Danish National Programme for collection of fisheries data for 2006

(Update of the Danish 2002-2006 data collection programme)

by

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Danish National Programme for collection of fisheries data.

1. Introduction.

This document updates the Danish Programme for collection of data in the fisheries sector. The programme has been developed in accordance with the rules laid down in the *"Commission Regulation (EC) No 1581/2004 amending Commission Regulation (EC) N^0 1639/2001 of establishing the Minimum and Extended Community Programmes for the collection of data in the fisheries sector and laying down detailed rules for the application of Council Regulation (EC) N^0 1543/2000"*, hereafter in this programme called the "Data Directive".

The programme will be conducted in close cooperation between:

- **Danish Institute for Fisheries Research**
  Danish Institute for Fisheries Research (DIFRES) is a Public Research Institution which carries out research, investigations and provides advice concerning sustainable exploitation of live marine and fresh water resources. Moreover, processing and improvement of fish products as well as quality assurance in the fish industry are important parts of the research areas of the institution.
- **Danish Directorate of Fisheries**
  Danish Directorate of Fisheries (FD) performs control and authority exercises at the commercial fisheries and the recreational and game fisheries.
- **Danish Research Institute of Food Economics**
  The Danish Research Institute of Food Economics (FOI) is a Public Research Institute. The researchers and academic staff of the Institute have backgrounds and experience in economics, agricultural and resource economics, agronomy, as well as a wide range of statistical methods and applied research tools.

The Danish Institute for Fisheries Research is acting as coordinator for the Danish Programme. A Steering Group has been established with members from all three Institutes involved in the programme. The main objective of the Steering Group is to coordinate of the work under the programme.

Primary data collected under the Danish programme will be stored in the following computerised databases:

- Vessel register. Data on fishing capacity. (FD)
- Logbook database. Data on origin of catches and on effort. (FD)
- Sales notes database. Data on quantities landed and prices. (FD)
- Species composition database. Data on species composition in landings for industrial purposes. (FD)

- Biological database. Data on discards and biological parameters. (DIFRES)
- Economic data. (FOI)

In addition to the above-mentioned databases containing primary data a database, the Danish Fisheries Analyses Database (DFAD) containing information from all databases merged and aggregated by segments is established. This database contains most of the information requested in research projects and in relation to fisheries management.

Biological data will be collected by DIFRES and stored in a database managed by the institute. These data are surrounded by confidentiality and will not be passed on to other persons or authorities without permission.

Economic data will be collected by FOI and stored in a database managed by the institute. These data are surrounded by strict confidentiality and will not in any circumstance be passed on to other persons or authorities. Each year FOI produces an analytic file on the individual level, which includes relevant data for stratification and grouping for statistical purposes. Based on the analytic file a number of statistical files will be produced and made available for external users.

All data collected under the programme are dealt with in confidence. Accesses to the data are limited to authorised staff members from the three institutes and no one outside the institutes has access to the data without permission.

1.1 Co-operation and task sharing between Denmark and other Member States

Collection of information on fishing capacity, fishing effort, economic and landings statistics are carried out entirely on a national basis. Biological information on catches, information collected by research vessels and information on discards are in most cases coordinated internationally and carried out in close cooperation with research institutes in Member States and third countries.

In 2003 DIFRES started an intense co-operation and coordination of the sampling of biological data in the Baltic with Institute of Marine Research in Karlskrona, Sweden. This cooperation is continued in 2004 and in the beginning of 2005 a cooperation agreement with Institute of Marine Research, Lysekil was signed. Same sort of agreement has been agreed with Germany. Same initiatives will be initiated with Poland. Initiatives for further development will be initiated. It is the plan to establish the same kind of co-operation with other North Sea countries.

In the economic field FOI constitutes the Danish representative in the project economic Assessment of European Fisheries organized under the Concerted Actions and Thematic Networks which is committed to develop a common method or standard for evaluation of the economic situation in the Community fisheries.

1.2 National Correspondent

Denmark has assigned the Danish Institute for Fisheries Research as the National Correspondent. Contact person is until further notice:
Fishery Adviser Jørgen Dalskov
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1.3 Appreciation of the level of precision

The information on landings by species, catch areas, fishing effort and fishing capacity will be given on level 3. All information concerning landing figures (tonnes by species) will be given as census data, which 100% coverage as all landings or all fish sold in Denmark is reported to FD. Data on capacity and effort can be given for all Danish fishing vessels.

For the biological and economical information level of precision can not be estimated at this stage as no international common standard on estimation of precision is agreed. At DIFRES a preliminary method to calculate the precision has been developed, but international standard will be welcomed.

2. Module of evaluation of inputs: fishing capacity and fishing effort

2.1 C. Collection of data concerning fishing capacity

Minimum programme:

All Danish fishing vessels with the right to undertake commercial fishery are registered in the Vessel Register of the FD. The Vessels Register is a computerised database and includes among others the following information:

- Vessel type e.g. trawler, seiner
- Vessels age (age of the hull)
- Dimensions of the vessel; GRT, length, width, draught.
- Engine power, type and age.
- Insurance value and –year.

The information in the Vessels Register is registered according to Regulation (EC) N^{o} 2930/1986, N^{o} 2090/1998 and N^{o} 26/2004 and is updated daily.

The information on fishing capacity is merged with other fishery dependent data and stored in the DFAD as described in Section 5.

Data on fishing capacity on an aggregated level by segments as described in Appendix III of the Data Directive can at any time be delivered on a precision level of 3 as all fishing vessels is registered. As there is no lower limit on the size of the fishing vessel for registration in the Vessel Register and all vessels are registered, a 100% coverage of all Danish fishing vessels will be given.

Extended Programme:

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

2.2 D. Collection of data related to fishing effort

Minimum programme:

The base for the regulation concerning the collection of information on the catch origin is the EC-regulations on logbooks, etc. and the implementation of a control-regulation concerning the common fisheries policy and more explicit regulations of information on catches by Member States.

The set of regulations prescribes that all vessels used for commercial fishery are obliged to keep logbooks of the fishery. The only exception from these rules is vessels with a total length less than 10 m. and for fishing trip in agreement with a catch area declaration. A catch area declaration is made for vessels which limit its fishing activities to a single defined area (ICES Sub-division). It should be mentioned that all fishing vessels in Denmark are registered in databases in FD.

All the information is stored in the Logbook database which is a computerised database of the Danish Directorate of Fisheries and includes among others the following information:

- Vessel name, number and captain
- Departure and arrival date and time
- Gear type employed
- Fishing ground, area and square
- Registration of fishing days
- Estimated catch per species once a day at the minimum.

The information in Logbook database is registered according to the provisions of Commission Regulation (EC) No 2807/83 and No 2847/93.

It is possible to estimate the fishing effort, defined as fishing days, for vessels less than 10 m (loa) as sales slips also for these vessels are recorded. Therefore, if a sales slip is recorded for a vessel less than 10 m (loa), a fishing day can be recorded.

The information on fishing effort is merged with other fishery dependent data and stored in the DFAD as described in Section 5.

Data on fishing effort on an aggregated level by segments as described in Appendix V, Appendix VI and Appendix VIII of the Data Directive can at any time be delivered on a precision level of 2 respectively level 1 for passive gears.

Information on fuel consumption will be collected within the data collection programme according to Chapter IV in the Data Directive.

Extended Programme:

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

3. Module of evaluation of catches and landings

3.1 E. Collection of data related to catches and landings

Minimum programme:

According to the legislation information on fish and shellfish sold in Danish harbours has to be reported to the Danish Directorate of Fisheries (FD). The registration and information duty applies to the following persons and parties:

- Storage warehouses, cold storage warehouses, or other establishments receiving fish and shellfish with purpose for sale, storage, sorting, or other liking treatments before the fish is sold to first hand buyers.
- Persons or parties that as a part of their trade buy fish directly from the fishermen for sale purposes on the home-market, export including transistation, for conservation purposes or processing for later sale.
- Persons or parties receiving fish directly from the fishermen in cases where the sale has taken place before the landing of the fish.
- Fishermen selling the catch directly to the consumer, or who lands directly in a foreign country, or export including transistation, or process the fish from own landing.

Therefore, all information on sold fish and shellfish are registered and all these information are stored in the Sales Notes database which is a computerised database and includes among others the following information:

- Vessel number.
- Landing place and buyer.
- Species and size-class.
- Quality and purpose (e.g. human consumption).
- Weight in kilo and value in national currency (exchanged to DKK)

The information in the Sales Notes database is registered according to the provisions of Council Regulation (EC) No 2847/93 and No 104/2000. Conversion factors for raising from gutted weight to live weight is given in annex I.

It should be mentioned that all landings are recorded and there is no derogation for vessels less than 10 m (loa). This means, a 100% coverage for all landings including all other countries flagged vessels landing in Denmark.

The Danish fishery can be divided into two categories: A fishery with landings only for human consumption purposes and the so-called "Industrial fishery", where all the landings are made for reduction purposes (fish meal and oil).

3.1.1 Collecting data on landings designated human consumption.

The above mentioned information in the Sales Notes database provides the background for collecting information of landings statistics made for human consumption landed by Danish fishing vessels.

Information on human consumption landings by Danish fishing vessels landing in Denmark and abroad will be given on a precision level 3. As human consumption species landings include all landings (census data) the precision will be better than required.

3.1.2 Collecting data on landings designated reduction purposes.

For landings made for reduction purposes only the target-species is registered. Therefore, the Sales Notes database does not contain reliable information on by-catches taken by industrial fishing fleet. In order to be able estimate species composition of the industrial landings additional information has to be collected. The method and data used in estimation of landings by species is described in the following.

The objective of the Danish sampling scheme for industrial landings is to collect data needed for estimation of the species composition of landings by statistical rectangle and month.

A number of random sub-samples are taken from the landings. The samples are sorted and weighted by species. The information registered includes e.g.:

- The vessel number.
- Landing harbour and landing date.
- Total landing in kilos.
- Total weight in grams per sample.
- Weight in grams per species.

The samples are collected and processed by FD and data are stored in the Species distribution database which is a computerised database in FD.

In addition to the above-mentioned samples, FD collects a number of samples, which are delivered to DIFRES. These samples are sorted by species and each species is length measured, weighed and selected species are aged.

The species composition of the landings is derived as follows:

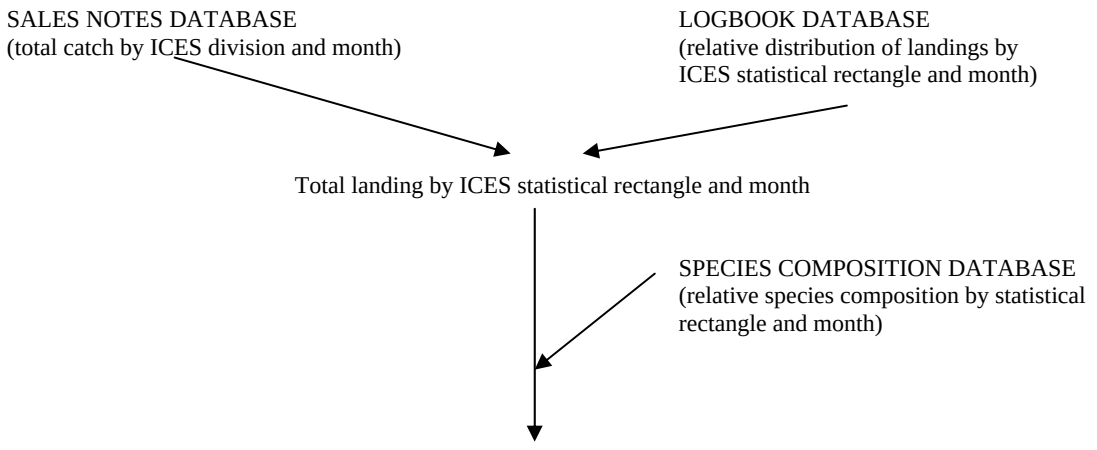
The total landings for reduction purposes by month and area are calculated using the sales note database. The landings are then allocated to statistical rectangle using the relative geographical distribution from the logbook database of landings identified as have been taken for reduction purposes. The output is the total industrial landings by statistical rectangle and month.

The relative species composition by statistical rectangle and month is estimated using the information in the species composition and biological databases. An average composition by rectangle is estimated as the mean of all samples from the rectangle. If more than one sample is taken from the same landing, a mean composition of the landing is calculated and treated as one sample.

After calculation of average composition by rectangle a new average composition is calculated taking into account the species composition in all neighbouring rectangles. Taking the mean species composition of the rectangle and all 8 surrounding rectangles does this.

The total landings by species, statistical rectangle and month are calculated using the estimated species composition and total landings by rectangle and month.

The estimation procedure is illustrated by the flow diagram below.



The information on landings is merged with other fishery dependent data and store in the DFAD as described in Section 5.

Data on landings for the stocks mentioned in Appendix XII of the Data Directive will be given disaggregated as indicated in that Appendix.

The precision of landings of target (and TAC) species in the fisheries for reduction purposes will at least be at level 2 (Lewy 1996, Lewy 1995).

As some of the species listed in Appendix XII of the Data Directive occur as by-catch in landings made for reduction purposes in scarce quantities it is not possible to increase the precision without having disproportionately high resource expenses (Lewy 1996, Lewy 1995). Hence it will not be possible when estimating the by-catch quantities per species to reach a precision level higher than 1.

3.1.3 Collecting data on recreational fishery for salmon in the Baltic

According to the Data Directive chapter 3.E.1.b Denmark must collect data on salmon (mentioned in Appendix XI) caught by recreational fishery in both the Baltic sea and the North sea.

In the North Sea no recreational fishing for salmon takes place.

The recreational fishery for salmon in the Danish waters is mainly a trolling fishery taking place around the island Bornholm, especially to the east and north of Bornholm in ICES Sub-division 25. In recent years catches have also been reported from further west in the Baltic. The troll-fishing season starts in September and ends in the month of May.
In addition to this, a fishery with fixed hook lines set for salmon and gill-nets set for trout by non-professional residents on the island Bornholm takes place. This fishing mainly takes place in late autumn and early winter.

The recreational fishery is partly organized in local anglers associations (both on Bornholm and on the Island Zealand), and boat rental companies in small harbors at the coast of Bornholm. Some fishing by unorganized tourist fishermen from both mainland Denmark and from foreign countries, arranging travel and boat transport by themselves, also takes place. A few times every year fishing competitions are organized with 150 – 200 boats participating.

The catches in the recreational fishery are not officially registered in Denmark. In previous years it was estimated that the total catch was approximately 3000 individuals.

For the fishing taking place in 2006 DIFRES plans to use various sources of information. The total fishing effort (i.e. the number of boat-days) will be estimated by collecting information from local anglers, boat rental companies, the ferry company servicing Bornholm and from results from fishing competitions. From selected anglers information on the average catch-per-unit-effort (CPUE) will be collected, and from this the total catch by troll fishing will be estimated. Previous attempts on collecting information by questionnaires from a larger part of the anglers did not prove to be efficient, as the response was very poor.

The catch of salmon by non-professionals using fixed hook-lines and nets set for trout has previously been very uncertain. For the year 2006 DIFRES will try to gather

information on the effort (number of hooks and nets used) from the local Fisheries Inspectors and on the average CPUE from interviews with selected fishermen. Based on these figures the total catch will be estimated.

3.1.4 Collecting data on recreational fishery for cod

Recreational fishery in Denmark for cod as target species or as bycatch in fishery for other target species is to some extent conducted by non-professional fishermen. The recreational fishery includes both fishing with rods and passive gears and according to Danish law it is illegal for recreational fishermen to sell their catches. A fishing license has to be obtained by the recreational fishermen before conducting any fishery in fresh or marine water.

Angling by rod

The fishery is performed on commercial organized trips with vessels dedicated to the purpose or by individuals fishing from the coastline or from private boats near the shores. A small part of the anglers are organized in local regional recreational fishermen associations under the umbrella of the Danish Sports fishing Society (Dansk Sportsfiskerforbund). These more than 200 associations cover typically marine fishery as well as freshwater fishery. App. 30.000 persons were in 2005 registered in one of those associations. An unknown number of other anglers associations are not connected to the Danish Sports fishing Society and a significant number of the anglers are not member of any association.
The act of law shall apply to fishing with light hand fishing tackle in natural fresh-water systems and in the sea if you have reached the age of 18 and not reached the age of 65. According to the official statistics 152.534 persons hold such a license in 2003.

Recreative fishing by passive gears

All Danes at 12 years at age or more are allowed to fish with 6 passive gears (traps, gillnets or long lines) if they buy a special fishing license for this purpose. According to the official statistics 33.516 persons had a license for recreational fishery with passive gears in 2003.

The main “target” for the recreational fishermen using passive gears is eel, flatfishes and herring, but some fishermen are also fishing for cod. It is known that there are bycatches of cod in especially the fishery for eel- and flatfishes.

Planning of the data collection from anglers in 2006

DIFRES have planned to collect data from the following sources:

- Personal contact to anglers at regional basis
- Contact to local anglers associations
- Vessels dedicated to organized angling trips

The pilot study is planed to be carried out using telephone surveys of random selected individuals having a fishing licence, inquiries to the local recreational fishery associations, inquiries to the organizer of commercial recreational fishing trips and by use of official statistics.

The estimate of catches from non organized anglers, and anglers below 18 years and above 65 years of age has to rely on the assumption that the fishing pattern does not differ from the rest of the recreational fishermen and on an estimate of the number of persons based on the data from the organizations fishermen and official statistics.

Planning of the data collection from the recreational fishery using passive gears in 2006

In order to get the best estimate on the catches of cod in the recreational fishery with passive gears, it is planned to carry the pilot study out in cooperation with the Danish Fisheries Inspection. The Fisheries Inspection have quiet good knowledge in the recreational fishery using passive gears, and are often working in the coastal areas on inspection of the total fisheries, including the recreational fisheries with passive gears.

From data collected by the Fisheries Inspection on number of different types of gears, number of fishingdays, catches and by-catches in numbers, the total catch of cod in this fishery will be estimated.

3.1.5 Danish discard sampling of relevant species and areas.

According to the Data Directive chapter 3.E.1.b Denmark must collect discard data in order to be able to present estimates of discard rates for selected species. Discards will be monitored for the stocks mentioned in Appendix XII of the Data Directive and by type of technique as defined in Appendix III of the Data Directive except for the stocks for which Appendix XII specifies another aggregation rule. The information on discards will be collected according to the programme described in Section H.

Collection of such data has been going on in Denmark already for some years as systematic catch sampling directed towards the estimation of discard rates was initiated in 1995 both in the North Sea, Skagerrak, Kattegat and the Baltic Sea. The sampling has been ongoing since then with 50% financial contribution from EU. Before 1995 only sporadic discard sampling has been carried out.

Annex II gives an overview of the species and areas for which discard estimates is to be made according to Article H section e). The estimate of discard in 2006 from which the sampling intensity in 2006 is calculated is derived from the experienced discard rates and the landings in 2004. Furthermore Annex II gives the number of samples to be taken according to Data Directive Annex XV.

The discard sampling schemes will under the observance of the yearly sampling level given in annex II be organized in a way that sampling efforts are distributed according to the fishing intensities in the different strata. This means a relative large number of landings imply heavy sampling effort and relative smaller number of landings implies less sampling effort. This assures that the biological data are directly applicable to the national landing statistics. As the fishery pattern in the recent years, on many occasions, changes very quickly, DIFRES employs many different information sources, to be able to reorganize the sampling effort and sampling pattern very quickly. Among these different sources are weekly reports from the FD, output from

the FD database, weekly contacts to the industry and information from the logbook database.

All Danish discard sampling follows the rules laid down in national (North Sea and the Skagerrak) or international agreed sampling manuals (the Kattegat and the Baltic Sea). In these documents most relevant aspects of "at sea sampling" is covered (including: selection procedures for selecting fishing trips, description of sub-sampling procedures, recording of data, etc).

Within the overall framework given in annex II, the sampling will be stratified on:

- ICES Division/Sub-division.
- Quarter.
- Discard pattern relevant defined fisheries.

The fisheries will be defined on gear type, mesh size and target species and reflect the discrete discard patterns in the Danish fishery. The number of samples planed in 2006 will be dimensioned according to discard information collected in 2004 but will be subject to running adjustments during 2006 according to the fishery actually realised.

Based on sampling made from 1995 to 2000 it is verified that the discard rates obtained in the Danish gillnet fishery, the fishery using hooks and the small mesh size fishery are insignificant compared to the rest of the fisheries. In total app. 25 different fisheries are identified in the Danish fishery. Taking this into account and in order to maximise the level of certainty of the overall discard estimate the sampling is concentrated to the fisheries shoving significant discard rates: demersal trawl, Nephrops trawl and Danish seine. Therefore, only sporadic discard sampling of the gillnet fishery, the fishery using hooks and the small mesh size fishery will be conducted.

In many cases the observer on board will have the possibility in the spare time between hauls to obtain length distributions for species not defined as mandatory according to Article H section e).

The sampling of commercial vessels will normally be done on board during normal active fishery by observers trained and employed at DIFRES. Only in fisheries where it is verified that no advantages are obtained by sampling on board (e.g. fisheries where no discards are made), in fisheries where the vessels are to small to carry an extra person or where sampling on board for various reasons are impossible to organize will discard sampling be made in harbours during landing. In such cases and when the observers are confident with the skipper and crew, the part of the catch, which normally will be discarded, will be landed separately from the normal landing part of the catch and worked up and recorded. In this case the same information are collected and recorded as if the observer has been on board.

The vessels for monitoring will more or less be randomly selected within a given fishery among a large number of vessels identified in close cooperation with the Danish Fishermen's Organisation. In addition some considerations will be made in order to assure that different vessel sizes and various durations of the fishing trips are covered. There is no authority in Danish law, which give the possibility to enforce the observers' participation on a fishing trip. Therefore, the vessels will not be sampled

randomly among all vessels performing a given fishery but only among the vessels where the skipper beforehand has agreed in having observers on board. It is the objective to include as many different vessels as possible in the sampling scheme. By the involvement of the Danish Fishermen's Organisation in the selection of vessels potential for sampling, some mutual concessions are facilitated allowing the broadest possible basis for the sampling, representing most categories of behaviour among fishermen and assuring not too biased results.

The fishery performed in different areas differs considerably in respect to duration, number of station per trip and handling of the catch. In the North Sea trips are often up to 3 weeks of duration, while trips of 1-2 days duration are common in the Kattegat and the Baltic Sea. Because of differences in the fisheries in the areas different sampling procedures are applied. If possible, all biological information from the catch will be sampled from each station.
Those are:

- Total weight of discard and landing by all species caught.
- Separate length distributions of discard and landings by all relevant species caught. If the retained catch is landing in commercial weight categories separate length frequencies are obtained.
- Otoliths and individual mean weight per cm-length group of selected species.

In addition all relevant vessel, gear and geographical information will be recorded.

If such an extensive sampling is not possible due to long trips, inadequate time between stations to work up the whole catch, only the discard part of the catch will be fully worked up (species distribution, length distribution and otoliths). In these areas traditional harbour sampling will be carried out regularly.

All data recorded in connection with the collection of discard are included in a national central database (see Section 1) holding all biological catch data collected by DIFRES.

Danish discard figures will be raised to total yearly discard by species and fishery by applying the ratio between discard and retained amount in the sampled fishing trips to the total landing. Data will be published.

The programme for collecting data related to annual estimates of discards for the stocks mentioned in Appendix XII of the Data Directive will be set up in order to achieve a precision level of 1 for the estimation of the amount of discards for the specific species.

3.1.5.1 Quality assurance of discard data

The discard data are collected in agreement and in cooperation with the Danish Fishermen's organisation. This assures a continuous and fruitful communication between the industry and the fisheries biologists and facilitates the possibility of a continuous adjustment of the sampling scheme to the actual activity and trends in the industry. At the same time a careful going through the data collected looking at the

premises for the sampling, not the results, assure that the data collected are in agreement with the reality defined as the understanding of the fishery based on discussions between in the fishermen and the biologists.

A very important spin-off from the discard sampling at sea is the opportunity to intensify the communication with the Danish Fishermen's organisations and the individual fisherman providing a natural possibility to explain and overcome the misunderstandings often existing between the fishermen and the fisheries biologists. This has already involved changes toward a more constructive and responsible attitude by the fishermen and the Fishermen's Organisation.

3.1.5.2 Storage of discard data

All Danish catch data sampled during discard sampling in the the North Sea, Skagerrak, Kattegat and the Baltic Sea are included in the international database "FishFrame. This database constitutes the backbone in international discard calculations and is essential for the further development and international cooperation concerning discard.

3.1.6 Appreciation of the level of precision

Information on human consumption landings by Danish fishing vessels landing in Denmark and abroad will be given on a precision level 3.

Information on landings for fish meal and oil production by Danish vessels landing in Denmark and abroad will for the main species be given on a precision level 3 and for the by-catch landings of scarce quantities it will not be possible to estimate these quantities per species to a precision level higher than 1, without having disproportionately high resource expenses.

Estimation of discard precision level will be an integrated part of data handling and compilation in FishFrame as soon as proper guidelines are available. It is expected that the guidelines will be available before 2006 and if so, the level of precision will be calculated on routine basis for discard estimates.

Extended Programme:

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

3.2 F. Collection of data concerning the catches per unit effort and/or effective effort of specific commercial fleets.

Minimum programme:

The collecting of data concerning the catches per unit of effort and/or effective effort of specific commercial fleets will be done following the guidelines in the Minimum Programme, as both the catch and effort data are collected in the National Programme (Section 2.2). Denmark will continue to produce CPUE data, according to the

provision in the Data Directive 1581/2004, for assessment purposes as collection of catch and effort data is carried out for all Danish fishing vessels (see Section 2.2 and 3.1).

Following Danish commercial tuning fleets are produced and used in the stock assessment work:

Cod in the Western Baltic (Sub-division 22-24).

- Danish Gillnetters.
- Danish Trawlers.
- Danish Seiners.

Cod in the Kattegat (Sub-division IIIa South).

- Danish trawlers 70_89 mm mesh size.
- Danish trawlers 105_120 mm mesh size.
- Danish Seiners. Data are provided but not used.

Plaice in the Kattegat (Sub-division IIIa South)

- Danish Gillnetters.
- Danish Trawlers.
- Danish Seiners.

Sole in the Kattegat and the Skagerrrak (Division IIIa)

- Danish trawlers 70_89 mm mesh size.
- Danish trawlers 90_104 mm mesh size.

Sandeel in the North Sea (Sub-area IV)
Norway pout in the North Sea (Sub-area IV)
Pandalus in the North Sea (Sub-area IV)
Pandalus in the Skagerrak (Sub-division IIIa North)
Nephrops in the North Sea (Sub-area IV)
Nephrops in the Skagerrak and Kattegat (Division IIIa)

Extended Programme:

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

3.3 G. Eligibility of the scientific evaluation surveys of stocks

The Danish Institute for Fisheries Research command three research vessels. The R/V DANA which is a stern trawler with a loa of 78 meters. DIFRES uses R/V DANA when conducting the International Bottom Trawl Survey (IBTS), the Baltic International Trawl Survey (BITS), the Acoustic Survey in the Norwegian Sea (ASH) and the Herring Acoustic Survey (HERSUR).

One of the other Danish research vessels R/V HAVFISKEN, a 20 GRT side trawler is used at the BITS survey in the Kattegat and the Western Baltic area.

The smallest of the Danish Research vessels the R/V HAVKATTEN is normally only used in the very coastal areas and is not used within any of the surveys conducted within this framework of this programme.

All member states are obligated to undertake scientific research at sea to evaluate the abundance and distribution of stock independently of the data provided by the commercial fisheries in the case of stocks mentioned in of the Data Directive. The below described surveys are of priority 1 and are thus a part of the minimal program defined in the Data Directive Appendix XIV. Denmark will undertake 5 different surveys in the North Sea, the Skagerrak, the Kattegat and the Baltic Sea.

In 2006 Denmark will as in the two previous years try to organize cooperation with Germany, Ireland, the Netherlands, Sweden and UK on a joined EU participation in the ICES international coordinated survey on the Norwegian Spring Spawning Herring and blue whiting in the Norwegian Sea. It is the intention that the Danish R/V Dana will be used and that the scientific staff onboard the cruise should be a joined staff. Denmark will offer to act as coordinator of the joined EU survey.

In 2005 Denmark agreed in participation on in the Blue whiting survey west of Ireland and staff from Denmark participated on the two vessels. This cooperation and participation will continue in 2006.

The surveys described in this programme are internationally co-ordinated and will remain so when the programme is implemented. The planning and co-ordination of the surveys are done in the ICES working groups connected with the surveys (IBTS Working Group, BITS Working Group, Herring Survey Planning Working Group, and Planning Group on Surveys on Pelagic Fish in the Norwegian Sea).

Minimum programme:

3.3.1 International Bottom Trawl Survey (IBTS)

According to the Data Directive this survey is classified as a Priority 1 survey. The survey is undertaken twice during a year, one in the first quarter (20 days at sea) and during the third quarter (18 days at sea) and is the Danish part of the IBTS. R/V DANA is used when conducting this survey.

The purpose is to estimate abundance of commercial and non-commercial fish species by means of bottom trawling and to collect otoliths of commercial species (cod, haddock, whiting, Norway pout, saithe, herring, sprat, and mackerel) to assess abundance by age, in particular for the recruiting year classes in the North Sea, the Skagerrak and the Kattegat.

The sampling procedure and the level of precision are defined in the Manual for the International Bottom Trawl Surveys. ICES CM 2000/D:07
(http://www.ices.dk/datacentre/datras/NSIBTSmanualRevVIIdraft.pdf)

The survey is ICES co-ordinated and performed in collaboration with research vessels from France, Norway, England, Germany, The Netherlands, Scotland and Sweden. The survey is carried out as a bottom trawl survey deploying a GOV trawl during daylight hours as a standard aboard all research vessels involved. In addition to the trawl-surveys, a Method Isaac Kidd trawl is deployed during night hours to estimate the abundance of fish larvae, in particular herring- and sprat larvae. Hydrographical

data are collected with a CTD. At the first quarter survey two extra days have been added to the survey. These two extra days will be used for further intercalibration with the Swedish R/V ARGOS (started in 2005) in order to secure that same catchability by the trawl used by ARGOS is the same as used by DANA. The results from the intercalibration exercise in 2005 indicate that further effort has to be used.

Data are stored in an international database in ICES and revised before usage in the relevant ICES Working Group.

3.3.2 Baltic International Trawl Survey (BITS)

According to the Data Directive this survey is classified as a Priority 1 survey. The survey is undertaken twice during a year, in the 1st quarter (18 days at sea) and in the 4th quarter (18 days at sea) both with the research vessel R/V DANA, and the smaller research vessel R/V HAVFISKEN undertakes the second part of the BITS in the sub-areas 21-23 during the same periods.

The primary purpose of the part undertaken by R/V DANA is to develop indices for recruitment and stock abundance of the Baltic cod stocks. The second part undertaken by R/V HAVFISKEN provides in addition to cod also abundance indices for flatfish.

The sampling procedure and the level of precision are defined in the Manual for the Baltic International Trawl Surveys. Addendum to ICES CM 2002/G:05 (http://www.ices.dk/datacentre/datras/Manual%20BITS.pdf)

R/V DANA:
The cod population is estimated by means of establishing catch-rates in bottom-trawls in different depths and areas in the ICES subdivisions 24, 25, 26, and 28.
Data on gonadal maturity and weight of individual cod and organs is obtained to establish sex specific maturity ogives, mean weight and condition at age for cod. Hydrographical data are collected with a CTD.

R/V HAVFISKEN:
The species composition and the length distributions of all caught fish are recorded, and samples for ageing are taken of cod, plaice and sole. Hydrographical data are collected with a CTD.

Data are stored in an international database and used by relevant ICES Working Groups.

3.3.3 NS herring acoustic survey in the North Sea, the Skagerrak and the Kattegat

According to the Data Directive this survey is classified as a Priority 1 survey. The survey is undertaken during the 2nd and 3rd quarter and consists of a calibration part (2 seadays) and an acoustic abundance estimate of herring stocks (12 seadays) in the North Sea, the Skagerrak, and the Kattegat.

The purpose is to provide acoustic abundance estimates of herring and sprat in the North Sea (eastern part), the Skagerrak, and the Kattegat.

The sampling procedure and the level of precision are defined in the Manual for the Herring Hydro Acoustic Surveys ICES CM 1994/H:3.

The acoustic abundance estimate is done in collaboration between Denmark, Norway, Scotland, Germany, and The Netherlands. The herring are length measured and weighted aboard and sent to the laboratory in Charlottenlund for further examinations such as sex, maturity, age and spawningtype.

Hydrographical data are collected using a CTD.

Data are stored in a database and revised before usage in the relevant ICES Working Group.

3.3.4 Acoustic Survey on Pelagic Fish in the Norwegian Sea

The survey is planed to take place in May-June in cooperation with Norway, The Faroe Islands, Iceland and Russia. The total survey time is undertaken on 30 days and consists of a calibration part (1-2 sea days) and an acoustic abundance estimate of herring stocks (28 sea days) inclusive the time used to steam from homeport to the survey area and back to homeport again.

The purpose is to provide acoustic abundance estimates of herring and blue whiting in the Norwegian Sea.

The survey will be conducted as specified by the Herring Survey Planning Working Group, Planning Group on Surveys on Pelagic Fish in the Norwegian Sea (ICES, PGNAPES)

Hydrographical data are collected using a CTD and plankton using a WP2 sampler.

Data are stored in a database and revised before usage in the relevant ICES Working Group.

As Denmark has offered to act as coordinator, contacts will be made to other member states (Germany, Ireland, the Netherlands, Sweden and UK) which have quota shares of more than 5 % on the EU Norwegian Spring Spawning quota. In order to share the costs of running the survey a budget have been distributed to Germany, Ireland, the Netherlands, Sweden and UK at 23. May 2005. Positive response has been given for all member states, but one has not replied yet. If not **all** involved member states participate in running the survey and pay its share of the costs, Denmark will ask for derogation for running the survey.

3.3.5 Blue whiting survey west of Ireland.

The survey is planed to take place in March – April and it is planed that the Dutch R/V Tridens and the Irish R/V Celtic Explorer will conduct the survey. The survey is

conducted in cooperation with Norway and Russia. The total survey time is 18 days for R/V Tridens and 20 days for R/V Celtic explorer

The purpose is to provide acoustic abundance estimates of blue whiting at the spawning grounds.

The survey will be conducted as specified by the Herring Survey Planning Working Group, Planning Group on Surveys on Pelagic Fish in the Norwegian Sea (ICES, PGNAPES).

Data are stored in a database and revised before usage in the relevant ICES Working Group.

Denmark has agreed in participation in this survey and staff from Denmark will participate on the two vessels.

3.3.6 Herring Acoustic Survey.

The survey is planed to take place in September- October and is conducted with the German R/V Solea. The survey is conducted in cooperation with Germany. The total survey time is around 20 days. The purpose is to provide acoustic abundance estimates of Herring and Sprat in the Baltic Sea.

The results of the survey will be sent to the Herring Assessment Working Group for the Area South of 62'N (ICES HAWG) and Baltic Fisheries Assessment Working Group (ICES WGBFAS).

Denmark has agreed in participation in this survey and staff from Denmark will participate on the vessels

3.3.7 Other surveys.

Danish research vessels have never participated in other of the priority 1 surveys listed in Appendix XIV in Data Directive and therefore derogation for participating in these surveys is requested.

Extended Programme:

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

3.3.8 Coordination and quality assurance.

The IBTS, BITS, Herring acoustic in the North Sea, the Skagerrak and the Kattegat, the Acoustic survey in the Norwegian Sea as well as the blue whiting survey west of Ireland are all international coordinated surveys, which endeavour a high level of consistency in sampling procedure among participants. As a part of this, exchange of

staff onboard research vessels between countries will be conducted. It is believed that this is an important contribution to the quality assurance of the survey data.

3.4 H. Biological sampling of catches: composition by age and by length and I. Other biological sampling

The Data Directive gives the instructions that biological sampling must be performed in order to evaluate the composition in length and where appropriate in age of landings for all stocks specified in Appendix XV and Appendix XII respectively in the Data Directive and for some species also other biological samplings as specified in Appendix XVI.

Biological samplings must be performed if the Danish share of the EU TAC or when total landings of a certain species, listed in Appendix XV of the Data Directive exceeds the thresholds defined in the Data Directive; Chapter III, Section H (1) (d) 1) and 2). The Appendix XV in the Data Directive also defines the level of sampling required, which in principle is proportional to the landings. Annex III and annex VI shows the landings made in Denmark by Danish flagged vessels and by other Member States flagged vessels in 2004. Information on the Danish and the total EC TAC is given for 2005. It should be noticed that at the time of the preparation of this proposal for data sampling in 2006, the potential landings of the years for which sampling is planned (TAC's) have not yet been defined. Therefore, some of the encountered problems are listed below:

- Potential landings to be sampled of the years for which sampling is planned (TAC's) have not been defined yet.
- Also the amount of landings by foreign flagged vessels landed in Denmark cannot be predicted.
- Reducing sampling targets when the TAC decreases cannot always be done while aiming simultaneously for maintaining the required level of precision defined in Chapter III, section B (4) of the Regulation. Similarly increasing sampling targets when the TAC increases, does not always result in a significant improvement of the level of precision.

The actual sampling scheme, to be implemented in 2006 may therefore deviate from the proposed scheme, depending on the changes in quota in 2006 compared to 2005.

The purpose of the biological sampling of catches is to estimate the number of fish and their mean weight at age of the landings made in Danish harbours. The sampling will be performed by segments and the data will ultimately together with data on landings made by other nations flagged fishing vessels give the basic input data when analysing the historical exploitation of the stocks and further be the foundation when carrying out assessments on the stocks.

All biological sampling data will be stored in a central database at DIFRES. Data security is ensured by common standards. Data entry is conducted at the two laboratories in Charlottenlund and in Hirtshals to a closed network. To maintain data integrity and performance of the database a data manager will maintain the database.

The tasks of the data manager are:

- Merge data sampled on research vessel to the main base.
- Compact and tune the database at regular intervals
- Perform backup of data
- Act as help-deck for user of the base
- Maintain look-up tables
- Make error checking and consistency tests on the database
- Maintain a security system, that grant users and outside partners access to data at an appropriate level

A new Microsoft XP system based on SQL server DFU-database was implemented in 2004 will be used also in 2006. Still further development of the data base takes place in order to conduct a better quality assurance of the collected and analysed data and samples.

3.5.1 The Danish standard sampling scheme

The Danish standard sampling scheme will be carried out on a quarterly or monthly basis by ICES Division, Sub-division or statistical rectangle depending on the requirements. All sampling- and measurement procedures are described in internal manual. For each stock the intended sampling level is given in Annex V and VIII as outlined in the Data Directive, for landings made both by Danish and other Members States flagged vessels which land in Denmark.

The Danish sampling schemes for sampling biological information from the landings can be divided into three sampling systems:

- **Harbour sampling of landings of demersal species for human consumption purposes.**
  Sampling of demersal species is mostly carried out in the harbours. For standard sampling a defined number of kilos of fish are collected from each size grade of the landings. These fish are length measured, weighted and aged.
- **Harbour sampling of landings of pelagic species for human consumption purposes.**
  Sampling of pelagic species is mostly carried out in the harbours. Standard samples are non-size grated samples and for these samples a defined minimum number of fish is collected of the landings. These fish are length measured, weighted and aged.
- **Harbour sampling of landings for reduction purposes.**
  The industrial fishery is divided into four types of fisheries; the sandeel fishery, the sprat fishery, the Norway pout fishery and the blue whiting fishery. For each of these fisheries a number of samples are collected accordingly with Appendix XV in the Data Directive, a minimum number of fish are length measured, weighted and aged.

For all three categories samples will be collected randomly and the number of samples will reflect the fishery activity. For each stock the intended sampling level is given for Danish landings in Denmark in Annex V. For other EC member states landings in Denmark the sampling level is given in Annex VIII. The sampling level is based on

the average landings for 2002-2004 and as outlined in the Data Directive for landings made by both Danish - and other Member States flagged vessels landing in Denmark.

Sampling length, weight and age from discards is carried out by scientific observers onboard commercial fishing vessels.

The ageing is performed according to the standardised method. The aggregated data are stored in the Biological database (Babelfish) at DIFRES.

Concerning the 'Other biological sampling' outlined in the Data Directive Chapter III I. (1) the parameters in Sections (1) (a) (i) and (iii) will be sampled during surveys on all species as the samples of the commercial landings either are in such condition that histological measures are impossible or that the sampling is performed on gutted fish. However, samples of herring and sprat are subject to the parameters mentioned in Sections 1 (a) (i) and (iii) as an improvement of the estimation of spawning stock biomass and recruitment to the spawning stock is of striking importance for the assessment of these stocks.

The 'Other biological sampling' outlined in the Data Directive Chapter III I. (1) (a) (ii) will be fully completed for the relevant stocks.

With reference to Annex III and V, a description of the stocks that will be a part of the Danish sampling programme is given below. Each stock is described by the following structure: The Danish landings made in Denmark and the Danish TAC is given and the fishery for the stock is shortly described. If the biological sampling of catches deviates from the standard described above, the sampling is described. If any other biological analysis is conducted, this is described.

Minimum programme:

Introduction:

The Danish sampling scheme for 2006 is based on the average Danish catches for 2002-2004. Therefore, the total sampling for 2006 can be increased or decreased depending on the Danish quotas for 2006 and the actual landings in 2006 both from Danish and other EC member states flagged vessels landings in Denmark. It should also be stressed that for some species, especially species for which recovery plans are implemented, such as for cod, the sampling levels need to be increased and sampled with a higher intensity than prescribed in the Data Directive. For these species Denmark will follow a "rule of thumb" in order to achieve an adequate sampling for assessment purposes.

Biological information of the landings is collected by use of marked sampling made by staff employed at DIFRES. The sampling is a stratified random sub-sampling of all landings. The sampling scheme is stratified on area, quarter, species and commercial sorting. All assessment relevant species are sampled according to the Minimum Programme. All relevant information necessary for estimating number of individuals landed by age group and mean weight by age group is recorded. Furthermore, stratified maturity ogives are estimated based on internationally agreed maturity stages definitions.

The sampling intensity level is within the framework of the MP adjusted to the actual fishing activity level (in terms of landing) in each stratum. The adjustments are based on monthly interviews of first-hand buyers of fish and real time information from the central logbook database. All strata are sampled except strata from which only marginal landing has been recorded.

3.5.2 Pelagic fishery

3.5.2.1 Herring fishery

Denmark is having herring fishery in the Baltic, the Kattegat, the Skagerrak, the North Sea and in the Norwegian Sea. The fishery is carried out by trawlers and purse seiners, the latter is not permitted in the Kattegat and the Baltic. Most common mesh size is 32 mm but in the North Sea and the Norwegian Sea larger mesh sizes are used.

Standard sampling procedure as described in 3.5.1 will be used when sampling and analysing these herring samples.

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

Sex and maturity stage is obtained from the individuals selected for ageing in each sample. The sex and maturity is determined following an international 8 scale maturity key.

Herring in ICES division IIIb-d

The Danish share of the total EU quota in that area is app. 4 percent and therefore not obliges Denmark to sample this stock. As herring also is taken as by-catch in other fisheries, Denmark would like to continue the sampling in order to secure the quality of the international data collection for the different herring stocks.

The herring fishery takes place in all seasons, however, more intensively during periods when the cod fishery is low. The catches are only landed for human consumption purposes. By-catches of herring takes place in the sprat fishery and these catches are used for reduction purposes. The fleet is mainly smaller trawlers only part-time engaged in the herring fishery. In addition a few medium sized herring-trawlers participate in the fishery.

Planned sampling intensity is given in annex V.

Herring in ICES division IIIa

The average Danish human consumption landings corresponding to app. 48 % of the EC share TAC. Furthermore, by-catches of herring taken in the small meshed fishery are landed. Therefore, Denmark is obliged to sample the herring landings from fishery in that area.

The human consumption fishery is mainly occurring during June to October and the small meshed fishery on the spring and autumn.

The purpose of the other biological sampling is to estimate on a yearly basis the distribution of sex, maturity per age and stock and in addition, to determine the spawningtype of the individual herring.

The herring population in this area is composed of 3 stocks, and the sampling is performed on the following categories (Article 11.1.a.ii):
a) Autumn spawners from the North Sea.
b) Spring spawners from the Western Baltic.
c) Winter spawners both from the English Channel and local populations.
Assessments are done on these spawning types. The spawning type is determined from the otoliths following an intern manual (Mosegaard, H, L.A. Worsøe, and M. Lindberg 1999)

Herring is also taken as by-catch in the small meshed fishery. These landings are counted against a by-catch ceiling. The Danish share of the total by-catch ceiling is set as 20,642 tonnes. The actual landings in the past years have been substantial lower. The landings will be sampled as described in section 3.5.1.

Planned sampling intensity is given in annex V.

Herring in the North Sea and Eastern Channel

The Danish share of the total EU quota share of the TAC is app. 22 %. This applies only for the directed herring fishery. A by-catch ceiling for herring for 2005 is set at 50,000 tonnes and the mean landings for the period 2002-2004 have been 16,008 tonnes. This obliges Denmark to sample this part of the stock.

The fishery is mainly occurring during October to May. By-catches of herring taken in the small meshed fishery for sandeel, sprat and Norway pout is estimated in 2004 to app. 13,600 tonnes.

The purpose of the other biological sampling is to estimate on a yearly basis the distribution of sex, maturity per age and stock and in addition, to determine the spawningtype of the individual herring.

The herring population in this area is composed of 3 stocks, and the sampling is performed on the following categories (Article 11.1.a.ii):
d) Autumn spawners from the North Sea.
e) Spring spawners from the Western Baltic.
f) Winter spawners both from the English Channel and local populations.
Assessments are done on these spawning types. The spawning type is determined from the otoliths following an intern manual (Mosegaard, H, L.A. Worsøe, and M. Lindberg 1999)

Planned sampling intensity is given in annex V.

Herring in the Norwegian Sea (Norwegian Spring Spawners (NSS))

The Danish EU quota share is 35 %, which obliging Denmark to sample this stock.

Atlanto-Scandian herring is landed during spring only for human consumption purposes. As a major part of Danish landings of NSS herring is taking place in Norway, Iceland or at the Faroes. Again for 2006 an arrangement concerning sampling of these landings will tried to be set up with the landing countries, as a supplement to the standard sampling in Denmark.

Planned sampling intensity is given in annex V.

3.5.2.2 Mackerel fishery

Denmark is having mackerel fishery in the Kattegat, the Skagerrak, the North Sea and in Faroese waters. Mackerel is landed during autumn and winter only for human consumption purposes. The fishery is undertaken by trawlers and purse seiners all using gear with a mesh-size larger than 32 mm.

Standard sampling procedure as described in 3.5.1 will be used when sampling and analysing these herring samples.

The Danish share of the total EC mackerel quota is between 5-6 percent. The Danish fishery in some areas, such as Div. IIIa and the North Sea, constitutes a substantial part of the total EC landings. Therefore, Denmark will sample this stock in these areas.

This stock is subject to other biological analysis such as weight, sex and maturity staging.

Planned sampling intensity is given in annex V.

3.5.2.3 Salmon fishery

The Danish salmon fishery is combined of a longline fishery from November to March and a driftnet fishery in the remaining months of the year except from a few summer-months, where there is no fishing for salmon. However, the majority of the fishing is taking place during September, October, and January. Approximately 20 vessels participate in the salmon fishery and none of these are full-time engaged in fishing.

The Danish share of the total EC quota is 93,512 individuals corresponding to 19 % obliging Denmark to sample this stock.

The sampling of salmon is following the standard sampling scheme. In practise the sampling is done from 1 auction-hall in Bornholm where all landings are made. The sampling is size-class stratified and scales are taken from all size-classes. The scales are analysed at DIFRES.

The purpose of the other biological sampling is to estimate on a yearly basis the distribution of wild and reared salmon in the total landings of salmon.

In addition, the scales of wild and reared salmon will be compared in order to determine whether this feature is a method for routine distinction between the two types of salmon.

It is acknowledged by DIFRES that it for other Baltic countries could be valuable to use DNA micro satellite-analysis to separate wild salmon from reared salmon. However DIFRES will not use genetically sampling in Denmark.

This stock is not subject to other biological analysis.

Planned sampling intensity is given in annex V.

3.5.3 Demersal fishery

3.5.3.1 Cod fishery

The fishery of cod is taking place in the Baltic, the Kattegat, the Skagerrak and the North Sea. The fishery is carried out by trawlers and gill netters. The mesh size used by the trawlers depends on fishing areas, as the mesh size regulation differ from area to area. In the Baltic a Bacoma exit window of 110 mm mesh size have to be used and a 90 mm mesh in Div. IIIa. Most common mesh size used in cod fishery in the North Sea is 120 mm. Gill netters are using different mesh sizes but most common is between 130 mm and 180 mm.

Standard sampling procedure as described in 3.5.1 will be used when sampling and analysing these cod samples.

The sampling of cod follows the standard sampling scheme, however it is performed by the size-class stratification defined in EC standards from 1-5. At least one sample will be collected by size-grade per season. In cases where cod appears as by-catch in the small meshed fishery all individuals are sampled, length measured and aged. Data are treated as for the samples of cod taken from landings designated for human consumption.

The purpose of the other biological sampling is to estimate on a yearly basis the distribution of sex, maturity and per age and it is only possible to do during R/V surveys as all cod landed is gutted.

Cod in the Baltic

The cod population in the Baltic is divided into two different stocks: The Eastern stock (Sub-divisions 25-32) and a Western stock (Sub-divisions 22-24). The sampling and data revision is made for each stock.

The Danish share of the total EC quota is 44 % for the Western stock and 15 % for the Eastern stock. These shares are obliging Denmark to sample this stock.

Also the fishery is divided into East and West of the Baltic. East of Bornholm the fishery is mostly performed during March to May and is directed towards the spawning cod population. A summer stop for the Eastern area is in force in the period May to mid September. The fishery is closed in the Western area from March to May. Almost all types and sizes of vessels are engaged in the fishery and the gears used are pelagic trawl, bottom trawl, gillnet and to a lesser extent hooks. The fishery is exclusively directed towards cod and only by-catches of flounder may occur during February and March. West of Bornholm the fishery is taking place during most of the year, except for the summer-stop, depending on the TAC's. The fishery is a combined fishery with cod as a main target-species with a considerable by-catch of flatfish. It is primarily smaller vessels that participate in the fishery and the gears used are bottom trawl, Danish seine, gillnet, trapnet and hooks. However, larger foreign vessels do participate in shorter periods.

As the Eastern cod stock is managed under a recovery regime, the sampling level needs to be increased in order to collect adequate data for stock assessment purposes. Therefore, if possible, it is the intensions of sampling at a higher level than prescribed in the Data Directive. The intension is to double the sampling for the Eastern area.

If cod appears as by-catch in samples collected from other fisheries all individuals are sampled, length measured and aged. Data are treated as for the samples of cod taken from landings designated for human consumption.

This stock is subject to other biological analysis such as weight, sex and maturity staging.

Planned sampling intensity is given in annex V.

Cod in the Kattegat and the Skagerrak

The Danish share of the quota is respectively 83 % and 62 % for the Skagerrak and the Kattegat. This obliges Denmark to sample these two stocks.

The cod fishery is taking place during all year and a major part of the cod fishery is done by trawlers and to a lesser extent by gillnets vessels (mainly during the winter). All gears used have a mesh size larger than 90 mm.

As these stocks are managed under a recovery regime, the sampling level needs to be increased in order to collect adequate data for stock assessment purposes. Therefore, if possible, it is the intensions of sampling at a higher level than prescribed in the Data Directive. The intension is to sample at the EP level, even though this obligation first get into force from 2006 an onwards.

This stock is subject to other biological analysis such as weight, sex and maturity staging.

Planned sampling intensity is given in annex V.

Cod in the North Sea

The Danish share of the EC quota is 20 % which is obliging Denmark to sample this stock.

The cod fishery is carried out during all seasons. The landings of cod are made by demersal trawler, gill netters and Danish seiners. All towed gears used are having a mesh size larger than 120 mm. The gill netters are using 130-180 mm mesh size.

As this cod stock is managed under a recovery regime, the sampling level needs to be increased in order to collect adequate data for stock assessment purposes. Therefore, if possible, it is the intensions of sampling at a higher level than prescribed in the Data Directive. The intension is to sample at the EP level, even though this obligation first get into force from 2006 an onwards.

In cases where cod appears as by-catch in the small meshed fishery all individuals are sampled, length measured and aged. Data are treated as for the samples of cod taken from landings designated for human consumption.

This stock is subject to other biological analysis such as weight, sex and maturity staging.

Planned sampling intensity is given in annex V.

3.5.3.2 Plaice fishery

The Danish plaice fishery is mainly taking place in Kattegat, the Skagerrak and the North Sea. A fishery is also conducted in the Baltic. The fishery is carried out by trawlers, Danish seines, beam trawlers and gill netters. The mesh size used by the trawlers depends on fishing areas, as the mesh size regulation differ from area to area.

In the Baltic and the Kattegat and the Skagerrak mesh size used is 90 mm by the trawlers and Danish seiners. Most common mesh size used in plaice fishery in the North Sea is 120 mm. Gill netters are using different mesh sizes but most common is between 120mm and 150 mm.

Standard sampling procedure as described in 3.5.1 will be used when sampling and analysing these plaice samples.

The sampling of plaice follows the standard sampling scheme, however it is performed by the size-class stratification defined in EC standards from 1-4. At least one sample will be collected by size-grade per season.

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

Plaice in the Baltic

Denmark is obliged to sample this stock as the Danish quota share is 72 % of the EC share.

The fishery most common gears used are trawl and gill net. The mesh sizes used are trawl with 110 mm Bacoma exit windows and in gill nets 110-140.

This stock is subject to other biological analysis such as weight, sex and maturity staging.

Planned sampling intensity is given in annex V.

Plaice in the Skagerrak and the Kattegat

The Danish share of the quotas in the Skagerrak and the Kattegat are respectively 79% and 89 % respectively of the total EU quota which obliges Denmark to sample these stocks.

Plaice is caught both as a target species for smaller trawlers, Danish seiners and gillnet vessels, and as by-catches in the nephrops and cod fishery. The catches are taken all year round and only for human consumption purposes. The gears used in the plaice fishery and in other demersal human consumption fishery are trawls with mesh-sizes at least 90 mm. Gill netters are using 120-150 mm mesh size.

This stock is subject to other biological analysis such as weight, sex and maturity staging.

Planned sampling intensity is given in annex V.

Plaice in the North Sea

Denmark is obliged to sample this stock as the Danish share of the quota is 20%.

The fishery for plaice is carried out by a variety of vessel types: trawlers, gill netters, Danish seiners and beam-trawlers. All gears are having mesh-sizes larger than 120 mm. Plaice is landed all year round.

This stock is subject to other biological analysis such as weight, sex and maturity staging.

Planned sampling intensity is given in annex V.

3.5.3.3 Nephrops fishery

The Danish Nephrops fisheries takes place in the Kattegat, the Skagerrak and in the central and northern North Sea and is conducted by trawlers using different mesh sizes depending fishing area.

Standard sampling procedure as described in 3.5.1 will be used when sampling and analysing these nephrops samples. The sampling of nephrops follows the standard sampling scheme. No size grade is used for this species.

The purpose of the other biological sampling is to estimate on a yearly basis the distribution of nephrops by length group per sex.

Nephrops in the Skagerrak and the Kattegat (Div. IIIa)

Denmark is obliged to sample nephrops caught in Division IIIa as the Danish share of the quota is 74 %.

This stock is subject to other biological analysis such as weight, sex and maturity staging.

Planned sampling intensity is given in annex V.

Nephrops in the North Sea

The Danish share of the EC quota is app. 9 % which obliging Denmark to sample this stock.

Nephrops is landed all year round and only for human consumption purposes. Trawlers fishing south of 56^0N are using gears with a mesh-size of 80 mm or larger. The fishery in the northern North Sea is using 120 mm mesh size.

This stock is subject to other biological analysis such as weight, sex and maturity staging.

Planned sampling intensity is given in annex V.

3.5.3.4 Shrimps fishery

Denmark is having a shrimp fishery in the North Sea and in the Skagerrak. The limited number of vessels participating in this fishery is using trawls with mesh sizes of 35-40 mm.

Standard sampling procedure as described in 3.5.1 will be used when sampling and analysing these shrimp's samples. The sampling of shrimps follows the standard sampling scheme. No size grade is used for this species.

The purpose of the other biological sampling is to estimate on a yearly basis the distribution of shrimps by length group per sex.

Deep-sea shrimp in the Skagerrak

The Danish share of the EC quota is 65 % which obliging Denmark to sample this stock.

Shrimps (Pandalus) is landed all year round and only for human consumption purposes. Trawlers using gear with a mesh-size larger than 35 mm undertakes the fishery.

This stock is subject to other biological analysis such as weight and sex.

Planned sampling intensity is given in annex V.

Deep-sea shrimp in the North Sea

The Danish share of the EC quota is 76 %, which obliging Denmark to sample this stock. The total Danish landing is significant lower than the quota and the sampling will be adjusted according to the actual landings in 2006.

Pandalus is landed all year round and only for human consumption purposes. Trawlers using gear with a mesh-size larger than 35 mm undertakes the fishery.

This stock is subject to other biological analysis such as weight and sex.

Planned sampling intensity is given in annex V.

3.5.3.5 Other demersal fisheries

Sole fisheries

In Denmark a directed sole fishery using gill netters takes place in the North Sea and in the Kattegat. Most of the sole landings from the fishery in Div. IIIa is taken as by-catches in other fisheries, especially the Nephrops fishery.

The sampling of sole follows the standard sampling scheme, however it is performed by the size-class stratification defined in EC standards from 1-3. At least one sample will be collected by size-grade during the high season.

Sole in the Kattegat and the Skagerrak (Div. IIIa)
Denmark is having 84 % of the total TAC in Division IIIa and therefore obliging Denmark to sample this stock.

Sole is caught as a target species for smaller trawlers and gillnet vessels. The bulk of catches are taken during the 2nd to 4rd quarter and only for human consumption purposes. The gears used have mesh-sizes larger than 90 mm.

This stock is subject to other biological analysis such as weight, sex and maturity staging.

Planned sampling intensity is given in annex V.

Sole in the North Sea

The Danish share of the total EC share of the sole TAC is 3.8 % and this is less than the threshold of 5 %. Despite Denmark is not obliged to sample this stock, it will be attempted as the size distribution of sole in the Danish landings differ from the landings taken by beam trawlers.

Sole is caught as a target species for smaller trawlers and gillnet vessels. The catches are taken mostly during the 2nd quarter and only for human consumption purposes. The gears used have mesh-sizes larger than 70 mm.

This stock is not subject to other biological analysis.

Planned sampling intensity is given in annex V.

Haddock fisheries in the North Sea and the Skagerrak

Haddock is landed all year round and only for human consumption purposes by trawlers using gear with a mesh-size larger than 120 mm from fishery in the North Sea and 90 mm from fishery in the Skagerrak. Most of the landings are taken as by-catch in other fisheries.

The Danish share of the EC quota in the Skagerrak is 84 % and the Danish share of the North Sea quota is app. 7 % which obliges Denmark to sample this stock.

The sampling of sole follows the standard sampling scheme, however it is performed by the size-class stratification defined in EC standards from 1-4. At least one sample will be collected by size-grade during the high season.

Haddock is landed all year round and only for human consumption purposes. Trawlers using gear with a mesh-size larger than 90 mm undertakes the fishery.

In cases where haddock appears as by-catch in the small meshed fishery all individuals sampled will be length measured and aged

This stock is subject to other biological analysis such as weight, sex and maturity staging.

Planned sampling intensity is given in annex V.

Hake fisheries in the North Sea and the Skagerrak

The Danish hake is caught as by-catch in the fishery from gill-net vessels using mesh sizes larger than 120 mm and as by-catch in human consumption trawl fishery. Hake is mostly landed during summer.

The combined Danish quota share for hake landings from the North Sea and the Skagerrak is 74 % obliging Denmark to sample this stock. The total Danish landing is significant lower than the quota and the sampling will be adjusted according to the actual landings in 2006.

The sampling of hake follows the standard sampling scheme, however it is performed by the size-class stratification defined in EC standards from 1-4. At least one sample will be collected from each size grade.

This stock is not subject to other biological analysis.

Planned sampling intensity is given in annex V.

Saithe fisheries in the North Sea and the Skagerrak

Most of the Danish saithe landings are caught as by-catch in demersal human consumption trawl fisheries using mesh sizes 120 mm or larger. In the Skagerrak the legal minimum mesh size is 90 mm. Saithe is landed all year round only for human consumption purposes.

The sampling of saithe follows the standard sampling scheme, however it is performed by the size-class stratification defined in EC standards from 1-4. At least one sample per size grade will be collected.

This stock is not subject to other biological analysis.

Planned sampling intensity is given in annex V.

Anglerfish fisheries in the North Sea and the Skagerrak

Anglerfish caught in the ICES area IV are landed exclusively for human consumption purposes and most of the landings are taken as by-catch in the entire Danish demersal trawl fishery.

The Danish quota share is 18 % which obliges Denmark to sample this stock.

The sampling of anglerfish follows the standard sampling scheme, however it is performed by the size-class stratification defined in EC standards from 1-4. At least one sample per size-grade will be collected.

This stock is not subject to other biological analysis.

Planned sampling intensity is given in annex V.

Turbot fisheries in the North Sea

The Danish turbot landings are mainly taken during spring and summer by gill-net vessels using mesh-sizes larger than 200 mm. Turbot is also taken as by-catch in the fishery from vessels using either gill-net vessels or bottom trawls.

Denmark is having a share of 16 % of the total EC quota of turbot which obliges Denmark to sample this stock. It should be mentioned that for the turbot TAC, brill is included.

The sampling of turbot follows the standard sampling scheme, however it is performed by the size-class stratification defined in EC standards from 1-4. At least one sample per size-grade will be collected.

This stock is not subject to other biological analysis.

Planned sampling intensity is given in annex V.

Lemon sole fisheries in the North Sea

The fishery for lemon sole is carried out by a variety of vessel types: trawlers, gill netters, Danish seiners and beam-trawlers. All landings are by-catch landings and landed all year round.

The Danish quota share is 15 % which obliges Denmark to sample this stock.

The sampling of lemon sole follows the standard sampling scheme, however it is performed by the size-class stratification defined in EC standards from 1-2. At least one sample per size-grade will be collected.

This stock is not subject to other biological analysis.

Planned sampling intensity is given in annex V.

3.5.4 Small meshed fishery (Fishery for reduction purposes)

3.5.4.1 Sandeel fishery

The Danish sandeel fishery is mainly taking place in the ICES area IV and are landed exclusively for reduction purposes and the fishery is undertaken by trawler using bottom-trawls with mesh-sizes less than 16 mm. Sandeels are landed from early spring to late summer. A limited fishery also takes place in the Skagerrak.

As this fishery is mainly a Danish fishery, Denmark is having a quota share of 94 % of the EC quota share, which obliges Denmark to sample this stock.

Standard sampling procedure as described in 3.5.1.

This stock is not subject to other biological analysis.

Planned sampling intensity is given in annex V.

3.5.4.2 Sprat fishery

The Danish fishery for sprat takes place in the Baltic, the Kattegat, the Skagerrak and in the central and southern North Sea and is conducted by trawlers using different mesh sizes of 16 mm. All the landings are used for reduction (meal and oil production).

Standard sampling procedure as described in 3.5.1. No size grade is used for this species.

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

Sex and maturity stage is obtained from the individuals selected for ageing in each sample. The sex and maturity is determined following an international key (F. E. Alekseejev & E. I. Alekseejeva 1996).

Sprat fishery in the Baltic

The Danish sprat fishery in ICES area IIIb-d is mainly landed for reduction purposes. The catches are mainly taken during the period from November to March.

Denmark is having a share of 10 % of the total EC quota of sprat which obliges Denmark to sample this stock.

Planned sampling intensity is given in annex V.

Sprat fishery in Division IIIa

Small to medium sized trawlers using mesh sizes less than 32 mm participate in the sprat fishery. The landings are exclusively used for reduction purposes. Most catches are made during the 2nd and 4th quarter.

The Danish quota share of the total EC quota is 72% and is obliging Denmark to sample this stock.

Planned sampling intensity is given in annex V.

Sprat fishery in the North Sea

Trawlers using mesh-size less than 32 mm conducts this fishery and all landings of sprat are landed for reduction purposes during the period from August to March.

The Danish quota share of the total EC quota is 89 and is obliging Denmark to sample this stock.

Planned sampling intensity is given in annex V.

3.5.4.3 Blue whiting fishery

Blue whiting is landed all year round exclusively for reduction purposes. In the directed fishery for blue whiting trawl with a mesh size of 40 mm is used. Blue whiting is also caught as by-catch in the Norway pout fishery and in this fishery trawls with a mesh-size less than 32 mm are used. In 2004 and 2005 Danish landings from the areas west of the North Sea has increased.

The Danish quota share of the total EC shares depends on management areas and is the following:

- Zone: IIa (EC waters), IV (EC waters) 97 %
- Zone: IV (Norwegian waters) 95 %

- Zone: V, VI, VII, XII and XIV 2 %
- Zone: VIIIa,b,d,e 0 %
- Zone: VIIIc, IX, X, CECAF 34.1.1 (EC waters) 0 %
- Zone: I, II (international waters) 0 %
- Zone: VIb (Faroese waters) 44 %

These quota shares are obliging Denmark to sample this stock.

Standard sampling procedure as described in 3.5.1.

This stock is not subject to other biological analysis.

Planned sampling intensity is given in annex V.

3.5.4.4 Norway pout fishery

Norway pout fishery is mainly taking place during autumn and winter. All the landings are made by demersal trawlers using 16-18 mm mesh size. All landings are used for reduction purposes.

The fishery is mainly taking place in the northern North Sea. A limited fishery also takes place in the Skagerrak. The Danish quota share for the combined area is 99 % which obliges Denmark to sample this stock.

Standard sampling procedure as described in 3.5.1.

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

Planned sampling intensity is given in annex V.

3.5.4.5 Horse mackerel fishery

Most of the Danish catches of horse mackerel are taken as by-catch in the small meshed fishery which is carried out mainly by large trawlers during winter and landed for reduction purposes.

The Danish quota share for the North Sea is 68 % but as the catches in that area is taken as by-catches, the quota has not been taken in previous years. The quota in other areas (IIa, V, VI, VII, VIII and IX) is 9 %. These quota shares are obliging Denmark to sample this stock.

The purpose is to estimate the number of fish and their mean weight at age of horse mackerel from ICES area IV landed in Denmark. However, a target-oriented sampling is not possible as horse mackerel only appears as by-catch in landings for reduction purposes.

This stock is not subject to other biological analysis.

Planned sampling intensity is given in annex V.

Extended Programme:

No data collection according to the provisions in the Data Directive Chapter H. Biological sampling of catches: composition by age and by length, and in Chapter I. Other biological samplings will be carried out within the framework of the extended programme.

3.6 Other EC-members states landing in Denmark.

Sampling of landings in Danish harbours by other EC-members will be conducted by Denmark. The sampling principles and frequency will be as for national landings. An overview of estimates of foreign average landings for 2002-2004 is given in annex VI, VII and VIII.

4. Module of evaluation of the economic situation of the sector

4.1 J. Collection of economic data by groups of vessels

The Danish programme for collection of economic data by groups of vessels 2006 is a continuation of the programme implemented over the previous years.

4.1.1 Data sources

The Danish programme for section J covering the information for the Community Programme, as defined in appendix XVII and XVIII, will be completed by two sources of data. The first being register data from the administrative and statistical registers of the Danish Directorate of Fisheries (FD) and secondly by sample statistics compiled at the Danish Food and Resource Economics Institute (FOI).

The administrative and statistical registers in FD are the basic source to information about the Danish fishery. The registers relevant to the collection of economic information for groups of vessels are: the Register of Fishing Vessels, the Register of Fishermen/Vessel Owners, the Sales Note Register and the Logbook Register. These registers are fully comprehensive in the sense that all fishery related activities are registered for all individuals, which means that statistical analysis based on the registers can cover all activities in the fishery and on the first-hand market for fish, when that is required (e.g. the official catch statistics).

For economic data like cost and earnings, which are not subject to administrative control by the authorities there is no need to build a comprehensive register. Instead it is more cost efficient to use a statistical sample. FOI obtains each year an extract from the FD registers containing information on all active vessels for the year before. This extract is used to analyse and stratify the population of fishing units before the sample for the year is drawn.

4.1.2 Stratifying the population

The population comprises all commercial fishermen and fishing firms with a yearly sale of fish above a fixed minimum measured as SCV (see below). The threshold value, which is updated every year proportional to changes in the price of fish, was EUR 30,161 in 2004. The aggregated value of the neglected small-scale fishery is less than 2% of the total fishery, whereupon the population in the statistics covers more 98% of the total output in the Danish fishery.

Before drawing the sample the population is stratified according to vessel segment, economic size, and region. The stratification by economic size is based on the total Standard Catch Value (SCV) for the vessel (fishing unit), which is the weighted sum of the production of that vessel, where the catch of each species (live weight quantities) has been weighted by the average live weight price of that species. The population is divided into 11 economic size groups.

From the year 2001 the categorisation of the population by vessel segments has been according to the length groups and type of fishing technique stipulated in appendix III of Regulation (EC) No 1639/2001. For national purposes the length group 12 to 24 metres has been divided into 3 subgroups. The total number of segments used for categorising the Danish fishery is then 25, which means that the resulting stratification matrix has 25*11 cells.

Basic segmentation of vessels in the Danish fishing fleet 2004 into 25 groups (min. programme)

Fishing technique	< 12m	12-14.9m	15-17.9m	18-23.9m	24-39.9m	>= 40m	All vessels
Fixed net/traps	63						63
Gill netters	249	65	32	21			367
Trawlers *	26	136	102	107	* 117	* 34	522
Purse seiners						9	9
Danish seiners		15	21	33			69
Beam trawlers					8		8
Polyvalent	56	40	9	5	5		115
Shrimpers							26
Mussel dredgers							61
All vessel categories	394	256	164	166	130	43	1,240

Note: Shrimpers and Musseldredgers are not divided among length groups.
* Trawlers 24-39.9m and trawlers >=40m are split up into two groups (industrial fishery and other fishery).

4.1.3 Selection of the sample

In a stratified random sampling the precision of the estimate for the population depends on the allocation of the sample on the strata. The optimal allocation is reached when the size of the sample in a stratum is proportional with the dispersion of the variable in that stratum. This means that the bigger fraction should be selected from the strata of big size firms.

The process of selecting the sample for the account statistics is initiated by calculating the optimal selection fraction when estimating total SCV for the economic size

groups. Then the selection percentages are set for the column total (all vessel segments) and the number of units to be drawn in each cell to give the best possible fit for total SCV for each vessel segment is calculated.

The number of fishing firms to be drawn in each cell is then randomly selected among the firms available for selection. In 2004 the population numbered 1,243 fishing units, but only 407 of these units were available for selection as it is voluntary to participate in the statistics. 309 units were selected for the sample in 2004. The selection cannot be considered a genuine random selection, when a part of the stratum is not open for selection. But it gives a far better sample than it would, having selected a sample from the total population and maybe due to voluntarily participation only getting a respond from a fraction of the sample.

Even though participating in the sampling programmes is voluntary, this applies only to the situation before the sample is drawn. After the sample has been drawn, the accountants must report the account for those of their clients, who have been selected for that year. Every year before the sample is drawn, each accountant signs a contract with the institute in which their clients available for selection that year are listed. Nevertheless due to specific reasons (death, accident, retirement, or excessive delay by the accountant), it is necessary to find substitutes for about 4% of the selected accounts. The substitutes are of course chosen to match the categorisation criteria of the cancelled accounts.

The 11 economic size groups are used to fine tune the sample selection process. Subsequent only 5 groups are used in the weighting procedure and in the final statistics. The table below shows the number of accounts selected, but here aggregated from vessel segments to length groups.

Population and sample by length groups and economic size class 2004

		---------- Yearly landings measured as SCV, EUR 1000----------					
Vessel- Length groups		30.1- 70.3	70.4- 160.8	160.9- 301.6	301.7- 603.2	603.3 and More	All vessels
Vessels less	Number in population	249	133	7	5	-	394
than 12 metre	Number in sample	33	23	4	1	-	61
Vessels	Number in population	33	130	81	12	-	256
12 to 14,9 metre	Number in sample	4	28	14	4	-	50
Vessels	Number in population	3	22	96	43	-	164
15 to 17,9 metre	Number in sample	-	5	24	15	-	44
Vessels	Number in population	-	16	48	81	21	166
18 to 23,9 metre	Number in sample	-	-	13	29	11	53
Vessels	Number in population	-	1	7	43	79	130
24 to 39,9 metre	Number in sample	-	-	2	18	35	54
Vessels	Number in population	-	-	-	3	40	43
over 40 metre	Number in sample	-	-	-	1	22	23
Special fisheries	Number in population	1	2	41	37	6	87
	Number in sample	-	-	8	14	2	24
All length groups	Number in population	286	304	280	224	146	1,240
	Number in sample	37	56	65	82	69	309
	Sample size	13%	18%	23%	37%	47%	25%

4.1.4 Statistical calculation, weighing the sample

Based on the population database it is relatively straightforward to calculate the total SCV as well as the average SCV per vessel for each cell in the stratification matrix. These results are used as restrictions in a quadratic goal-programming model when calculating the statistical weight for each individual account in the sample.

4.1.5 Data in the Account statistics for Fishery

In order to ensure an adequate data quality the institute does not rely on a simple questionnaire. The coherent structure of economic data makes it necessary to be able to validate all variables for an individual economic agent both in detail and consistently combined with other variables. The best way to do that is by setting up a balanced account. Therefore FOI has constructed a harmonized accounting form for fishery, which ensures that the data is broken down to meet the requirements of the Account Statistic for Fishery as well as the specifications in appendix XVII and XVIII of Regulation (EC) No 1639/2001.

The reported accounts are entered into a database, where the data in each individual account is thoroughly tested for a vast number of properties and relevant comparisons. Any inconsistence disclosed by the test programme has to be addressed in collaboration with the reporting accountant and solved before the account is approved for statistical use.

The economic information collected and processed for account statistics forms together with the extract from the FD registers the basis for reporting data on the economic situation for the vessel groups.

4.1.6 Data for basic economic evaluation

Minimum Programme

1. Statistics based on register data:

- Vessel data. The physical data for the vessels are verified according to the FD register of fishing vessels, that is the Number in population, gross tonnage (GT), engine power (kW), and age of vessel.

- Effort. Vessel activity measured as days at sea according to the FD register of logbooks.

- Prices. Quarterly data on prices will be prepared using statistical files produced by FD based on the sales note register.

2. Sample statistics:

- Income / turnover: Value of production by species.

- Production costs: Labour costs, fuel, repair and maintenance, other operational costs.

- Fixed costs: Depreciation calculated individually by a fixed percentage for each type of fishery asset based on expected lifetime.

- Financial position: Own capital / borrowed capital.

- Invested capital: Replacement value of fishery assets at the beginning of the year. Insured values could also be included, but must be considered second best to the book value (replacement value).

- Employment: Calculated number of employed (part time / full time).

4.1.7 Supplementary data for improving the economic evaluation

Extended programme

Some of the entries in appendix XVIII of the Commission Regulation may call for specific pilot studies in order to access the possibilities to fulfil the requirements. For instance regional differentiation of costs by ICES subdivisions is not easily accomplished when many vessels have fishing trips in several subdivisions.

Another area where it may be necessary to carry out a more elaborate distinction is in the detailed disaggregation of vessels (appendix IV), where calculations based on number of days performing a specific type of fishing technique may be implemented. The type of fishing technique is not fully identical with the vessel type based grouping in fleet segments, though there may be a high degree of correlation between fleet segment and use of gear type.

1. Statistics based on register data:

- Prices. Monthly data on prices prepared using statistical files produced by FD based on the sales note register.

- Production. Nominal catch in tonnes per species. Seasonal (monthly) data and by stock (ICES area) information could possible be prepared using the statistical files from FD.

2. Sample statistics:

- Production. Nominal catch in tonnes per species. Seasonal (monthly) data and by stock (ICES area) data is not considered to be comprehensive for the account forms. But the register-based statistics could complement the account statistics in this respect.

- Income/revenue/turnover. Subsidies separated from other income from fishery.

- Production costs. Further break down of operational costs into subgroups.

- Invested capital. Break down into type of fishery assets, for instance vessel (hull), engines and winches, electronic equipment, fishing gear, sheds/gear house, trucks or vans etc.

- Effort. The data for vessel activity are verified according to the FD register of logbooks. That is the number of days at sea and use of gear for each vessel.

- Employment: Separately calculated for the owner, partners, hired skippers and crew.

4.1.8 Time schedule for collecting and processing of economic data

The yearly routine for producing the statistics for evaluation of the economic situation of the fishery is scheduled at completing the data by the end of October.

Schedule of the process for collecting and processing of economic data

January/February	Preparing revisions for improving the statistic Meeting in Working Group with economic consultants from the Fishermen's Organisation and Fishery accountants Make ready the spreadsheet template for the year
February/March	Extracts from FD's register data are delivered Construction of the population file for the year Combining population with catalogue of firms available for selection Stratifying and selection of sample Updating/revising instructions for accounting forms for reporting
April	Submitting contracts to accountants including a list of clients selected for the years statistic and clients available for selection of substitutes. Preparing spreadsheet with template of the accounting form including data for last years end balance for repeated accounting firms
May/June	Make ready the database test system Deadline for reporting accounts is June 30th
July/August	Arranging and testing 315 accounts individually for approval
September	Calculation of weights to produce the statistics Building of the SAS-files for analysis Producing statistical tables for Account Statistics and the AER report
October	Writing and publishing the Account Statistics for Fishery Publishing spreadsheets on the homepage Reporting economic data to the Commission.
November/December	Preparing/analysing data to the publication Economic Situation of the Danish Fishery

4.1.9 Submission of data

All information required in the minimum programme is specified in the FOI accounting forms for fishery. In possible co-operation with other Member States all statistical information will be aggregated to the harmonized variables as specified in the appendix to the Commission Regulation. Data will for each group of vessels (fleet segments) be prepared as totals and average per vessel.

4.2. K. Collection of data concerning the processing industry.

The aim for the pilot study was to examine the possibilities for collecting and processing of data for the processing industry. The pilot study has provided the foundation for collection of yearly data that makes it possible to evaluate the economic situation in the processing industry as a whole, as well as for special sub branches of the sector compiled at different species and degree of processing. The results and conclusions from the pilot study have been forwarded to the Commission in October 2003.

Project description - Collection of data concerning the Danish fish processing industry.

1. Examination and investigation of the existing collection of data by Statistics Denmark, the Directorate of Fisheries, and other relevant Authorities.
2. Examine the need for collection of complementary data.
3. On the basis of the investigations, if it's possible and there is a need for it, work out a plan for collecting more data on the processing industry in Denmark.
4. Collection, evaluation and adaptation of complementary data.
5. Evaluation and reporting to the Commission.

Flowchart of study phases

	2002	2003	2003	2004	2004	2005	2005	2006
Pilot study investigating method and strategy for data collection	X							
Examining of existing data		X						
Collection and processing of existing data			X					
Investigation for collection of complementary data				X				
Collection and test of data					X			
Collection and processing of yearly data series						X		
Test and evaluation of data							X	
Reporting to the Commission								X

4.2.1 Data sources

In this investigation data from Statistics Denmark's Industrial Commodity-, Account- and Raw Materiel Statistics will be used. The purpose of this study is to investigate data from these statistics, and find out if they can provide the needed data to comply with the demands, that are listed in the Commission regulation (EC) No 1639/2001 of 25 July 2001 appendix XIX.

This investigation will include data from NACE groups

NACE 15.20.10 – Fish processing and preservation
NACE 15.20.20 – Smoking, curing and salting of fish etc.
NACE 15.20.30 – Fish meal factories

4.2.2 Further development of collection of processing industry data

The data from the Industrial Commodity Statistics have been examined to disclose the possibility to define homogenous sub branches in the sense of input of raw material and output of commodities from the existing branches in the Danish fish processing industry (NACE 15.20.10-30). The purpose of creating these new sub branches of enterprises is to provide yearly time series data of the processing industry, which reflect the physical and economic data from the primary sector.

FOI has examined the composition of commodities from each enterprise in the processing industry for the years 2000 until 2004. This investigation has provided the background for dividing the enterprises into 13 sub branches on the basis of the enterprise's commodity production (Table 4.2). The first criteria for the division of the sub branches is the species that the enterprise processes and secondly the degree of processing. From these 13 sub branches it will probably be possible to evaluate the supply of raw materiel going into the processing industry from the Danish market and from abroad. The 13 sub branches also reflect the most important species in the Danish primary sector, and if there is a change in the supply of raw material, it will probably reflect on these groups. The 13 sub branches will probably also reflect the social and the economic impact, on the processing industry of measures taken on behalf of the common fisheries policy.

The analysis of the Industrial Commodity Statistics for 2002 represent 74 Kind of Activity Units with a total sales of commodities of approximately EUR 1.4 billion, which covers 98 % of the total sales of commodities in the Account Statistics, which covers all enterprises in the Danish fish processing industry.

For the present the analysis of the "purity" of the processing industry suggest, that the "purity" is very high, which means that most, more than 90 %, of the commodities, which contain fish or fish products are produced in the branches defined by NACE 15.20.10-30.

On the basis of the new 13 sub branches the data from the Industrial Commodity-, Account- and Raw Materiel Statistics will be distributed as shown in Table 4.2. From the previous investigations FOI expect, that the existing data provided by Statistics Denmark will cover most of the needed data to comply with the demands listed in Commission regulation (EC) No 1639/2001 of 25 July 2001 appendix XIX.

The on going investigations of the 13 sub branches will focus on the need for collection of complementary data. When the existing data is collected it will be examined if there is a need for collection of complementary data. As an example it will be disclosed if there is a need for a larger sample of enterprises to cover the Raw Material Statistics. At present only enterprises with more than 50 employees are covered in the Raw Material Statistics.

The data on volume for raw materiel is not yet available, but data can be calculated from the Commodity Sales Statistics. FOI are investigating other methods of collecting this information, as an example it will be disclosed, if it is possible to get the information through the questionnaire already presented to the enterprises in the processing industry by Statistics Denmark or directly from the company accounts. FOI will have to conduct further investigation on how to collected the needed data to

comply with the demands listed in Commission regulation (EC) No 1639/2001 of 25 July 2001 appendix XIX.

Enterprises with less than 10 full time employees are not included in the Industrial Commodity Statistics. In cooperation with the industrial organisation in Denmark FOI will have to investigate the commodity composition for these enterprises and place them in the sub branches every year. The enterprises with less than 10 full time employees produce approximately 2 percent of the total production of commodities in the fish processing industry.

If there is a need for complementary data, FOI will work out a plan in collaboration with Statistics Denmark to collect and process the needed data.

4.2.3. Collection, test and processing of yearly data series.

When data is collected to comply with the demands listed in Commission regulation (EC) No 1639/2001 of 25 July 2001, appendix XIX, FOI will test the data.

One of the things that will be investigated is how the enterprises are placed in the new sub branches from 2001 until 2003. Hopefully the sub branches will be robust over the years. If the sub branches are robust, the analysis of time series will give a much more precise picture on how the Danish fish processing industry are doing, and how the industry are effected by changes in demands and supply. If possible FOI will also look at the impact, including the social and the economic impact, on the processing industry of measures taken on behalf of the common fisheries policy.

FOI will also look into if the possibility to divide the Danish fish processing industry on size groups. The size groups refer to employment in terms of full-time equivalent persons. The most frequently used categories are 0-9, 10-19, 20-99 and 100+ employed persons. The size groups will help to describe the structure of the fish processing industry and how the common fisheries policy affects the industry in terms of large and small enterprises.

One of the things that have been investigated is on which regional level data will be available. In the extended program the geographical region level is 3 (nomenclature of territorial units for statistical purposes, NUTS 3), but this will not be possible for the 13 sub branches, because the population is too small, that there will be problems referring to confidentiality of the data given by the industry. Another problem is that the Danish regions are merging from 11 regions (“Amter”), which for the time being is identical with nomenclature of territorial units for statistical purposes, NUTS 3, into 5 new regions in 2007.

4.2.4. Evaluation and reporting to the Commission.

When the data is tested and has found its final form, FOI will in collaboration with Statistics Denmark work out a plan for delivery of yearly data.

Data from the year 2004 will hopefully be the first year of the data series of the processing industry, where all the needed data are included.

Data will also be placed in the Danish Fisheries Analysis Database (DFAD).

FOI will evaluate the processed data series and work out the final report to the Commission.

4.2.5. Data for the basic economic evaluation

Minimum programme

- **Raw material (volume)** (Data is not yet available)

The data on volume for raw materiel is not yet available, but data can be calculated from the Commodity Sales Statistics. The Institute are investigating other methods of collecting this information, as an example it will be disclosed, if it is possible to get the information through the questionnaire already presented to the enterprises in the processing industry by Statistics Denmark or directly from the company accounts.

- **Prices / product** (Data is available)

Price per product and total income per product is calculated from the Industrial Commodity Statistics. Every single product is specified by the key in Combined Nomenclature. For all products the amount sold is given in tonnes and the corresponding value in 1,000 DKK.

- **Income** (Data is available)
- **Production costs** (Data is available)
- **Fixed costs** (Data is available)
- **Financial position** (Data is available)
- **Investment** (Data is available)
- **Employment** (Data is available)

The collection of data on: Income, production costs, fixed costs, financial position, investment and employment is collected from the Accounts Statistics.

In the process of collecting data concerning the Danish fish processing industry there have been problems referring to confidentiality of the data given by the industry, because the sector is very small. Data on the 13 sub branches will not be distributed on regional level and some of the sub branches have been merged to avoid this problem.

- **Capacity utilisation** (Data is not available)

Capacity utilisation is not estimated for the Danish fish processing industry at present. For the time being there is no meaningful way of measuring capacity utilisation in the Danish fish processing industry. Denmark suggests that this parameter is removed from section K.

Precision level

- **Account Statistics.**

Data for the Account Statistics is collected from various kinds of sources and combined in such a way that a complete set of accounting items is computed for each business enterprise and its component units (establishments) in the survey population. The precision level is 3.

- **Industrial Commodity Statistics**

Data for the Industrial Commodity Statistics is collected from the enterprises (questionnaire) covering approximately 98 percent of the commodities produced in the fish processing industry. The precision level is 3.

4.2.6. Supplementary data for improving the economic evaluation

Extended programme
Denmark has no extended program for 2006.

A description of the 13 new sub branches in the Danish fish processing industry is given in annex IX

5. Danish Fisheries Analyses Database (DFAD)

As mentioned in Section 1 all data collected according to the provisions concerning logbooks, sales notes and registration of fishing vessels and the primary data collected under the Danish programme will all be stored in the following computerised databases:

- Vessel register. Data on fishing capacity. (FD)
- Logbook database. Data on origin of catches and on effort. (FD)
- Sales notes database. Data on quantities landed and prices. (FD)
- Species composition database. Data on species composition in landings for industrial purposes. (FD)
- Biological database. Data on discards and biological parameters. (DIFRES)
- Economic data. (FOI)

In order, for the three involved institutes, to use the same primary data on capacity, effort, and geographical distribution of the origin of the landings a common database will be produced every year, the Danish Fisheries Analyses Database (DFAD). This database is a database where data from the register on Danish fishing vessels, data from the Danish logbooks and the catch area declarations database together with data from the Danish sales notes database are merged. It is therefore possible to gain the possibility of categorise each landing in one fleet segment, in one fishery etc. This database contains most of the information requested in research projects and in relation to fisheries management. The DFAD is quarterly and yearly updated.

The design and development of the database is made in a co-operation between the three above mentioned institutes.

6. International coordination and cooperation.

Denmark has for a number of years been the key-player in international coordination and cooperation of the data collection in the Baltic Sea. This cooperation has been

further developed and will continue. Within the ICES Planning Group for Commercial Catch, Discard and Biological Sampling (PGCCDBS) Denmark has been very active as well in carrying out the joint EU Acoustic Survey in the Norwegian Sea. Denmark will actively participate in most of the international planning, cooperation and coordination group meeting held in 2006.

Denmark has made agreements with Sweden and Germany on collection of biological sampling of landings. The agreement with Sweden is attached as annex X and Germany as annex XI.

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9. Annexes

Annex I. Conversion factors from gutted weight to live weight.

GUTTED, WITH HEAD:

COD	1.18
HADDOCK	1.18
WHITING	1.18
HAKE	1.18
LING	1.18
SAITHE	1.18
POLLACK	1.18
PLAICE	1.05
SOLE	1.05
EUROPEAN FLOUNDER	1.05
DAB	1.05
TURBOT	1.05
BRILL	1.05
LEMON SOLE	1.05
WITCH FLOUNDER	1.05
ATLANTIC HALIBUT	1.05
PORBEAGLE	1.33
PICKED DOGFISH	1.33
SALMON	1.10

GUTTED, WITHOUT HEAD:

COD	1.60
MONK	2.72

TAIL:

NORWAY LOBSTER	3.33

Annex II. Calculation of Danish discard sampling effort by species and area. Sampling frequency as specified in 1639/2001 and 1581/2004.

				Beforehand estimates			Sampling frequency rules				Sampling frequency		
Species	Area (*)	DK landings in DK in 2004 (tonnes)	Estimated discard in 2006 (tonnes)	Discard rates (weight)	Discard rates. (numbers)	Yearly discard sampling required (Y/N)	Length measurement	Sampling Age readings	Number of individuals length measured pr. sample	Number of fish aged pr. sample	Number of length samples to be sampled	Number of samples to be aged	Number of fish to be aged
Anglerfish	IV, VIId	1,735	0	<10%	<20%	N	1:200	1:200	25	25			
Atlanto-Scandian Herring	II, V (landed in DK)	11,276	0	<10%	<20%	N	1:1000	1:1000	50	25			
Atlanto-Scandian Herring	IIa V (landed in non EU)	10,961	0	<10%	<20%	N	1:1000	1:1000	50	25			
Blue whiting	IIIaN	5,456	0	<10%	<20%	N	1:1000	1:1000	50	50			
Blue whiting	IIa, IV, VIId	55,995	0	<10%	<20%	N	1:1000	1:1000	50	50			
Blue whiting	I-IX, XII, XIV	4,817	0	<10%	<20%	N	1:1000	1:1000	50	25			
Brill (*1)	IV, VIId	66	5	<10%	<20%	N	1:200	1:200	25	25			
Cod	IIIaN	3,009	451	>10%	>20%	Y	1:100	1:100	50	25	5	5	113
Cod	IIIaS	839	185	>10%	>20%	Y	1:100	1:100	50	50	2	2	92
Cod	IIIb-d	19,860	2383	>10%	>20%	Y	1:200	1:200	50	25	12	12	298
Cod	IV, VIId	5,760	691	>10%	>20%	Y	1:200	1:200	50	25	3	3	86
Haddock	IIIaN	1,077	151	>10%	>20%	Y	1:100	1:100	50	50	2	2	75
Haddock	IV, VIId	2,031	406	>10%	>20%	Y	1:200	1:200	50	25	2	2	51
Hake	IIIaN, IV	384	35	<10%	<20%	N	1:100	1:100	50	50			
Herring	IIIaS	6,433	129	<10%	<20%	N	1:1000	1:1000	100	100			
Herring	IIIaN	18,085	543	<10%	<20%	N	1:1000	1:1000	100	100			
Herring	IIIb-c	1,482	30	<10%	<20%	N	1:1000	1:1000	100	25			
Herring	IIId	6,713	336	<10%	<20%	N	1:1000	1:1000	100	50			
Herring	IV, VIId	69,933	3497	<10%	<20%	N	1:1000	1:1000	50	25			
Horse mackerel	IIa, IV, VIId	10,755	538	<10%	<20%	N	1:1000	1:1000	100	25			
Horse mackerel	IIa, V, VI, VII, VIII, IX	11,157	558	<10%	<20%	N	1:1000	1:1000	50	25			
Lemon sole (*2)	IV, VIId	1,045	84	<10%	<20%	N	1:200	1:200	25	25			
Mackerel	IIIaN	104	1	<10%	<20%	N	1:500	1:500	100	100			
Mackerel	IV, VIId	17,752	178	<10%	<20%	N	1:1000	1:1000	50	25			
Norway lobster	IIIaS (Funcional unit)	1,360	571	>10%	>20%	Y	1:100		200	0	6	0	0
Norway lobster	IIIaN (Funcional unit)	1,587	603	>10%	>20%	Y	1:100		200	0	6	0	0
Norway lobster	IV, (Funcional unit)	2,144	322	>10%	<20%	Y	1:50		400	0	6	0	0
Norway pout	IIIaN	102	0	<10%	<20%	N	1:1000	1:1000	50	50			
Norway pout	IIa, IV	11,249	0	<10%	<20%	N	1:2000	1:2000	50	50			
Plaice	IIIaS	1,397	349	>10%	>20%	Y	1:100	1:100	50	50	3	3	175
Plaice	IIIaN	5,730	1547	>10%	>20%	Y	1:100	1:100	50	50	15	15	774
Plaice	IIIb-d	1,356	285	>10%	>20%	Y	1:100	1:100	50	50	3	3	142
Plaice	IIa, IV	11,061	885	<10%	>20%	Y	1:500	1:500	50	25	2	2	44
Saithe	IIIaN	3,119	1248	>10%	>20%	Y	1:100	1:100	50	50	12	12	624
Saithe	IV, VIId	4,666	933	>10%	<20%	Y	1:200	1:200	50	25	5	5	117
Salmon (in numbers)	IIIb-d	78,534	0	<10%	<20%	N	1:100	1:100	50	50			
Sandeel	IIIaN	10,988	0	<10%	<20%	N	1:1000	1:1000	50	50			
Sandeel	IV	287,743	0	<10%	<20%	N	1:2000	1:2000	50	50			
Shrimp (Pandalid)	IIIaN	2,471	0	<10%	<20%	N	1:100		400	0			
Shrimp (Pandalid)	IV	788	0	<10%	<20%	N	1:500		100	0			
Sole	IIIaS	248	60	>10%	>20%	Y	1:50	1:50	100	100	1	1	119
Sole	IIIaN	109	3	<10%	>20%	Y	1:50	1:50	50	50	0	0	3
Sole	IV	435	22	<10%	<20%	N	1:200	1:200	50	25			
Sprat	IIIaS	19,521	0	<10%	<20%	N	1:1000	1:1000	100	50			
Sprat	IIIaN	4,630	0	<10%	<20%	N	1:1000	1:1000	100	50			
Sprat	IIIb-d	42,885	0	<10%	<20%	N	1:2000	1:2000	100	50			
Turbot (*1)	IV, VIId	464	32	<10%	<20%	N	1:200	1:200	25	25			
Whiting	IV, VIId	0	0	>10%	>20%	Y	1:200	1:200	50	25	0	0	0

(*) According to Commission Regulation (EC) No 1581/2004 (Appendix XV -section H)
(*1) The TAC for brill are included in the common TAC for turbot and brill.
(*2) The TAC for witch flounder are included in the common TAC for lemon sole and witch flounder.

Annex III. Danish landings made in Danish harbours in 2002, 2003 and 2004. (for calculation of average landings for annex IV)

Species	Area (*)	DK landings in DK in 2002 (tonnes)	DK landings in DK in 2003 (tonnes)	DK landings in DK in 2004 (tonnes)
Anglerfish	IV, VIId	1,497	1,597	1,735
Atlanto-Scandian Herring	IIa, V, (landed in DK)	6,625	8,081	11,276
Atlanto-Scandian Herring	IIa, V (landed in NW)	18,986	6,064	10,961
Blue whiting	IIIaN	10,292	7,667	5,456
Blue whiting	IV, VIId	16,272	23,570	55,995
Blue whiting	I-IX, XII, XIV	3,078	11,890	4,817
Brill (*1)	IV, VIId	48	51	66
Cod	IIIaN	5,511	3,054	3,009
Cod	IIIaS	1,751	1,441	839
Cod	IIIb-c	20,904	21,413	19,860
Cod	IIId			
Cod	IV, VIId	8,658	4,516	5,760
Haddock	IIIaN	3,352	1,435	1,077
Haddock	IV, VIId	5,096	2,947	2,031
Hake	IIIaN	398	293	384
Herring	IIIaS	7,631	8,112	6,433
Herring	IIIaN	24,190	24,265	18,085
Herring	IIIb-c	6,375	2,438	1,482
Herring	IIId	11,824	5,231	6,713
Herring	IV, VIId	42,234	55,420	69,933
Horse mackerel	IV, VIId	907	3,041	10,755
Horse mackerel	IIa, V, VI, VII, VIII, IX	9,374	10,499	11,157
Lemon sole (*2)	IV, VIId	1,666	954	1,045
Mackerel	IIIaN	899	1,254	104
Mackerel	IV, VIId	18,812	17,151	17,752
Norway lobster	IIIaS (Funcional unit)	1,223	1,328	1,360
Norway lobster	IIIaN (Funcional unit)	2,051	1,414	1,587
Norway lobster	IV, (Funcional unit)	2,127	2,042	2,144
Norway pout	IIIaN	2,568	3,240	102
Norway pout	IV	69,160	12,414	11,249
Plaice	IIIaS	1,803	2,037	1,397
Plaice	IIIaN	6,461	4,847	5,730
Plaice	IIIb-d	2,148	1,661	1,356
Plaice	IV	11,668	12,665	11,061
Saithe	IIIaN	2,447	3,109	3,119
Saithe	IV, VIId	2,993	3,231	4,666
Salmon (in numbers)	IIIb-d	76,122	102,293	78,534
Sandeel	IIIaN	27,822	8,127	10,988
Sandeel	IV	623,511	274,096	287,743
Shrimp (Pandalid)	IIIaN	1,702	2,215	2,471
Shrimp	IV	1,530	1,576	788
Sole	IIIaS	359	194	248
Sole	IIIaN	177	77	109
Sole	IV	580	495	435
Sprat	IIIaS	22,260	24,297	19,521
Sprat	IIIaN	3,268	2,379	4,630
Sprat	IIIb-d	41,485	37,499	42,885
Sprat	IV, VIId	164,308	193,768	204,258
Turbot (*1)	IV, VIId	753	436	464

(*) According to Commission Regulation (EC) No 1581/2004 (Appendix XV -section H)

(*1) The TAC for brill are included in the common TAC for turbot and brill.

(*2) The TAC for witch flounder are included in the common TAC for lemon sole and witch flounder.

Annex IV. Estimation of Danish sampling effort by species and area based on Danish landings made in Danish harbours.

Species	Area (*)	Total EU TAC in 2005	Danish quota in 2005	Danish quota in %	DK landings in DK in 2002-2004 (tonnes) Avrg.
Anglerfish	IV, VIId	12,114	2,185	18.0	1,610
Atlanto-Scandian Herring	II, V (landed in DK)	78,541	27,209	34.6	8,661
Atlanto-Scandian Herring	IIa V (landed in non EU)				12,004
Blue whiting	IIIaN	141,024	136,525	96.8	7,805
Blue whiting	IIa, IV, VIId				31,946
Blue whiting	I-IX, XII, XIV	474,333	9,803	2.1	6,595
Brill (*1)	IV, VIId				55
Cod	IIIaN	3,773	3,119	82.7	3,858
Cod	IIIaS	1,000	617	61.7	1,344
Cod	IIIb-c	24,700	10,781	43.6	20,726
Cod	IIId	58,520	8,959	15.3	
Cod	IV, VIId	22,659	4,635	20.5	6,311
Haddock	IIIaN	3,610	3,036	84.1	1,955
Haddock	IV, VIId	51,321	3,742	7.3	3,358
Hake	IIIaN, IV	2,780	2,049	73.7	358
Herring	IIIaS	82,696	40,104	48.5	7,392
Herring	IIIaN				22,180
Herring	IIIb-c	46,000	6,448	14.0	3,432
Herring	IIId	116,172	2,588	2.2	7,923
Herring	IV, VIId	305,557	96,152	31.5	55,862
Horse mackerel	IIa, IV, VIId	40,616	27,547	67.8	4,901
Horse mackerel	IIa, V, VI, VII, VIII, IX	133,223	12,088	9.1	10,343
Lemon sole (*2)	IV, VIId	6,500	970	14.9	1,222
Mackerel	IIIaN	420,000	23,501	5.6	752
Mackerel	IV, VIId				17,905
Norway lobster	IIIaS (Funcional unit)	4,700	3,454	73.5	1,304
Norway lobster	IIIaN (Funcional unit)				1,684
Norway lobster	IV, (Funcional unit)	22,350	2,063	9.2	2,104
Norway pout	IIIaN	5,000	4,750	95.0	1,970
Norway pout	IIa, IV				30,941
Plaice	IIIaS	1,900	1,691	89.0	1,746
Plaice	IIIaN	7,448	5,917	79.4	5,679
Plaice	IIIb-d	3,766	2,697	71.6	1,722
Plaice	IIa, IV	57,370	11,474	20.0	11,798
Saithe	IIIaN	69,600	6,013	8.6	2,892
Saithe	IV, VIId				3,630
Salmon (in numbers)	IIIb-d	468,260	93,512	20.0	85,650
Sandeel	IIIaN	665,960	628,267	94.3	15,646
Sandeel	IV				395,117
Shrimp (Pandalid)	IIIaN	5,719	3,717	65.0	2,129
Shrimp (Pandalid)	IV	5,931	4,526	76.3	1,298
Sole	IIIaS	520	437	84.0	267
Sole	IIIaN				121
Sole	IV	18,320	698	3.8	503
Sprat	IIIaS	46,250	33,504	72.4	22,026
Sprat	IIIaN				3,426
Sprat	IIIb-d	494,560	48,785	9.9	40,623
Sprat	IV, VIId	250,000	227,669	91.1	187,445
Turbot (*1)	IV, VIId	4,550	713	15.7	551

(*) According to Commission Regulation (EC) No 1581/2004 (Appendix XV -section H)

(*1) The TAC for brill are included in the common TAC for turbot and brill.

(*2) The TAC for witch flounder are included in the common TAC for lemon sole and witch flounder.

Annex V. Estimation of Danish numbers of samples, fish measurement and aging by species and area based on Danish landings made in Danish harbours in 2002-2004.

Species	Area (*)	Sampling Length measure-ment (1 sample per……. tonnes)	Sampling Age readings (1 sample per….. tonnes)	Number of fish measu-red pr. sample	Number of fish aged pr. sample	Estimated Number of samples from DK landings 2002-2004	Estimated Number of fish measured	Estimated Number of fish aged
Anglerfish	IV, VIId	200	200	25	25	8	200	200
Atlanto-Scandian Herring	IIa, V (landed in DK)	1000	1000	50	25	9	450	225
Atlanto-Scandian Herring	IIa, V (landed in NW)	1000	1000	50	25	12	600	300
Blue whiting	IIIaN	1000	1000	50	50	8	400	400
Blue whiting	IV, VIId	1000	1000	50	50	32	1600	1600
Blue whiting	I-IX, XII, XIV	1000	1000	50	25	7	350	175
Brill	IV, VIId	200	200	25	25	0	0	0
Cod (*1)	IIIaN	100	100	50	25	78	3900	3900
Cod (*1)	IIIaS	100	100	50	50	26	1300	2600
Cod (*1)	IIIb-c	200	200	50	25	156	7800	7800
Cod (*1)	IIId							
Cod (*1)	IV, VIId	200	200	50	25	64	3200	3200
Haddock	IIIaN	100	100	50	50	20	1000	1000
Haddock	IV, VIId	200	200	50	25	17	850	425
Hake	IIIaN	100	100	25	25	4	100	100
Herring	IIIaS	1000	1000	100	100	7	700	700
Herring	IIIaN	1000	1000	100	100	22	2200	2200
Herring	IIIb-c	1000	1000	100	50	3	300	150
Herring	IIId	1000	1000	100	100	8	800	800
Herring	IV, VIId	1000	1000	50	25	56	2800	1400
Horse mackerel	IV, VIId	1000	1000	100	25	5	500	125
Horse mackerel	IIa, V, VI, VII, VIII, IX	1000	1000	100	25	10	1000	250
Lemon sole	IV, VIId	200	200	25	25	6	150	150
Mackerel	IIIaN	500	500	100	100	2	200	200
Mackerel	IV, VIId	1000	1000	50	25	18	900	450
Norway lobster	IIIaS (Funcional unit)	100		200		13	2600	0
Norway lobster	IIIaN (Funcional unit)	100		200		17	3400	0
Norway lobster	IV, (Funcional unit)	50		400		42	16800	0
Norway pout	IIIaN	1000	1000	50	50	2	100	100
Norway pout	IV	2000	2000	50	50	15	750	750
Plaice	IIIaS	100	100	50	50	17	850	850
Plaice	IIIaN	100	100	50	50	57	2850	2850
Plaice	IIIb-d	100	100	50	50	17	850	850
Plaice	IV	500	500	50	25	24	1200	600
Saithe	IIIaN	100	100	50	50	29	1450	1450
Saithe	IV, VIId	200	200	50	25	18	900	450
Salmon (in numbers)	IIIb-d	20000	20000	50	50	4	200	200
Sandeel	IIIaN	1000	1000	50	50	16	800	800
Sandeel	IV	2000	2000	50	50	198	9900	9900
Shrimp (Pandalid)	IIIaN	100		400		21	8400	0
Shrimp	IV,	500		100		3	300	0
Sole	IIIaS	50	50	50	50	5	250	250
Sole	IIIaN	50	50	50	50	2	100	100
Sole	IV	200	200	50	25	3	150	75
Sprat	IIIaS	1000	1000	100	50	22	2200	1100
Sprat	IIIaN	1000	1000	100	100	3	300	300
Sprat	IIIb-d	2000	2000	100	50	20	2000	1000
Sprat	IV, VIId	2000	2000	50	50	94	4700	4700
Turbot	IV, VIId	200	200	25	25	3	75	75

(*) According to Commission Regulation (EC) No 1581/2004 (Appendix XV -section H)

(*1) The sampling is dobled due to the low level of cod stocks in IV, IIIa, IIId. All lenght measured is also aged.

Annex VI. Other EU member states landings in tonnes made in Danish harbours (for calculation of average landings for annex VII)

Species	Area (*)	Other EU member states landings in DK in 2002 (tonnes)	Other EU member states landings in DK in 2003 (tonnes)	Other EU member states landings in DK in 2004 (tonnes)
Anglerfish	IIIa, IV, Vb, VIa, VIId	167	104	104
Atlanto-Scandian Herring	IIa, V	1,413	1,015	5,329
Blue whiting	IIIaN	6,546	3,591	2,034
Blue whiting	IV, VIId	203	235	251
Blue whiting	I-IX, XII, XIV	16,447	15,534	37,277
Brill (*1)	IV, VIId	2	4	11
Cod	IIIaN	355	206	131
Cod	IIIaS	99	99	23
Cod	IIIb-d	1,911	1,298	62
Cod	IV, VIId	2,839	1,863	3,150
Haddock	IIIaN	2,839	1,863	2,726
Haddock	IIIb-c	388	246	114
Haddock	IIId	1,080	1,952	1,512
Hake	IIIaN	10	11	134
Herring	IIIaS	881	4,616	3,042
Herring	IIIaN	12,626	8,275	6,702
Herring	IIIb-c	4,011	3,288	1,622
Herring	IIId	15,881	15,292	20,148
Herring	IV, VIId	6,793	6,676	5,919
Horse mackerel	IV, VIId	217	141	237
Horse mackerel	IIa, V, VI, VII, VIII, IX	34	-	-
Lemon sole (*2)	IV, VIId	142	162	249
Mackerel	IIIa	204	110	228
Mackerel	IV, VIId	5,613	6,670	2,676
Mackerel	II, V, VI, VII,VIII, IX	8,341	3,431	660
Norway lobster	IIIaS (Funcional unit)	9	13	12
Norway lobster	IIIaN (Funcional unit)	28	14	11
Norway lobster	IV, (Funcional unit)	16	2	2
Norway pout	IIIaN	-	-	54
Norway pout	IV	-	-	3
Plaice	IIIaS	9	10	8
Plaice	IIIaN	36	1,170	20
Plaice	IIIb-d	18	8	12
Plaice	IV	1,489	1,466	1,360
Saithe	IIIaN	256	179	551
Saithe	IV, Vb, VIa, VIId	9,742	8,074	8,401
Salmon (in numbers)	IIIb-d	23,600		
Sandeel	IIIaN	12,308	18	9
Sandeel	IV	35,124	18,541	27,726
Shrimp (Pandalid)	IIIaN	2	-	-
Shrimp	IV	10	-	-
Sole	IIIaS	13	18	19
Sole	IIIaN	-	2	-
Sole	IV	50	49	37
Sprat	IIIaS	-	3,416	1,445
Sprat	IIIaN	-	626	769
Sprat	IIIb-d	41,423	52,679	90,278
Sprat	IV, VIId	-	35	52
Turbot (*1)	IV, VIId	52	40	41

(*) According to Commission Regulation (EC) No 1581/2004 (Appendix XV -section H)

(*1) The TAC for brill are included in the common TAC for turbot and brill.

(*2) The TAC for witch flounder are included in the common TAC for lemon sole and witch flounder.

Annex VII. Estimation of Danish sampling effort by species and area based on landings made in Danish harbours by other EU member states

Species	Area (*)	Total EU TAC in 2003	Other EU member states landings in DK in 2002-2004 (tonnes) Avrg.
Anglerfish	IV, VIId	12,114	125
Atlanto-Scandian Herring	IIa, V	78,541	2,586
Blue whiting	IIIaN	141,024	4,057
Blue whiting	IV, VIId		230
Blue whiting	I-IX, XII, XIV	474,333	23,086
Brill (*1)	IV, VIId		6
Cod	IIIaN	3,773	231
Cod	IIIaS	1,000	74
Cod	IIIb-c	24,700	1,090
Cod	IIId	58,520	2,617
Cod	IV, VIId	22,659	2,476
Haddock	IIIaN	3,610	249
Haddock	IV, VIId	51,321	1,515
Hake	IIIaN	2,780	52
Herring	IIIaS	82,696	2,846
Herring	IIIaN		9,201
Herring	IIIb-c	46,000	2,974
Herring	IIId	116,172	17,107
Herring	IV, VIId	305,557	6,463
Horse mackerel	IV, VIId	40,616	198
Horse mackerel	IIa, V, VI, VII, VIII, IX	133,223	11
Lemon sole (*2)	IV, VIId	6,500	184
Mackerel	IIIaN	420,000	181
Mackerel	IIa, IV, VIId		4,986
Mackerel	V, VI, VII,VIII, IX		4,144
Norway lobster	IIIaS (Funcional unit)	4,700	11
Norway lobster	IIIaN (Funcional unit)		18
Norway lobster	IV, (Funcional unit)	22,350	7
Norway pout	IIIaN	5,000	-
Norway pout	IV		1
Plaice	IIIaS	1,900	9
Plaice	IIIaN	7,448	409
Plaice	IIIb-d	3,766	13
Plaice	IV	57,370	1,438
Saithe	IIIaN	69,600	329
Saithe	IV, VIId		8,739
Salmon (in numbers)	IIIb-d	468,260	7,867
Sandeel	IIIaN	665,960	4,112
Sandeel	IV		27,130
Shrimp (Pandalid)	IIIaN	5,719	1
Shrimp	IV	5,931	3
Sole	IIIaS	520	17
Sole	IIIaN		1
Sole	IV	18,320	45
Sprat	IIIaS	46,250	1,620
Sprat	IIIaN		465
Sprat	IIIb-d	494,560	61,460
Sprat	IV, VIId	250,000	29
Turbot (*1)	IV, VIId	4,550	44

(*) According to Commission Regulation (EC) No 1581/2004 (Appendix XV -section H)

(*1) The TAC for brill are included in the common TAC for turbot and brill.

(*2) The TAC for witch flounder are included in the common TAC for lemon sole and witch flounder.

Annex VIII. Estimation of Danish numbers of samples, fish measurement and aging by species and area based on other EU member states landings made in Danish harbours in 2002-2004

Species	Area (*)	Sampling Length measure-ment (1 sample per……. tonnes)	Sampling Age readings (1 sample per….. tonnes)	Number of fish measu-red pr. sample	Number of fish aged pr. sample	Estimated Number of samples from other member states landings in DK 2002-2004	Estimated Number of fish measured	Estimated Number of fish aged
Anglerfish	IV, VIId	200	200	25	25	1	25	25
Atlanto-Scandian Herring	IIa, V	1000	1000	50	25	3	150	75
Blue whiting	IIIaN	1000	1000	50	50	4	200	200
Blue whiting	IV, VIId	1000	1000	50	50	-	-	-
Blue whiting	I-IX, XII, XIV	1000	1000	50	25	23	1.150	575
Brill (*1)	IV, VIId	200	200	25	25	-	-	-
Cod (*2)	IIIaN	100	100	50	25	4	200	100
Cod (*2)	IIIaS	100	100	50	50	2	100	100
Cod (*2)	IIIb-c	200	200	50	25	5	250	125
Cod (*2)	IIId	200	200	50	25	26	1.300	650
Cod (*2)	IV, VIId	200	200	50	25	24	1.200	600
Haddock	IIIaN	100	100	50	50	2	100	100
Haddock	IV, VIId	200	200	50	25	8	400	200
Hake	IIIaN	100	100	50	50	1	50	50
Herring	IIIaS	1000	1000	100	100	3	300	300
Herring	IIIaN	1000	1000	100	100	9	900	900
Herring	IIIb-c	1000	1000	100	50	3	300	150
Herring	IIId	1000	1000	100	100	17	1.700	1.700
Herring	IV, VIId	1000	1000	50	25	6	300	150
Horse mackerel	IV, VIId	1000	1000	100	25	-	-	-
Horse mackerel	IIa, V, VI, VII, VIII, IX	1000	1000	50	25	-	-	-
Lemon sole (*3)	IV, VIId	200	200	25	25	1	25	25
Mackerel	IIIaN	500	500	100	100	-	-	-
Mackerel	IV, VIId	1000	1000	50	25	5	250	125
Mackerel	II, IIIa, IV, V, VI, VII,VIII,	1000	1000	50	25	4	200	100
Norway lobster	IIIaS (Funcional unit)	100		200		-	-	-
Norway lobster	IIIaN (Funcional unit)	100		200		-	-	-
Norway lobster	IV, (Funcional unit)	50		400		-	-	-
Norway pout	IIIaN	1000	1000	50	50	-	-	-
Norway pout	IV	2000	2000	50	50	-	-	-
Plaice	IIIaS	100	100	50	50	-	-	-
Plaice	IIIaN	100	100	50	50	4	200	200
Plaice	IIIb-d	100	100	50	50	-	-	-
Plaice	IV	500	500	50	25	3	150	75
Saithe	IIIaN	100	100	50	50	3	150	150
Saithe	IV, VIId	200	200	50	25	44	2.200	1.100
Salmon (in numbers)	IIIb-d	20000	20000	50	50	-	-	-
Sandeel	IIIaN	1000	1000	50	50	4	200	200
Sandeel	IV	2000	2000	50	50	14	700	700
Shrimp (Pandalid)	IIIaN	100		400		-	-	-
Shrimp	IV	500		100		-	-	-
Sole	IIIaS	50	50	100	100	-	-	-
Sole	IIIaN	50	50	50	50	-	-	-
Sole	IV	200	200	50	25	-	-	-
Sprat	IIIaS	1000	1000	100	50	2	200	100
Sprat	IIIaN	1000	1000	100	100	-	-	-
Sprat	IIIb-d	2000	2000	100	50	31	3.100	1.550
Sprat	IV, VIId	2000	2000	50	50	-	-	-

Annex IX

Description of the 13 new sub branches in the Danish fish processing industry

Sub branches (NACE)	General description
15.20.10	**"Fish processing and preservation". Total for the sub branches 15.20.11-15.20.19**
15.20.11	**Primary industry** "Cod, flatfish etc.", provides more than 50% of the enterprises turnover.
15.20.12	**Mixed industry** "Cod, flatfish etc.", provides more than 50% of the enterprises turnover.
15.20.13	**Prepared and preserved product industry** "Mackerel", provides more than 50% of the enterprises turnover.
15.20.14	**Primary industry** "Herring", provides more than 50% of the enterprises turnover.
15.20.15	**Secondary industry** "Herring", provides more than 50% of the enterprises turnover.
15.20.16	**Prepared and preserved product industry** "Herring", provides more than 50% of the enterprises turnover.
15.20.17	**Prepared and preserved product industry** "Molluscs", provides more than 50% of the enterprises turnover.
15.20.18	**Prepared and preserved product industry** "Shrimps and crustaceans", provides more than 50% of the enterprises turnover.
15.20.19	**Mixed species and product production industry** "Mixed species production", provides more than 50% of the enterprises turnover.
15.20.20	**"Smoking curing and salting of fish etc." Total for the sub branches 15.20.21-15.20.23**
15.20.21	**Smoking of salmon** "Salmonoids", provides more than 50% of the enterprises turnover.
15.20.22	**Mixed industry** "Salmonoids", provides more than 50% of the enterprises turnover.
15.20.23	**Smokehouses** "Salmonoids", Herring, Mackerel and Eel.
15.20.30	**"Fish meal factories"**

Annex X

2005 -02- 15

Dnr: 00008-205

Agreement between the Danish Institute for Marine Research and the Institute of Marine Research, Sweden concerning collection of fisheries data in 2005

In accordance with the Data Collection Regulation (DCR) (Commission Regulation 1639/2001) Denmark and Sweden have agreed entering co-operation on collection of fisheries data. This agreement has been establish 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 (70 tons), Denmark (651 tons) and Norway (779 tons) 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.

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.

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: 15/2-2005

Fredrik Arrhenius
Director
Institute for Marine Research

For DIFRES

Date: 2/2-2005

Jørgen Dalskov
National Correspondent
Danish Institute for Marine Research

ANNEX 1

Species/~~stock~~: **Pandalus**

In area: **ICES Division IIIa**

In accordance with regulation EC (no) 1639/2001 countries that receive foreign landings are responsible to sample those.

In year: **2005**
Flag country: **Denmark** Landings (2004): **553** (tons)
In receiving country: **Sweden**

This means that receiving country will sample this particular species/stock in accordance with the Minimum Programme (MP) / Extended Programme (EP) in (EC) No 1639/2001.

Programme level (MP / EP): **MP**

The sampling intensity should be in accordance with the stated programme level and sampling will be carried out in accordance with sampling alternative **3** as stated below.

Based on last year's landings the sampling effort for this species/stock would be:
No samples: **6**
No of age readings per sample: **0**
No of length measurements per sample: **400**
No of individual weight per sample: **0**

If landings decrease or increase the amount of samples will be adjusted accordingly.

Sampling alternatives:

Receiving country will perform sampling in one of the two following alternatives:

1. Receiving country will perform sampling in accordance with the sampling scheme (attached to this agreement) defined by flag country. Receiving country will then deliver raw-data (length, weight and information about the landing) and material for ageing, to the flag country.
2. Receiving country will perform sampling in accordance with their national sampling procedure. Receiving country will then deliver data as raised No/age within each strata.

3. The sampling method is described as follows:

Sweden obtains the samples by market sampling from landings. Denmark is responsible for submitting the data to relevant ICES WG and to the EC.

Measurement: mm class

Sample size: 400 individuals per sample

Data will be delivered to Denmark regularly and at latest 1 February 2006

Name of contact person in:
Receiving country:
Karin Frohlund (karin.frohlund@fiskeriverket.se or +4652318714)

Flag country:
Aage Thaarup (at@dfu.min.dk or +45 33 96 32 48)

Signatures:

For the Institute of Marine Research

Date: 15/2-2005

Fredrik Arrhenius
Director
Institute for Marine Research

For DIFRES

Date: 2/2-2005

Jørgen Dalskov
National Correspondent
Danish Institute for Marine Research

ANNEX II

Species/~~stock~~: **Herring**

In area: **ICES Division IIIa**

In accordance with regulation EC (no) 1639/2001 countries that receive foreign landings are responsible to sample those.

In year: **2005**
Flag country: **Sweden** Landings (2004): **9,400** (tons)
In receiving country: **Denmark**

This means that the receiving country will sample this particular species/stock in accordance with the Minimum Programme (MP) / Extended Programme (EP) in (EC) No 1639/2001.

Programme level (MP / EP): **MP**

The sampling intensity should be in accordance with the stated programme level and sampling will be carried out in accordance with sampling alternative **3** as stated below.

Based on last year's landings the sampling effort for this species/stock would be:
No samples: **10**
No of age readings per sample: **100**
No of length measurements per sample: **100**
No of individual weight per sample: **100**

If landings decrease or increase the amount of samples will be adjusted accordingly.

Sampling alternatives:

Receiving country will perform sampling in one if the two following alternatives:

4. Receiving country will perform sampling in accordance with the sampling scheme (attached to this agreement) defined by flag country. Receiving country will then deliver raw-data (length, weight and information about the landing) and material for ageing, to the flag country.
5. Receiving country will perform sampling in accordance with their national sampling procedure. Receiving country will then deliver data as raised No/age within each strata.

6. The sampling method is described as follows:

Denmark obtains the samples by market sampling from unsorted catches, stratified by fishery (see below). Denmark will sample length, age and weight information.

Otoliths should be stored in paper bags provided by IMR. The raw-data and the otoliths will be sent to Sweden for the age determination of the otoliths. A subset of the otoliths should be returned to Denmark for cross-checking of the age interpretation. Sweden is responsible for submitting the data to relevant ICES WG and to the EC.

Measurement: 0.5 cm class, 1 g

Sample size: 100 individuals per sample

Fishery unit:

- **Mesh-size from 16 to 32mm**
- **Mesh-size > 32mm**

Data will be delivered to Sweden regularly and at latest 1 February 2006

Name of contact person in:
Receiving country:
Aage Thaarup (at@dfu.min.dk or +45 33 96 32 48)

Flag country:
Marianne Johansson (marianne.johansson@fiskeriverket.se or +4652318719)

Signatures:

For the Institute of Marine Research

Date: 15/2-2005

Fredrik Arrhenius
Director
Institute for Marine Research

For DIFRES

Date: 4/2-2005

Jørgen Dalskov
National Correspondent
Danish Institute for Marine Research

ANNEX III

Species/~~stock~~: **Sprat**

In area: **ICES Division IIIa**

In accordance with regulation EC (no) 1639/2001 countries that receive foreign landings are responsible to sample those.

In year: **2005**
Flag country: **Sweden** Landings (2004): **2,500** (tons)
In receiving country: **Denmark**

This means that the receiving country will sample this particular species/stock in accordance with the Minimum Programme (MP) / Extended Programme (EP) in (EC) No 1639/2001.

Programme level (MP / EP): **MP**

The sampling intensity should be in accordance with the stated programme level and sampling will be carried out in accordance with sampling alternative **3** as stated below.

Based on last year's landings the sampling effort for this species/stock would be:
No samples: **3**
No of age readings per sample: **100**
No of length measurements per sample: **100**
No of individual weight per sample: **100**

If landings decrease or increase the amount of samples will be adjusted accordingly.

Sampling alternatives:

Receiving country will perform sampling in one of the two following alternatives:

7. Receiving country will perform sampling in accordance with the sampling scheme (attached to this agreement) defined by flag country. Receivingcountry will then deliver raw-data (length, weight and information about the landing) and material for ageing, to the flag country.
8. Receiving country will perform sampling in accordance with their national sampling procedure. Receiving country will then deliver data as raised No/age within each strata.

9. The sampling method is described as follow:

Denmark obtains the samples by market sampling from unsorted catches, stratified by fishery. Denmark will sample length, age and weight information. Otoliths will

be mounted on glass plates. The otoliths will be age determined in Denmark and the otoliths and obtained raw-data will afterwards be sent to Sweden for cross-checking of the age interpretation. Sweden is responsible for submitting the data to relevant ICES WG and to the EC.

Measurement: 0.5 cm class, 1 g

Sample size: 100 individuals per sample

Fishery unit:

- **Mesh-size from 16 to 32mm**

Data will be delivered to Sweden regularly and at latest 1 February 2006

Name of contact person in:
Receiving country:
Frank Ivan Hansen (fih@dfu.min.dk or +45 33 96 33 63)

Flag country:
Birgitta Krischansson (birgitta.krischansson@fiskeriverket.se or +4652318721)

Signatures:

For the Institute of Marine Research

Date: 15/2-2005

Fredrik Arrhenius
Director
Institute for Marine Research

For DIFRES

Date: 2/2-2005

Jørgen Dalskov
National Correspondent
Danish Institute for Marine Research

ANNEX IV

Species/~~stock~~: **Herring**

In area: **ICES Division III b-d**

In accordance with regulation EC (no) 1639/2001 countries that receive foreign landings are responsible to sample those.

In year: **2005**
Flag country: **Sweden** Landings (2004): **18,600** (tons)
In receiving country: **Denmark**

This means that receiving country will sample this particular species/stock in accordance with the Minimum Programme (MP) / Extended Programme (EP) in (EC) No 1639/2001.

Programme level (MP / EP): **MP**

The sampling intensity should be in accordance with the stated programme level and sampling will be carried out in accordance with sampling alternative **3** as stated below.

Based on last year's landings the sampling effort for this species/stock would be:
No samples: **19**
No of age readings per sample: **100**
No of length measurements per sample: **100**
No of individual weight per sample: **100**

If landings decrease or increase the amount of samples will be adjusted accordingly.

Sampling alternatives:

Receiving country will perform sampling in one if the two following alternatives:

10. Receiving country will perform sampling in accordance with the sampling scheme (attached to this agreement) defined by flag country. Receiving country will then deliver raw-data (length, weight and information about the landing) and material for ageing to the flag country.
11. Receiving country will perform sampling in accordance with their national sampling procedure. Receiving country will then deliver data as raised No/age within each strata.

12. The sampling method is described as follow:

Denmark obtains the samples by market sampling from unsorted catches, stratified by fishery (see below). Denmark will sample length, age and weight information. Otoliths will be stored in paper bags provided by IMR. The raw-data and the

otoliths will be sent to Sweden for the age determination of the otoliths. Sweden is responsible for submitting the data to relevant ICES WG and to the EC.

Measurement: 0.5 cm class, 1 g

Sample size: 100 individuals per sample

Fishery unit:

- **Mesh-size from 16 to 32mm**
- **Mesh-size > 32mm**

Data will be delivered to Sweden regularly and at latest 1 February 2006

Name of contact person in:
Receiving country:
Frank Ivan Hansen (fih@dfu.min.dk or +45 33 96 33 63)

Flag country:
Carina Jernberg (carina.jernberg@fiskeriverket.se or +4652318718)

Signatures:

For the Institute of Marine Research

Date: 15/2 - 2005

Fredrik Arrhenius
Director
Institute for Marine Research

For DIFRES

Date: 2/2 - 2005

Jørgen Dalskov
National Correspondent
Danish Institute for Marine Research

ANNEX V

Species/~~stock~~: **Sprat**

In area: **ICES Division III b-d**

In accordance with regulation EC (no) 1639/2001 countries that receive foreign landings are responsible to sample those.

In year: **2005**
Flag country: **Sweden** Landings (2004): **47,000** (tons)
In receiving country: **Denmark**

This means that receiving country will sample this particular species/stock in accordance with the Minimum Programme (MP) / Extended Programme (EP) in (EC) No 1639/2001.

Program level (MP / EP): **MP**

The sampling intensity should be in accordance with the stated programme level and sampling will be carried out in accordance with sampling alternative **3** as stated below.

Based on last year's landings the sampling effort for this species/stock would be:
No samples: **24**
No of age readings per sample: **50**
No of length measurements per sample: **50**
No of individual weight per sample: **50**

If landings decrease or increase the amount of samples will be adjusted accordingly.

Sampling alternatives:

Receiving country will perform sampling in one if the two following alternatives:

13. Receiving country will perform sampling in accordance with the sampling scheme (attached to this agreement) defined by flag country. Receiving country will then deliver raw-data (length, weight and information about the landing) and material for ageing to the flag country.
14. Receiving country will perform sampling in accordance with their national sampling procedure. Receiving country will then deliver data as raised No/age within each strata.

15. The sampling method is described as follow:

Denmark obtains the samples by market sampling from unsorted catches, stratified by fishery. Denmark will sample length, age and weight information. Otoliths will be mounted on glass plates. The otoliths will be age determined in Denmark and the

Annex XI

Agreement

between the Danish Institute for Marine Research and the Institut für Ostseefischerei, Rostock (IOR) and Bundesforshungsanstalt für Fisherie, Institut für Seefischerei, Hamburg, Germany

concerning collection of fisheries catch data in 2005

In accordance with the Data Collection Regulation (DCR) (Commission Regulation 1639/2001) Denmark and Germany have agreed entering co-operation on collection of fisheries data. This agreement has been establish due to common interests in the fisheries in the Skagerrak (Division IIIa North), the Kattegat (Division IIIa South), in the Baltic Sea and in the North Sea. Furthermore, substantial landings by German 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:

Cod in the Western Baltic Sea (SD 22+24)
The German landings in Denmark were in 2004 below 5 percent of the German quota in 2004. Therefore, no sampling is made in Denmark. Germany will in 2005 adjust the national sampling to compensate for the missing sampling of the landings in Denmark.

The Danish landings in Germany were in 2004 below 5 percent of the Danish quota. Denmark will adjust national sampling to compensate for the landings in Germany.

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 Eastern Baltic Sea (SD 25+32)
German landings in Denmark were in 2004 more than 5% of the German quota (Landings in DK = 501 t, GFR quota = 3364t) but the German sampling is based on extended level of intensity which supersede Danish sampling of the German landings.

Danish landings in Germany do not exceed 5% of the Danish quota and is therefore not sampled by Germany. Increased level of Danish sampling will compensate for the missing German sampling in order to obtain the correct sampling level according to the DCR .

Herring.
Danish landings in Germany (292t) from Sub-division 24 were in 2004 less than 5% of the Danish quota (6448t) and will not be sampled in 2005 by Germany. Increased level of Danish sampling will in 2005 compensate for the missing German sampling in order to obtain the correct sampling level according to the DCR.

German landings in Denmark from Sub-division 24 were in 2004 7% and exceed in 2004 the 5% threshold. In defiance of that Denmark will not sample those landings in 2005 as those landings are assumed to be very similar in composition to the German landings in Germany and German sampling in Germany will in 2005 compensate for the missing Danish Sampling.

In eastern area (Sub-division 25+) no sampling of foreign landings of herring is taken due to insignificant landings.

Sprat
German landings in Denmark were in 2004 13000t out of a German quota of 30907t which is equal to 42%. See annex 1 for detailed description of the sampling scheme.

No Danish landings of sprat in Germany.

Flounder
German landings in Denmark were in 2004 ca. 60t. There are no quotas on Flounder in the Baltic Sea. One sample per 200 tons is required according to DCR. Therefore, no sampling is made from those landings.
The Danish landings in Germany were in 2004 258 tons which should require 2-3 samples according to the DCR. As the landings in Germany are assumed similar to the landings in Denmark concerning composition, no sampling in Denmark is performed.

In the light of the growing importance of the flounder as a commercial species in the area, the amount of landings of this species should be monitored for potential sampling obligation.

Sole in Kattegat
As the German landings in Denmark are less than 5% of the German quota, no sampling is performed on those landings.

No sole are landed in Germany by Danish fishermen.

Saithe in North Sea and Skagerrak
In 2004 the German quota was 15184 tons in total for the North Sea and Skagerrak. The German landings in Denmark were 7569 tons (equals app. 50 %). Therefore, 38 samples should be taken from those landings (one sample per 200t). The German trawl fishery for saithe (and other demersal species) is sampled by Germany by use of observers on board the vessels. The coverage of this sampling scheme includes trips where the landings are in Denmark. Therefore, there is no need for Danish sampling of those landings.

There are no Danish landings of saithe in Germany.

Haddock in the North Sea
Germany has as specified in the Sampling Contract between Germany and the EU Commission derogation for sampling of haddock in the North Sea.
No Danish landings of haddock in Germany.

Plaice in the North Sea
The German landings of plaice from the North Sea are covered by the observer scheme and include landings in Denmark.
No Danish landings of plaice in Germany.

Cod in the North Sea
The German landings of cod from the North Sea are covered by the observer scheme and include landings in Denmark.
No Danish landings of cod in Germany.

Exchange of staff on surveys

It has been agreed to continue the cooperation during the herring German acoustic survey in the Western Baltic and the Belt area with R/S Solea. The agreement includes participation of one Danish person on the survey.

Furthermore, it has been agreed to exchange one staff person during the 1st quarter International Bottom Trawl Survey (IBTS) in the North Sea and one staff person during the 1st quarter Baltic International Trawl Survey (BITS) in the Baltic Sea.

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

North Sea and Skagerrak	**Kay Panten**	**E-mail**	**kay.panten@ish.bfa.de**
Baltic and Kattegat	**Ulrich Berth**	**E-mail**	**ulrich.berth@ior.bfa-fisch.de**

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

North Sea and Skagerrak	**Aage Thaarup**	**E-mail: att@dfu.min.dk**
Baltic and Kattegat	**Frank I. Hansen**	**E-mail: fih@dfu.min.dk**

Signatures:

For BFA

Date: 25.5.05

Hans Peter Cornus
National Correspondent
Bundesforschungsanstalt f. Fischerei
Institut für Seefischerei

For DIFRES

Date: 25/5-05

Jørgen Dalskov
National Correspondent
Danish Institute for Marine
Research

ANNEX I

Species/~~stock~~: **Sprat**

In area: **ICES Sub-division 24**

In accordance with regulation EC (no) 1639/2001 countries that receive foreign landings are responsible to sample those.

In year: **2005**
Flag country: **Germany** Landings (2004): **1,300** (tons)
In receiving country: **Denmark**

This means that the receiving country will sample this particular species/stock in accordance with the Minimum Programme (MP) / Extended Programme (EP) in (EC) No 1639/2001.

Programme level (MP / EP): **MP**

The sampling intensity should be in accordance with the stated programme level and sampling will be carried out in accordance with sampling alternative **3** as stated below.

Based on last year's landings the sampling effort for this species/stock would be:
No samples: **6**
No of age readings per sample: **100**
No of length measurements per sample: **100**
No of individual weight per sample: **100**

If landings decrease or increase the amount of samples will be adjusted accordingly.
It is expected that the landing will increase to a level where 10-12 samples are required.

Sampling alternatives:

Receiving country will perform sampling in one of the two following alternatives:

1. Receiving country will perform sampling in accordance with the sampling scheme (attached to this agreement) defined by flag country. Receiving country will then deliver raw-data (length, weight and information about the landing) and material for ageing, to the flag country.
2. Receiving country will perform sampling in accordance with their national sampling procedure. Receiving country will then deliver data as raised No/age within each strata.

3. The sampling method is described as follow:

Denmark obtains the samples by market sampling from unsorted catches, stratified by fishery. Denmark will sample length, age and weight information. Otoliths will be mounted on glass plates. The otoliths will not be age determined in Denmark but the otoliths and obtained raw-data recorded on Danish samplings sheets will be sent to Germany for age determination. Germany is responsible for submitting the data to relevant ICES WG and to the EC.

Measurement: 0.5 cm class, 1 g

Sample size: 100 individuals per sample

Fishery unit:

- **Mesh-size from 16 to 32mm**

Data will be delivered to Germany regularly and at latest 1 February 2006

Name of contact person in:
Receiving country:
Stina Bildstrup (sb@difres.dk)

Flag country:
Peter Ernst (ernst.ior@t-online.de)

Signatures:

For BFA

Date: 25.5.05

Hans Peter Cornus
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