries. The metiers PTM_SPF_32-69_0_0, PTM_SPF_16-31_0_0, OTM_SPF_32-69_0_0, OTM_SPF_16-31_0_0, OTB_SPF_32-69_0_0 and OTB_SPF_16-31_0_0 are thereby merged.

The metier was included in the sea sampling programme 1996-2001. Discard rates are estimated to be below 10%. The metier will be sampled concurrently in harbours/at markets by purchasing unsorted samples. Sampling scheme 1 will be applied.

Sampling will be stratified by quarter and fishing ground (IIIaS, IIIaN). The assumption for the planned number of trip is that the fishery is conducted all year around (except closed season) at both fishing grounds.

Purse seine fisheries targeting small pelagic fish (PS_SPF_16-32_0_0), IIIa

In 2007 the total annual landing from the metier was 5320 tonnes. The landings constitutes exclusively (>99%) of the target species herring and sprat. The fishery is taking place in coastal waters along the Swedish west coast (area IIIaN and IIIaS) during the 1st and 4th quarter. The fishery is nationally managed by yearly rations, limiting the allowed landing by vessel. The majority of the catches (>99% in 2007) are taken by pair trawlers using a mesh size 16-32 mm, but to a very limited extent mesh sizes \geq 32 mm are used. The metiers PS_SPF_32-69_0_0 and PS_SPF_16-31_0_0 are thereby merged.

The metier was included in the sea sampling programme 2004-2005. Discard rates are estimated to be below 10%. The metier will be sampled concurrently in harbours/at markets. Sampling scheme 1 will be applied.

Sampling will be stratified by quarter.

Fyke net fisheries targeting catadromous species (FYK_CAT_0_0_0), IIIaS

Fishing for yellow eel (*Anguilla anguilla*) with small fyke nets is concentrated to the coastal areas of the Skagerrak (IIIaN), the Kattegatt (IIIaS). The total annual landings in this fishery were 168 tonnes in 2006-2007. Discards are estimated to be above 10%. Due to a high abundance of shore crabs, eating most of the fish by-catch, sampling for discard is considered not possible with reasonable costs. Survey data on catch composition exist for long timeseries that will provide a good proxy for discards in the commercial fyke net fishery. Stock specific sampling of yellow eel will be applied on a monthly basis with special focus on the Skagerrak area, where most of the yellow eel is landed. Sampling of this fishery will be coordinated with sampling of the fyke fishery targeting yellow eel in the Baltic region. The metier was selected due to high effort.

Gillnet fisheries targeting demersal fish (GNS_DEF_120-219_0_0), IIIaS

The total landing in 2007 from gillnets fisheries targeting demersal fish in the Kattegatt was 145 tonnes. The landings constitutes predominantly of flatfishes but also of cod and lumpfish. The fisheries are conducted all year around but the target species could differ between seasons.

A variety of mesh sizes are used in the gillnet fisheries as well as a mixture of set gillnets and trammel nets. Set gillnets and trammel nets as well as the different mesh sizes (GNS_DEF_120-219_0_0, GTR_DEF_120-219_0_0, GTR_DEF_70-89_0_0, GTR_DEF_90-99_0_0, GTR_DEF_100-119_0_0, GTR_DEF_>220_0_0, GNS_DEF_70-89_0_0, GNS_DEF_90-99_0_0, GNS_DEF_100-119_0_0 and GNS_DEF_>220_0_0) have thereby been merged for sampling purposes.

The metier has so far not been sampled for discards. The metier will be sampled concurrently in harbours (markets) throughout the main fishing season. Sampling scheme 1 will be applied. Sweden will during 2009, as a complement to the market based concurrent sampling, carry out a pilot project to evaluate if discards in the metier could be sampled after fishermen bringing the discards ashore.

III.C.3 Data Quality

Detailed information on the metiers (including national metiers) and stratification planned for sampling the metiers are available in section III.C.2 and table III.C.3. During the forthcoming years, after the finalisation of the COST project, Sweden will prioritise analytical work to increase quality and knowledge of quality in sampling.

The work will include

Scientific analysis of possibilities to merge metiers

Scientific analysis of necessary sampling levels (no. of trips and length measurements) to reach certain precision levels (length frequencies, discards etc)

Cost-benefit analysis of sampling allocation to different metiers

III.C.4 Regional Coordination

Regarding bilateral agreements with Denmark and Germany for the North Sea (the Skagerrak and Kattegat), this has been done for previous years and the intention is to follow up this for the period 2009-2010, during the RCM meeting in Nov 2008. Recommendations made in the RCM North Sea and East Arctic are listed below starting with 2007 back to 2004.

Recommendations concerning 2008 can only be included after the RCM meeting which will be held in Nov 2008.

The bilateral agreements and recommendations for 2008 will be submitted in an updated version of the programme.

Source	Recommendation	Action
RCM North Sea & East Arctic (2007)	<i>THE RCM NS&EA RECOMMENDS THAT ALL MS SUBMIT DATA IN THE AGREED FORMAT WHEN REQUESTED. THE REGIONAL DATA SHOULD BE COMPILED WELL BEFORE THE MEETING AND BE DISTRIBUTED TO THE RCM PARTICIPANTS.</i>	SE COMPILED THIS DATA TO THE MEETING IN 2007 AND WILL PREPARE REQUESTED DATA FOR FUTURE MEETING TO GAIN COOPERATION BETWEEN MS IN THE RCM.
RCM North Sea & East Arctic (2007)	<i>THE RCM NS&EA RECOMMENDS THAT, AT A TRIP LEVEL, OR AT A FISHING OPERATION LEVEL WHEN POSSIBLE, THE RETAINED PART OF THE CATCH SHOULD BE CLASSIFIED BY TARGET ASSEMBLAGE (CRUSTACEANS, CEPHALOPODS, DEMERSAL,...) AND SORTED BY WEIGHT (BY TOTAL VALUE IN THE CASE OF VALUABLE CRUSTACEAN SPECIES, E.G. NEPHROPS). THE TARGET ASSEMBLAGE THAT COMES UP AT THE FIRST POSITION SHOULD BE CONSIDERED AS THE TARGET ASSEMBLAGE TO REPORT IN THE MATRIX. THE RCM NS&EA UNDERSTANDS THAT THIS WAY OF DOING DOES NOT ALLOCATE ANY INFORMATION TO THE METIERS TARGETING MIXED TARGET ASSEMBLAGES.</i>	SE WILL REPORT FISHING ACTIVITY DATA IN THE FLEET-FISHERY MATRIX ACCORDING TO THE RECOMMENDATIONS MADE.
RCM North Sea & East Arctic (2007)	<i>THE RCM NS&EA RECOMMENDS THAT IN GENERAL IF AN AREA IS COVERED BY ONE DEDICATED TRIP PER YEAR ONLY, THE EFFORT PUT INTO THIS SINGLE TRIP COULD BETTER BE ALLOCATED TO OTHER FLEET SEGMENTS ENSURING BETTER COVERAGE OF THESE SEGMENTS. THE RCM FURTHER RECOMMENDS UPDATING THE LIST OF ONBOARD OBSERVER TRIPS BY FISHING ACTIVITY ON LEVEL 6 BEFORE THE NEXT MEETING.</i>	SE WILL CONTRIBUTE WITH THIS INFORMATION.
RCM North Sea & East Arctic (2007)	<i>THE RCM NS&EA RECOMMENDS THAT ALL MS TAKE PART IN THE CASE STUDY ON SPATIAL ASPECTS ON GROWTH PATTERNS FOR NORTH SEA COD BY SUBMITTING DATA TO FRANCE USING THE TEMPLATE IN ANNEX 6.</i>	NO DATA HAS BEEN SENT.

RCM North Sea & East Arctic (2006)	RCM NS AND EA TO UPLOAD THE 2004-2006 LANDINGS AND EFFORT STATISTICS INTO FISHFRAME TOGETHER WITH THE ASSOCIATED DATA FROM MARKET AND ON-BOARD SAMPLING, FOR ALL SPECIES WITHIN THE REMITS OF THE WGNSSK BY APRIL 1ST, 2007.	DONE
RCM North Sea & East Arctic (2006)	THE RCM NS & EA RECOMMENDS THAT DENMARK AND SWEDEN PREPARE A WORKING DOCUMENT PROPOSING HOW REGIONAL DATA COLLECTION COULD BE ARRANGED BY USING THE KATTEGAT AS A TEST ARE. THE WD WILL BE PRESENTED AT WGBFAS 2007 AND FOR THE RCM'S.	NOT FULFILLED TO WGBFAS. THE PROCESS WILL START BY FILLING IN SUGGESTED TABLES DESCRIBING THE PRESENT SAMPLING METHODS.
RCM North Sea (2005)	7.1 RCM NORTH SEA EXPECTS THAT ALL LABS WILL UPDATE THE SPREADSHEET WITH THEIR COD SAMPLING INFORMATION ON A MONTHLY BASIS.	SWEDEN HAS NOT UPDATED THE SPREADSHEET.
RCM North Sea (2005)	8.1 RCM NORTH SEA RECOMMENDS THAT ALL COUNTRIES HAVING DATA ON NS COD PARTICIPATE IN THE PROPOSED WORKSHOP ON FISHFRAME (CHAIR: HENRIK DEGEL, MID-JANUARY 2006, COPENHAGEN, DENMARK).	SWEDEN WAS REPRESENTED BY ONE PARTICIPANT IN THE FISHFRAME WORKSHOP
RCM North Sea (2005)	9.1 RCM NORTH SEA RECOMMENDED THAT DATA ARE SUBMITTED TO FISHFRAME, STARTING WITH THE 2004 AND 2005 DATA FOR NORTH SEA COD BEFORE 1 MAY 2006.	DATA WILL BE DELIVERED BEFORE 1 ST JUNE 2006.
RCM North Sea (2005)	13.1 RCM NORTH SEA INSISTS THAT ALL COUNTRIES PARTICIPATE IN THE EXERCISE OF COMPARING SAMPLING STRATEGIES ON COMMERCIAL CATCHES AND DISCARDS BY PROVIDING THE RELEVANT INFORMATION TO THE SWEDISH COORDINATORS.	DONE
RCM North Sea (2005)	14.1 RCM NORTH SEA AGREED THAT IN ORDER TO COORDINATE ACTIVITIES EFFECTIVELY THERE WAS A NEED TO DEVELOP A BETTER METHOD OF PRESENTING THE COVERAGE DISCARD SAMPLING AND THE NETHERLANDS HAVE AGREED TO PREPARE A TEMPLATE BASED ON FLEET SEGMENTATION (CURRENTLY UNDER REVIEW) AND CIRCULATE BEFORE NEXT YEAR'S MEETING.	SWEDEN WILL PREPARE DATA AS SOON AS THE TEMPLATES ARE DELIVERED.
RCM North Sea (2005)	14.2 RCM NORTH SEA RECOMMENDED THAT WHERE DISCARD SAMPLING COVERAGE IS RESTRICTED TO A LOW LEVEL, THE COUNTRY CONCERNED, CONSIDERS THE INPUTS FROM OTHER COUNTRIES AND ENTER INTO BILATERAL AGREEMENTS WHERE APPROPRIATE.	WHEN GREATER KNOWLEDGE OF OTHER COUNTRIES DISCARD SAMPLING PROGRAMMES IS ACHIEVED, SWEDEN WILL DO THIS WHERE NECESSARY
RCM North Sea (2005)	14.3 RCM NORTH SEA STRONGLY SUPPORTS THE INITIATIVE TO DEVELOP A DISCARD ATLAS AS IT IS REGARDED AS A MOVE WHICH WOULD PROVIDE USEFUL INFORMATION TO SUPPORT DECISION MAKING IN THE COORDINATION OF DISCARD SURVEYS.	SWEDEN WAS REPRESENTED BY ONE PARTICIPANTS IN THE DISCARD ATLAS MEETING IN ISPra (2006). SWEDEN WILL ALSO TAKE PART IN THE STEERING COMMITTEE.
RCM North Sea (2005)	17.1 THE RCM NORTH SEA REITERATES ITS 2004 RECOMMENDATION ON THE CONCLUSION OF FORMAL BILATERAL AGREEMENTS ON THE SAMPLING OF FOREIGN FLAG VESSELS, AND ON THE INCLUSION OF THESE AGREEMENTS IN THE MS' NATIONAL PROGRAMME PROPOSALS.	BILATERAL AGREEMENTS BETWEEN SWEDEN AND DENMARK AND SWEDEN AND GERMANY WERE UPDATED IN FIRST QUARTER OF 2006.
RCM	5.1.1 NS RCM RECOMMENDS THAT THE DCR SHOULD	SWEDEN WAS PARTICIPATING IN THE

North Sea (2004)	MOVE TO METIER BASED SAMPLING PROGRAMME. FURTHER IT SUGGESTS THAT RATHER THAN ESTABLISH A COMPLETE LIST OF NATIONAL METIERS WHICH COULD TAKE A CONSIDERABLE TIME TO BE AGREED, SGRN SHOULD BE REQUESTED TO ENDORSE THE DEFINITION OF A METIER BASED ON WORK OF EXPERT GROUPS SUCH AS SGDFFF AS PART OF THE UPCOMING REVISION OF THE REGULATION. THIS DEFINITION SHOULD BE USED BY MS TO DETERMINE THEIR METIER LIST WHICH CAN BE REVIEWED IN FUTURE BY THE COMMISSION.	FIRST FLEET BASED APPROACH MEETINGS IN NANTES 2005 WHERE THE FLEET MATRIX WAS SUGGESTED. WE HAVE PREPARED FLEET DATA FOR BOTH RCMs WHICH WERE REQUESTED. WE HAVE ALSO PARTICIPATED IN THE HANDS-ON WORKSHOP WHICH TOOK PLACE IN FEBRUARY 2006.
RCM North Sea (2004)	5.2.1 RCM RECOMMENDS THAT MS START BILATERAL TALKS AS SOON AS POSSIBLE, WITH A VIEW TO ESTABLISHING BILATERAL AGREEMENTS ON THE ISSUE OF FOREIGN FLAG VESSEL SAMPLING.	A BILATERAL MEETING WAS HELD BETWEEN DENMARK AND SWEDEN IN JANUARY 2005 AND AN AGREEMENT WAS ESTABLISHED.
RCM North Sea (2004)	5.3.1 IT WAS RECOMMENDED THAT DATA FOR THE NORTH SEA COD STOCK SHOULD BE ENTERED INTO THE SAMPLING STATUS SPREADSHEET COVERING THE DATA COLLECTED DURING 2005 WHICH WILL BE HOSTED ON THE WEBSITE OF DIFRES (WWW.DFU.MIN.DK/SAMPLINGSTATUS).	THE SAMPLING SPREADSHEET WAS ESTABLISHED FOR BOTH THE BALTIC AND THE NORTH SEA AND SWEDEN TOOK ACTIVE PART IN THE DEVELOPMENT. THE SPREADSHEET HAS NOT BEEN USED BY ANY COUNTRY INCLUDING SWEDEN.
RCM North Sea (2004)	5.4.1 NS RCM RECOMMENDS THAT MS CARRY OUT A PRECISION ANALYSIS ON AT LEAST ONE SELECTED STOCK FROM WITHIN THE NS RCM REGION, USING THE GUIDELINES AND PROTOCOLS SUGGESTED AT THE PRECISION WORKSHOP HELD IN NANTES 2004. THE RESULTS OF THIS ANALYSIS SHOULD BE REPORTED BACK TO THE NS RCM IN TIME TO BE CONSIDERED AT ITS NEXT MEETING.	PRECISION LEVEL ON COD IN SKAGERRAK WAS CALCULATED AND BROUGHT TO THE MEETING.
RCM North Sea (2004)	6.3.1 NS RCM RECOMMENDS THAT IN ALL CASES THE MEASURED WEIGHT (EITHER GUTTED OR WHOLE) SHOULD BE RECORDED RATHER THAN WEIGHTS DERIVED FROM GUTTED/WHOLE WEIGHT CONVERSION FACTORS.	IT'S DIFFICULT TO ACT ON THIS RECOMMENDATION AS LONG AS DATA ARE HANDLED ON A NATIONAL LEVEL.
RCM North Sea (2004)	6.4.1 NS RCM AGREED THAT A PRELIMINARY ANALYSIS OF THE LEVEL OF MATURITY SAMPLING AND SAMPLING COVERAGE BY AREA AND TIME SHOULD BE CARRIED OUT AND PRESENTED TO THE NEXT MEETING OF THE RCM WITH A VIEW OF ESTABLISHING TASK SHARING AGREEMENTS FROM 2007 ONWARDS. IT WAS AGREED THAT BELGIUM WOULD TAKE RESPONSIBILITY FOR THE DEMERSAL SPECIES AND THE NETHERLANDS WOULD DESCRIBE THE SITUATION IN RELATION TO PELAGIC SPECIES.	LEVEL OF MATURITY SAMPLING AND SAMPLING COVERAGE WERE REPORTED AS REQUESTED PRIOR TO THE MEETING. (NUMBER INDIVIDUALS PER ICES RECTANGLE AND MONTH). THE OVERVIEW HIGHLIGHTED SEVERAL IMPORTANT ASPECTS REGARDING MATURITY SAMPLING, STAGING, TIMING OF SAMPLING ETC. THESE ASPECTS ARE PLANNED TO BE TAKEN CARE OF WITHIN MATURITY WORKSHOPS IN WHICH SWEDEN WILL PARTICIPATE.
RCM North Sea (2004)	8.1 NS RCM RECOMMENDS FURTHER WORK TO BE DONE ON HOW TO LINK BIOLOGICAL AND ECONOMIC DATA. IN THIS CONTEXT, THE POSSIBLE IMPLICATIONS ON THE COLLECTION OF ECONOMIC DATA ALSO NEED TO BE FURTHER EXPLORED. IN ANTICIPATION OF RESULT FROM SUCH WORK, NS RCM RECOMMENDS THAT MS, IN THE MEANTIME, SHOULD BE ENCOURAGED TO COLLECT ECONOMIC DATA IN A WAY THAT MAKES IT POSSIBLE TO DO REGIONAL ECONOMIC ANALYSIS.	IN ORDER TO CONDUCT BIO-ECONOMIC MODELLING THERE IS A NEED TO ESTABLISH A CLEAR LINK BETWEEN BIOLOGICAL AND ECONOMICAL DATA.
RCM	NS RCM RECOMMENDS THAT THERE SHOULD BE A	THE CONCERTED ACTION PROJECT

North Sea (2004)	<i>FORUM FOR REGIONAL ECONOMIC ANALYSIS ALSO IN THE FUTURE. ANALYSES OF THE ECONOMIC DEVELOPMENT IN SPECIFIC REGIONS HAVE BEEN DONE WITHIN THE FRAMEWORK OF CONCERTED ACTION PROJECT THAT WILL END THIS YEAR. THERE IS A NEED, ALSO IN FUTURE, OF A FORUM WHERE THIS KIND OF WORK IS DONE</i>	WILL BE REPLACED BY THE NEW DATA REGULATION ANALYSIS. THE STECF SUBGROUPS ON ECONOMIC AFFAIRS WILL MEET ON THE 15-18 MAY TO DISCUSS HOW THE TRANSITION FROM THE CONCERTED ACTION PROJECT INTO THE NEW DATA REGULATION CAN BE MADE.
RCM North Sea (2004)	<i>9.1 THE NS RCM AGREED THAT THE FISHFRAME DATABASE SHOULD BE USED ON A EXPLORATORY BASIS TO INPUT RAW LEVEL DATA FROM 2004 FROM BOTH EU AND NON-EU COUNTRIES. COUNTRIES SHOULD UPLOAD DATA IN TIME TO BE USED BY THE STOCK COORDINATORS OF THE WGNSSK BY MAY 2005. A DATABASE SUBGROUP (CHAIRD BY HENRIK DEGEL) WILL PROVIDE GUIDELINES FOR DATA ENTRY AND THE TIMING OF DATA SUBMISSION.</i>	RECOMMENDATION FULFILLED.

III.C.5 Derogations and non-conformities

Fisheries picked by the metier ranking system but not chosen for sampling

Trawl fisheries targeting demersal fish (OTB_DEF_90-119_0_0), IV

In 2007 the total landing from the metier was 1315 tonnes. The landings consisted to 90% of the main targeted species saithe, cod and haddock. Only a few vessels (approx.10) are involved in the fishery and the total number of fishing days are low (approx 350). The fishery is conducted during the entire year. The bulk of the landings take place in Denmark. The gears used are managed in accordance with the Cod recovery plan (423/2004) including limitations in allowed number of days at sea in accordance with the TAC regulation (40/2008 annex IIa). At the national level, the landings of the fishery are managed by weekly rations by species, administered by the Swedish fishermen federation.

The metier was included in the sea-sampling programme during 1999-2001. Discard rates were found to be below 10%. The fisheries are further predominantly performed in the Norwegian zone where it is prohibited to discard.

Sweden will not sample the metier during 2009-2010 due to i) a low share of landings at the European level, ii) a majority of landings taking place in foreign countries and iii) discards presumably below 10%. Sweden thereby asks for derogation.

Trawl fisheries targeting demersal fish (OTB_DEF <16_0_0), IIIaN, IV

In 2007 the total landing from the metier was 7847 tonnes. The landings consist of 100% sandeel. The fishery takes place during a very limited season in springtime. The metier is managed in accordance with the TAC regulation (40/2008 annex II d). All landings take place in Denmark.

Sweden will not sample the metier during 2009-2010 due to i) a low share of landings at the European level and ii) a majority of landings taking place in foreign countries. Sweden thereby asks for derogation.

Trawl fisheries targeting small pelagic fish (PTM_SPF_32-69_0_0), IV

In 2007 the total annual landing from trawl fisheries targeting small pelagic fish in the North Sea was 12 100 tonnes. The landings constitutes of the target species herring, mackerel or

blue whiting. The fisheries could be conducted all year but were in 2007 concentrated to the 3rd and 4th quarter. The fishery is conducted both with pair trawl and single trawls and the metiers PTM_SPF_32-69_0_0 and OTM_SPF_32-69_0_0 are consequently merged. The fishery is nationally managed by yearly rations, limiting the allowed landing by vessel. Predominately the landings take place in Denmark. Sweden has a low share of EU quota of the target species and asks for a derogation not to sample the metier.

Purse seine fisheries targeting small pelagic fish (PS_SPF_32-69_0_0), IV

In 2007 the total annual landing from purse seine fisheries targeting small pelagic fish in the North Sea was 7550 tonnes. The landings constitutes of the target species herring and mackerel. The fisheries were in 2007 concentrated to the 2nd and 3rd quarter. The fishery is nationally managed by yearly rations, limiting the allowed landing by vessel. Predominately the landings take place in Denmark. Sweden has a low share of EU quota of the target species and asks for a derogation not to sample the metier.

Hand and pole line fishery targeting finfish (LHM_FIF_0_0_0), IIIa, IV

The hand and pole line fishery is mainly conducted in coastal waters of Kattegat (IIIaS) and Skagerrak (IIIaN). In 2007 the total annual landing was 112 tonnes. The main target species are mackerel and cod. The fisheries are concentrated to the 2nd and 3rd quarter and are predominantly performed by small vessels. Discard rates are assumed to be below 10%. The metier was picked by the ranking system because of effort. Sweden asks for derogation to sample the metier.

Gillnet fisheries targeting small pelagic fish (GNS_SPF_50-69_0_0), IIIa, IV

The gillnet fishery targeting small pelagic fish is mainly conducted in coastal waters of the Kattegat (IIIaS) and the Skagerrak (IIIaN). In 2007 the total annual landing was 52 tonnes. The main target species are herring and mackerel. The fisheries are conducted all year around but are most frequent in the 2nd and 3rd quarter, and are predominantly performed by small vessels. Discard rates are assumed to be below 10%. The metier was picked by the ranking system because of effort. Sweden asks for derogation to sample the metier.

Gillnet fisheries targeting demersal fish (GNS_DEF_120-219_0_0), IIIaN

In 2007 was the total annual landing 130 tonnes from gillnet fisheries targeting demersal fish in the Skagerrak. The fishery is very diverse and the landings constitutes of different species such as spurdog, cod, plaice and pollack.

A variety of mesh sizes are used in the gillnet fisheries as well as a mixture of set gillnets and trammel nets. Set gillnets and trammel nets as well as the different mesh sizes (GNS_DEF_120-219_0_0, GTR_DEF_120-219_0_0, GTR_DEF_70-89_0_0, GTR_DEF_90-99_0_0, GTR_DEF_100-119_0_0, GTR_DEF_>220_0_0, GNS_DEF_70-89_0_0, GNS_DEF_90-99_0_0, GNS_DEF_100-119_0_0 and GNS_DEF_>220_0_0) have been merged.

The high variability in catches and gear as well as the relatively low total landing in the metier makes it difficult to sample the metier for length distributions with precision in a cost-effective way. Sweden will therefore not sample the metier and asks for a derogation.

Gillnet fisheries targeting demersal fish (GNS DEF 120-219 0 0), IV

The Swedish gillnet fisheries in the North Sea are very limited. In 2007 no such fishery occurred. The metier was picked due to the relative greater importance of the fishery in area IIIaS and IIIaN. Sweden will consequently not sample gillnetters in the North Sea.

III.D Biological - Recreational fisheries

THE BALTIC SEA

Concerns cod and salmon. Recreational fishery for eel is not permitted.

III.D.1 Data acquisition

Salmon

Swedish recreational salmon fishery in the Baltic region takes place in rivers, at the coast and in the sea. Data on landings from the recreational fishery for salmon in the three areas is collected as described in the pilot study in 2003 (Anon. 2003).

Catch data on salmon and sea trout are collected annually from all salmon rivers (approximately 20). Salmon fishery in Swedish rivers is carried out almost exclusively by non-commercial fishermen. The fishery categories are:

- Angling
- Broodstock fishery (catch of spawners used for rearing purposes)
- Net, seine fishery or fishery with trapnets by recreational fishermen
- Trapnet fishery by licensed fishermen in two rivers

Statistics are from logbooks (coastal journals) for licensed fishermen. Data from other kinds of fishery are collected by enquiries or surveys. In many rivers there are several Fishery Management Areas, fishing clubs or other organizations that are managing the fishery. They are also collecting statistics of the fishery. Unfortunately the interest for collection of data is highly variable among the local organizations and fishermen and this leads to a large variability in the accuracy and preciseness of the collected data. As no national regulation exists that requires collection of fishery statistics from recreational fishermen, many fishermen are difficult to motivate in following local rules in particular when the surveillance is incomplete.

Coastal salmon fishery takes place almost exclusively with trapnets. Most of these are operated by commercial fishermen, who are obliged to use logbooks. However, some of the trapnets are operated by recreational fishermen without obligations to report. In order to estimate their catch, data is used on catches in nearby trapnets operated by commercial fishermen. A survey of the number and distribution of trapnets between recreational and commercial fishermen was carried out in 2003 and 2007. Information on the number of trapnets operated by different categories of fishermen in these years and the concurrent catch by commercial fishermen was used to calculate the coastal catch by recreational fishermen in these years.

Recreational salmon catch in the offshore region is dominated by trolling in the southern Baltic. An investigation was carried out within the framework of the pilot study in 2003 to get

an overview of the trolling fishery and catches in year 2002 (Anon. 2003). This study was repeated in 2007. The investigations consisted of enquiries to trolling fishermen and collection of fishery statistics from the most important trolling fishery harbours in southern Sweden. Estimated catch figures in 2002 and 2007 did not differ substantially indicating that the fishery may be relatively constant. This suggests that an estimate of the recreational catch by trolling in the investigated years can be used as a constant to be used also in the intermediate years without investigation.

The resulting catch data on recreational fisheries are summarized and reported to the relevant ICES Working Group (WGBAST).

Cod

All European member states with commercial cod catch were obliged by the Commission to conduct a pilot study on recreational fisher's cod catch during 2004 through 2006, in support of the data collection regulation (Regulation EC No 1581/2004, 7th appendix XI (section E) para.3). The final reports were made available to the Commission in spring 2007 and evaluated by SGRN in July. For the Baltic area, Denmark, Germany, Sweden, Poland and Lithuania delivered reports. Approach and effort spent on the collection of data from the recreational fishery as well as the level of detail provided and the estimated removals by recreational fishers were very different between the nations. A workshop on Sampling Methods for recreational Fisheries (WKSMRF) has been recommended by the PGCCDBS to take action in early 2009. The WK will focus on: review the results of the EU pilot study of cod catches in the recreational fisheries 2004-2006, recommend appropriate statistical sampling schemes and associated data analysis for estimating recreational fishery removals. There is an urgent need to provide member states with guidelines for statistical robust sampling and data analysis schemes and to ensure the harmonization of methods across geographic areas. Sweden will actively take part in the WK and the outcome of the WK is essential for Sweden while setting up a sampling scheme. After the WK Sweden will plan and start sampling on recreational fisheries of cod.

III.D.2 Data quality

Salmon

As indicated in the preceding description there are three important components of the recreational salmon fishery and the situation is quite different in them.

In rivers many kinds of fishery are operating and the organization of the fishery is also very variable. A survey was carried out in 2007-08 to investigate how the management organizations considered their tasks concerning collection of fishery data and what they thought about their quality. As might be expected there were considerable differences among the answers. The idea has been to evaluate these results and try to improve the collection of data in areas where the quality is particularly poor. This will take place in 2008-09. It is expected that these efforts will give a better basis for estimating the preciseness of the collected data. At present it is not possible to estimate error levels in catch estimates.

The recreational coastal trapnet fishery which is carried out with gears in the metier FPO_ANA_0_0_0 is diminishing in importance. Surveys of the number of gears operated by commercial and recreational fishermen are carried out with a few years interval and they give a basis for an estimate of the catches by recreational fishermen. Sampling takes place of commercial fishery in the metier FPO_ANA_0_0_0 and it gives a basis for estimates of catch composition and length distributions also in the recreational fishery.

Most trolling fishery in the Baltic takes place in Sub-division 25 and many of the boats use the same harbour for their boats (Simrishamn). This gives a possibility to get access to voluntary records made by fishermen when they return to the harbour after a fishing trip. It is however difficult to estimate the preciseness of these figures. This can be used in combination with the results from surveys to get approximate estimates of length distribution of the catches.

Cod

The sampling program for cod caught in the recreational fisheries in Sweden will be based on the outcome and guidelines from the workshop WKSMRF. After the Workshop Sweden will plan and describe the sampling scheme and analysis to be used.

III.D.3 Regional coordination

Salmon

None.

Cod

Sampling of cod will be discussed between MS in the WKSMRF, which is aiming to harmonise and coordinate sampling from the recreational fisheries. Sweden will participate in the Workshop which will be a useful platform to do necessary coordination and harmonisation from the start.

III.D.4 Derogations and non-conformities

Salmon

As indicated earlier annual estimates of catches are provided for the recreational river fishery, while estimates for the coastal and offshore components of the fishery are getting complete updates with a few years interval and partial updates in intermediate years.

Work is in progress to improve the river statistics and provide estimates of the accuracy of collected catch data. Results will be reported in 2009. If the results indicate considerable deficiencies in important districts there is a preliminary plan to make a major survey covering some of these areas in 2010.

Cod

None

THE NORTH SEA AND EAST ARCTIC

Concerns cod. Recreational fishery for eel is not permitted.

III.D.1 Data acquisition

All European member states with commercial cod catch were obliged by the Commission to conduct a pilot study on recreational fisher's cod catch during 2004 through 2006, in support of the data collection regulation (Regulation EC No 1581/2004, 7th appendix XI (section E) para.3). The final reports were made available to the Commission in spring 2007 and evaluated by SGRN in July. For the Baltic area, Denmark, Germany, Sweden, Poland and

Lithuania delivered reports. Approach and effort spent on the collection of data from the recreational fishery as well as the level of detail provided and the estimated removals by recreational fishers were very different between the nations. A workshop on Sampling Methods for recreational Fisheries (WKSMMRF) has been recommended by the PGCCDBS to take action in early 2009. The WK will focus on: review the results of the EU pilot study of cod catches in the recreational fisheries 2004-2006, recommend appropriate statistical sampling schemes and associated data analysis for estimating recreational fishery removals. There is an urgent need to provide member states with guidelines for statistical robust sampling and data analysis schemes and to ensure the harmonization of methods across geographic areas. Sweden will actively take part in the WK and the outcome of the WK is essential for Sweden while setting up a sampling scheme. After the WK Sweden will plan and start sampling on recreational fisheries of cod.

III.D.2 Data quality

The sampling program for cod caught in the recreational fisheries in Sweden will be based on the outcome and guidelines from the workshop WKSMMRF. After the Workshop Sweden will plan and describe the sampling scheme and analysis to be used.

III.D.3 Regional coordination

Sampling of cod will be discussed between MS in the WKSMMRF, which is aiming to harmonise and coordinate sampling from the recreational fisheries. Sweden will participate in the Workshop which will be a useful platform to do necessary coordination and harmonisation from the start.

III.D.4 Derogations and non-conformities

None

III.E Biological – stock-related variables

THE BALTIC SEA

III.E.1 Selection of stocks to sample

Stocks to be included in the sampling scheme for the Baltic region are listed in the upper part of table III.E.1.

An overview of long term planning of sampling for stock related variables is given in table III.E.2, and an overview of the planned sampling for age, weight, sex, maturity and fecundity is given in table III.E.3. To get the numbers of individuals presented in table III.E.3 a separate sampling table was produced for Sweden, to clarify the data sources and to give an overview of the sampling intensity (market, sea sampling, survey) at stock level (see annex 1).

III.E.2 Data acquisition

Herring (*Clupea harengus*) IIIb-d

Sweden is considering sd 22-24, sd 25-29, sd 30 and sd 31 as separate sampling units. For western Baltic herring (SD 22-24) and main basin herring (SD 25-29), herring are collected from randomly selected fishing vessels. In Sweden, herring is mainly caught in one merged metier, constituting of trawls (OTB_SPF_16-31_0_0), (PTM_SPF_16-31_0_0) and (PTM_SPF_>=32_0_0). Samples are purchased from different landing ports (Simrishamn, Nordersund, Västervik and Rånehamn on Gotland). Each sample is constituted of 50 or 100 individuals collected randomly from about 6 - 10 kg of landed fish. All samples are transported to IMR in Lysekil for analysis. Information on age, length, weight, sex and gonadal maturity is collected routinely from each individual sampled.

For herring from SD 30 and SD 31, stock specific data on age, weight, sex, and maturity will be compiled from samples from three sources, the Swedish sampling from herring gillnets (SD 30 and 31), the Baltic International Acoustic Survey (SD 30), and Finnish sampling from bottom trawls (SD 30 and 31). These multiple sources are necessary as the gillnet fishery targets spawning aggregations of herring, and hence individuals with a different maturity status for a given age and length than the bottom trawl fishery. Sampling for stock specific data from Swedish catches in herring gillnets amount to 400 ind. per stock (SD 30 and 31), collected in quarters 2-3. Data analysis of bottom trawl catches of herring will be co-ordinated with the large Finnish sampling scheme on stock specific data (approx. 2000 ind.) from this metier.

During the Baltic International Acoustic Survey (covering SD 25, 27, 28, 29, 30) conducted in the 4th quarter, sex and gonadal maturity are collected following the international 8 scale maturity key. In addition, information on age, length and weight is collected. For sex ratio and maturity the parameters are referenced to age.

Sprat (*Sprattus sprattus*) IIIb-d

Sprat in the Baltic is sampled as one single stock, and samples containing both herring and sprat are collected from randomly selected fishing vessels. In Sweden, sprat is mainly caught in one merged metier, constituting of trawls (OTB_SPF_16-31_0_0), (PTM_SPF_16-31_0_0)

and (PTM_SPF_>=32_0_0). Samples are purchased from different landing ports (see above). Each sample is constituted of 50 or 100 individuals collected randomly from about 6 - 10 kg of landed fish. All samples are transported to IMR in Lysekil for analysis. Information on age, length, weight and sex is collected routinely from each individual sampled. Gonadal maturity is recorded for the individuals collected in 1st and 2nd quarter due to the typical spawning activity of Baltic sprat in the 2nd quarter.

During the Baltic International Acoustic Survey conducted in the 4th quarter, information on age, length, weight and sex is collected. No sampling for maturity is performed during the Survey.

Cod (*Gadus morhua*) IIIb-d

Cod in the Baltic Sea is separated in two different stocks: the Western stock (sub-divisions 22-24), and the Eastern stock (sub-divisions 25-32). Biological sampling and results are reported by stock. Samples of cod will be collected randomly within each landing size category. Cod is mainly caught in three metiers, bottom trawls (OTB_DEM_>=105_1_110), gillnet (GNS_DEF_>=110_0_0) and long line (LLS_DEM_0_0_0) and information on age, length and weight are collected from these metiers. The species is sorted with respect to weight, in accordance with EU standard 1-5. A certain number of individuals are collected from each landing size category, for example more individuals are sampled from size 1-3 because it includes more age-classes compared to size 4 and 5. The idea is to sample all age classes in the population equally in number within a sampling unit to obtain a robust Age Length Key (ALK) in terms of precision. Sweden samples approximately 500 individuals per stock and quarter. For discarded cod, age, length and weight are collected in sea sampling programme.

Sampling of the Western and Eastern stocks takes place in fishing ports situated in Karlskrona, Nogersund, Simrishamn and the islands of Gotland and Öland.

Sampling of sex and gonadal maturity (along with age, length and weight) is carried out on board R/V ARGOS during the BITS surveys conducted in the 1st and 4th quarters. Number of individuals sampled follows the BITS manual. Sex and maturity are determined following the international 5 scale maturity key and the data is referenced to age.

Flounder (*Platichthys flesus*)

Average Swedish landings of flounder in the Baltic Sea during the last three years amount to 211 tonnes, thus rendering this stock eligible for sampling. Furthermore, since the Baltic flounder consists of two distinct stocks, demersal and pelagic spawning in the southern and northern part respectively, sampling is made in both areas. Sampling of flounder catches in the Baltic Sea is based on random samples taken from demersal trawls and gill-nets. Age-determined samples are supplemented by additional random samples of length-measured individuals. This sampling scheme ensures that the estimates of catch composition accounts for the two main gear types, seasonal variation, and are of adequate precision.

A reference length-age distribution (300 individuals) will be derived annually in SD 27 where additional detailed catch protocols are recorded in collaboration with fishermen (protocols are kept solely at national expense). This will be accompanied by age-determined samples of 200 individuals per quarter, during two quarters in SD25. The age-length keys will if necessary be derived using both landed and discarded fish to cover the whole size distribution. These are combined with additional length samples weighted by catch rates, to obtain acceptable precision levels in a cost-effective way. Both females and males will be sampled until more is known about growth patterns and selectivity.

In total 700 individuals will be age determined. All age-determined individuals are also sampled for weight, length, sex and gonadal maturity status.

Eel (*Anguilla anguilla*) sd 20, 21, 23, 24, 25 & 27.

The European eel is considered to belong to one single panmictic stock. According to EC Regulation no 1100/2007 each member state (MS) has to present a national management (EMP) plan by the end of 2008. To comply with this plan the MS will have to present a credible estimate of the biomass of spawners produced annually in the entire area of Swedish eel management.

The Swedish eel stock is primarily recruited from glass eel settling in the coastal zone of Skagerrak, Kattegatt and the Danish Straits and in rivers in this area. After an unknown period of time and depending on processes not fully understood, the young eels continue spreading into the Baltic basin. This process probably involves density dependence. The Swedish eel stock thus could be considered one single management unit and most probably will be treated as one in the future national EMP.

The EMP has to be adaptive and national targets have to set on different time scales and to be evaluated for compliance. Assessment tools including monitoring have to be developed to meet this demand. In this process there is an urge for data, fishery dependent as well as fishery independent, from all significant habitats within a management unit. In Sweden this should be applied for yellow eel in the coastal zone as well as in freshwater and for escaping silver eels mainly in the Baltic Sea. The source of silver eels caught in the Swedish pound net fishery could be anywhere in the Baltic basin, with no information on the proportion in the catch of specific national origin. This fact must be addressed in evaluating compliance with any national EMP in the Baltic region, urging for specific research on this issue.

Yellow eel is almost exclusively caught in the fyke net fishery (FYK_CAT_0_0_0). Sampling of stock specific data will be performed by purchasing samples from randomly selected fishermen on a quarterly basis during the main fishing season in quarters 2-3. Information on age, weight, sex, and maturity will be derived from a total material of approx. 400 individuals in the Baltic Sea. The samples will be collected in SD 23 and 27 where the fishery mainly is conducted. Each single length/age key will be based on 200 individuals. In order to get a good coverage of the size- and age distribution in the yellow eel stock, sampling in SD 27 will include undersized and thus normally discarded yellow eels.

The pound net fishery (FPN_CAT_0_0_0) in the Baltic is strongly targeting silver eel. Samples for stock specific data on age, weight, sex, and maturity will be purchased from randomly selected fishermen each month during the peak of the fishing season. In total, approx. 800 individuals will be sampled within SDs 23-25 and 27, where the fishery is focused. Each single length/age key will be based on 200 individuals. Sampling in all subdivisions will include undersized and thus normally discarded silver eels.

Sampling in the Baltic region (IIIId) is coordinated with sampling in the North Sea region.

Salmon (*Salmo salar*)

The Swedish landings from commercial and recreational fisheries of salmon in IIIb-d was on average 566 tonnes (years 2005-07) or 112370 fish obliging Sweden to sample this stock.

The Swedish fishery for anadromous fish species was formerly dominated by the offshore driftnet fishery (GND_ANA \geq 157_0_0) for salmon in SD 25-29 in autumn and spring, while long lines (LLD_ANA_0_0_0) were used in the winter. As driftnets were banned from 1 Jan 2008, it is possible that long line fishery could increase in magnitude to compensate for the ban. The present magnitude of the long line fishery does not motivate a sampling in 2009, but in case the fishery increases in 2008, sampling may need to be added as a complement for 2010.

Sampling of the commercial salmon and sea trout catches in the coastal metier (FPO_ANA_0_0_0) takes place in the Gulf of Bothnia (ICES sub-divisions 30-31). The sampling is partly carried out by selected fishermen themselves in different coastal regions and the data collected include length, weight and sex of individual fish. This sampling is also representative of the recreational fishery using similar gear. Scales are collected from all fish in samples. Scales are used for aging, determination of whether the fish is of wild or reared origin and genetic studies.

Recreational fishery is sampled in three rivers in Gulf of Bothnia and one river in the Main Basin, where catch samples of salmon and sea trout are collected throughout the fishing season. The monitored variables include smolt age, sea-age, sex, origin (wild/reared) and size at capture (weight and length). These data are an integral part of the assessment of the spawning run composition and the effects of the fishery. Data on fecundity will be collected by a recreational brood stock fishery in River Dalälven, Sub-division 30.

River monitoring of wild salmon and sea trout stocks

In 2006-2008 river monitoring of Swedish wild salmon stocks was included in the NP. The monitoring consisted of annual electrofishing surveys of salmon and sea trout parr in wild salmon rivers, running of a smolt trap for emigrating smolts and maintaining counting of ascending salmon and sea trout spawners in fishladders in three rivers.

In the new Commission Regulation valid for 2009-10, it is stated that countries should establish salmon index rivers, as defined by ICES, for counting of smolts, numbers of ascending spawners and estimating densities of parr. As Sweden has a major part of the Baltic salmon rivers, this has major implications for the Swedish monitoring system.

According to ICES definitions Sweden will establish three index rivers, two in Gulf of Bothnia and one in the Main Basin. Establishment of index rivers is normally associated with major costs because basic facilities are needed for the counting activities and the costs for running the investigations are also substantial. In order to handle the new demands it has been necessary to decrease the amount of monitoring in other non-index rivers. Furthermore the Swedish Board of Fisheries has decided to co-operate with other bodies, both private companies and regional and local agencies and local organizations as well as the Swedish University of Agriculture (SLU). They will be used as sub-contractors for local activities and are also in some cases able to provide substantial financial contributions. As the Board of Fisheries will not own any of the investments in fishladders nor the new smolt traps it will be considered as subcontracting costs. The Board has established a clear definition that investments for instance in basic constructions such as dams are not allowed in the NP. Costs that are included must be clearly related to facilitation of the basic operation of index rivers, such as installation or operation of counting equipment.

The plan for index rivers is as described in the text table below.

River	Smolt count	Adult count	Electro-fishing	Need for investment
Ume/Vindelalven, Su b-div. 31, a large river	New traps will operate in 2009-10	Use of existing fishladder in 2009-10, need for improvement	Yes	Smolt traps and considerable investments in counting equipment in fishladder in 2009-10
Savaran, Sub-div. 31, a small river	Existing traps will operate in 2009-10	Not in 2009, in 2010 dependent on result of investigation	Yes	Investigation of solution for adult counting in 2009, outcome will decide plan for 2010
Morrumsan, Sub-div. 25, midsize river	Existing traps will operate in 2009-10	Use of existing fishladder, need for improvement	Yes	Improvement of inlet to fishladder, counting equipment in fishladder

In addition to the monitoring of the index rivers operation of a fishladder in River Kalixalven and electrofishing at less than 50% of the level in 2008 is included in the NP. A detailed plan of the different costs is in an annex to the budget.

All data from electrofishing survey are collected in a national database covering all Swedish surveys (SERS). Other data are also collected and kept in a database that is partly operated by the Board of Fisheries. It is expected that it will take more than one year to get all datasets in order. All data from river monitoring will be reported to the relevant ICES Working Group (WGBAST).

III.E.3 Data quality

While waiting for the standard tool (COST) for analysing precision etc, Sweden has over the years calculated CV on a national level using analytical or boot strap methods. The results from the analyses have been used to adjust the sampling size as well as improve and optimise the sampling scheme. When the tool is released, Sweden will be able to analyse the data in a standardized way, and the results will guide us to reconsider the sample size as well as sampling setup.

III.E.4 Regional coordination

Bilateral agreements for the Baltic have been signed with Denmark and Germany. The intention is to follow up this for the period 2009-2010, during the RCM meeting in December 2008.

Recommendations made in the RCM Baltic are listed in section III.C.4.

In the Baltic, two types of surveys are conducted following the international manuals defining sampling procedure and sampling size etc. The Baltic International Trawl Survey (BITS) in quarter 1 and quarter 4, follows the manuals BITS 2002 (ICES CM 2002/H), and for Baltic International Acoustic Survey (BIAS) manual version 0,8 BIAS 2008 is used. The surveys are planned within the ICES WGBIFS working group.

III.E.5 Derogations and non-conformities

Regarding Table III.E.3, Swedish data in the column “Number of fish necessary to achieve precision target” is referring to the national calculations on CV, on which the Swedish sampling size is based. This might be changed as soon as the statistical tool (COST) will be available and data analysed in a standardized way.

Cod in subdivision 22-24 are not sampled for sex and maturity since the fish sampled in harbours are gutted and Sweden is not covering this area during the BITS survey. The survey is planned internationally and Sweden is covering Subdivisions 25-28, whereas other countries are covering sd 22-24. Therefore, Sweden asks for derogation for the required sampling.

Eel (*Anguilla anguilla*)

Sweden will be proposed one single management unit in the national eel management plan. Due to large regional differences in stock composition and habitat, the required biological sampling of minimum 100 age samples per management unit will not be adequate to fulfil the demands for evaluation of compliance. A minimum of 200 age samples from each of the most relevant ICES Subdivisions is thus suggested. The sample size is estimated to meet the demand of five individuals aged per cm-group.

Herring (*Clupea harengus*)

The herring stock in Sub-divisions 30-31 is mainly exploited by the Finnish trawl fishery (95% of the landings). Information for representing the metier of bottom trawl catches of herring is suggested to be obtained from the large Finnish sampling scheme on stock specific data of approx. 2000 individuals. The Swedish trawl fishery has a similar selection pattern as the Finnish trawl fishery. Sweden asks for derogation for the required sampling of the Swedish trawl fleet in Subdivision 30. For assessment purposes landings of this fleet will be distributed according to sampling results from Finland.

Flounder (*Platichthys flesus*)

Sampling will only be made during the most intensive parts of the fishery, for GNS_DEF_>=110_0_0 during the quarter 3 and for (OTB_DEF_>=105_1_110 and OTM_DEF_>=105_1_110) during the quarters 1 and 4. The required biological sampling would result in too small sample size to achieve the required precision, hence the sample size for the metiers above will be increased to 300 and 400 individuals respectively.

Salmon (*Salmo salar*)

The offshore longline fishery will not be sampled due to the small extent of this fishery. In case the fishery increases considerably in 2008-09, it is planned to start sampling in 2010. Data on maturity will not be collected for salmon. Maturity data for salmon has never been used by ICES and no other parties are known to have an interest in such data. It is only in the offshore fishery there is a theoretical interest to collect such data as the fish have a varying maturity stage in this fishery. The offshore fishery is not sampled in 2009-10. When salmon are on their spawning migration they are caught in the coastal fishery where samples are taken. These fish are in an advanced stage of maturity and it provides no further information to investigate the maturity stage of them.

Because of the major investigations and investments needed for the river monitoring in index rivers, it will not be possible to get all three planned index rivers fully operational in 2009 and

perhaps not in 2010. Depending on the outcome of an investigation in 2009, an additional investment may be needed for 2010.

THE NORTH SEA AND EAST ARCTIC

III.E.1 Selection of stocks to sample

Stocks to be included in the sampling scheme for the North Sea region are listed in the lower part of table III.E.1.

An overview of long term planning of sampling for stock related variables is given in table III.E.2, and an overview of the planned sampling for age, weight, sex, maturity and fecundity is given in table III.E.3. To get the numbers of individuals presented in table III.E.3 a separate sampling table was produced for Sweden, to clarify the data sources and to give an overview of the sampling intensity (market, sea sampling, survey) at stock level (see annex 1).

III.E.2 Data acquisition

Herring (*Clupea harengus*) IIIa

Herring are collected from randomly selected fishing vessels. Each sample is constituted of 50 or 100 individuals collected randomly from about 6 - 10 kg of landed fish.

Sampling of herring in IIIa takes place by spawning stock (Chapter III.B.1.2a). Herring in IIIa consist of:

- a/ autumn-spawners from the North Sea
- b/ spring-spawners from the Western Baltic Sea
- c/ local winter and spring-spawning stocks.

The size of these stocks varies between years, seasons and age groups. The variations are evaluated annually with the help of special biological sampling (i.e. analysis of the microstructure of the otolith). From 1990 onwards, two main spawning stocks are identified: autumn-spawning and spring-spawning herring. Herring samples are collected from three metiers, trawls (PTM_SPF_32-69_0_0 and OTM_SPF_32-69_0_0) and purse seine (PS_SPF_32-69_0_0). However, the metiers are currently targeting herring for human consumption and ALK does not differ between them (Cardinale and Hansson, 2006). Thus, Sweden considers the three metiers as a single statistical sampling unit and precision levels as well as ALK were derived from the fleets combined. Samples of herring is purchased or performed by the Department of Fisheries control and transported to IMR in Lysekil for analysis. Information on age, length and weight, sex and gonadal maturity is collected from each individual sampled. The spawning type is determined by analyses of otoliths individual fish.

Also, information on age, length, weight, sex and gonadal maturity are collected during IBTS surveys conducted in the 1st and 3rd quarters. Sex and maturity are determined following an 8 stage international key and the data is referenced to age.

Sprat (*Sprattus sprattus*) IIIa

Samples of sprat are collected from three metiers. Sprat for human consumption is caught with fine-mesh purse seines and ring nets mainly during autumn and winter in the Skagerrak (PS_SPF_32-69_0_0).

Samples of sprat are also collected from Fisheries taking place throughout the year using ring nets, mid-water trawls and bottom trawls. (PTM_SPF_32-69_0_0) and (OTM_SPF_32-69_0_0). Sweden considers the three metiers as a single statistical sampling unit and precision levels as well as ALK were derived from the fleets combined.

Samples of sprat is purchased or performed by the Department of Fisheries control and transported to IMR in Lysekil for analysis. Information on age, length, weight, sex and gonadal maturity is collected from each individual sampled. Information on age, length, weight and sex and gonadal maturity are also collected during IBTS surveys conducted in the 1st and 3rd quarters. Sex and maturity are determined following an 8 stage international key and data is referenced to age.

Sampling for cod and plaice

Samples of cod and plaice will be collected randomly within each landing size category. Both species are sorted with respect to weight, in accordance with EU standard 1-5 for cod and 1-4 for plaice. A certain number of individuals are collected from each landing size category, for example more individuals are sampled from size 1-3 because it includes more age-classes compared to size 4 and 5. The idea is to sample all age classes in the population equally in number within a sampling unit to obtain a robust Age Length Key (ALK) in terms of precision. Samples are collected from a randomly selected number of boats representing the fishery. Cod and plaice are caught primarily in following metiers, demersal fish trawl (OTB_DEF_90-119_0_0) and as by-catch in trawls targeting nephrops (OTB_CRU_90-119_0_0) and for cod, as by-catch in trawls targeting pandalus (OTB_CRU_32-69_0_0) and for plaice in gillnet (GNS_DEF_120-219_0_0).

Cod (*Gadus morhua*) IIIa S and N

The cod in IIIa belong to two different stocks and are therefore sampled separately. The major part of the catch is taken during the 1st and 4th quarters. Sampling of cod regarding age, length and weight is performed at the fish auction in Göteborg on the landed part of the catch. Samples on age, length and weight for discarded cod are performed in the sea sampling programme.

While landed cod is gutted, sampling of sex and gonadal maturity (along with age, length and weight) is carried out on board R/V ARGOS during the IBTS surveys conducted in the 1st and 3rd quarters. Numbers of individuals sampled follow the IBTS manual. Sex and maturity are determined following the national 8 scale maturity key (transferable to the international key) and the data is referenced to age.

Plaice (*Pleuronectes platessa*) IIIa

Plaice in the Kattegat and the Skagerrak are assumed to belong to the same stock. Only plaice in the Kattegat is sampled by Sweden, while bilateral agreement with Denmark cover the sampling of plaice in the Skagerrak.

Sampling of plaice, regarding age, length and weight on landed part of the catch is carried out in the fishing port in Göteborg, and for the discarded part in the sea sampling programme. While landed plaice are gutted, sampling of sex and gonadal maturity (along with age, length and weight) is carried out on-board R/V ARGOS during the IBTS surveys conducted in the 1st and 3rd quarters. Number of individuals sampled follows the IBTS manual. Sex and maturity are determined following the national 8 scale maturity key (transferable to the international key) and the data is referenced to age.

Witch Flounder (*Glyptocephalus cynoglossus*) IIIaNs

2009 will be the first year for Sweden of regular sampling of witch flounder in the Skagerrak. Therefore, there will be a pilot study regarding sampling strategy and sample size. Sweden is planning to collect data on age, length and weight of the whole catch in sea sampling programme within the metier (OTB_DEF_90-119_0_0) targeting witch flounder. For discards, samples of age will be collected onboard and for the landed part, a sample of unsorted catch will be purchased and transported to IMR in Lysekil for analysis. Sampling of sex and gonadal maturity (along with age, length and weight) is carried out on board R/V ARGOS during the IBTS surveys conducted in the 1st and 3rd quarter. Sex and maturity is determined following the national 8 scale maturity key and the data is referenced to age.

Norway lobster (*Nephrops norvegicus*) IIIa

The sampling is carried out on board commercial Norway lobster trawlers (single and twin trawlers) separated into traditional trawls (OTB_CRU_90-119_0_0) and grid equipped ones (OTB_CRU_70-89_2_35), and onboard crustacean creel boats (FPO_CRU_0_0_0), performed by personnel from IMR. Sampling onboard trawlers is performed on the sorted catch, i.e. both on the proportion of the catch to be landed and the proportion to be discarded, separated into sex, female maturity stage, and includes length measurement of the carapax. When appropriate time series of data are available for the Skagerrak creel fishery, this fishery should be assessed separately for reasons of its different exploitation pattern and explains the high level of sampling planned.

Other biological parameters such as sex and gonadal maturity are sampled as supplementary data on females for those individuals which are length measured. The analytical stock assessment is carried out on each sex separately.

Sweden and Denmark have signed an agreement of cooperation in data collection. The agreement has an emphasis on foreign landings but it also covers specific parameters. For Norway lobster it has been agreed that only Sweden will carry out sampling for weight, sex and maturity and will therefore increase its sampling intensity to compensate for the missing Danish sampling.

Eel (*Anguilla anguilla*)

The European eel is considered to belong to one single panmictic stock. According to EC Regulation no 1100/2007 each member state (MS) has to present a national management (EMP) plan by the end of 2008. To comply with this plan the MS will have to present a credible estimate of the biomass of spawners produced annually in the entire area of Swedish eel management.

The Swedish eel stock is primarily recruited from glass eel settling in the coastal zone of the Skagerrak, Kattegatt and the Danish Straits and in rivers in this area. After an unknown period of time and depending on processes not fully understood, the young eels continue spreading into the Baltic basin. This process probably involves density dependence. The Swedish eel stock thus could be considered one single management unit and most probably will be treated as one in the future national EMP.

The EMP has to be adaptive and national targets have to set on different time scales and to be evaluated for compliance. Assessment tools including monitoring have to be developed to meet this demand. In this process there is an urge for data, fishery dependent as well as

fishery independent, from all significant habitats within a management unit. In Sweden this should be applied for yellow eel in the coastal zone as well as in freshwater and for escaping silver eels mainly in the Baltic Sea.

Less than 200 tonnes of eel are landed from IIIa, almost exclusively yellow eel caught in the fyke net fishery (FYK_CAT_0_0_0). Sampling of stock specific data will be performed by purchasing samples from randomly selected fishermen on a monthly basis during the main fishing season in quarters 2-3. Information on age, weight, sex, and maturity will be derived from a total material of approx. 600 individuals in area IIIa. Each single length/age key will be based on 200 individuals

Pandalid shrimps (*Pandalus borealis*) IIIa and IVa E

Pandalid shrimp is caught in two metiers, trawls with species selected grid (OTB_CRU_32-69_2_35) and traditional shrimp trawl (OTB_CRU_32-69_0_0). Samples will be collected from both metiers. Shrimps caught in traditional shrimp trawl will be sampled on board by staff from IMR. The metier catching shrimps using species sorting grid will be sampled on board during a pilot study 2009. While discard rate is low, and the catch is quite “clean” for this metier, Sweden is aiming towards a self sampling scheme.

The catch is sorted on board according to size. The fraction of larger shrimps is boiled on board, the middle fraction landed fresh to the canning industry and the smallest shrimps are discarded. Samples from boiled and middle fractions will be purchased and transported to IMR for analysis in respect of carapax length, sex, maturity stage and weight. Sex and maturity is referenced to length.

III.E.3 Data quality

While waiting for the standard tool (COST) for analysing precision etc, Sweden has over the years calculated CV on a national level using analytical or boot strap methods. The results from the analyses have been used to adjust the sampling size as well as improve and optimise the sampling scheme. When the tool is released, Sweden will be able to analyse the data in a standardized way, and the results will guide us to reconsider the sample size as well as sampling setup.

III.E.4 Regional coordination

Bilateral agreements with Denmark and Germany for the Skagerrak and Kattegat, has been done for previous years and the intention is to follow up this for the period 2009-2010, during the RCM meeting in December 2008.

Recommendations made in the RCM North Sea and East Arctic are listed in section III.C.4.

In the Skagerrak and Kattegat, the International Bottom Trawl Surveys (IBTS) are conducted in quarter 1 and quarter 3 following the international manuals defining sampling procedure and sampling size etc. (Anon 2006). The surveys are planned within the ICES IBTS working group.

III.E.5 Derogations and non-conformities

Regarding Table III.E.3, Swedish data in the column “Number of fish necessary to achieve precision target” is referring to the national calculations on CV, on which the Swedish sampling size is based on. This might be changed as soon as the statistical tool (COST) will be available and data analysed in a standardized way.

Eel (*Anguilla anguilla*)

Sweden will be proposed one single management unit in the national eel management plan. Due to large regional differences in stock composition and habitat, the required biological sampling of minimum 100 age samples per management unit will not be adequate to fulfil the demands for evaluation of compliance. A minimum of 200 age samples from each of the most relevant ICES subdivisions is thus suggested. The sample size is estimated to meet the demand of five individuals aged per cm group.

Haddock (*Melanogrammus aeglefinus*) IIIa

Average landing of Haddock in Sweden was 230 tonnes in IIIa (for the period 2005-2007) while the Swedish share of EU TAC is below 10 %, obliging Sweden to sample this stock. Analytical stock assessment on Haddock is performed on a stock level constituting of the two areas IIIA and IV (North Sea) together. The Swedish landings in IIIA are very small compared to the total landing of the whole stock and the value of Swedish data for the overall picture of the stock is insignificant. Sweden therefore asks for derogation for sampling this stock.

III.F Transversal variables

III.F.1 Capacity

III.F.1.1 Data acquisition

Capacity data will be obtained from the fleet register. In order to segment the fleet logbooks and coastal journals will be used to obtain the main gear type used. The dominance criteria to allocate each vessel to a segment will be based on the number of fishing days used with each gear.

Definition of variables and sources:

As defined in Appendix VIII of the Commission regulation (EC) no 665/2008.

Number of vessels: Shall be compiled from the fleet register and disaggregated to level C3 and B1 by use of logbooks and coastal journals.

GT, kW and Vessel age: Shall be compiled from the fleet register.

III.F.1.2 Data Quality

Capacity data are collected exhaustively in the fleet register

III.F.1.3 Regional coordination

Sweden will participate in the RCMs and implement their recommendations.

III.F.1.4 Derogations and non-conformities

There are no planned derogations or non-conformities with the requirements of the DCR.

III.F.2 Effort

III.F.2.1 Data acquisition

Data will be acquired as defined in Appendix VIII of the Commission decision 2008/XXX/EC.

All spatial data used to calculate time in area for vessels reporting in logbook, will be based on best information from VMS, AIS, Effort reports, logbook and inspection information (sighting etc). The spatial data are stored trip by trip with information for each record on vessel, position (long/lat), time and data source. Information on activity and gear onboard is linked to each trip.

Vessel not obliged to keep logbook report there effort information in the monthly coastal journal. Data on gear capacity and activity will be collected as well as information on days at sea/fishing days. For simplicity reason calendar day will be used for the calculation of activities of vessels under 8m/10m without logbook

Variable	Data sources and methodologies.
Days at sea	Spatial data sources (described above) and coastal journals for vessels without logbook
Hours fished	Effort data in logbook (haul by haul records) information.
Fishing days	Logbook and coastal journals for vessels without logbook
kW * Fishing Days	Fleet register and logbook/coastal journal
GT * Fishing days	Fleet register and logbook/coastal journal
Number of trips	Logbook/Coastal journal (gear information)
Number of rigs	Logbook/Coastal journal (gear information)
Number of fishing operations	Logbook/Coastal journal
Number of nets, Length	Logbook/Coastal journal
Number of hooks, Number of lines	Logbook/Coastal journal
Numbers of pots, traps	Logbook/Coastal journal
Soaking time	Logbook/Coastal journal

III.F.2.2 Data quality

Effort data derive from the same datasets used to monitor quota and effort limitations. Comprehensive validations are made during the database entry process (logbook, landing declarations, sales notes, Coastal journals, effort reports). Spatial data from logbook, VMS, effort reports, sightings etc are compiled trip by trip. The trip information is crosschecked in

order to verify catch and effort area information in the logbook and to calculate time in different effort areas.

Cross-checking of effort information in the monthly coastal journals is not made on a trip by trip base and not on a regular base. Risk based cross-checks will be performed by using surveillance information.

III.F.2.3 Regional coordination

No initiatives to coordinate the national programme with other MS for the collection of effort data.

III.F.2.4 Derogations and non-conformities

For simplicity reason calendar day (not 24 hour period) will be used for the calculation of activities of vessels under 8m/10m without logbook.

III.F.3 Landings

III.F.3.1 Data acquisition

Data will be acquired as defined in Appendix VIII of the Commission decision 2008/XXX/EC.

Variable	Data sources and methodologies.
Value of landings total and per commercial species	Logbook/Landing declaration, Coastal Journal and salesnotes. Since all quantity in a landing does not necessarily end up in a salesnote, an average price for the species landed is used instead of the corresponding sales note. For monthly coastal journals an average for the month is used. The average prices are based on species, landing location and landing date.
Live Weight of landings total and per species	Logbook/Landing declaration and Coastal Journal. National conversion factors (same as for quota calculation) are used to calculate live weight from product weight until EC harmonised factors are in
Prices by commercial species	Sales notes
Conversion factor per species	National conversion factors (same as for quota calculation) are used to calculate live weight from product weight until EC harmonised factors are in force.

III.F.3.2 Data quality

Landing data derive from the same datasets used to monitor quotas. Comprehensive validations are made during the database entry process (logbook, landing declarations, sales notes, Coastal journals, effort reports). Catch, landing and sales data as well as spatial data from logbook, VMS, effort reports, sightings etc are compiled trip by trip. The trip information is crosschecked in order to verify catch and catch area information in the logbook. Cross-

checking of information in the monthly coastal journals are not made on a trip by trip base and not on a regular base.

III.F.3.3 Regional coordination

No initiatives to coordinate the national programme with other MS for the collection of landing data.

III.F.3.4 Derogations and non-conformities

There are no planned derogations or non-conformities with the requirements of the DCR.

III.G Research surveys at sea

III.G.1 Planned surveys

Member States are required to conduct scientific research at sea to enable them to evaluate the size and distribution of the stocks, regardless of the data submitted by the commercial fisheries in relation to stocks for which such evaluations are possible and appropriate. Sweden will undertake six surveys in the Baltic Sea, the Kattegat and the Skagerrak. These six surveys are defined in Appendix IX of Commission Decision (2008/XXX/EC).

The Swedish Board of Fisheries commands two research vessels. The R/V ARGOS which is a 61 meters long stern trawler. The Institute of Marine Research, IMR, uses R/V ARGOS when conducting the Baltic International Trawl Survey (BITS), Baltic International Acoustic Survey (BIAS) and the International Bottom Trawl Survey (IBTS). The smaller vessel, R/V Ancylus will be used for conducting the Nephrops TV Survey (see table III.G.1.).

The trawl surveys described in this programme are internationally coordinated and will remain so. The planning and coordination of the surveys are done in ICES working groups connected with the surveys (BIFS Working Group, IBTS Working Group and WGNSSK Herring Survey Planning Working Group).

Baltic International Trawl Survey (BITS)

The survey is conducted twice yearly, in the 1st quarter (15 days at sea, 50 trawl stations) and in the 4th quarter (10 days at sea, 30 trawl stations) with the research vessel ARGOS. The surveys cover area IIIId.

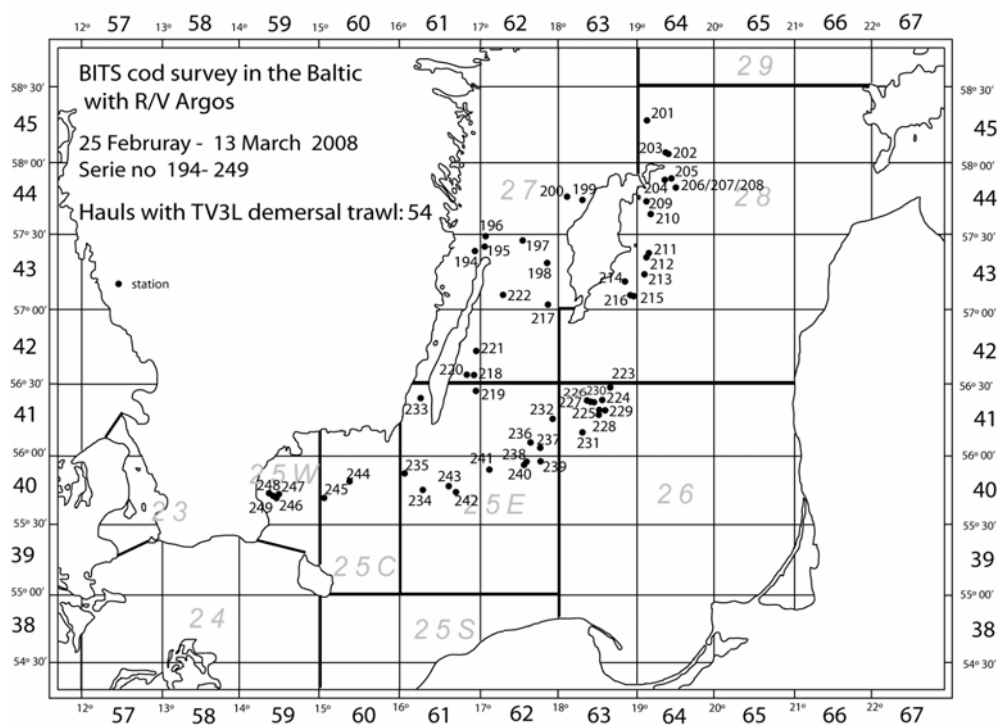
The primary purpose is to produce indices for recruitment and stock abundance of the Baltic cod stock. Sampling of individual cod includes fish length, age, weight, sex and gonadal maturity and is carried out on board the survey vessel. Data on gonadal maturity and individual weight are obtained to establish sex specific maturity ogives and mean weight at age for cod. The otoliths are analysed at IMR in Lysekil. Age determination takes place in accordance with standardised methods (Anon. 2000a).

The sampling procedure and the level of precision are defined in the Manual for the Baltic International Trawl surveys. ICES CM 2002/G:05(Addendum). The manual is available on the ICES website: <http://datras.ices.dk/Documents/Manuals/Manuals.aspx>

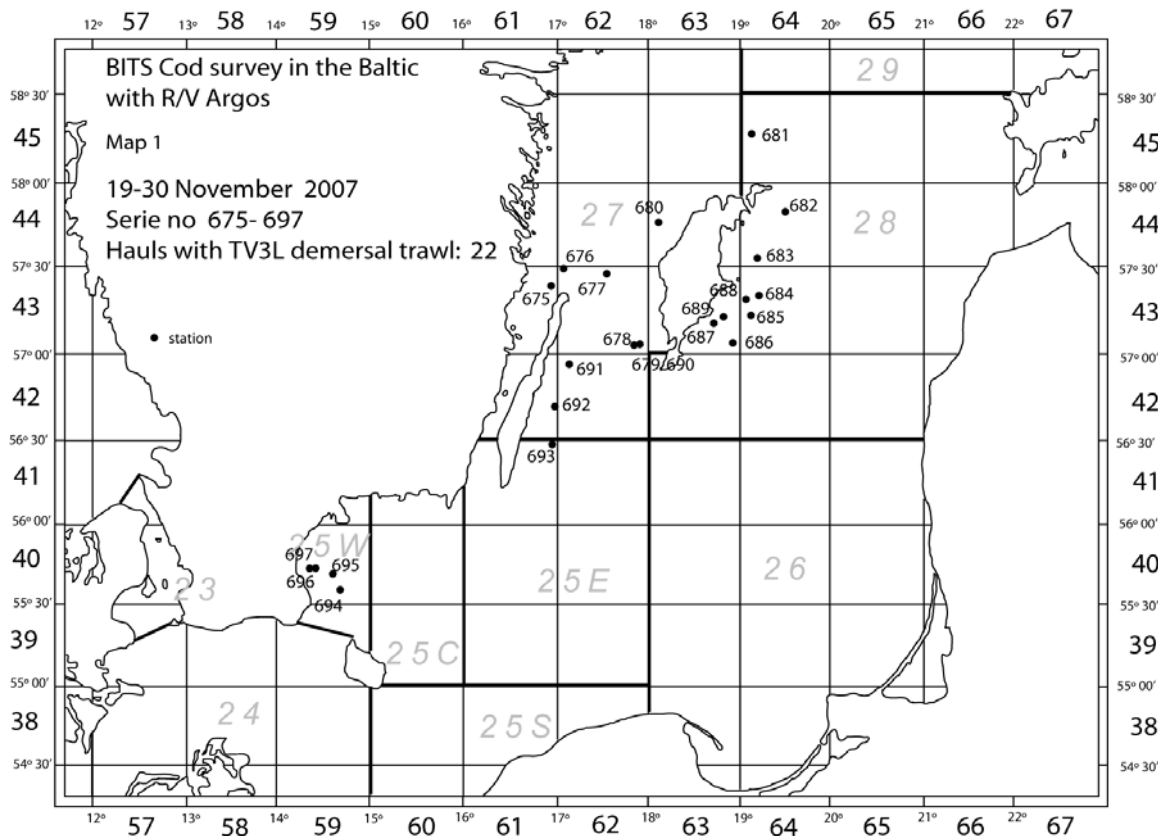
The survey is ICES coordinated and performed in collaboration with research vessels from Denmark, Germany, Poland, Latvia and Russia. However, all countries are not involved in every survey. During the survey a TV3 bottom trawl is used at day-time. This gear was developed around ten years ago and is used as a standard gear by the countries involved. In connection with each haul, hydrographical data are collected with a CTD.

Primary survey data are stored in a fish sample database (FISKDATA) administered by IMR in Lysekil. Aggregated data are reported and used annually by relevant ICES Working Groups. Since 1997, data are also stored in an internationally coordinated database (DATRAS) at ICES in Copenhagen.

The survey is well suited for the calculation of the ecosystem indicators 1-4 as listed in Appendix XIII of Commission Decision 2008/XXX/EC.



Map 1. BITS (Baltic International Trawl Survey) quarter 1, cod survey in the Baltic. Stations plotted from survey in 2008.



Map 2. BITS (Baltic International Trawl Survey) quarter 4, cod survey in the Baltic. Stations plotted from survey in 2007.

Baltic International Acoustic Survey (BIAS)

The survey is conducted in area IIIId during the 4th quarter (25 days at sea, 80 trawl stations) with the research vessel ARGOS. The survey consists of two parts, one joint-venture with Finland covering Sd 30 and one which is run by Sweden only, covering Sd 25-29.

The purpose of the survey is to provide acoustic abundance estimates of herring and sprat in the Baltic Sea (sub-divisions 25-30).

The sampling procedure and the level of precision are defined in the Manual for the Baltic International Acoustic surveys ICES CM 2008/LRC:8Add 2. The Manual is available at <http://www.ices.dk/reports/LRC/2008/WGBIFS/directory.asp>

The acoustic abundance estimate is done in collaboration with Finland, Germany, Denmark, Poland, Russia, Latvia and Estonia. All species are length measured on board and parameters such as age, weight, sex and gonadal maturity are analyzed on herring and sprat. Age determination takes place in accordance with standardised methods (Anon. 2000a).

Primary survey data are stored in a fish sample database (FISKDATA) administered by IMR in Lysekil. Aggregated data are reported and used annually by relevant ICES Working Groups. Data are also stored in an internationally coordinated database (Fishframe Acoustic, EC 99/06) administered by DFU in Copenhagen, Denmark.

The survey is well suited for the calculation of the ecosystem indicators 1-4 as listed in Appendix XIII of Commission Decision 2008/XXX/EC.



Map 3. Trek chart of the Baltic International Acoustic Survey 2007 quarter 4

International Bottom Trawl Survey (IBTS)

The survey is conducted twice a year, one in the 1st quarter (15 days at sea, 48 trawl stations) and one in the 3rd quarter (15 days at sea, 48 trawl stations) with the research vessel ARGOS. The surveys cover area IIIa and are the Swedish contribution to the International Bottom Trawl Survey.

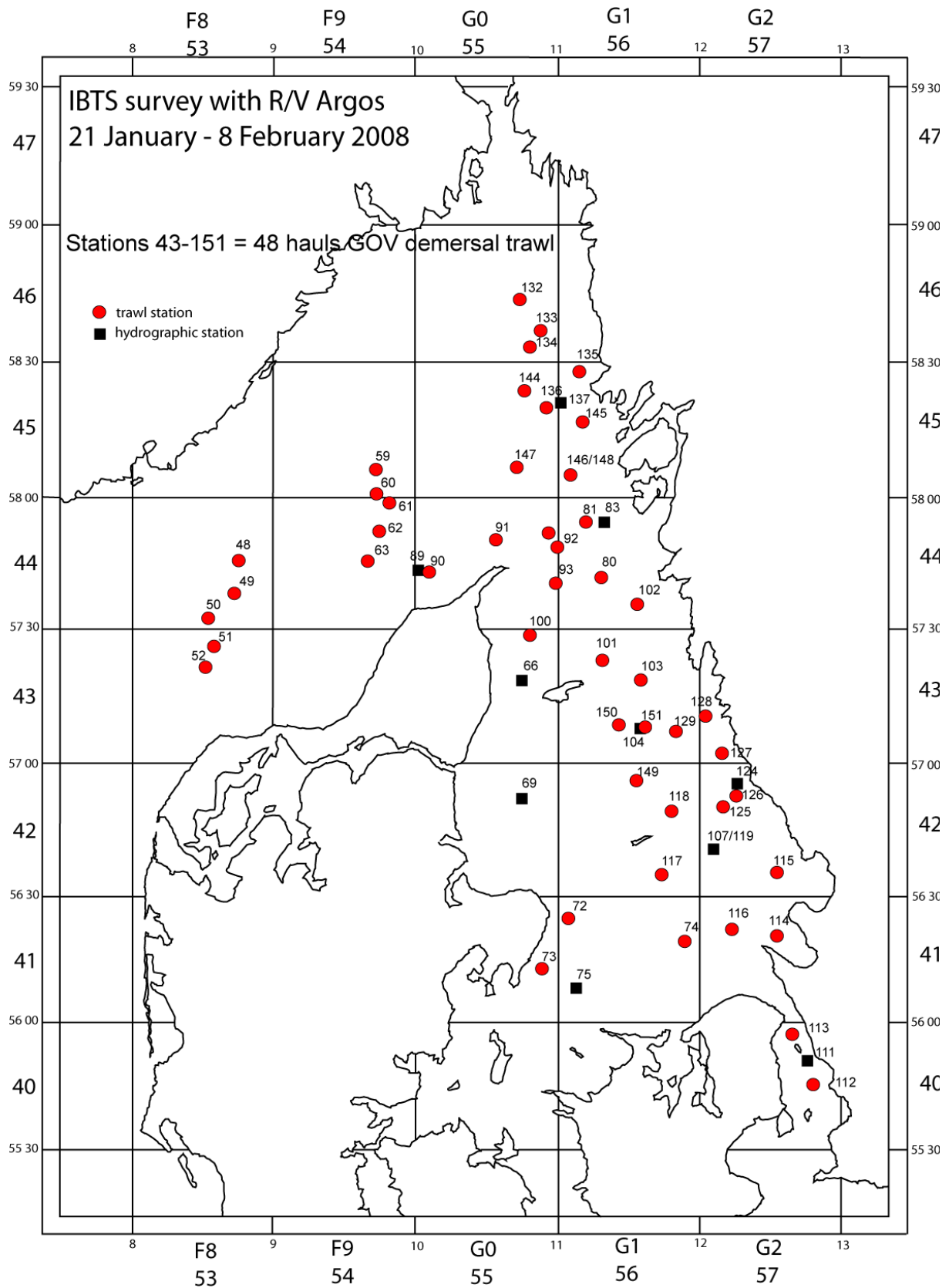
The purpose of the survey is to estimate abundance by age, in particular for the recruiting year classes of the target species (cod, haddock, whiting, herring, sprat, Norway pout and plaice) in the Kattegat and the Skagerrak. Sampling of target species includes fish length, age, weight, sex and gonadal maturity and is carried out on board R/V ARGOS. The otoliths are analysed at IMR in Lysekil. Age determination takes place in accordance with standardized methods (Anon. 2000a).

The sampling procedure and the level of precision are defined in the Manual for the International Bottom Trawl Surveys ICES CM 2000/D:07. The manual can be found on the ICES website: <http://datras.ices.dk/Documents/Manuals/Manuals.aspx>

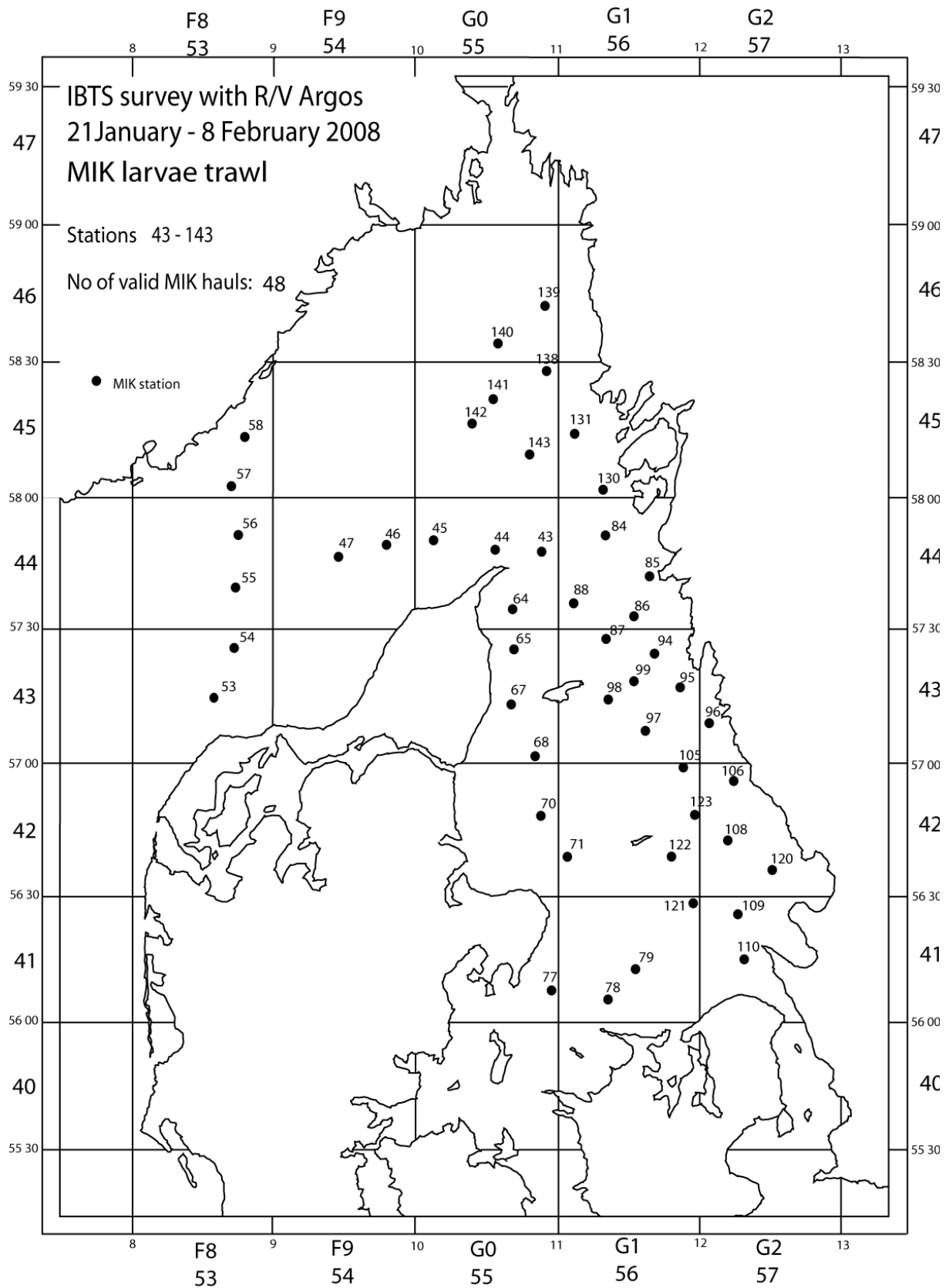
The survey is ICES coordinated and performed in collaboration with research vessels from Denmark, Norway, Germany, Netherlands, England, Scotland and France. During the surveys, a GOV bottom trawl is used at day-time. This gear is a standard since the seventies and used by all countries involved. A Method Isaac Kidd trawl is used at night-time in the quarter 1 survey to estimate the abundance of fish larvae, in particular herring- and sprat larvae. In connection to each haul hydrographical data are collected with a CTD.

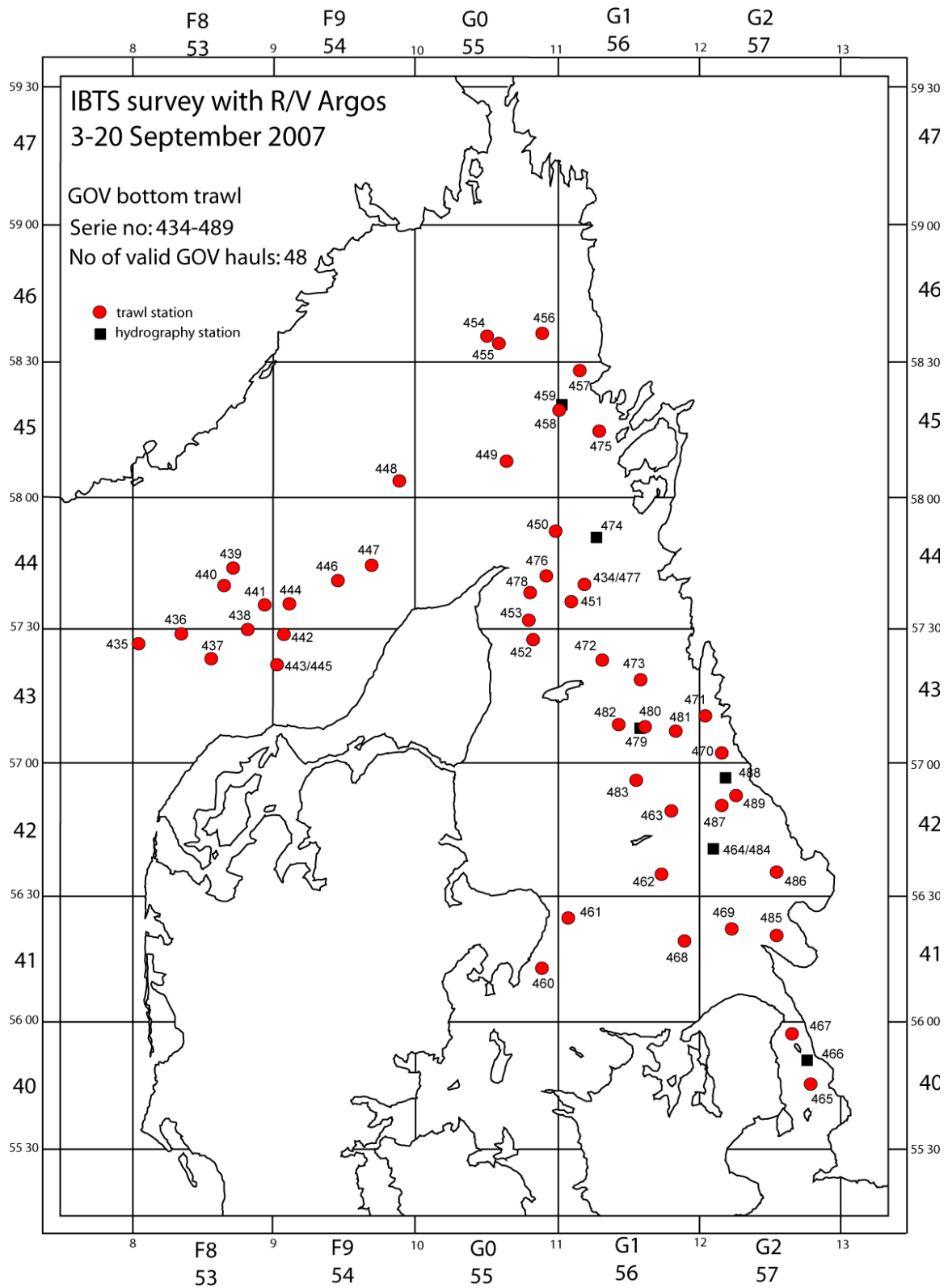
Primary survey data are stored in a fish sample database (FISKDATA) administered by IMR in Lysekil. Aggregated data are reported and used annually by relevant ICES Working Groups. Since 1977, data are also stored in an internationally coordinated database (DATRAS) at ICES in Copenhagen.

The survey is well suited for the calculation of the ecosystem indicators 1-4 as listed in Appendix XIII of Commission Decision 2008/XXX/EC.



Map 4. IBTS (International Bottom Trawl Survey) quarter 1. Stations plotted from survey conducted in 2008.





Map 6. IBTS quarter 3. Stations plotted from survey conducted in 2007.

International Ecosystem Survey in the Nordic Seas (ASH)

Sweden will participate with two staff members during two weeks of the ASH survey targeting herring and blue whiting in the Norwegian Sea, area IIa. The survey is coordinated by Denmark.

Nephrops TV Survey (NTV3&4)

Uncertainty regarding landing figures and concern over some of the analytical assumptions upon which analytical assessments are based, has led to investigations into alternative approaches for providing *Nephrops* advice.

Nephrops stocks are limited to bottoms with suitable silty clay sediment where they live in burrows. This mud-burrowing species is protected from trawling while inside its burrow. Burrow emergence is known to vary with environmental (ambient light intensity) and biological (moult cycle, female reproductive condition) factors. Trawl surveys are therefore not ideal for *Nephrops*, and underwater TV (UWTV) has been developed as a means of estimating stock size from burrow densities.

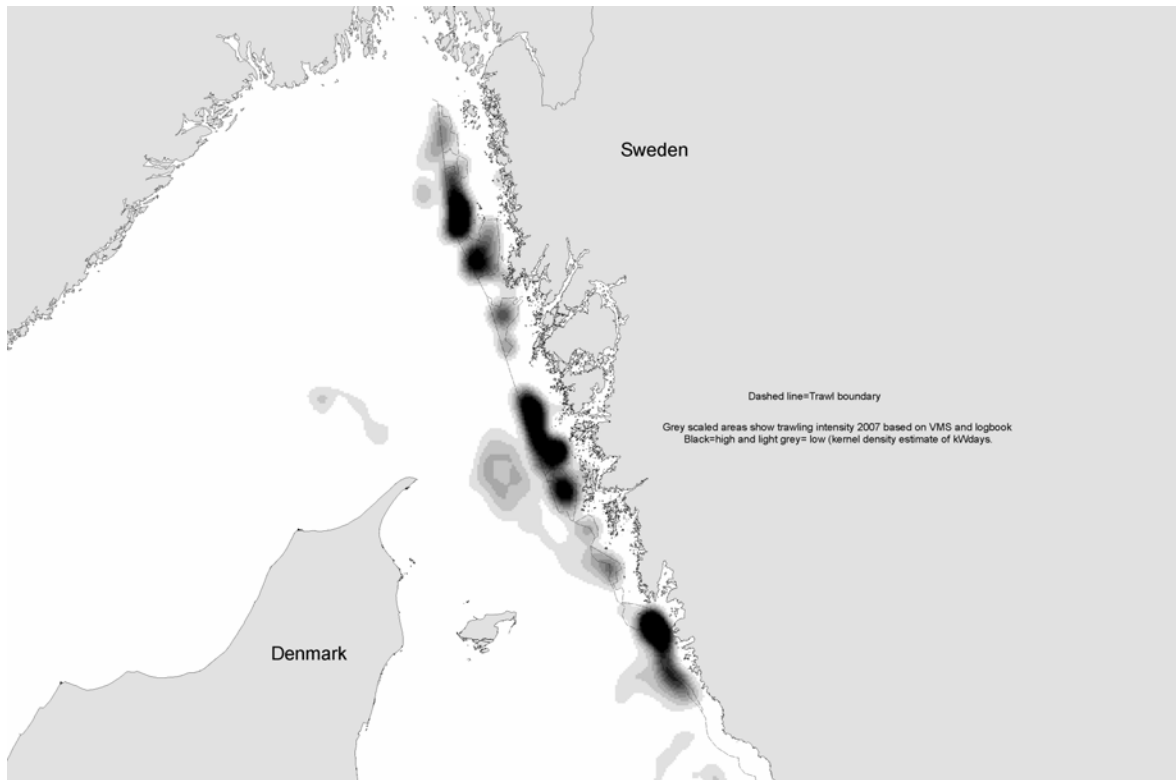
The Marine laboratory in Aberdeen developed a fishery independent UWTV survey in order to estimate stock size from burrow densities. UWTV consists of a video camera mounted on a sledge that is towed slowly on the bottom by a vessel. *Nephrops* burrows are counted and converted into densities using information on the width of the view of the camera and length of the tow.

ICES Advisory Committee for Fisheries Management (ACFM) recommend that UWTV surveys should be used to provide biomass estimates for mud-burrowing animals like *Nephrops*.

Standardisation of the UWTV methodology has been established at a Workshop on TV surveys for *Nephrops* stocks (WKNEPHTV) in April 2007.

The Swedish *Nephrops* fishery has got an increasing economic importance in recent years and it was suggested that Denmark and Sweden start a joint UWTV survey on *Nephrops* grounds in the Skagerrak and the Kattegat using R/V Ancyclus. The first survey will take place during the summer months in 2009

The films will be stored on external hard-discs and DVD:s. Aggregated data will be stored in the database.



Map 7. illustrating the UWTV-survey area

III. G.2 Modifications in the surveys

No modifications of the Swedish surveys are planned.

IV. Module of the evaluation of the economic situation of the aquaculture and processing industry

IV.A Collection of data concerning the aquaculture

IV.A.1 General description of the aquaculture sector

In 2006 the total volume of the aquaculture production in Sweden was 9625 tonnes, and the value of the total production was 30.4 million EUR. The total population of enterprises was 219, and the total number of persons employed was 286. The main species produced was rainbow trout with a total volume of 6787 tonnes, the total value of the production was 20.3 million EUR. The volume of mussels produced in 2006 was 1791 tonnes with a value of 1.4 million EUR, and the total production of crayfish was 7 tonnes with a value of less than 0.2 million EUR.

Over the period 1996 to 2006 the volume of total production fluctuated between 5,500 and 9700 tonnes and the value of total production fluctuated between 14.5 and 30.4 million EUR. Both the number of companies and the employment numbers indicate a declining trend in the long term perspective. The volume of the saltwater production varied between 1,300 and 2,900 tonnes and its value fluctuated between 3.3 and 6.7 million EUR. The freshwater production varied between 3000 and 6100 tonnes, with a value of production fluctuating between 9.2 and 25.3 million EUR. Both volume and value of the freshwater production has increased largely over the period, but the number of companies has declined since production has gradually concentrated towards a few large producers. The volume of shellfish production varied between 500 and 1800 tonnes and the value of shellfish production fluctuated between 0.2 and 1.4 million EUR. It should be noted that during the period 1996 to 1999 only data on fish for consumption were collected. Since fish for stocking purposes is mostly produced in freshwater, this mainly affects the times series of the freshwater production.

IV.A.2 Data acquisition

The Swedish Board of Fisheries (SBF) will be responsible for compiling and reporting the statistics on the aquaculture sector. The SBF in cooperation with Statistics Sweden and Fiskhälsan AB (The National Fish Health Control Programme) will conduct an annual survey covering all enterprises whose primary activity is defined according to the EUROSTAT definition under NACE Rev. 2 Code 03.2: "Aquaculture". Data on subsidies will be collected from the Swedish Board of Fisheries who is the managing authority of the European Fisheries Fund (EFF).

Reference years for collection of data are 2008 and 2009. Final validated data referring to 2008 will be available in end of February the forthcoming year 2010. However at the end of 2009 preliminary data will be available. This is due to the data from Statistics Sweden not being finalized earlier.

Segmentation: For companies using more than one technique or having more than one species all production, incomes and costs will be transferred to the main technique and main species based on turnover.

Data will be collected by Statistics Sweden and Fiskhälsan AB. Statistics Sweden will use a questionnaire to be sent out to all aquaculture companies. The results from the questionnaire and data from annual tax declarations of the enterprises will be compiled. Fiskhälsan AB conducts a survey by visiting a number of aquaculture companies, who participate in a mandatory fish health control programme. Thereby they are able to get more detailed data over different types of costs specific to aquaculture companies (personnel costs, energy costs, live raw material costs, feed raw material costs and number of employees including months worked as well as unpaid labour measured in months).

Since three sources will be used for retrieving the necessary information some approximations and calculations are necessary. As regards energy costs, live raw material costs and feed raw material costs, the values of these indicators will be calculated through looking at each cost per tonne based on the data provided by Fiskhälsan AB and (in the case of mussel, oyster and crayfish producers) by the survey conducted by the Swedish Board of Fisheries. The cost per tonne is then applied to the volume of each segment provided by Statistics Sweden. Thus, although it is not possible to get the information on energy costs, live raw material costs etc from the data provided by Statistics Sweden, these figures will be estimated through looking at the data retrieved through the additional surveys. For estimating value of unpaid labour the data provided through the additional surveys of Fiskhälsan AB (for fish producers) and the Swedish Board of Fisheries (for mussel, oyster and crayfish producers) form the basis. The full time equivalents of employed persons and the figures on unpaid labour are divided by number of firms in each segment and can then be applied to the data provided by Statistics Sweden. Some segments and sub-segments are very small and will therefore only be presented on a larger scale.

The survey to be conducted by Statistics Sweden is an exhaustive survey, *i.e.* all enterprises with permits for aquaculture production will be included. The survey to be carried out by Fiskhälsan AB will cover all enterprises affiliated to Fiskhälsan. Segments can be presented in different detail, depending on the number of companies in each segment. 2009 will be the first year of collecting data on the aquaculture sector according to the new regulation. The survey will therefore be further developed and modifications found necessary when collecting the data in 2009 will be taken into consideration for the collection of data in 2010.

For companies using more than one technique or having more than one species all production, incomes and costs will be transferred to the main technique and main species based on turnover.

Definition of variables and sources:

As defined in Appendix X of the Commission regulation (EC) no 665/2008.

Income: Data on turnover and other income shall be compiled from tax declarations/company accounts (bought from Statistics Sweden), data on direct subsidies will be collected from the Swedish Board of Fisheries.

Personnel costs: Wages and salaries of staff shall be compiled from tax declarations/company accounts (bought from Statistics Sweden). Imputed value of unpaid labour will be estimated from data on employment from company accounts. The imputed value will be based on a panel of companies.

Energy costs: Data from questionnaire surveys to be conducted by Fiskhälsan AB and the Swedish Board of Fisheries.

Raw material costs: Data from questionnaire survey to be conducted by Fiskhälsan AB and the Swedish Board of Fisheries.

Other operational costs: Shall be compiled from tax declarations/company accounts (bought from Statistics Sweden) and from questionnaire survey to be conducted by Fiskhälsan AB and the Swedish Board of Fisheries.

Capital costs: Depreciation of capital and financial costs, net, shall be compiled from tax declarations/company accounts (bought from Statistics Sweden).

Extraordinary costs, net: Shall be compiled from tax declarations/company accounts (bought from Statistics Sweden).

Capital value: Shall be compiled from tax declarations/company accounts (bought from Statistics Sweden).

Net investments: Shall be compiled from tax declarations/company accounts (bought from Statistics Sweden).

Debt: Shall be compiled from tax declarations/company accounts (bought from Statistics Sweden).

Raw material volume: Data from questionnaire survey to be conducted by Fiskhälsan AB and the Swedish Board of Fisheries.

Volume of sales: Data from questionnaire survey to be conducted by Fiskhälsan AB and the Swedish Board of Fisheries.

Employment: Compiled from tax declarations/company accounts (bought from Statistics Sweden). Number of persons employed by gender is counted as all persons employed, including part time. Persons who are not in service due to illness, vacation, on leave of absence etc are included. Working owners in joint-stock companies are also included. A person employed at different work places is counted several times but if one employed person has more than one job at the same work place this person is only counted once. For full time equivalents, FTE National, employment is recalculated to full time employment i.e. two part time jobs become one full time job. A full time employment is considered to consist of 1800 working hours.

Number of enterprises: Shall be compiled from company accounts by size category (bought from Statistics Sweden).

IV.A.3 Data quality

The survey to be carried out by Statistics Sweden will be an exhaustive survey of all enterprises under NACE Rev. 2 Code 03.2: “Aquaculture” whereas the survey to be conducted by Fiskhälsan AB covers all affiliated enterprises, which makes up approximately 50 % of all aquaculture enterprises. All larger aqua culture enterprises are affiliated to Fiskhälsan AB and the 25 largest ones stand for 90 % of the total Swedish production of fish for consumption.

Both the survey to be carried out by Statistics Sweden and the survey to be carried out by Fiskhälsan AB include data on production. This will then serve as a validation indicator.

IV.A.4 Regional coordination

Sweden will participate in the RCM: s and implement their recommendations.

IV.A.5 Derogations and non-conformities

There are no planned derogations or non-conformities with the requirements of the DCR.

IV.B. Collection of data concerning the processing industry

IV.B.1 Data acquisition

Reference years for collection of economic data are 2007 and 2008. Final and validated economic data on 2007 will be available in mid October 2009 and final and validated economic data on 2008 will be available in mid October 2010.

Population: All enterprises whose main activity is defined according to the EUROSTAT definition under NACE Rev. 2 Code 10.20: "Processing and preserving of fish crustaceans and molluscs".

Company accounts: Data will be based on company accounts of all enterprises in the population. Data will be compiled by Statistics Sweden.

Stratification: Data will be stratified according to size category (number of persons employed).

Definition of variables and sources:

As defined in Appendix VII of the Commission regulation (EC) no 665/2008

Income: Turnover, subsidies and other income shall be compiled from company accounts (bought from Statistics Sweden).

Personnel costs: Wages and salaries of staff shall be compiled from company accounts (bought from Statistics Sweden). Imputed value of unpaid labour will be estimated from data on employment from company accounts. The imputed value will be based on a panel of companies.

Energy costs: Shall be compiled from company accounts (bought from Statistics Sweden).

Raw material costs: Shall be compiled from company accounts (bought from Statistics Sweden).

Other operational costs: Shall be compiled from company accounts (bought from Statistics Sweden).

Capital costs: Depreciation of capital and financial costs, net, shall be compiled from company accounts (bought from Statistics Sweden).

Extraordinary costs, net: Shall be compiled from company accounts (bought from Statistics Sweden).

Capital value: Shall be compiled from company accounts (bought from Statistics Sweden).

Net investments: Shall be compiled from company accounts (bought from Statistics Sweden).

Debt: Shall be compiled from company accounts (bought from Statistics Sweden).

Employment: Compiled from company accounts (bought from Statistics Sweden). Number of persons employed by gender is counted as all persons employed, including part time. Persons who are not in service due to illness, vacation, on leave of absence etc are included. Working owners in joint-stock companies are also included. A person employed at different work places is counted several times but if one employed person has more than one job at the same work place this person is only counted once. For full time equivalents, FTE National, employment is recalculated to full time employment i.e. two part time jobs become one full time job. A full time employment is considered to consist of 1800 working hours.

Number of enterprises: Shall be compiled from company accounts by size category (bought from Statistics Sweden).

IV.B.2 Data quality

The data is compiled from an exhaustive survey carried out by Statistics Sweden on tax declarations/company accounts called “The economy of the enterprises”.

IV.B.3 Regional coordination

Sweden will participate in the RCMs and implement their recommendations.

IV.B.4 Derogations and non-conformities

There are no planned derogations or non-conformities with the requirements of the DCR.

V. Module of evaluation of the effects of the fishing sector on the marine ecosystem

Through our annual surveys, The Swedish Board of Fisheries can realize the data requirements for the indicators 1-4 proposed in the Commission Decision 2008/XXX/EC Appendix XIII. The spatial and temporal coverage of data collection for the evaluation of effects of the fishing sector will consist of area IIIa in the first and third quarters and area III d in the first and fourth quarters 2009 and 2010. The data collection will be fishery independent and is carried out by our research vessel ARGOS using standard gear, thereby fulfilling the required precision level. The surveys are described in section III.G.1. Data on species, length frequencies and abundance will be collected from all hauls including individual parameters such as age, length, sex and maturity from the target species of the survey at the required precision level.

The Research and Development Department of the National Board of Fisheries has full access to VMS data from all Swedish vessels in all waters. Positions are reported once every hour for boats of 15m length or longer. Data can be aggregated at metier level 6 for environmental indicators 4, 5 and 6 and processed accordingly.

VI. Module for management and use of the data

VI.A Management of the data

General

The biological and economical data are stored in five different Oracle databases (listed below) at The Swedish Board of Fisheries. In addition, The Board of Fisheries also houses a database where surveillance data from the Vessel Monitoring System (VMS) are stored.

LOGGBAS: landing data

LANDBAS: data from the fishery control

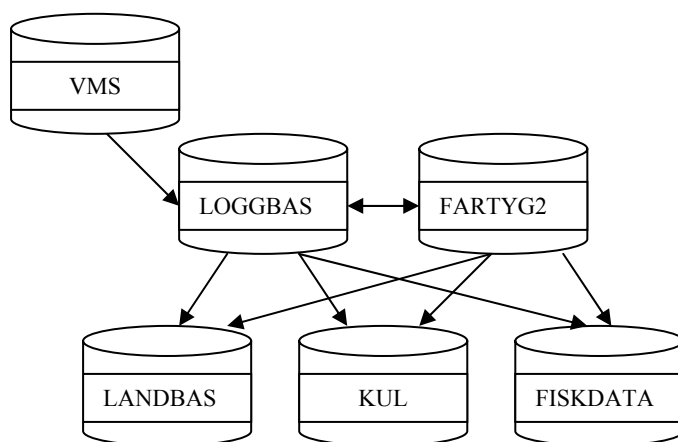
FARTYG2 data on fishing vessels and licences

FISKDATA: survey data and biological sampling collected by the IMR

KUL: biological sampling data collected by the ICR

VMS: monitoring data

The databases are inter-linked as illustrated below:



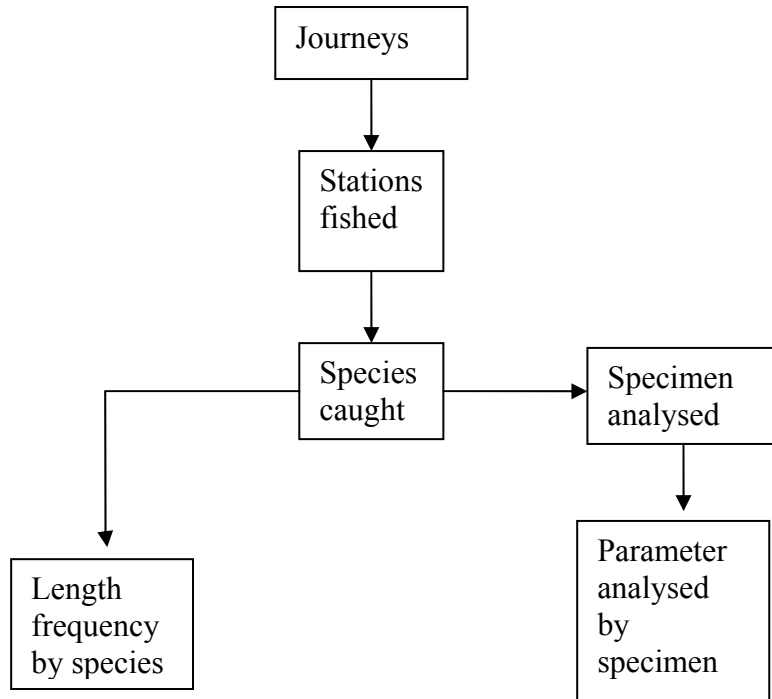
All data are entered as primary data. Metadata are stored in specific tables in the databases. The databases are backed-up on a daily basis by the database administrator.

Landing data

Landing data are stored in a relational database, LOGGBAS, as primary data delivered by fisherman through logbooks and coastal journals. FARTYG2 supports LOGGBAS with data on the Swedish fishing vessels and licences. LOGGBAS and FARTYG2 provide look-up tables for FISKDATA, LANDBAS and KUL.

Survey data and data from biological sampling

The Institute of Marine Research (IMR) administers a relational database, FISKDATA, where all survey data, all data from the biological sampling on landings and discards collected are stored. The database schema has been in use since 1991. The biological data are stored as primary data at different levels in a hierarchy where journeys are the highest level and single specimen parameters at the lowest level.



Quality control and validation procedures are secured through data being checked against look-up tables and business rules when entering data.

Only primary data are stored in the database but through reports, aggregated data can be extracted which is submitted on a regular basis to other internationally co-ordinated databases (Datras, Fishframe) or on request, for instance by the JRC (for STECF related working groups).

A project is currently running, aiming to modernize FISKDATA and the new version is planned to be implemented during 2009.

At the Institute of Costal Research, the data are stored in a centralized database, KUL, and data are entered at the lowest level. The database is operated by the IT department at The Swedish Board of Fisheries.

Quality control and validation procedures are secured through data being checked against look-up tables and business rules when entering data.

At regular intervals (each night) the data is transferred into a data warehouse. In order to be transferred, the data must be approved. Once the data have been approved and allowed to be transferred to the data warehouse, this data cannot be changed.

All data that is entered and changed in the database are logged.

Internally at the Institute for Costal Research the scientists have query tools that enable them to retrieve data from the data warehouse at any level. From the data warehouse, aggregated data can be requested by any end user.

Socio-economic data

The primary socio-economic data come from different sources. Some data are derived from centralized databases at The Swedish Board of Fisheries, and other data come from external sources, such as the Swedish authorities and questionnaires sent to selected fishermen.

Currently all the socio-economic data are handled in Excel files. A project has recently been defined in order to create a new system where the socio-economic data will be stored in a centralized electronic database, EKBAS.

Data entry functions will be created for all data derived from external sources and for data that are manually estimated at The Swedish Board of Fisheries. Functions will also be created for estimating of the costs per vessel where the primary data is the selection of questionnaires or cost data from the authorities.

The data will be stored on primary data level and on estimated level. No data will be deleted during the process, in order to achieve traceability.

Socio-economic data will also be transferred to a data warehouse, where aggregated data can be requested by any end user.

Data request log

Queries that are made against the data warehouse at the home page of The Swedish Board of Fisheries will not be logged whereas queries made by personnel at The Swedish Board of Fisheries on demand from end users will be logged. For this purpose a logging database will be created in accordance with article 9 in the COM Reg.(EC) no 665/2008.

VI. B Use of the data

The Swedish Board of Fisheries databases can provide sets of data to support scientific analysis needed to advice fisheries management. It includes parameters for assessment purposes or other scientific analysis such as number-at-age, weight-at-age and maturity-at-age which have routinely been submitted to relevant ICES governed assessment groups.

The data stored, also allow the assessment of the status of exploited stocks as well as estimating the volume of catches (defined by regional fishing types and fleet segments) including discards in the areas IIIa and III d, on a quarterly basis.

VII. Follow-up of STECF recommendations

The evaluations made by SGRN/STECF on the Swedish proposals and Technical reports have so far been rather favourable and the requests from the Commission for clarifications and explanations have been delivered in time and accepted.

VIII. List of derogations

Sweden requests the following derogations:

Title of derogation	NP proposal section	Derogation approved/rejected	Year of past approval/rejection
<u>Pots and traps fisheries targeting freshwater species (FPO_FWS_0_0_0)</u>	III.C.5 Baltic		
<u>Longline fisheries targeting demersal fish (LLS_DEF_0_0_0), Subdivision 22-24</u>	III.C.5 Baltic		
<u>Trawl fisheries targeting demersal fish (OTB_DEF_90-119_0_0), IV</u>	III.C.5 North Sea		
<u>Trawl fisheries targeting demersal fish (OTB_DEF_<16_0_0), IIIaN, IV</u>	III.C.5 North Sea		
<u>Trawl fisheries targeting small pelagic fish (PTM_SPF_32-69_0_0), IV</u>	III.C.5 North Sea		
<u>Hand and pole line fishery targeting finfish (LHM_FIF_0_0_0), IIIa, IV</u>	III.C.5 North Sea		
<u>Gillnet fisheries targeting small pelagic fish (GNS_SPF_50-69_0_0), IIIa, IV</u>	III.C.5 North Sea		
<u>Gillnet fisheries targeting demersal fish (GNS_DEF_120-219_0_0), IIIaN</u>	III.C.5 North Sea		
<u>Gillnet fisheries targeting demersal fish (GNS_DEF_120-219_0_0), IV</u>	III.C.5 North Sea		
<u>Purse seine fisheries targeting small pelagic fish (PS_SPF_32-69_0_0), IV</u>	III.C.5 North Sea		
<u>Cod sampling sd 22-24</u>	III.E.5 Baltic		
<u>Herring sampling sd 30</u>	III.E.5 Baltic		
<u>Haddock sampling sd IIIa</u>	III.E.5 North Sea		

IX. List of acronyms and abbreviations

DFU	Danmarks Fiskeriundersøgelse
ICES	International Council for the Exploration of the Sea
RAC	Regional Advisory Committee
RCM	Regional Coordination Meeting
SPSS	Statistical Package for the Social Sciences
WGIBTS	International Bottom Trawl Survey Working Group
WGBIFS	Baltic International Fish Survey Working Group
WKNEPHTV	Workshop on the Use of UWTV Surveys for determining abundances in Nephrops stock in European Waters
WKSFRFB	Workshop on Sampling Recreational Fisheries in the Baltic
WGBAST	Baltic Salmon and Trout Assessment Working Group

X. Comments, suggestions and reflections

XI. References

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- ICES 1994. Manual for Herring Hydro Acoustic Surveys ICES CM 1994/H:3
- Anon 2008a. Report of the Baltic Fisheries Assessment Working Group. Copenhagen, 8-17 April 2008 (ICES CM 2008/ACOM:06).
- Anon 2008b. Manual for the Baltic International Acoustic surveys ICES CM 2008/LRC:8Add 2

XII. Annexes

1. Swedish sampling by stock and sampling location

Species	Species Group	Region	Area / Stock	Age					Weight					Sex-ratio					Maturity					
				market	*sea sampl	*survey	samples from DEN/GER	total	market	*sea sampl	*survey	samples from DEN/GER	total	market	*sea sampl	*survey	samples from DEN/GER	total	market	*sea sampl	*survey	samples from DEN/GER	total	
<i>Anguilla anguilla</i>	G1	Baltic Sea	IIIb-d																					
<i>Clupea harengus</i>	G1	Baltic Sea	22-24 IIIa/	2400	0	0		2400	2400	0	0		2400	2400	0	0		2400	2400	0	0			2400
<i>Clupea harengus</i>	G1	Baltic Sea	III d 25-29 + 32	4800	0	3600		8400	4800	0	3600		8400	4800	0	3600		8400	4800	0	3600			8400
<i>Clupea harengus</i>	G1	Baltic Sea	31)				0	0				0	0			0	0					0	0	
<i>Gadus morhua</i>	G1	Baltic Sea	22-24	1900	200	480	0	2580	1900	200	480	0	2580	0	0	480 ¹⁾	0	480	0	0	480 ¹⁾	0		480
<i>Gadus morhua</i>	G1	Baltic Sea	25-32	1900	600	1600	0	4100	1900	600	1600	0	4100	0	0	1600	0	1600	0	0	1600	0		1600
<i>Platichthys flesus</i>	G2	Baltic Sea	22-32				0	0				0	0			0	0					0	0	
<i>Salmo salar</i>	G1	Baltic Sea	22-31 / 32				0	0				0	0			0	0					0	0	
<i>Sprattus sprattus</i>	G1	Baltic Sea	22-32	6400	0	3000		9400	6400	0	3000		9400	6400	0	3000		9400	3000	0	0			3000
<i>Anguilla anguilla</i>	G1	North Sea and Eastern	IIIa				0	0				0	0			0	0					0	0	
<i>Clupea harengus</i>	G1	North Sea and Eastern	IV, VIId, IIIa	5200	0	2500		7700	5200	0	2500		7700	5200	0	2500		7700	5200	0	2500			7700
<i>Gadus morhua</i>	G1	North Sea and Eastern	IV, VIId, IIIa N	1200	900	800	0	2900	1200	900	800	0	2900	0	0	800	0	800	0	0	800	0		800
<i>Gadus morhua</i>	G1	North Sea and Eastern	IIIa S	1200	900	500	0	2600	1200	900	500	0	2600	0	0	500	0	500	0	0	500	0		500
<i>Glyptocephalus</i>	G2	North Sea and Eastern	IIIa	1500	500	200	0	2200	1500	500	200	0	2200	0	0	200	0	200	0	0	200	0		200
<i>aeglefinus</i>	G1	North Sea and Eastern	IV, IIIa	0	240	550	0	790	0	240	550	0	790	0	0	550	0	550	0	0	550	0		550
<i>Nephrops norvegicus</i> ²⁾	G1	North Sea and Eastern	FU3 (IIIa N)	0	0	0	0	0	4900	6100	0	0	11000	4900	6100	0	0	11000	4900	6100	0	0		11000
<i>Nephrops norvegicus</i>	G1	North Sea and Eastern	FU4 (IIIa S)	0	0	0	0	0	4600	5600	0	0	10200	4600	5600	0	0	10200	4600	5600	0	0		10200
<i>Pandalus borealis</i>	G1	North Sea and Eastern	IVa/IVb	0	0	0	0	0	4000		0	0	4000	6000	5000	0	0	11000	6000	5000	0	0		11000
<i>Pleuronectes platessa</i>	G1	North Sea and Eastern	IIIa	1500	1400	1800		4700	1500	1400	1800		4700	0	0	1800		1800	0	0	1800			1800
<i>Sprattus sprattus</i>	G1	North Sea and Eastern	IIIa	2000	0	1500		3500	2000	0	1500		3500	2000	0	1500		3500	2000	0	1500			3500

* Numbers presented for discard and survey sampling are dependent on amount of catch which is variable. Numbers in table above is referring to the results from 2007

1) Only SD 23 covered in the IBTS survey

2) Nephrops is sampled in sea sampling only. Figures are splitted between retained and discarded part of the catch

								51270					76470					69530						63130

