

MEMORANDUM

Date
2007-05-17

SWEDISH NATIONAL PROGRAMME FOR
COLLECTION OF FISHERIES DATA 2008

in accordance with

Council Regulation (EC) No 1543/2000

Council Decision 2000/439/EC

Commission Regulation (EC) No 1639/2001

Commission Regulation (EC) No 1581/2004

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1. Introduction

1.1. General framework

This document describes the Swedish Programme for 2008 for the collection of data in the fisheries sector. In Sweden, the Swedish Board of Fisheries (**SBF**) is the administrative authority responsible for fisheries and fisheries issues.

The collection of information on fishing capacity, fishing effort, economics and landing statistics is conducted at a national level. 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 co-operation with research institutes in Member States as well as third countries. In order to secure adequate sampling of Swedish landings in Denmark and Danish landings in Sweden, a formal agreement of co-operation has been signed between the two MS. This agreement also includes co-operation in biological analyses (Annex 1). Sweden has a similar agreement with Germany (Annex 2).

As the revision of the Data Collection Regulation has been delayed, Sweden does not foresee any major changes in the programme for 2008 compared to that for 2007.

1.2. General description of the fisheries

In late 2005 there were 1603 Swedish vessels with licences for commercial fishery and 1902 licensed fishermen. The Swedish fleet can roughly be divided into:

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

Table 1.1. illustrates distribution of species and geographical areas where the fleet is operating.

Preliminary calculations up to December 2006 indicate that the catches have increased compared to 2005. For cod however, the quantity landed has decreased by 30%. Also the catches for industrial purposes have decreased. For many species the prices have increased (cod 16%, pandalid shrimp 30%, Norway lobster 18%, herring for consumption 25% and mackerel 62%). Despite these increases, the overall value of the landings has decreased by 17% because of the reduced quantities.

2. Participating institutes

2.1. National correspondent

The National correspondent for Sweden is:

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2.2. Participating institutes

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Department of Resource Management (**RF-dep**), within which the following institutes participate:
Fisheries Research Office
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Swedish Board of Fisheries
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Fisheries Research Office
Swedish Board of Fisheries
Skeppsbrogatan 9
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Department of Research and Development (**FoU-dep**), within which the following institutes participate:
Institute of Marine Research (**IMR**)
Swedish Board of Fisheries
Box 4
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Institute of Freshwater Research (**IFR**)
Swedish Board of Fisheries
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Institute of Coastal Research (**ICR**)
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3. Module C – Fishing capacities

3.1 MP – Planned sampling

Data on number of vessels, tonnage, engine power and the age of the hull will be compiled for all vessels of the Swedish fleet according to Appendix III. The data will be obtained from the vessel register of the Swedish Board of Fisheries. All vessels above 5 metres are registered in the vessel register and will be included in the compilation.

The following data is collected for every vessel covered by FUIV:

DATA	SOURCE
Number of fishing days with a particular type of gear	Logbooks and coastal fisheries journals
Vessel length (Length Over All)	Vessel register
Gross tonnage	Vessel register
Engine power (main engine)	Vessel register
Age of Hull	Vessel register

3.2 MP – Derogations and non-conformities

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

3.3 EP – Planned sampling

No data collection will be carried out within the framework of the extended programme.

3.4 EP - Non-conformities

No data collection will be carried out within the framework of the extended programme

4. Module D – Fishing effort

4.1. MP - Planned sampling

Fuel consumption

Calculations of the average annual fuel consumption expressed in volume units for vessels in the respective segments (as defined in the Regulation Appendix III) and the average cost will be dealt with in the collection of economic data on the fishing fleet.

Fishing effort

The data required to calculate fishing effort according to the Annex to Regulation no 1639/2001 is collected from log books and coastal journals. Log sheets should in accordance with Community and national legislation be submitted to the Swedish Board of Fisheries for all fishing operations of a commercial nature conducted by vessels with a length overall of at

least 10 meter. For fishing operations in the Baltic Sea (sub division 22-27)), log sheets should be submitted from vessels with a length overall of at least 8 meter. All fishing with trawl and other towed gears must use the EC logbook according to national provisions. For fishing vessels below these thresholds coastal journals should in accordance with national legislation are submitted for commercial fisheries. Data from fishing operations conducted by vessels less than 10 meter (less than 8 meters in the Baltic Sea) is thus reported in the coastal journals which have to be sent in to the Board at least monthly and in certain cases even daily. An electronic coastal journal is introduced in 2007. The fisherman can then report via a secure web interface.

Data	Source
Fuel consumption	Fartyg II (vessel register) Questionnaires
Fuel prices	Statistics Sweden
Number of fishing days with a particular type of gear (as defined in Appendix III+IV)	Log base (log books and coastal journals crosschecked with VMS and effort reports)
Catch areas (as defined in Appendix I)	Log base (log books and coastal journals)
Period	Log base (log books and coastal journals)
Quantity by species (as defined in Appendix VIII)	Log base (log books, coastal journals, sales notes and/or sampling)
Vessel length (as defined in Appendix III)	Fartyg II (vessel register)

4.2. MP - Derogations and non-conformities

No derogations are requested and no non-conformities are foreseen.

4.3. EP - Planned sampling

No data collection will be carried out within the framework of the extended programme.

4.4. EP - Non-conformities

Not applicable.

5. Module E - Catches and landings

5.1. MP - Landings - Planned sampling

The data required to calculate commercial landings of catches according to the Annex to Regulation no 1639/2001 is collected from log books and coastal journals. Log sheets should in accordance with Community and national legislation be submitted to the Swedish Board of Fisheries for all fishing operations of a commercial nature conducted by vessels with a length overall of at least 10 meter. For fishing operations in the Baltic Sea (sub division 22-27)), log sheets should be submitted from vessels with a length overall of at least 8 meter. All fishing with trawl and other towed gears must use the EC logbook according to national provisions. Coastal journals should in accordance with national legislation be submitted by fishermen holding a professional fishing licence. Data from fishing operations conducted by vessels less than 10 meter (less than 8 meters in the Baltic Sea) is thus reported in the coastal journals which have to be sent to the Board at least monthly and in certain cases even daily. An electronic coastal journal is introduced in 2007. The fisherman can then report by using forms on a secure web page.

5.2. MP - Landings - Derogations and non-conformities

No derogations are requested and no non-conformities are foreseen.

5.3. EP - Landings - Planned sampling

No data collection will be carried out within the framework of the extended programme.

5.4. EP - Landings - Non-conformities

Not applicable.

5.5. MP & EP – Discards –Planned sampling

According to Commission Regulation (EC) No. 1581/2004 Chapter 3.E.1.b Sweden is obliged to collect discard data in order to present estimates of discard rates for selected species. In Sweden, discard data has systematically been sampled since 1995 (the Kattegat and the Baltic) for the most important Swedish fisheries. In the Skagerrak and North Sea, Swedish discard sampling started in 1999.

In 2008, the Swedish discard sampling programme covers area IIIb-d and area IIIa.

Table 5.2 contains an overview of Swedish fisheries and performed discard sampling,

NOTE: The numbers of vessels involved in the different fisheries and the performed effort are rough estimates. The figures can't be used for anything else than the present purpose as an overview of the Swedish fisheries in relation to discard sampling. "Number of vessels" includes all vessels that have been active in a particular fishery during 2006. A single vessel

could thereby be included in several fisheries. If a vessel has been active in more than one fishery during a day, each fishery got one fishing day.

The Swedish discard sampling programme is primarily focused on fisheries in which the discard rate of MP species is substantial. Fisheries to be sampled in 2008 are listed in table 5.3. Some of the fisheries show a strong seasonality and will thereby only be sampled during parts of the year. Fishing patterns can however change considerably between years due to management decisions, quota restrictions or environmental factors. Sampling effort can thereby be redistributed during the year if necessary. This is particularly true for the different trawl fisheries in Kattegat (IIIaS).

In gillnet fisheries for cod discard rates are generally below 10% of the catch. In 2008 this fishery will only be sampled in subdivision 23, where discard rates are higher than in the rest of the Baltic Sea and in which it is prohibited to trawl for cod.

Observers onboard commercial salmon fishing vessels in the southern Baltic will collect data on salmon discards from longline fishery in 2008. In response to longer fishing seasons for longline fishery and phasing out of driftnets at the end of 2007, it is expected that catches by longline will increase and the proportion of undersized fish taken by longlines may also increase in 2008. The samples of legal sized fish from these cruises will be utilized as catch samples and they will include data on sex and the proportion of sexually mature salmon.

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

In order to get the best use the sampling effort available, fisheries with very low fishing effort (indicated in table 5.2) will not be sampled for discards.

5.7. MP – Recreational – Planned sampling

Salmon

Swedish recreational salmon fishery in the Baltic region takes place in rivers, at the coast and in the sea. Data on landings by 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.

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. Information on the number of trapnets operated by different categories of fishermen in 2003 and the catch by commercial fishermen in 2004-05 was used to calculate the coastal catch by recreational fishermen in these years. A new survey of the number of trapnets in Gulf of Bothnia is carried out in 2007. This is done by a gear inventory along the coast during the coastal peak fishing period in the end of June.

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). Catch figures from 2002 have been used as a constant to estimate the recreational catch by trolling in 2003-2005. The investigation of the trolling fishery will be repeated in year 2007. It will cover the fishery and catches in 2006. The investigation will consist of enquiries to trolling fishermen and collection of fishery statistics from the most important trolling fishery harbours in southern Sweden.

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

5.8. MP – Recreational – Derogations and non-conformities

No derogations are requested

5.9. EP – Recreational – Planned sampling

No extended programme is planned

5.10. EP – Recreational – Derogations and non-conformities

Not applicable.

6. Module F – Catches per unit effort

6.1. MP – Planned sampling

Catch per unit effort data are used for *Pandalus* in IIIa and IVa East, *Nephrops* in IIIa and Salmon in III b-d. Data is used for indicator assessment purposes and production models in the relevant ICES Working Groups (see table 6.1.).

6.2. MP – Derogations and non-conformities

No derogations are requested

6.3. EP – Planned sampling

No extended programme is planned

6.4. EP – Derogations and non-conformities

Not applicable.

7. Module G – Scientific evaluation surveys

7.1. MP - Planned Priority 1 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 according to Commission Regulation (EC) No. 1639/2001. Sweden will undertake five surveys in the Baltic Sea, the Kattegat and the Skagerrak by using R/V ARGOS. These five surveys are of priority 1. Staff from IMR will in 2008 also participate in the international Atlantoscandic Herring Survey.

The planning and co-ordination of the surveys are done in ICES working groups connected with the surveys (BITS Working Group, IBTS Working Group, WGBIFS Working Group, Herring Survey Planning Working Group).

- **Baltic International Trawl Survey (BITS)**

The survey is conducted twice during a year, 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 III_d.

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 survey is ICES co-ordinated 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. Hydrographical data are collected with a CTD.

Primary survey data are stored in a fish sample database 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 international co-ordinated database (DATRAS) at ICES in Copenhagen

- **International Bottom Trawl Survey (IBTS)**

The survey is conducted twice a year, one in the 1st quarter (15 days at sea, 45 trawl stations) and one in the 3rd quarter (15 days at sea, 45 trawl stations) with the research vessel ARGOS. The surveys cover area IIIa and are the Swedish part of the IBTS.

The purpose is to estimate abundance by age, in particular for the recruiting year classes of target species (cod, haddock, whiting, herring, sprat, Norway pout, mackerel 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 ARGOS. 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 International Bottom Trawl Surveys ICES CM 2000/D:07.

The survey is ICES co-ordinated 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. A Method Isaac Kidd trawl (MIK) is used at night-time in the quarter 1 survey to estimate the abundance of fish larvae, in particular herring- and sprat larvae. Hydrographical data are collected with a CTD.

Primary survey data are stored in a fish sample database 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 co-ordinated database (DATRAS) at ICES in Copenhagen.

- **Herring Acoustic Survey**

The survey is conducted during the 4th quarter (25 days at sea, 80 trawl stations) with the research vessel ARGOS. The Swedish part of the survey covers area IIIId (sub-divisions 25-30). The investigations onboard R/V Argos in SD 30 are conducted in co-operation with Finland.

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 1994/H:3.

The acoustic abundance estimate is done in collaboration between Finland, Germany, Denmark, Poland, Russia, Latvia and Estonia. The herring and sprat are length measured on board and sent to IMR in Lysekil for further examinations such as age, weight, sex and

gonadal maturity. Age determination takes place in accordance with standardised methods (Anon. 2000a).

Primary survey data are stored in a fish sample database administered by IMR in Lysekil. Aggregated data are reported and used annually by relevant ICES Working Groups. Since 2000, data have also been stored in an internationally co-ordinated database (EC 99/06) DFU in Hirtshals, Denmark.

- **Atlantoscandic Herring Survey**

Sweden will participate with two staff members during two weeks of the survey.

7.2. MP - Derogations and non-conformities

No derogations are requested

7.3. EP – Planned Priority 2 surveys

No data collection will be carried out within the framework of the extended programme.

7.4. EP - Non-conformities and priority upgrades

Not applicable.

8. Module H – Length and age sampling

The Swedish sampling procedure will be carried out on a quarterly basis by ICES division in the main fishing ports where landings take place. All individuals in a sample are analysed according to the standard measures:

- Length
- Weight
- Age

Age determination always takes place at the laboratories according to standardised methods (Anon. 2000a).

Swedish sampling is aiming towards a precision based approach. For most of the stocks within the minimum program, a certain number of individuals will be sampled from each size category or unsorted catch irrespective of the landing size in order to reach an established level of precision for the most abundant age classes (>90% of the stock in number of individuals) on a quarterly basis. Methods used and evaluation of the sampling methodology is described in the Swedish Technical Report 2005, Annex III-V. In the light of these results described in the Technical report 2005, together with CV calculations based on 2006 data we consider the planned sampling levels as presented in Table 8.1.

The ideal number of individuals to be sampled in a sampling unit (e.g. unit = area, time, fishery as indicated by relevant ICES working groups) depends on number of age classes in the population, and differs between stocks.

Stocks included in the Swedish minimum program sampled for length, age and biological parameters are listed in table 8.2, together with information on share in EU TAC and average landings (2004-2006) for relevant DCR stocks.

Below, sampling procedure are described for group of species with similar sampling scheme, followed by information on the Swedish landings, the Swedish TAC of the EC shared TAC in percent and a short description of the fishery by stock.

- Baltic

8.1. MP – Landings – planned sampling

- **Sampling for pelagic species**

Sampling for herring and sprat

Herring and sprat 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. The number of samples planned and the sampling unit considered is indicated in the text below.

Collected data are stored in the fish sample database at IMR. The results from the Baltic area are reported annually to the ICES Working Group (WGBFAS).

- Herring IIIb-d

The Swedish officially reported landings in 2006 were 48 798 tonnes, obliging Sweden to sample this stock. All Swedish landings derive from III d. Sweden is sampling the areas sd 22-24, sd 25-29, sd 30 and sd 31 as separate sampling units.

Herring is caught mainly in pelagic trawls, but also in bottom trawls and in the coastal zones during spawning season also in gill-nets. The herring fishery takes place in all seasons, but is more intensive during winter and spring. The majority of the catch is landed for industrial purposes.

Sampling is sub-divided between three fishing fleets:

a/ herring fisheries with bottom trawls or ring nets with ≥ 32 mm mesh size,

b/ mid-water trawl fisheries with both <32 mm and ≥ 32 mm mesh, which land herring mainly for industrial purposes.

c) herring fisheries using gill-nets

Samples from fishing fleet b/ are collected by the Swedish Coast Guard during their standard control of the pelagic fishery regarding species composition. Samples from fishing fleet a/ and c/ are purchased, and all samples are transported to IMR in Lysekil for analysis.

- Sprat IIIb-d

The Swedish officially reported landings in 2006 were 84 800 tonnes, obliging Sweden to sample this stock.

The Swedish sprat fishery in the Baltic Sea is conducted with mid-water trawl with <32 mm mesh size and the catches are mainly landed for industrial purposes. The fishery is most intensive during winter and spring.

Samples are collected by the Swedish Coast Guard during their standard control of the species composition in the pelagic fishery. Data (age, length and weight) on sprat are also collected at the Herring Acoustic Survey conducted in the 4th quarter.

- Salmon and sea trout IIIb-d

Catch samples

The Swedish landings in 2006 from commercial and recreational fisheries of salmon in IIIb-d was 497 tonnes (average 2004-06 692 tonnes) or 97285 fish obliging Sweden to sample this stock.

Catch samples are collected from offshore, coastal and river fishery. 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.

A sampling scheme for all countries with salmon fishery at sea in the Main Basin was established by the ICES Working Group in 2005 and it was updated 2006. Sampling of the commercial sea fishery takes place in major landing ports for salmon. It is planned according to the previous year's fishing pattern. Observers onboard commercial offshore vessels in the southern Baltic will collect data on discards of salmon. The samples of legal sized fish from these cruises will be utilized as catch samples and they include data on sex ratios and the proportion of sexually mature salmon.

The commercial offshore driftnet fishery will be banned from the beginning of 2008. This may lead to a considerable reduction of the offshore fishing effort and catch of salmon. The present planning assumes that an offshore fishery will still take place in 2008.

Sampling of the commercial salmon and sea trout catches in the coastal fishery take place in the Gulf of Bothnia (ICES sub-divisions 30-31). The sampling is carried out by selected fishermen themselves in four coastal regions and the data collected include length, weight and sex of individual fish.

Recreational fishery is sampled in three rivers in the 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 broodstock fishery in River Dalälven.

Monitoring of salmon and sea trout in rivers

As in year 2006 and 2007, monitoring of the Swedish wild salmon river stocks will be included in the NP in year 2008. Electrofishing of salmon and sea trout parr will take place in the autumn in all 13 wild salmon rivers. Such surveys have been going on annually for more than 10 years.. In about every fourth year high water flows will make it impossible to carry out the surveys. Electrofishing are carried out by subcontractors in approximately eight of the rivers.

The number of emigrating salmon and sea trout smolts will be estimated by subcontractors in an index river, Sävarån in the Gulf of Bothnia, in 2008. Fish ladders for ascending salmon and sea trout spawners will be operated in three different rivers; Kalixäven, Lögdeälven and Sävarån.

All data from electrofishing surveys are collected in a national database covering all Swedish surveys (SERS). All data from river monitoring will be reported to the relevant ICES Working Group (WGBAST).

- **Sampling for Demersal species**

Sampling for cod

Samples of cod will be collected randomly within each landing size category. The species is sorted with respect to weight, in accordance with EU standard 1-5. The proportion of fish landed in size categories 1-3 is small and is thus sampled as one single category. 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 (e.g. unit = time, area, fishery as indicated by relevant ICES working groups) 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.

In order to distinguish between the different fisheries, extra length measurements are collected for each fishery (5 boats / sampling unit). The reason to add extra length measurements to the simple random sampling design is to get age-disaggregated information from three fisheries without increasing the number of age samples further. The Swedish sampling of all cod stocks are over-sampled in relation to DCR requirements since they are a subject to recovery plans. Collected data are stored in a fish sample database at IMR. Results on cod in the Baltic are reported annually to the ICES Working Group (WGBFAS).

- Cod III b,d

The Swedish landings of cod from areas IIIb-d in 2006 were 12 351 tonnes, obliging Sweden to sample this stock. Cod in the Baltic Sea is regarded to be 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.

The cod fishery in the Baltic is conducted mainly with trawls and gill-nets, but also long-lines are used with increasing intensity. The bottom trawling is conducted during day-time at 30-100 meters depths all year round with exception for the obligatory summer closure.

The gill-net fishery is conducted primarily by smaller vessels, fishing along the coast. Each vessel uses 4-6 km gillnets.

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 for flounder

Sampling of flounder catches in area IIIb and d 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 (Table 8.1). This sampling scheme ensures that the estimates of catch composition accounts for the two main gear types, seasonal variation, and are of adequate precision. Analyses of the relationship between precision of catch age-composition (boot-strap estimates of CV) and the number of individuals per sample shows that the minimum number of individuals per sampling occasion is 200 individuals, in order to achieve a precision level of 12.5% with 95% confidence interval for catch numbers at age for ages 5-12 (when combined with a reference age-length-key of 800 individuals).

Thus, a reference length-age distribution (300 individuals) will be derived annually in subdivision 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 subdivision and quarter, during two quarters in SD25 and one quarter in SD23 and 28. 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 1700 individuals will be length measured of which 1100 individuals will be age determined. All age-determined individuals are also sampled for weight, length, sex and gonadal maturity status.

Collected data are stored in a database at ICR and the results are reported annually to the ICES Baltic Fisheries Assessment Working Group (WGBFAS).

- Flounder IIIb, d

The Swedish commercial landings in area IIIb, d were 169 tonnes in 2006 (annual average 2003-2005 was 221 tonnes), obliging Sweden to sample this stock. About 67% of the total landings come from gill-net fisheries, predominantly in SD27, but also in the other SD 23-28. In 2006 26% of catches were taken as bycatch in the demersal trawl fishery for cod, most of which come from SD25.

- **Sampling for Eel**

Since the fisheries for yellow eel and silver eel are distinctly separated both geographically and with respect to gears, the two types are sampled separately. Both sampling strategies are based on random samples of 100 individuals per sample, all of which are measured for length

and weight. Sampling is done on a quarterly basis during the two quarters that constitute the peak fishing season.

The annual yellow eel sampling schedule consists of in total 1600 individuals to be sampled from fyke nets in ICES subdivisions 20, 21, 23 and 27. Silver eel will be sampled from pound nets in subdivisions 23, 24, 25 and 27, and in total 1100 individuals will be collected. All individuals will be measured for length and weight.

Collected data are stored in a database at ICR, and the results are reported annually to the ICES Working Group on Eel (WGEEL).

- Eel IIIaS, b, d

The Swedish commercial landings of eel in area IIIa were 240 tons in 2006, and 363 tons in IIIb-d (annual averages 2004-2006 were 225 and 318 tons, respectively), obliging Sweden to sample eel in both these areas. The commercial eel catches consist of approximately equal amounts of silver eel and yellow eel. However, the catch areas for the different types of eel are quite distinctly separated. Yellow eel is predominantly caught in IIIa (99% of the total eel catches in IIIa in 2006 was yellow eel) using fyke nets, and silver eel predominantly in IIIb-d (making up 90% of total eel catches in IIIb-d in 2006) using pound nets.

8.2. MP – Landings – Derogations and non-conformities

For the sampling year 2008 Sweden seeks derogation from determining age on sampled eels (Proposal section ‘8. Module H – Length and age sampling). Age determination will only be sampled every third year (according to proposal section 9.1). This will give some benefits; first it will be possible to increase the number of eels measured per sample, second the length measurement can be done by the fishermen, and third, no eels will be withdrawn from the fishery.

In the section “HIJ Catch Composition Sampling” in the report “Report of the Workshop National Data Collection, European eel, Sångå Säby (Stockholm, Sweden), 6 – 8 September 2005” (Dekker 2005), we find the following three recommendations:

“6. Length sampling level should be defined as 200 eels measured per sample.

7. It is most likely that future assessments will be length based rather than age based. It is therefore not deemed appropriate to sample age on an annual basis under Schedule H.

8. The current DCR requirement of sampling growth data (length and weight) every three years was considered to be adequate.”

These recommendations were based on the following reasoning:

“The number of individuals per sample for length analysis was examined and there has been no analysis to date determining the precise levels required. Common practice would indicate that 100 individuals per sample may not be adequate for length and this should be increased to 200 per sample.

It is most likely that future assessments will be length based rather than age based and this will be further evaluated under the FP6-project SLIME (FP6-022488). It is therefore not deemed appropriate to sample age on an annual basis under Schedule H.

The current DCR requirement of sampling growth data (length and weight) every three years was considered to be adequate. As sexual dimorphism is a strong feature in eel (females at least twice as large as males), Schedule I should also include maturity and sex ratio analysis for eel.

It is appropriate to sample age every three years for the estimation of growth. This would be sufficient to monitor changes in growth parameters over time. Age analysis should be at 200 eels per sample, or where this is deemed to be excessive, Member States may reduce the number to a minimum of 5 individuals per cm length interval. A minimum of 200 individuals should be analysed per management unit for yellow and silver eel separately.”

Since the FP6-project SLIME is now finished some information on the data requirements of the appropriate models can be added. Six models were described and applied to different selections of appropriate case studies. One of the models (GEMAC, Glass Eel Model to Assess Compliance) only apply to glass eels and is thus not considered for the Swedish situation. The GlobAng use age structure of yellow and silver eels for calibration of the model. On the other hand this model only applies to rivers, which is currently not sampled under the DCR in Sweden. The DemCam (Demographic Camargue Model) is structured both according to length and age, but does only require age data to establish curves of somatic growth. The SMEP (Scenario-based Model for Eel Populations), LVPA (Length-based Virtual Population Assessment) and SWAM (Swedish Analytical Models) are all length based models, of which SMEP only applies to rivers.

So the earlier conclusion that it is most likely that future assessments for eel will be length based rather than age based, is still valid. (Dekker W. (ed.) 2005 Report of the Workshop on National Data Collection for the European Eel, Sånge Säby (Stockholm, Sweden), 6 – 8 September 2005.)

8.3. EP – Landings – Planned sampling

Biological sampling of catches to obtain composition by age and length will be carried out within an extended programme for four species in area IIIId: European whitefish, turbot, perch and pike (Table 8.3).

To obtain estimates of acceptable precision levels in a cost-effective way, sampling within the extended programme is based on annual targets, but account for temporal variation in fishing activity by sampling during peak fishing seasons. Estimated composition of the catch is thus representative for the main fishing activity. In contrast to the species sampled within the minimum programme, however, the estimates do not necessarily accurately reflect the composition in the catches from other seasons, since these are not sampled within the extended programme. Moreover, sampling is not done in all sub-divisions, but only in the some catch areas.

All individuals in collected samples are analysed according to standard measures (length, weight, age) and age determination takes place at the ICR according to standardized methods (Anon. 2000a). Collected data are stored in a database at ICR and the results are reported annually to the relevant ICES Working groups and HELCOM.

Below the sampling procedures are described for species with similar sampling scheme, followed by information on the Swedish landings and a short description of the fishery by species.

Sampling for European whitefish and Perch

The sampling of catches is based on random samples from landings by selected vessels. Sampling is concentrated on sub-divisions 27-29N where relatively long time series on perch stocks are available. The samples are taken only during the peak fishing month. For all collected individuals the length, age, weight, sex and gonadal status are recorded. To account for the differences in size-selectivity between gears the age-determined samples are supplemented by random samples of length-measured individuals from the major fisheries (gill-nets and trap-nets). Whitefish fishing season is temperature dependent and therefore varies between years, and sampling may therefore be adjusted accordingly. Sampling of landings is accompanied by additional detailed catch protocols on both European whitefish and perch that are recorded in collaboration with fishermen in SD27 (collected solely at national expense).

In total in area IIIId, 1000 individuals of European whitefish will be age-determined and an additional 1000 will be measured only for length, and 300 perch will be age-determined and an additional 600 will be measured only for length. For perch, the few samples for determining age and other biological parameters taken within this programme will be complemented by age-length distributions and other biological parameters from ICR's coastal surveys in the corresponding catch areas (performed solely at national expense).

Collected data are stored in a database at ICR and the results will be reported to the ICES Baltic Committee and HELCOM, to be used in integrated assessments in the Baltic Sea (for more information, see the report from the ICES/BSRP/HELCOM Workshop on Developing a Framework for Integrated Assessment for the Baltic Sea, held in Tvärminne, Finland, from 1-4 March 2006).

- European whitefish in IIIId

The annual Swedish commercial landings of European whitefish in area IIIId are 245 tonnes (average 2004-2006), most of which are taken in the northern part. The main catch areas are the Bothnian Bay, i.e. SD31, with about 50% of the landings and Bothnian Sea, i.e., SD30, with 30% of the landings. Trapnets are the dominating gear in the northern areas whereas gill-net becomes increasingly important further south, and is the dominating gear in sub-divisions south of sd 30. Recreational catches of European whitefish in IIIId are estimated to be twice as big as the commercial landings (about 580 ton).

- Perch in IIIId

The annual Swedish commercial landings of Perch in area IIIId are 103 tonnes (average 2004-2006), most of which are taken in the northern part. The main catch areas are the Bothnian Bay, i.e. SD31, Bothnian Sea, i.e., SD30, and the Baltic Proper (sub-division 27). Gill-net is

the dominating gear in the fishery as a whole. Recreational catches of perch in IIIId are more than four times as big as the commercial landings (about 1200 ton).

Sampling for Turbot in IIIId

Annual sampling consists of the minimum number of samples to assess turbot stocks with acceptable precision levels (level 3 for catch at age of females ages 5-12 and level 2 for males ages 5-12) in the two main catch areas sub-divisions 25 and 28.

The sampling for turbot is stratified by size categories, landing size categories 1-3 and discard size category 4 according to length and weight. 100 individuals per size category and sub-division will be collected during the peak fishing month (mid-June – mid-August). These will be supplemented by random samples with length-measured individuals, of 100 individuals per size category and month during peak fishing periods (mid-May – mid-July). In total 1600 individuals will be length measured and 800 individuals will be age determined. Due to the sex differentiated growth patterns both females and males will be sampled. Sampling of catches is accompanied by additional detailed catch protocols recorded in collaboration with fishermen (solely at national expense).

Collected data are stored in a database at ICR and the results are reported annually to the ICES Baltic Fisheries Assessment Working Group (WGBFAS).

The Swedish commercial landings in area IIIId were 30 tonnes in 2006 (annual average 2004-2006 was 30 tonnes). Commercial catches of turbot are taken in directed gill-net fisheries in SD 28 and SD25. Recreational catches of flatfish (mainly turbot and flounder) in IIIId have been estimated to amount to about 440 ton.

Sampling for Pike in IIIId

The sampling is length stratified, to ensure adequate sampling of large individuals, necessary for good precision. Twenty individuals per 2.5-cm class are sampled for age among individuals between minimum landing size and 60 cm, and 10 individuals are taken per 2.5-cm class above 60 cm; in total 300 individuals per sample. These collected samples are supplemented by random samples of length-measured individuals from the two gear types (gill-nets and trap-nets) in sub-division 27. Samples are only taken during the peak fishing month.

In total, 300 individuals will be age-determined and an additional 300 will be measured only for length.

The Swedish commercial landings in area IIIId were 47 tonnes in 2006 (annual average 2004-2006 was 43 tonnes), whereas recreational catches of pike amounted to almost 1200 tonnes. The commercial catches of pike are primarily taken in gill-net fisheries in sub-divisions 27 and 31, corresponding to about 30% of the landings each. Some directed trap-net fishery for pike occurs in both sub-divisions 27 and 31.

8.4. EP – Landings – Non-conformities

The number of samples according to regulation EC 1581/2004 for European whitefish, perch, pike and turbot (Table 8.3) are inadequate for any type of assessment. The sampling outlined above is the minimum number of samples necessary to obtain catch composition estimates of adequate precision for the most abundant age-classes, according to bootstrap estimates (see Sweden Technical Report 2006, Annex V).

8.5. MP & EP – Discards – Planned sampling

Fisheries to be sampled in the 2008 discard sampling programme are listed in table 5.3 and table 8.4.

In all sampled fisheries all species (app. XII, app. XIII and other fish species) will be measured for length. All fish or a sub sample of the fish will be measured in each sampled haul. Cod (area IIIb-d) and flounder (area IIIb-d) are sampled for age. For cod a sub-sample of fish will be sampled for ages and individual weights in each trip. The size of the sub samples are 5 ind/ cm class and trip for cod in area IIIb-d. Flounder in area IIIb-d is sampled with a target set in number. All discarded length classes, including adult fish (for example in the event of quota exhaustion), are sampled. In order to produce reliable ALKs, target sampling levels are expected to exceed the minimum levels given in Appendix XV Commission regulation EC (No) 1581/2004 for all these stocks except cod in IIIb-d.

Data will be collected by staff from IMR.

The information to be sampled for every haul in all sampled fisheries is:

- Vessel and gear characteristics
- Place, date, time and duration of fishing operation
- 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 discarded part of the catch of selected species in accordance with EC (No) 1581/2004 appendix XII.
- Individual weights for selected species in the discarded part of the catch.

All collected discard data are recorded in the Fish sample database at IMR.

All Swedish catch data sampled during discard sampling are uploaded in the international common database: FISHFRAME.

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

No derogations are requested

Skagerrak and Kattegat

8.1. MP – Landings – planned sampling

- **Sampling for pelagic species**

Sampling for herring and sprat

Herring and sprat 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. The number of samples planned and the sampling unit considered is indicated in the text below. Collected data are stored in the fish sample database at IMR, while results for the Western Baltic, Skagerrak and Kattegat go to (HAWG)

- Herring IIIa

The total Swedish herring catch in area IIIa was 34 714 tonnes in 2006, obliging Sweden to sample this stock.

Sampling of herring in IIIa takes place by spawning stock (Chapter III.I.1.a.ii). 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 spawning stocks are identified: autumn-spawning and spring-spawning herring.

Sampling on fleet a/ is purchased and transported to IMR in Lysekil for analysis. Sampling on fishing fleet b/ is performed by the Swedish Coast Guard and transported to IMR for analysis.

- Sprat IIIa

The Swedish landings in area IIIa were 8 821 tonnes in 2006, obliging Sweden to sample this stock.

More than half of the landings originate from fisheries in the Skagerrak.

Sampling is sub-divided into fish for human consumption and fish for industrial purposes.

a/ Sprat for human consumption is caught with fine-mesh purse seines and ring nets mainly during autumn and winter in the Skagerrak.

b/ Fisheries for fish for industrial purposes take place throughout the year using ring nets, mid-water trawls and bottom trawls.

Sampling from the human consumption fisheries a/ is performed on landings from representative purse seine boats during the 1st and 4th quarters. Sampling of animal feed fisheries b/ is performed all year round on landings made at the fish-meal factory on Ängholmen.

- **Sampling for Demersal species**

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. The proportion of fish landed in size categories 1-3 (cod) and 1-2 (plaice) is small and is thus sampled as one single category. 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 (e.g. unit = time, area, fishery as indicated by relevant ICES working groups) 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.

In order to distinguish between the different fisheries, extra length measurements are collected for each fishery (5 boats / sampling unit). The reason to add extra length measurements to the simple random sampling design is to get age-disaggregated information from three fisheries without increasing the number of age samples further. The Swedish sampling of all cod stocks are over-sampled in relation to DCR requirements since they are a subject to recovery plans. Collected data are stored in a fish sample database at IMR. Results on cod in the Baltic and Kattegat are reported annually to the ICES Working Group (WGBFAS)) for data on cod and plaice in the Skagerrak to WGNSSK.

- Cod IIIa S and N

The Swedish landings in 2006 were 285 tonnes in the Kattegat and 394 tonnes in the Skagerrak, obliging Sweden to sample both stocks.

Cod in the Kattegat and the Skagerrak is caught mainly in bottom trawls, both in directed fishery for fish but also as by-catch in Nephrops fishery. Cod is also caught in directed gill-net fishery. The major part of the catch is taken during the 1st and 4th quarters. Sampling of cod is performed in the fishing ports in Bua and Göteborg.

In Kattegat and Skagerrak where the quotas are very low, we sample the landed part of the catch both onboard vessels and at markets. The two sampling approaches complement each other and are necessary to do, in order to get the planned samples.

- Plaice IIIa

The Swedish landings in 2006 were 163 tonnes in the Kattegat and 172 tonnes in the Skagerrak. Plaice in the Kattegat and the Skagerrak are assumed to belong to the same stock. Only plaice in Kattegat is sampled by Sweden and in agreement with Denmark they will cover the sampling of plaice in Skagerrak.

Plaice are caught in trawls, Danish seines and gill-nets. Catches are taken all year round. Sampling of plaice is carried out in the fishing port in Göteborg.

Sampling for Norway lobster

The sampling is carried out on board commercial Norway lobster trawlers (single and twin trawlers) and onboard crustacean-creel boats and is 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.

The Swedish landings in 2006 were 1115 tonnes, obliging Sweden to sample this stock.

The purpose of biological sampling of catches is to yearly estimate the number of Norway lobsters and their average weight by length and estimated age in Swedish catches.

The fishery for Norway lobster (*Nephrops*) is conducted in the Skagerrak and the Kattegat, using *Nephrops* trawls and crustacean-creels.

Data are recorded and stored at IMR. The results are reported annually to the ICES Assessment Working Group (WGNSSK, earlier WGNEPH).

Sampling for Pandalid shrimps IIIa N

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 both parts of the landings are purchased and transported to IMR for analysis of carapax length, sex, maturity stage and weight.

The Swedish landings in 2006 were 2126 tonnes, obliging Sweden to sample this stock.

The purpose of biological sampling of catches is to estimate annually the number of shrimps and their average weight by length and age in Swedish catches.

The pandalid shrimps are caught in trawls fishing at 150-400 meters depth.

Data are stored at IMR. The results are reported annually to the ICES Assessment Working Group (WGPAND).

Sampling for Haddock IIIa N

Sampling of haddock caught in the Skagerrak is carried out on board fishing boats and includes only length measurements on unsorted catch. Only undersized individuals are sampled for age.

The Swedish landings in 2006 in area IIIa were 239 tonnes, obliging Sweden to sample this stock. Sampling of this stock must only include fish length according to exemption provision in Chapter III.H (1) (d).

Haddock is landed all year round and only for human consumption purposes. Haddock is caught in bottom trawls, Danish seines and gill-nets.

Data are stored in the fish sample database at IMR. Results are reported annually to the ICES Working Group (WGNSSK).

8.2. MP – Landings – Derogations and non-conformities

The sampling strategy planned is aiming towards a precision level on the most abundant age-classes. However, with reference to Sweden Technical Report 2005, Annex III-IV, estimation of CV of the number and weight at age for cod, herring and sprat, indicates unrealistic sample size to reach the precision levels 1, 2 and 3 according to the DCR. Sweden still argues for other more realistic precision levels which can be found in Swedish Technical Report for 2006.

8.3. EP – Landings – Planned sampling

None

8.4. EP – Landings – Non-conformities

None

8.5. MP & EP – Discards – Planned sampling

Fisheries to be sampled in the 2008 discard sampling programme are listed in table 5.3 and table 8.4.

In all sampled fisheries all species (app. XII, app. XIII and other fish species) will be measured for length. All fish or a sub sample of the fish will be measured in each sampled haul. Cod (areas IIIaS, IIIaN), plaice (areas IIIaS, IIIaN) and haddock (area IIIaN) are sampled for age. For cod, haddock and plaice a sub sample of fish will be sampled for ages and individual weights in each trip. The size of the sub samples are 3 ind/ cm class and trip for cod and plaice in area IIIa and 1 ind/ cm class and trip for haddock in area IIIaN. All discarded length classes, including adult fish (for example in the event of quota exhaustion), are sampled. In order to produce reliable ALKs, target sampling levels are expected to exceed the minimum levels given in Appendix XV Commission regulation EC (No) 1581/2004 for all these stocks.

Data will be collected by staff from IMR.

The information to be sampled for every haul in all sampled fisheries is:

- Vessel and gear characteristics
- Place, date, time and duration of fishing operation
- 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 discarded part of the catch of selected species in accordance with EC (No) 1581/2004 appendix XII.
- Individual weights for selected species in the discarded part of the catch.

All collected discard data are recorded in the Fish sample database at IMR.

All Swedish catch data sampled during discard sampling are uploaded in the international common database: FISHFRAME.

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

No derogations are requested

9. Module I – Other biological sampling

Baltic

9.1. MP – Planned sampling

The parameters sex, gonadal maturity, age, weight and length are sampled. The intention of ‘Other biological sampling’ is to describe annually the distribution by sex, gonadal maturity and spawning biomass by age and by sex for some fish stocks.

- **Pelagic species**

- Herring in area IIIb-d

Sampling of other biological parameters such as sex and gonadal maturity is performed on fishing fleets a/ and c/. Sampling of fishing fleet b/ includes no adequate sampling by sex and by sexual maturity, because in principle all landings are intended for the fish-meal and oil industry. The samples are thus not suitable for anatomical/histological examination.

However, sex and gonadal maturity are collected during the Herring Acoustic survey conducted in the 4th quarter. Sex and maturity are determined following the international 8 scale maturity key.

- Sprat in area IIIb-d

No adequate sampling for other biological parameters is conducted because in principle all landings are intended for the fish-meal and oil industry. The samples are thus not suitable for anatomical/histological examination.

However, sex and gonadal maturity are collected during the Herring Acoustic survey conducted in the 4th quarter. Sex and maturity are determined following the international 8 scale maturity key.

- Salmon and sea trout III b-d

Scale samples collected for aging are also used to determine the proportion of wild and reared salmon and sea trout in the landings. These scale characters are analysed in conjunction with the age determination of the sampled fish and their cost is included in the Module H –Length and age sampling. It has been recommended by the ICES Working Group to include DNA-analysis of salmon in the NP, in order to determine the salmon origin and improve assessment. No such analyses are included in the NP for 2008.

- **Demersal species**

- **Cod in the Baltic III b, d**

- Sampling of other biological parameters (including fish length, age, weight, sex and gonadal maturity) is carried out on board R/V ARGOS during the BITS surveys conducted in the 1st and 4th quarters. Sex and maturity are determined following the international 5 scale maturity key.

- **Flounder area IIIb, d**

- Sampling of other biological parameters on flounder includes sex, gonadal maturity, age, weight, and length, and is made on the age-determined samples taken from the catches (see section 8.1 for more details).

9.2. MP – Derogations and non-conformities

Cod in subdivision 22-24 are not sampled for sex and maturity due to gutted fish are sampled in harbours 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.

9.3 EP – Planned sampling

Sampling of other biological parameters on the five species in the extended programme includes sex, gonadal maturity, age, weight, and length, and is made on the age-determined samples taken from the catches (see section 8.3 for more details). For perch, the very few samples for determining age and other biological parameters taken within this programme will be complemented by age-length distributions and other biological parameters from ICR's coastal surveys in IIIId (performed solely at national expense).

9.4 EP – Non-conformities

None

Skagerrak and Kattegat

9.1. MP – Planned sampling

The parameters sex, gonadal maturity, age, weight and length are sampled. The intention of 'Other biological sampling' is to describe annually the distribution by sex, gonadal maturity and spawning biomass by age and by sex for some fish stocks.

- **Pelagic species**

- Herring in area IIIa

The purpose of the other biological sampling is to estimate on a yearly basis the distribution by sex and maturity per age and spawning stock. Identification of spawning stocks takes place on an individual basis and is of striking importance for the assessment.

Sampling of fishing fleet a/ includes supplementary data by sex and gonadal maturity. The spawning type is determined by analyses of otoliths and vertebra in individual fish. Sampling of fishing fleet b/ includes no adequate sampling by sex and by sexual maturity, because in principle all landings are intended for the fish-meal and oil industry. The samples are thus not suitable for anatomical /histological examination.

However, the 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.

- Sprat in area IIIa

The purpose of the other biological sampling is to estimate on a yearly basis the distribution by sex and maturity per age and sex.

Samples from the human consumption fisheries are purchased and transported to IMR a/. Sampling includes supplementary data relating to sex and gonadal maturity. Samples of the animal feed fisheries b/ are collected by the Swedish Coast guard and include no adequate sampling by sex and by gonadal maturity because in principle all landings are intended for the fish-meal and oil industry. The samples are thus not suitable for anatomical /histological examination.

However, 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.

- **Demersal species**

- Cod, plaice and haddock in IIIa

Sampling is carried out on board R/V ARGOS during IBTS surveys conducted in the 1st and 3rd quarters. For cod maturity are determined following the international 4 scale maturity key.

- Norway lobster in area IIIa

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

Sweden and Denmark has signed an agreement of co-operation 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 Other Biological Parameters and will therefore increase its sampling intensity to compensate for the missing Danish sampling.

- Pandalid shrimps area III a N

Sampling of other biological parameters such as sex and gonadal maturity comprises supplementary data on the individuals whose length is measured.

9.2. MP – Derogations and non-conformities

No derogations are requested

9.3 EP – Planned sampling

None

9.4 EP – Non-conformities

None

10. Module J – Economic data on fishing vessels

10.1. MP – Planned sampling

Economic data on the fleet will be compiled within the minimum as well as the extended program.

Economic data on the fleet will be based primarily on three sources:

- Register data from the Swedish Board of Fisheries (vessels, catches, landings and prices)
- Register of company accounts from all registered fishing companies (the information will be bought from Statistics Sweden)
- Information on parameters that cannot be distinguished from the Statistics Sweden register will be collected in a questionnaire that will be sent to selected vessel samples.

For each segment data on the following parameters will be collected in accordance with annex XVII:

Description	Parameters	Source
Income	Total and per species	- sales notes (SBF) - logbook (SBF) - company accounts/income tax declarations (vessel owners) from Statistics Sweden
Production costs	Crew Fuel Repair and Maintenance Other operational costs	- company accounts/income tax declarations from Statistics Sweden - questionnaire (vessel owners)
Fixed costs	Average costs	- company accounts/income tax declarations (vessel owners) from Statistics Sweden

		calculated as the sum of all costs except costs related to invested capital which are not related to fishing effort
Capital cost	Average costs	<ul style="list-style-type: none"> - company accounts/income tax declarations (vessel owners) from Statistics Sweden - calculated as depreciation costs + capital costs according to the report on capital value by Irepa Onlus, Study No Fish/ 2005/03
Financial position	Share of own/ foreign capital	<ul style="list-style-type: none"> - company accounts/income tax declarations (vessel owners) from Statistics Sweden
Investment	Value	<ul style="list-style-type: none"> - Questionnaire, calculated insurance value
Prices/species	Value/quantities	<ul style="list-style-type: none"> - Logbooks (SBF) - Sales notes (SBF)
Employment	Number and FTE	<ul style="list-style-type: none"> - questionnaires (vessel owners) - the calculations will be done in accordance with the report on labour including FTE, Study No Fish/2005/14
Fleet	Number GT KW Age Gear used	<ul style="list-style-type: none"> - vessel register (SBF) - logbooks
Effort		<ul style="list-style-type: none"> - vessel register (SBF) - logbooks (SBF)

The fishing fleet will be divided into the data collection segments as defined in annex III of the regulation. The below economic segments will be identified:

1. Demersal trawlers < 12 m
2. Demersal trawlers 12 - 24 m
3. Demersal trawlers \geq 24 m
4. Pelagic trawl and seiner 00-12 m
5. Pelagic trawl and seiner 12-24 m
6. Pelagic trawl and seiner 24-40 m
7. Pelagic trawl and seiner \geq 40 m
8. Hooks 12-24 m
9. Fixed nets 12 - 24 m
10. Passive gears < 12 m

Economic data will be collected for all vessels in the population generating at least one cent. A threshold will be used to separate the above segments that fish more actively from those who fish less active since the cost structure differs from regularly active and less active vessels. The threshold value used is set to be two basic amounts which are set by the Swedish

tax authorities. For 2007 two basic amounts adds up to 80 600 SEK. For 2008 the basic amount has not yet been set. Vessels with a landed value of more than 80 600 SEK will be classified as regularly active and vessels with a landed value of less than 80 600 SEK will be classified as less active. For there to be no misconception Sweden will follow the provisions of the DCR, economic data will be provided for all active vessels regardless of threshold but the segmentation will include the threshold.

Data on costs will be bought from Statistics Sweden who will compile income tax declarations from all companies of the Swedish Fishery. These will be used to calculate the total profitability of the Swedish fishery. However, the data is aggregated and in order to calculate production costs (except crew costs), fixed costs, investment and employment, a questionnaire has to be conducted. When selecting companies to be included in the sample the segments will be divided into subgroups based on catch composition (quantities/values). Simple random sampling will be used as a first option when selecting vessels in each subgroup. In order to attain statistically significant results the aim is to collect data of the parameters from a sufficient number of vessels of each segment.

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

Data will be presented as average for each segment. Price information will be on a quarterly basis.

10.2. MP – Derogations and non-conformities

No derogations are requested

10.3. EP – Planned sampling

The following additional data will be collected:

Description	Parameter	Source
Income	Total and per species - monthly - stock - market category	- sales notes (SBF) - logbooks (SBF) - company accounts/ income tax declarations (Statistics Sweden)
	- subsidies	- company accounts/income tax declarations - fisheries structural aid database (SBF)
Production costs	Remuneration - vessel owner (profit) - crew	- company accounts/income tax declarations - questionnaire (vessel owner)
Prices/species	Value/quantities	- logbooks (SBF)

	- monthly - market category	- sales notes (SBF)
Fleet	Sub-segments	- vessel register (SBF) - logbooks

In addition to the segments of the minimum programme another set of segments will be identified in the extended programme. The segments of the extended programme will be according to the DCR. The objective is to differentiate the data regionally.

The segments of the extended programme:

1. Pelagic trawl and seiner <12 m
2. Pelagic trawl and seiner 12-18 m
3. Pelagic trawl and seiner 18-24
4. Pelagic trawl and seiner 24-40 m
5. Pelagic trawl and seiner ≥ 40 m
6. Demersal trawl and seiner, <10 m
7. Demersal trawl and seiner, 10-12 m
8. Demersal trawl and seiner 12-18 m
9. Demersal trawl and seiner, 18-24 m
10. Demersal trawl and seiner, 24-40 m
11. Drift nets and fixed nets < 10 m
12. Drift nets and fixed nets, 10-12 m
13. Drift nets and fixed nets, 12-24 m
14. Pots and traps, <10 m
15. Pots and traps, 10-12 m
16. Pots and traps, 12-18 m
17. Polyvalent passive gears, < 12 m
18. Gears using hooks, <10 m
19. Gears using hooks, 10-12 m
20. Gears using hooks, 10-18 m

10.4. EP – Non-conformities

There are no non-conformities

11. Module K – Data concerning the fish processing industry

11.1. MP – Planned sampling

The data collection will be based on official statistics (Statistics Sweden) which is the only way of producing reliable and accurate statistics with reasonable costs. The information from Statistics Sweden will be processed in order to be in line with the data collection programmes. The Swedish processing companies are not classified into primary and secondary processing. A separation is not possible, as many companies operate both as primary and secondary processors. Naturally the industries could be separated according to their main occupation but it will require heavy costs and the benefits do not justify that. A survey will, in addition be made to compile information on the use of raw material per species and in tonnes.

Available information of the parameters included in Appendix XIX.

- **Raw material, total and per species:** The raw material in the processing industry is very diverse, ranging from round, fresh cod and herring to salted roe in barrels. The total value of raw material can be calculated from official statistics with a rather good accuracy but the volume in tons is very difficult. The statistics does not distinguish, what is used for direct consumption and what is input into industrial processing neither in the export/import statistics, nor in the landings. In addition the raw material cost for the industry is calculated at enterprise level which means that the same raw material will be calculated more than once if the processing companies sell their output for further processing. In spite of these difficulties it should be possible to calculate the total use of raw material in the processing industry measured in monetary terms. The species are in general rather well known but to some extent the raw material is substituted from time to time pending the comparative prices. Sweden will make a survey during 2006 in order to achieve a better picture of the raw material.
- **Income (turnover), total and per product:** The total turnover, also divided per NUTS 3 and 5 areas and into company size categories (number of employment), is available. Turnover per product is not available but consumer price index for the most important consumer items are available.
- **Production costs, total and per category cost:** All figures are available except packaging and the costs for obtaining that figure do not correspond to the benefits. Also it seems that the packaging costs between the different processing companies vary substantially. The booked values are available.
- **Investment (asset), historical, replacement and insurance.** The value of the bookkeeping is available which is set to be the historical value minus the depreciation. This value should be very close to the insurance value but no exact parallel exists. The historical and replacement values are not available.
- **Prices/product, value, tonne.** The companies are very reluctant to give away any figures but in spite of that some figures are available but they are not reliable. In practical terms no reliable figures are available. The consumer price index for fishery products and for individual items is available.
- **Employment, numbers/FTE.** The employment is available as the medium number of employed. The FTE is not available. As the number of staff working part time is rather limited the figures presented are rather close to FTE.
- **Capacity utilisation.** Not available. A query to the industry gave unreliable results.

11.2. MP – Derogations and non-conformities

Information on raw material use, packing cost, prices per product, and capacity utilisation can not be provided.

11.3. EP – Planned sampling

Data on income, labour, energy, raw material (value), other running costs, investment, employment, value added will be presented at NUTS 3 and NUTS 5 levels in accordance to Commission Regulation No 1639/2001 Annex Chapter IV K.2. (b). Data for regions with very low number of companies, however, cannot be presented separately.

Data at national level for different size groups of companies (employment) will also be presented. Companies will be divided into the following groups (based on employment): 0, 1-4, 5-9, 10-19, 20-49 and 50 people or more. No employed people means self-employed.

11.4. EP – Non-conformities

There are no non-conformities

12. Databases

12.1. Database development and data management

The development of databases during 2008 includes projects for The Institute of Marine Research and minor project for The Fisheries Control Department and The Institute of Coastal Research.

R&D Department

The Institute of Marine Research continues their projects of modernizing and refactoring the existing systems including data entry and reporting of fish sample data. This process comprises:

- Conversion of data.
- System integration.
- Development of new software for data entry and reporting.
- Development of a database using modern data warehouse architecture.

The Institute of Coastal Research continues with conversion of data, further development of their Datawarehouse and Reports. The existing application should be further developed in order to make it possible to be used by more countries in the Baltic areas.

The Fisheries Control Department

The existing application for calculation of effort should be further developed in order to make it possible to facilitate the aggregation of effort data in accordance with the requirements of the national data collection programme.

13. National and international co-ordination

13.1. National co-ordination

The Swedish Board of Fisheries arranges an annual meeting with participation of all relevant departments and staff connected to the Data Collection Programme. The purpose of the meeting is to discuss the outcome of activities in relation to the proposal. In addition to this

meeting, a DCR reference group meets several times per year in order to co-ordinate activities within the Programme.

13.2. International co-ordination

Table 13.1. illustrates the Swedish engagement in international meetings related to the data collection exercise. Focus is placed on an active participation in the Regional Co-ordination Meetings for the Baltic and the North Sea, in PGCCDBS, in workshops on economic data and in regional age reading calibrations.

13.3. Follow-up of RCM recommendations and initiatives

A detailed description of the follow-up activities conducted within the Swedish National Programme is presented in the Swedish Technical Report for 2006.

13.4. Follow-up of SGRN recommendations

Sweden has taken note of the SGRN comments on the application for 2007 and has applied the recommendations in the relevant sections of the 2008 application.

14. List of acronyms and abbreviations

ACFM	Advisory Committee on Fishery Management
BITS	Baltic International Trawl Survey
DATRAS	Data Base Trawl Surveys
DCR	Data Collection Regulation
DFU	Danmarks Fiskeriundersøgelser
HAWG	Herring Assessment Working Group for the Area South of 62° N
HELCOM	Helsinki Commission
IBTS	International Bottom Trawl Survey
ICR	Institute of Coastal Research, Swedish Board of Fisheries
IFR	Institute of Freshwater Research, Swedish Board of Fisheries
IMR	Institute of Marine Research, Swedish Board of Fisheries
NP	National Programme
PGCCDBS	Planning Group on Commercial Catch, Discards and Biological Sampling
SBF	Swedish Board of Fisheries
WGBIFS	Baltic International Fish Survey Working Group
WGBFAS	Baltic Fisheries Assessment Working Group
WGBAST	Baltic Salmon and Trout Assessment Working Group
WGEEL	Eifac/Ices Working Group on eels
WGNEPH	Working Group on <i>Nephrops</i> Stocks
WGNSSK	Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak
WGPAND	<i>Pandalus</i> Assessment Working Group
WKSCMFD	Workshop on Sampling and Calculation Methods for Fisheries Data
WKSDFD	Workshop on Sampling Design for Fisheries Data

15. Comments, suggestions and reflections

It would be appreciated if new instructions for the application format are not introduced at the last hour.

16. References

ICES 1994. Manual for Herring Hydro Acoustic Surveys ICES CM 1994/H:3

ICES 2000a. Manual for the Baltic International Trawl Surveys. ICES CM 2000/H:02.

ICES 2000b. Manual for the International Bottom trawl Surveys. ICES CM 2000/D:07.

ICES 2002. Report of the Baltic International Trawl Surveys. ICES CM 2002/G:05

ICES. 2005. Report of the ICES Advisory Committee on Fishery Management, Advisory Committee on the Marine Environment and Advisory Committee on Ecosystems, 2005. ICES Advice. Volumes 1 - 11. 1,418 pp.

Anon 2000a. Method handbook for the Swedish Board of Fisheries' Age Analysis Laboratories: the Marine Fisheries Laboratory, Coastal Laboratory , by the Freshwater Fisheries Laboratory 2000-07-01 Edition No. 3.

Anon. 2000b. Monitoring discarding and retention on fishing vessels towing demersal gears in the North Sea and Skagerrak. First Annual Progress Report. EC Project: 98/097

Anon 2003. Game and Recreational Fishery in Sweden – Pilot Study. Institute of Marine Research, Swedish Board of Fisheries, 5 pp.

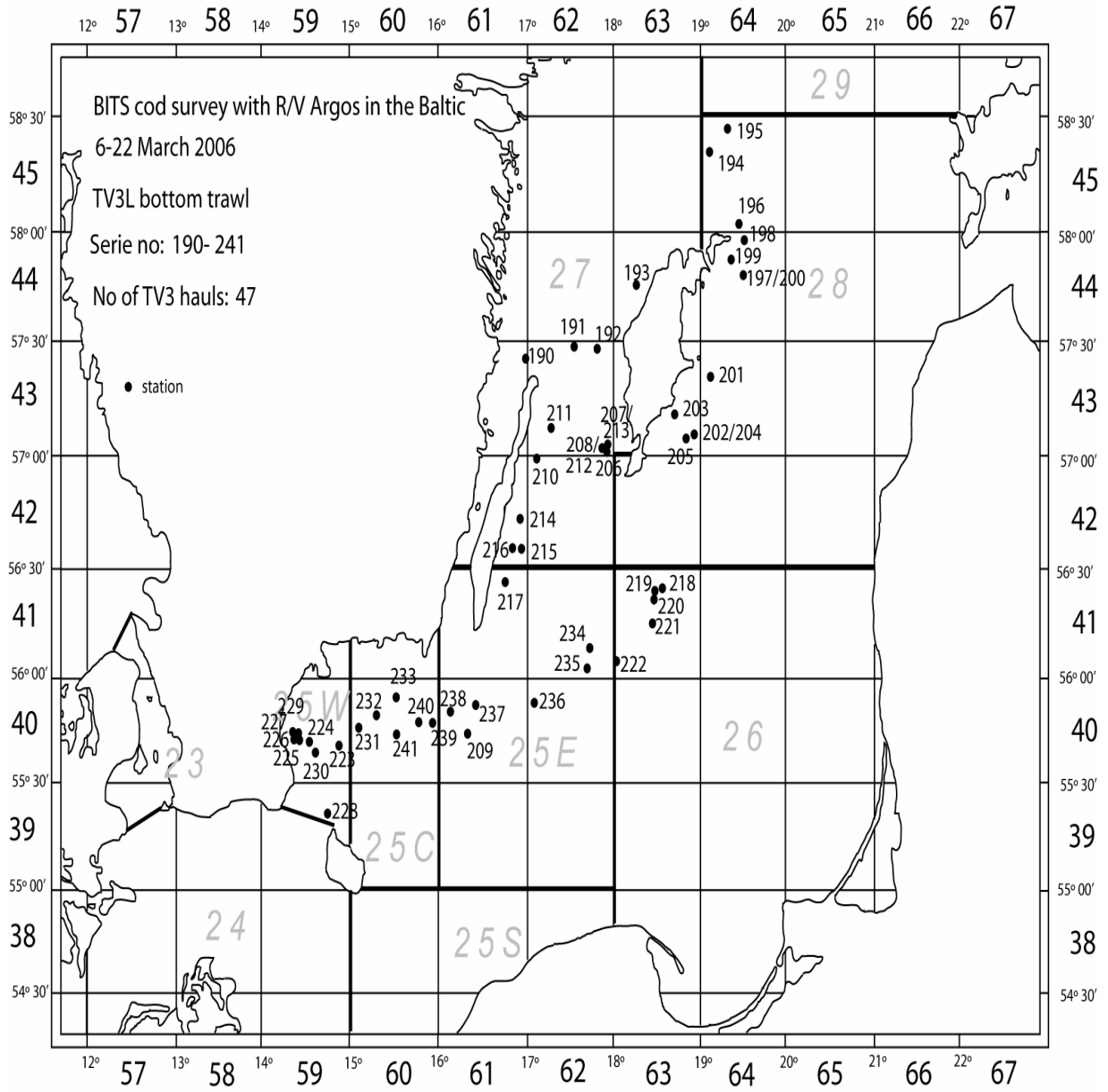
Dekker W. (ed.) 2005 Report of the Workshop on National Data Collection for the European Eel, Sångå Säby (Stockholm, Sweden), 6 – 8 September 2005.

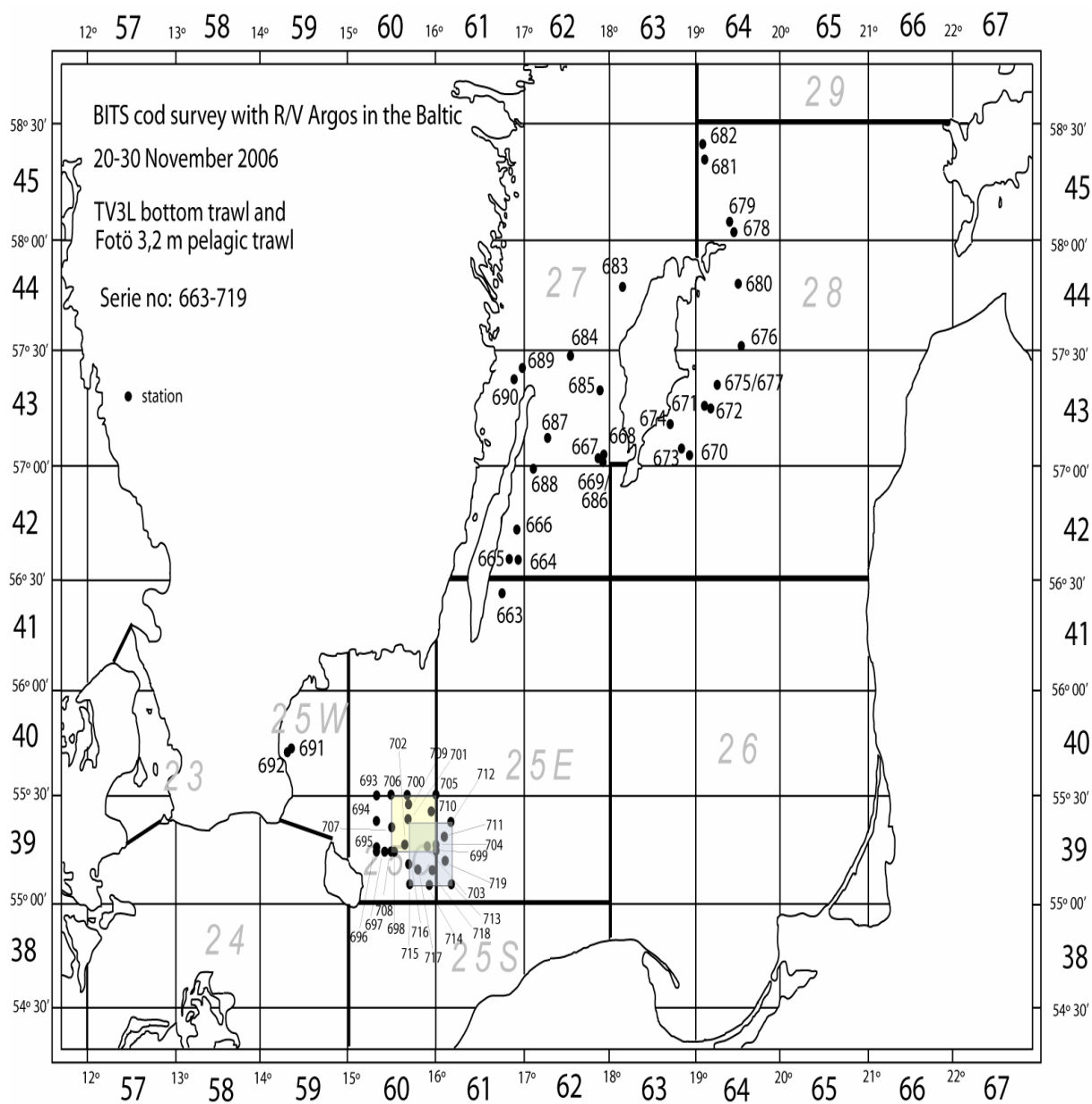
Annexes

Map 1-5

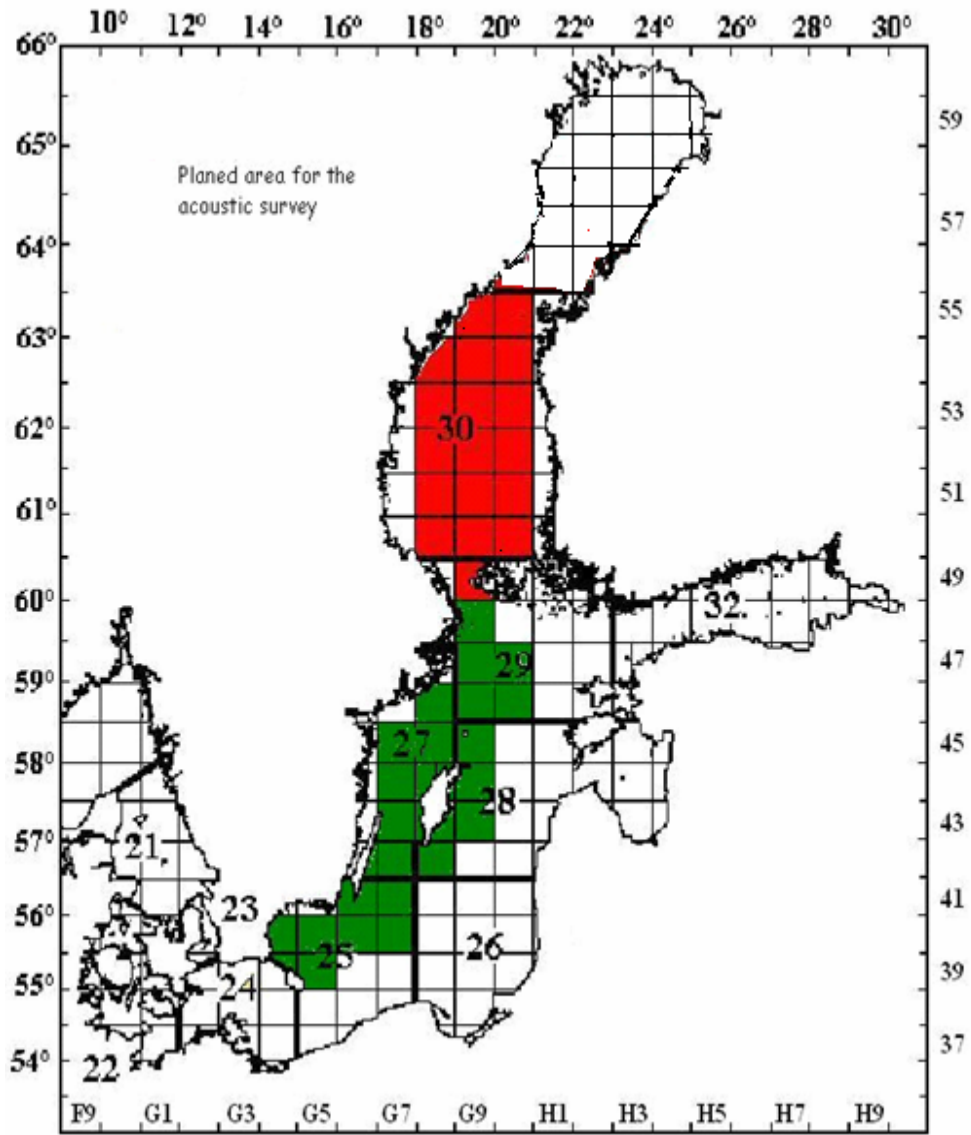
Annex 1: Agreement with Denmark concerning collection of fisheries data

Annex 2: Agreement with Germany concerning collection of fisheries data





Map 5



Agreement
between the Swedish Board of Fisheries, Institute of Marine Research and the
German Federal Research Centre for Fisheries
concerning collection of fisheries catch data in 2007 and 2008

In accordance with the Data Collection Regulation (DCR; Reg. 1639/2001 and 1581/2004), Sweden and Germany have agreed upon a co-operation in the collection of fisheries data. This agreement has first been established in 2005 due to common interests in the fisheries in the Baltic Sea and in the North Sea. Furthermore, substantial landings by German-flagged vessels take place in Sweden and therefore, in order to optimise the quality of the sampling programmes, exchange of information and knowledge is necessary.

Agreement:

It has been agreed that if landings in a specific country are below 5% of the national quota for the flag country for a given TAC stock unit, then the receiving country is not obliged to sample these landings. If there are major changes in the foreign flag landing fractions, it is the responsibility of both institutions to inform each other about these changes and to jointly adapt to the corresponding sampling scheme.

The sampling obligations were derived from landings statistics and quota from the two most recent years (Annex 1):

- **Sweden should collect 3 samples of herring in SD 25-32 (eastern Baltic) landed by German vessels, with 100 fish per sample measured by length and age-determined**
- **Sweden should collect 9 samples of sprat in ICES IIIbcd landed by German vessels, with 100 fish per sample measured by length and 50 fish per sample age-determined**
- **Germany should collect 1 sample of herring in ICES SD 22-24 (western Baltic) landed by Swedish vessels, with 100 fish measured by length and age-determined**
- **Germany should collect 1 sample of herring in ICES IVab landed by Swedish vessels, with 50 fish measured by length and 25 fish age-determined**

When sampling these stocks, the seasonality in the landings has to be taken into account (e.g. German landings of herring and sprat from SD 25-29 in Sweden were to >90% done in the 1st quarter in 2006!). Due to the fact that German herring and sprat landings were transhipped before landing in Sweden in 2005 and 2006, those landings could not be traced by Swedish scientists. In order to obtain data from landings and discards of these fisheries, Germany will continue efforts to place scientific observers onboard of vessels fishing for herring and sprat in the Baltic. Sweden, however, will continue aiming at the sampling of German landings in Sweden according to this Agreement.

Concerning the sample processing, the otoliths of these samples should be sent to the flag country, accompanied with station data, the length distribution protocol and the group weights per length (1/2 cm) class for these samples.

It has been agreed to encourage cooperation on national surveys in the Baltic and the North Sea, involving scientists and/or technicians. This may, however, depend on the staff resources available.

Contact persons:

The contact persons in general matters concerning sampling and handling of samples are:

Species/area	Name	e-mail	Tel.
<u>Germany:</u>			
North Sea and Skagerrak	Kay Panten	kay.panten@ish.bfa-fisch.de	+49 40 38905-108
Baltic and Kattegat	Ulrich Berth	ulrich.berth@ior.bfa-fisch.de	+49 381 8116-128
<u>Sweden:</u>			
Baltic sprat & North Sea herring	Birgitta Kirschensson	birgitta.kirschensson@fiskeriverket.se	+46 523 18721
Baltic herring	Carina Jernberg	carina.jernberg@fiskeriverket.se	+46 523 18718

These contact persons shall report to their respective National Correspondent in due time about any difficulties they might have regarding the conduction of sampling according to this Agreement.

Signatures:

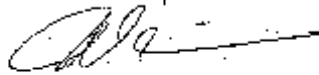
For BFAFi

Date: 12 April 2007


Christoph Stransky
German National Correspondent
Federal Research Centre for Fisheries
Institute for Sea Fisheries

For IMR

Date: 18 April 2007


Fredrik Arrhenius
Swedish National Correspondent
Institute of Marine Research
Swedish Board of Fisheries

Annex 1: Foreign flag landings (close to or above 100 t) of German vessels in Sweden and vice versa and quota in the two most recent years, fraction of landings to quota, landing ports and sampling obligations according to Reg. 1581/2004.

German landings in Sweden (in tonnes)

TAC stock unit	Landings 2005	Landings 2006	Quota 2006	Quota 2007	Average %	Remarks	Main landing ports	Sampling obligations		
								No. of samples	No. of fish (length)	No. of fish (age)
Herring SD 25-32	3,197	2,794	3,234	774	92.6	(1)	Karlskrona, Västervik	3 (1/1000 t)	300 (3*100)	300 (3*100)
Herring IVab	0	764	47,836	34,118	0.9		Ellös			
Cod SD 25-32	116	100	4,143	3,520	2.8		Simrishamm			
Sprat IIIbod	18,302	18,657	26,299	28,403	67.6		Västervik, Karlskrona	9 (1/2000 t)	900 (9*100)	450 (9*50)

Swedish landings in Germany (in tonnes)

Stock unit	Landings 2005	Landings 2006	Quota 2006	Quota 2007	Average %	Remarks	Main landing ports	Sampling obligations		
								No. of samples	No. of fish (length)	No. of fish (age)
Herring SD 22-24	1,184	624	8,451	10,992	9.1	(2)	Mukran	1 (1/1000 t)	100 (1*100)	100 (1*100)
Herring SD 25-32	174	0	38,744	44,389	0.2		Mukran			
Herring IVab	1,231	1,394	4,627	3,470	32.4		Mukran	1 (1/1000 t)	50 (1*50)	25 (1*25)
Sprat IIIbod	175	95	80,250	86,670	0.2		Mukran			

(1) Quota 2006 includes transfers of 2558 t from Sweden and Denmark; Quota 2007 according to Reg. 1941/2006

(2) Quota 2006 includes transfers of 2541 t from Germany; Quota 2007 according to Reg. 1941/2006

Agreement between the Danish Institute for Marine Research and the Institute of Marine Research, Sweden concerning collection of fisheries data in 2008

In accordance with the Data Collection Regulation (DCR) (Commission Regulation 1581/2004 amending Regulation 1639/2001) Denmark and Sweden have agreed entering co-operation on collection of fisheries data. This agreement has been established due to common interests in the fisheries in the Skagerrak (Division IIIa North), the Kattegat (Division IIIa South) and in the Baltic Sea. Furthermore, substantial landings by Swedish flagged vessels take place in Denmark and therefore, in order to optimize the quality of the sampling programme, exchange of information and knowledge is necessary.

Agreement:

It has been agreed that if landings in a specific country are below 5 percent of the national quota for the flag country then the receiving country is not obliged to sample these landings but the flag country should instead compensate for the missing samples in the national sampling scheme. If there is a change in the situation, it is the responsibility of the receiving country to initiate changes in the sampling scheme.

Even though the landings do not justify a sampling scheme for a certain fishery according to the DCR, this fishery might be sampled anyway taking into account other issues.

Sampling of the following species has been discussed and agreed:

Plaice in the Skagerrak

It has been agreed that only Denmark will carry out sampling as the Swedish landings are below the threshold of 5 percent of the total TAC.

Plaice in the Kattegat

Denmark and Sweden will carry out sampling of their own landings of plaice in their own ports and no exchange of sampling foreign landings will be made in accordance with the DCR. Age reading calibration between Denmark and Sweden will be carried out on routine basis.

Cod in the Skagerrak

Denmark and Sweden will carry out sampling of their own landings of cod in their own ports and no exchange of sampling foreign landings will be made in accordance with the DCR. Age reading calibration between Denmark and Sweden will be carried out on routine basis. Due to the present status of the stock the sampling will be carried out according to the extended programme in DCR.

Cod in the Kattegat

Denmark and Sweden will carry out sampling of their own landings of cod in their own ports and no exchange of sampling foreign landings will be made in accordance with the DCR. Age reading calibration between Denmark and Sweden will be carried out on routine basis. Due to the present status of the stock the sampling will be carried out according to the extended programme in DCR.

Cod in the Baltic Sea

In relation to the change of management regime of the Baltic cod into a separate management areas of eastern- and western cod stocks, the involved countries will be observant of any change in the distribution of landings from the two management areas and will adjust the sampling schemes in relation to such change in landing distribution. The sampling scheme will be carried out in accordance with the DCR. Due to the present status of the stocks the sampling will be carried out according to the extended programme in DCR.

Cod in the North Sea

It has been agreed that only Denmark will carry out sampling as the Swedish landings are below the threshold of 5 percent of the total TAC. Due to the present status of the stock the sampling will be carried out according to the extended programme in DCR.

Haddock in Div. IIIa

It has been agreed that only Denmark will carry out sampling as the Swedish landings are below the threshold of 5 percent of the total TAC.

Saithe in Div. IIIa

It has been agreed that only Denmark will carry out sampling as the Swedish landings are below the threshold of 5 percent of the total TAC.

Sole in Div. IIIa

It has been agreed that only Denmark will carry out sampling as the Swedish landings are below the threshold of 5 percent of the total TAC.

Whiting in Div. IIIa

Only Sweden, Denmark and Norway have shares in the TAC. The sum of landings of Swedish and Danish fishermen is below 10 percent of the TAC due to the market situation. Therefore, no sampling is done. On the other hand significant amounts of discard are obtained in some fisheries in the area. Discard rates of whiting and other relevant species will continue to be obtained.

Witch flounder in Div. IIIa

Even though this species should not be sampled according to the DCR, it has been agreed that Denmark will sample this species because of the importance of the landings and the stock as such, is expected to increase in the years to come. Therefore, it is regarded valuable by both Sweden and Denmark to sustain a sampling scheme of the species for possible future assessment. Sampling intensity will be as defined for the North Sea.

Norway Lobster in the Skagerrak

Denmark and Sweden will carry out sampling according to the DCR. It has been agreed that only Sweden will carry out sampling for other biological parameters. The Swedish sampling intensity will compensate for the missing Danish sampling.

Norway Lobster in the Kattegat

Denmark and Sweden will carry out sampling according to the DCR. It has been agreed that only Sweden will carry out sampling for other biological parameters. The Swedish sampling intensity will compensate for the missing Danish sampling.

Hake in Div. IIIa

The sampling scheme for hake in the area is included in the North Sea (IV, VI, VII, IIXa, IIXb) sampling scheme. Denmark will sample hake according to the DCR.

Mackerel in the Northern North Sea

It has been agreed that only Denmark will carry out sampling as the Swedish landings are below the threshold of 5 percent of the total TAC.

Salmon in the Baltic Sea

Samples of Swedish landings in Denmark will be collected on a regular basis in the fishing season (spring, autumn) from both driftnet and long-line fishery. Scales for age determination are sent to Sweden. The landings are regarded by both Sweden and Denmark to be of such value that the stock is sampled according to the extended programme in the DCR. As Danish fishermen the last couple of years have landed quite many salmon in the southern harbors of Sweden, samples of Danish landings in Sweden will be collected on a regular basis in the fishing season (spring, autumn) from both the driftnet and long-line fishery. Scales for age determination are sent to Denmark.

Special agreements have been developed for the following species (see appendices):

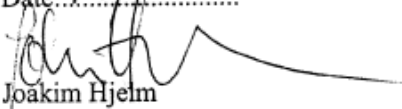
- Pandalus in Div. IIIa (appendix I)
- Herring in Div. IIIa (appendix II)
- Sprat in Div. IIIa (appendix III)
- Herring in Div. IIIb-d (appendix IV)
- Sprat in the Baltic Sea (appendix V)
- Sandeel in Div. IIIa and the North Sea (appendix VI)

Furthermore, it has been agreed that Denmark is carrying out age reading of Norway pout caught by Sweden from research vessel surveys as Denmark has the expertise in age reading of that species.

Signatures:

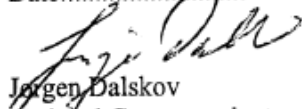
For the Institute of Marine Research

Date: 3/5 07


Joakim Hjelm
Director
Institute for Marine Research

For DIFRES

Date: 3/5-07


Jørgen Dalskov
National Correspondent
Danish Institute for Marine
Research