Proposal including detailed description of the budget for 2005 (Appendix 1).

Danish National Programme for collection of fisheries data for 2005

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

by

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Danish Institute for Fisheries Research
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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) 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 with 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 “Fiskeriverket” in Karlskrona, Sweden. The cooperation or bilateral agreement with Sweden has already given good results. This cooperation is continued in 2004 and initiatives for further development will be initiated. Same initiatives will be initiated with Germany and hopefully also with Poland. It is the plan is to establish the same kind of co-operation with North Sea countries. As for other EU members states fishing vessels landing in Denmark, German and British vessels constitutes the most and therefore cooperation with UK and Germany will initiated.

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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E-mail: jd@dfu.min.dk

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} 2930/86 and N^{o} 2090/98 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. The costs for this

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.

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:

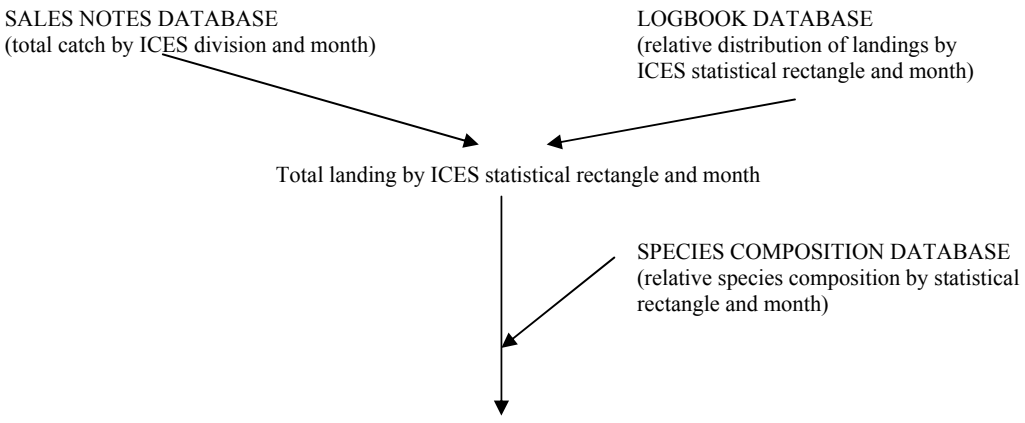
The total landings for reduction purposes by month and area are calculated using the sales note database. The landings are then allocated to statistical rectangle using the relative geographical distribution from the logbook database of landings identified as have been taken for reduction purposes. The 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 a trolling fishery east and north of Bornholm in Sub-division 25.

The fishing season starts in September and ends in the month of May. 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 fishermen arranging travel and boat (transported on trailers) by themselves also takes place. A few times every year larger salmon angler fishery competitions take place.

The catches in the recreational fishery in Denmark have not been officially registered so far. In previous years (based on interviews) it was estimated that the total catch was approximately 3000 individuals. For the fishing season 2004 questionnaires requiring information on both effort and catch will be distributed both to angling clubs, boat rental companies and in popular harbors.

On the 5th of March 2004 a questionnaire (Annex IX given in Danish language) was forwarded to all trolling anglers at the Island Bornholm, and besides this questionnaire DIFRES will collect information about the effort in the trolling fishery for salmon from the harbour masters and the ferry companies at Bornholm. The same approach will be used in 2005.

From this collected information we expect, in the future, to be able to give a more accurate estimation of the total salmon catches, caught by recreational fishermen.

3.1.4 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 disaggregation rule. The information on discards will 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). 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 2005 will be dimensioned according to discard information collected in 2003 but will be subject to running adjustments during 2005 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. 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.

3.1.4.1 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.

3.1.4.2 Storage of discard data

All Danish catch data sampled during discard sampling in the Kattegat and the Baltic Sea are included in the international database "FishFrame", which is a further development of the BALTCOM database. This database constitute the backbone in all international discard calculations made for the area and is essential for the further development and international cooperation concerning discard.

All countries around the Baltic Sea submit data to the database and have full access to all data collected if the data are used for scientific purposes.

It is the ambition that the database in the future besides providing age aggregated discard information, in addition shall provide the basis for central calculation of age-

aggregated landings in numbers for all countries fishing in the Baltic Sea (per e.g. 1000 tons landed). The initial step is already taken by including data from harbour sampling in the database and the development of software. This will assure that the input to the assessment model used by the Baltic Fish Assessment Working Group will be calculated in a consistent and well-documented way.

An updated web-based version of the database have been introduced is allowing participating countries to access all data through an Internet browser.

3.1.5 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.

Only few initiatives have been made to meet the growing international demand for exact information of the precision level connected to discard sampling. It is the ambition for DIFRES to use the experience obtained in other discard sampling programmes to estimate the level of precision of the Danish discard estimates by species.

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). Even though no guidelines for the minimum programme for 2005 is specified, Denmark will continue to produce CPUE data 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 produces 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 (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 (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 (Division IV)
- Norway pout in the North Sea (Division IV)
- Pandalus in the North Sea (Division IV)
- Pandalus in the Skagerrak (Division IIIa North)
- Nephrops in the North Sea (Division 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) 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 2005 Denmark will as in 2004 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.

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, 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 is this survey classified as a Priority 1 survey. The survey is undertaken twice during a year, one in the first quarter (18 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

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 is collected with a CTD.

Data is 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 is this survey 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

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 is 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 is collected with a CTD.

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

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

According to the Data Directive is this survey 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 is collected using a CTD.

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

3.4.4 Acoustic Survey on Pelagic Fish in the Norwegian Sea

The survey is planed to take place in May-June in cooperation with Norway, The Faroese Islands, Island and Russia. The total survey time is undertaken on 30 days and consists of a calibration part (1-2 seadays) and an acoustic abundance estimate of herring stocks (28 seadays) 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

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

Data is 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 18. May 2004. Positive response has been given for some member states, but not all has 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 Other surveys.

At present final decision on the status of the blue whiting survey at the spawning ground has been made. If this survey is upgraded to a priority one survey and it is conducted as a joined EU survey, Denmark will participate. Therefore, Denmark would like to ask for the possibility of extension of its programme when final decision has been made.

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.

3.3.6 Coordination and quality assurance.

The IBTS, BITS, Herring acoustic in the North Sea, the Skagerrak and the Kattegat as well as the Acoustic survey in the Norwegian Sea 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 2003. Information on the Danish and the total EC TAC is given for 2004. It should be noticed that at the time of the preparation of this proposal for data sampling in 2005, the potential landings of the years for which sampling is planned (TAC's) have not yet been defined. Therefore, some of the encountered problems is 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 fleets in the Netherlands 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, 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 2005 may therefore deviate from the proposed scheme, pending on the changes in quota in 2005 compared to 2004.

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 2005.

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 kilo of fish is 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 2001-2003 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 (Bobblefish) 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 2005 is based on the average Danish catches for 2001-2003. Therefore, the total sampling for 2005 can be increased or decreased depending on the Danish quotas for 2005 and the actual landings in 2005 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 be 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 The Baltic Sea. ICES Area IIIb-d

Sprat

The average Danish landings in 2001-2003 were 48,409 tonnes and the quota for 2004 is 37,254 tonnes which correspond to 10 % of the EC shared TAC. This obliges Denmark to sample this stock.

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

Standard sampling procedure as described in 3.5.1 will be used.

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

Sex and maturity stage is obtained from the individuals selected for ageing in each sample. The maturity estimates after aggregation has a CV which do not exceed 5% for the interval of 20-90% of the mature fish. The sex and maturity is determined following an international key (F. E. Alekseejev & E. I. Alekseejeva 1996).

Plaice

The average Danish landings in 2001-2003 were 2,697 tonnes and the Danish TAC for 2004 is 72 % of the EC share TAC, obliging Denmark to sample this stock.

Sampling of plaice follows the standard sampling scheme, however it is performed by the size-class stratification defined in EC standards from 1-4 and. At least one sample from each size-grade-class will be collected during the high season (summer).

This stock is not subject to other biological analysis.

Herring.

The average Danish landings of herring in 2001-2003 were 24,056 tonnes and the quota for 2004 is 8,279 tonnes corresponding to 4 % of the EC share TAC, do not oblige 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.

A major part of the herring catches (about 13,800 tonnes) in the Baltic is taken in Sub-division 24-32 (Sub-area IIId). The remaining part of the total Danish landings in 2003 is taken in Sub-division 22-23 (Sub-area IIIb and c).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. 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.

Standard sampling procedure as described in 3.5.1. will be used.

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

Sex and maturity stage is obtained from the individuals randomly selected for ageing in each sample. The maturity estimates after aggregation has a CV, which do not exceed 5% for the interval of 20-90% of the mature fish. The sex and maturity is determined following the international 8 scale maturity key.

Cod

The average Danish landings in 2001-2003 were 22,593 tonnes and the Danish TAC for 2004 is 19,917 tonnes corresponding to 29 % of the EC share TAC, obliging Denmark to sample this stock.

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.

Also the fishery is divided into East and West of the Baltic. East of Bornholm the fishery is exclusively performed during March to August with exception of the summer-stop during June and July, and is directed towards the spawning cod population. 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.

The sampling of cod follows the standard sampling scheme; however it is performed by the size-grade-class stratification defined in EC standards from size-grade 1-5. In practise, at least one sample will be collected per size-grade-class and during the high season (summer) more intensive ensuring samples from each size-class.

As this 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.

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 not subject to other biological analysis.

Salmon

The average Danish landings for 2001-2003 were 89,601 individuals and the Danish TAC in 2004 is 93,512 individuals corresponding to 19 % of the EC share TAC, obliging Denmark to sample this stock.

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 25 vessels participate in the salmon fishery and none of these are full-time engaged in fishing.

The sampling of salmon is following the standard sampling scheme. In practise the sampling is done from 2 auction-halls 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 recommended by DIFRES in Silkeborg, not to use DNA micro satellite-analysis to separate wild salmon from reared salmon, as this method will be much too expensive compared to the outcome of the results.

3.5.3 ICES AREA IIIa North and South

Sprat

The average Danish landings for the period 2001-2003 were 28,652 tonnes and the Danish TAC for 2004 is 33,504 tonnes corresponding to 72 % of the EC share TAC, obliging Denmark to sample this stock.

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

Standard sampling procedure as described in 3.5.1. will be used.

Sex and maturity stage is obtained from the individuals selected for ageing in each sample. The maturity estimates after aggregation has a CV which does not exceed 5% for the interval of 20-90% of the mature fish. The sex and maturity is determined following an international key (F. E. Alekseejev & E. I. Alekseejeva 1996).

Hake

The average Danish landings for 2001-2003 were 311 tonnes and the Danish TAC for 2004 is 1,086 tonnes corresponding to 92 % of the EC share TAC, obliging Denmark to sample this stock.

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 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.

Haddock

The average Danish landings for 2001-2003 were 2,040 tonnes and the Danish TAC in 2004 is 1,802 tonnes corresponding to 84 % of the EC share TAC, obliging Denmark to sample this stock.

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.

The sampling of haddock follows the standard sampling scheme, however it is performed by the size-class stratification defined in EC standards from 1-3.

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 not subject to other biological analysis.

Plaice

The average Danish landings in 2001-2003 were 6,782 tonnes in IIIa North (the Skagerrak) and 1,970 tonnes in IIIa South (the Kattegat). The quotas for 2004 is set at 7,397 tonnes for the Skagerrak and 1,659 tonnes for the Kattegat which corresponds to 79% and 89 % respectively of the total EU quota. This obliges Denmark to sample this stock.

Plaice is caught both as a target species for smaller trawlers 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 nephrops fishery is at least 70 mm and in other demersal human consumption fishery mesh-sizes larger than 90 mm.

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 per size-grade per season will be collected.

This stock is not subject to other biological analysis.

Herring

The average Danish human consumption landings in 2001-2003 were 32,3775 tonnes and the Danish TAC in 2004 is 29,177 tonnes corresponding to 48 % of the EC share TAC, and average landings of by-catches of herring in the small meshed fishery for Div. IIIa in 2001-2003 were estimated to app. 6,300 tonnes and the by-catch ceiling for herring set for Denmark in 2004 is 17,950 tonnes. These landings and TAC's obliging Denmark to sample this stock.

The herring human consumption fishing fleet in Division IIIa consists of trawler and purse seiners using mesh sizes larger than 32mm and the landings of herring are landed for human consumption purposes. The fishery is mainly occurring during June to October. By-catches of herring the small meshed fishery occur and these landings are used for fish meal and oil production.

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.

All revision of data and assessment are done on these spawning types.

Standard sampling procedure as described in 3.5.1. will be used.

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

Sex and maturity stages are obtained from the individuals randomly selected for ageing in each sample. The maturity estimates after aggregations have a CV which do not exceed 5% for the interval of 20-90% of the mature fish. The sex and maturity are determined following an international 8 scale maturity key. The spawning type is

determined from the otoliths following an intern manual (Mosegaard, H, L.A. Worsøe, and M. Lindberg 1999)

Sandeel

The average Danish landings for 2001-2003 for fishery in Div. IIIa were 18,247 tonnes. No separated TAC is given for this area. Denmark will sample this stock.

Sandeel is caught as a target species for trawlers. The catches are taken mainly during the 2nd quarter and are used for reduction purposes. The gears used have mesh-sizes less than 16 mm.

Standard sampling procedure as described in 3.5.1. will be used.

This stock is not subject to other biological analysis.

Sole

The average Danish landings for fishery in Div. IIIa in 2001-2003 were 435 tonnes and the Danish TAC for 2004 is 436 tonnes corresponding to 84 % of the EC share TAC, obliging Denmark to sample this stock.

Sole is caught as a target species for smaller trawlers and gillnet vessels. The catches are taken during the 2nd and 3rd quarter and only for human consumption purposes. The gears used have mesh-sizes larger than 90 mm.

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.

This stock is not subject to other biological analysis.

Cod

The average Danish landings in 2001-2003 for the Skagerrak was 4,535 tonnes and for the Kattegat 1,866 tonnes. The Danish TAC for 2004 is 3,119 tonnes in the Skagerrak and 841 tonnes for the Kattegat corresponding to 83% and 62% respectively for the two areas of the EC share TAC. This obliges Denmark to sample this stock.

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.

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.

As this 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.

This stock is not subject to other biological analysis.

Norway lobster (Nephrops)

The average Danish landings for fishery in Div. IIIa in 2001-2003 were 2,960 tonnes and the Danish TAC in 2004 is set at 3,380 tonnes corresponding to 74 % of the EC share TAC, which obliging Denmark to sample this stock.

Nephrops 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.

The sampling of nephrops follows the standard sampling scheme. No size grade is used for this species.

This stock is not subject to other biological analysis.

Deep-sea shrimp (Pandalus)

The average Danish landings for fishery in the Skagerrak in 2001-2003 were 1,665 tonnes and the Danish TAC in 2004 is set at 3,717 tonnes corresponding to 65 % of the EC share TAC, which obliging Denmark to sample this stock.

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.

The sampling of pandalus follows the standard sampling scheme. No size grade is used for this species.

This stock is not subject to other biological analysis.

3.5.4 ICES AREA II.

Atlanto-Scandian Herring

The average Danish landings in 2001-2003 in Denmark were 7,331 tonnes and in third countries 13,851 tonnes. The Danish TAC for 2004 is 24,945 tonnes

corresponding to 35 % of the EC share TAC, which obliging Denmark to sample this stock.

Atlanto-Scandian herring is landed during spring only for human consumption purposes. Purse seines using gear with a mesh-size between 32 and 40 mm undertakes this fishery.

As a major part of Danish landings of Atlanto-Scandian herring is taken place in Norway, an arrangement concerning sampling of these landings will tried to be set up with Norway, as a supplement to the standard sampling in Denmark.

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 maturity estimates after aggregation has a CV which do not exceed 5% for the interval of 20-90% of the mature fish. The sex and maturity is determined following an international 8 scale maturity key.

Blue whiting´

See Blue whiting in Section 3.5.5 ICES AREA IV

3.5.5 ICES AREA IV - XII

Mackerel

The average Danish landings in 2001-2003 in Div. IIIa, VI+VIId were 1,326 tonnes and 18,464 tonnes respectively. No separated TAC is given for the different areas and therefore all areas are managed together. The TAC for 2004 for the area is set at 11,951 tonnes corresponding to 56 % of EC-share. Denmark will sample this stock.

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.

This stock is not subject to other biological analysis.

Saithe

The average Danish landings in 2001-2003 in Div. IIIa and the North Sea were 5,062 tonnes. No separated TAC is given for the different areas and therefore all areas are managed together. The TAC for 2004 for the whole area is set at 7,879 tonnes corresponding to 8 % of EC-share. Denmark will sample this stock.

Saithe is landed all year round only for human consumption purposes. The fishery is undertaken by trawlers and gillnet vessels all using trawls and gill nets with a mesh-size larger than 90 mm in the Div. IIIa and 120 mm in the North Sea.

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.

Sandeel

The average Danish landings in 2001-2003 were 514,833 tonnes and the Danish TAC for 2004 is 851,922 tonnes corresponding to 94 % of the EC share TAC, which obliging Denmark to sample this stock.

Sandeel caught in the ICES area IV 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.

Standard sampling procedure as described in 3.5.1.

This stock is not subject to other biological analysis.

Anglerfish

The average Danish landings in 2001-2003 were 1,617 tonnes and the Danish TAC for 2004 is set at 546 tonnes corresponding to was 7,8 % of the EC share TAC. This catch level obliges Denmark to sample this stock.

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 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 sampler per size-grade will be collected.

The Danish sampling of this stock is due to the low Danish catch limited. It is therefore disproportionate expensive to train and maintain skills in age determination of this species.

Therefore, Denmark requests for derogation for age determination of this species. Sampling and length measurements will be carried out according to the levels described in the Data Directive.

This stock is not subject to other biological analysis.

Blue whiting

The average Danish landings for 2001-2003 in Div. IIIa, IV+VIId were 6,629 tonnes and 23,371 tonnes respectively. In other areas app. 9,900 tonnes were taken. The preliminary total Danish quota for 2004 is set at 76,317 tonnes. The Danish catch levels and TAC shares obliging Denmark to sample this stock.

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.

Standard sampling procedure as described in 3.5.1.

This stock is not subject to other biological analysis.

Sprat

The average Danish landings in 2001-2003 were 175,884 tonnes and the Danish TAC for 2004 is set at 219,803 tonnes corresponding to 89 % of the EC share TAC, which obliging Denmark to sample this stock.

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.

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. Sex and maturity stage is obtained from the individuals selected for ageing in each sample. The maturity estimates after aggregation has a CV which does not exceed 5% for the interval of 20-90% of the mature fish. The sex and maturity is determined following an international maturity key (F. E. Alekseejev & E. I. Alekseejeva 1996).

Horse mackerel

The average Danish landings in 2001-2003 were 2,050 tonnes in the areas IV and VIId and in area IIa, V, VI, VII, VIII, IX 13,676 tonnes. The Danish TAC for 2004 is set at 31,811 tonnes and 11,966 tonnes respectively, corresponding to 68 % and 9% of the EC share TAC, which obliging Denmark to sample this stock.

Most of the 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 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.

Norway lobster (Nephrops)

The average Danish landings in 2001-2003 were 2,025 tonnes (including catches in Norwegian zone) and the Danish TAC (EC zone) in 2004 is set at 993 tonnes corresponding to 5 % of the EC share TAC, which obliging Denmark to sample this stock. Even though the Danish TAC of the EC is 5%, Denmark will sample landings taken in the North Sea of this species.

Nephrops is landed all year round and only for human consumption purposes. Trawlers using gear with a mesh-size larger than 70 mm undertakes the fishery.

The sampling of nephrops follows the standard sampling scheme. No size grade is used for this species.

This stock is not subject to other biological analysis.

Deep-sea shrimp (Pandalus)

The average Danish landings in 2001-2003 were 1,657 tonnes (including catches in Norwegian zone) and the Danish TAC (EC zone) in 2004 is set at 4,526 tonnes corresponding to 76 % of the EC share TAC, which obliging Denmark to sample this stock.

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.

The sampling of pandalus follows the standard sampling scheme. No size grade is used for this species.

This stock is not subject to other biological analysis.

Turbot

The average Danish landings in 2001-2003 were 549 tonnes and the Danish TAC for 2004 is set at 764 tonnes corresponding to 16 % of the EC share TAC, which obliging Denmark to sample this stock. It should be mentioned that for the turbot TAC, brill is included.

Turbot is caught as by-catch in the fishery from vessels using either gill-net vessels or bottom trawls. Turbot is mainly landed during spring and summer by gill-net vessels using mesh-sizes larger than 200mm.

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.

Plaice.

The average Danish landings in 2001-2003 were 12,131 tonnes and the Danish TAC for 2004 is set at 11,585 tonnes corresponding to 20 % of the EC share TAC, which obliging Denmark to sample this stock.

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.

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 per size-grade will be collected per season.

This stock is not subject to other biological analysis.

Lemon sole

The average Danish landings in 2001-2003 were 1,268 tonnes and the Danish TAC for 2004 is set at 1,048 tonnes corresponding to 15 % of the EC share TAC, which obliging Denmark to sample this stock.

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

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.

Herring

The average Danish landings in 2001-2003 were 44,855 tonnes and the Danish TAC for 2004 is set at 78,722 tonnes corresponding to 22 % of the EC share TAC. A by-catch ceiling for herring for 2004 is set at 38,000 tonnes and the mean landings for the period 2001-2003 were 18,241 tonnes. This obliges Denmark to sample this stock.
The herring fishing fleet in ICES area IV consists of purse seiners and trawlers both using mesh-sizes larger than 32mm and the herring is landed for human consumption purposes. 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 2003 to app. 12,300 tonnes.

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 and stock and in addition, to determine the spawningtype of the individual herring.

Sex and maturity stage is obtained from the individuals randomly selected for ageing in each sample. The maturity estimates after aggregation has a CV which do not exceed 5% for the interval of 20-90% of the mature fish. The sex and maturity is determined following an international key. The spawningtype is determined from the otoliths following an intern manual (Mosegaard, H, L.A. Worsøe, and M. Lindberg 1999)

Norway pout

The average Danish landings in 2001-2003 in Div. IIIa and IV were 48,668 tonnes and the Danish TAC for 2004 is set at 220,340 tonnes corresponding to 99 % of the EC share TAC, which obliging Denmark to sample this stock.

Norway pout is mainly during autumn and winter. All the landing are made by demersal trawlers and used for reduction purposes.

Standard sampling procedure as described in 3.5.1.

This stock is not subject to other biological analysis.

Cod

The average Danish landings in 2001-2003 were 7,329 tonnes and the Danish TAC for 2004 is set at 4,635 tonnes corresponding to 20 % of the EC share TAC, which 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 gears used have a mesh size larger than 120 mm.

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 per size-grade will be collected per season and fishery.

However, as the cod fishery is heavily regulated at the present, the sampling aim may not be realistic, though it will be attempted completed. From the samples 50 individuals are length measured and 25 of these aged, both selected on a random basis.

As recovery plan for this stock is in force, the sampling level needs to be increased in order to collect adequate data for stock assessment purposes. Therefore, sampling will be carried out at higher level than prescribed in the Data Directive.

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 not subject to other biological analysis.

Haddock

The average Danish landings for 2001-2003 were 3,478 tonnes and the Danish TAC in 2004 is 4,773 tonnes corresponding to 7 % of the EC share TAC, obliging Denmark to sample this stock.

Haddock is landed all year round and only for human consumption purposes. Trawlers using gear with a mesh-size larger than 120 mm undertakes the fishery.

The sampling of haddock follows the standard sampling scheme, however it is performed by the size-class stratification defined in EC standards from 1-3.

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 not subject to other biological analysis.

Sole

The average Danish landings for fishery in Div. IV and VIId in 2001-2003 were 562 tonnes and the Danish TAC for 2004 is 648 tonnes corresponding to 3.8 % of the EC share TAC. As the Danish TAC share is lover than 5% of the EU TAC, Denmark will not sample this stock.

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.

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 2001-2003 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

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 Research Institute of Food Economics (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 30,900 in 2003. The aggregated value of the neglected small-scale fishery is only about 2% of the total fishery, whereupon the population in the statistics covers about 98% of the total output in the Danish fishery.

Before drawing the sample the population is stratified according to economic size, vessel segment, product combination, and region. The stratification by economic size is based on the total Standard Catch Value (SCV) for the fishing firm/vessel, 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 2003 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	60						60
Gill netters	258	65	35	22			380
Trawlers *	26	134	110	105	* 124	* 33	532
Purse seiners						9	9
Danish seiners		15	20	34			69
Beam trawlers					8		8
Polyvalent	48	33	8	7	4		100
Shrimpers							25
Mussel dredgers							61
All vessel categories	392	247	173	168	136	42	1,244

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 2003 the population numbered 1,244 fishing units, but only 405 of these units were available for selection as it is voluntary to participate in the statistics. 314 units were selected for the sample in 2003. 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 50% 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 2003

		-------- Yearly landings measured as SCV, Mio. DKK ---------					
Vessel- Length groups		Under 0.35	0.35- 0.79	0.80- 1.49	1.5- 2.99	3.00 and more	All vessels
Vessels less than 12 metre	Number in population Number in sample	117 15	203 24	66 16	4 1	2 -	392 56
Vessels 12 to 14,9 metre	Number in population Number in sample	7 -	76 16	106 21	57 11	1 1	247 49
Vessels 15 to 17,9 metre	Number in population Number in sample	2 -	6 1	53 16	87 20	25 13	173 50
Vessels 18 to 23,9 metre	Number in population Number in sample	1 -	2 1	18 5	75 17	72 34	168 57
Vessels 24 to 39,9 metre	Number in population Number in sample	- -	1 -	- -	8 4	127 51	136 55
Vessels over 40 metre	Number in population Number in sample	- -	- -	- -	- -	42 23	42 23
Special fisheries	Number in population Number in sample	- -	2 -	9 2	56 15	19 7	86 24
All length groups	Number in population Number in sample Sample size	127 15 12%	290 42 14%	252 60 24%	287 68 24%	288 129 45%	1,244 314 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 firm 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.

Both the units in the population as well as the structure of the weighting procedure have now been rebuilt to enable calculation of statistics by vessel units.

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 Precision level for sample statistics

The precision level or the uncertainty on the results cannot be calculated by approximation to a distribution function, because it is not possible to carry out a random sampling. The element of voluntary participation has the result, that only a part of each stratum is available for selection. The most important task for improving the precision level is to increase the willingness among the fishermen to participate in the selection population. The institute will follow up on last year's achievement on

increasing the number of fishermen to participate in the statistics, by selective enquiries to recruit fishermen in the strata where the participation needs improvement.

The institute will work on establishing an approximate measure for precision derived from ad hoc methods. At present the number of firms in the sample is about 315 and the remuneration to the fisherman's accountant is 385 EUR per reported account. It may be necessary to increase the number of accounts in order to meet the required precision for all fleet segments.

4.1.9 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

4.1.10 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 lines of business 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 of the collection of data concerning the 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 study data from Statistics Denmark's Industrial Commodity-, Account- and Raw Materiel Statistics, EU-Trade and Trade with non-EU countries 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 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 firms 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 firm in the processing industry for the years 2000, 2001 and 2002. This investigation has provided the background for dividing the firms into 13 sub-branches on the basis of the firm's commodity production (Annex X). The first criteria for the division of the sub-branches is the species that the firm 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 in to the processing industry from the Danish marked 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 analysis of the Industrial Commodity Statistics for 2000 represent 78 enterprises with a total turnover of approximately EUR 1.2 billion, which covers 79 % of the total turnover in the Account Statistics, which covers all enterprises in the Danish fish processing industry (NACE 15.20.10-30). The analysis of the Industrial Commodity Statistics for 2001 represent 77 enterprises with a total turnover of approximately EUR 1.4 billion, which covers 81 % of the total turnover.

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, EU-Trade and Trade with non-EU countries will be distributed as shown in annex X. 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 spot test covering the Raw Material

Statistics. At present only firms with more than 50 employees are covered in the Raw Material Statistics.

It has proved more difficult to calculate the raw material volume per species going into the processing industry than first expected. 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.

Firms with less than 10 full time employees are not yet distributed into the 13 new sub-branches, because they are not included in the Commodity Statistics. In cooperation with the industrial organisation in Denmark FOI will investigate the commodity composition for these firms and place them in the sub-branches where they belong. When the firms with less than 10 full time employees are distributed, FOI will have to calculate the total amount of commodities and raw material going into the 13 new sub-branches for the small firms.

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 all 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.

It will also be examined, how the collected data can comply with the extended program.

One of the things that will be 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 it will probably not be possible for the new 13 sub-branches, because the population is so small, that there can be problems referring to confidentiality of the data given by the industry.

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.

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.

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)**

The data collection will concentrate on examining the existing data collected by Statistics Denmark in Commodity Sales Statistics and the Sales note register at The Directorate of Fisheries.

- **Income**
- **Prices / product**

Calculation of total and per product income in the processing industry.

The starting point for this investigation will be the balance on price per product in Statistics Denmark Commodity Statistics, where every single product is specified by it's key in Combined Nomenclature. For all products the amount sold is given in tonnes and the corresponding value in 1,000 DKK.

- **Production costs**
- **Fixed costs**
- **Financial position**
- **Investment**
- **Employment**

The collection of the following data: production costs, fixed costs, financial position, investment and employment is described together because the foundation on which the data is collected is the same. The data is collected by Statistics Denmark in Accounts Statistics.

The key point is to investigate the existing data collected by Statistics Denmark for the use of an analysis of the Danish fish processing industry.

FOI will analyse the relevant data collected in Statistics Denmark's Commodity Statistics and Accounts Statistics for a description of the Danish fish processing industry, and evaluate the possibilities to provide new data for special types of commodities and branches.

Going through these data it will be examined in which case the data can be used directly or in which case it will be necessary to work out new data.

There is a need for a more precise description of some of the parameters in appendix XIX if they should be comparable between the countries.
"Raw material" (value) – Is this only the demands for fish or does it also covers other "raw materials" going into the processing industry.
"Fixed costs" – There is a need for a more precise definition of this parameter.
"Employment" – There can be some problems referring to, how the self-employed should be handled.

In the process of collecting data concerning the Danish fish processing industry there can be problems referring to confidentiality of the data given by the industry.

- **Capacity utilisation**

Capacity utilisation is not estimated for the Danish fish processing industry at present. To estimate capacity utilisation FOI will have to look at the parameters, that describe the capacity in the Danish processing industry. The study of capacity utilisation will be accomplished in collaboration among the relevant institutions and organisations to give the best possible evaluation to measure the capacity, and which parameters that best can describe the capacity in the Danish processing industry.

4.2.6. Supplementary data for improving the economic evaluation

Extended programme

To comply with the extended programme FOI will have to finish the pilot studies in order to disclose missing data and evaluate the possibilities to provide this data. On this basis FOI will make an evaluation and a description of the project to fulfil the extended programme. This will not be completed before the data collection for the minimum program has been launched, which means that the project description will be specified in the program for 2006.

- **Precision level**

It is for the time being, probably possible to divide the firms in the processing industry (NACE 15.20.10-30) on geographical region level 3 (nomenclature of territorial units for statistical purposes, NUTS 3), but it will probably not be possible for the new 13 sub-branches, because the population is so small, that there can be problems referring to confidentiality of the data given by the industry. FOI will look into this problem, and examine the possibilities for another slightly aggregated version of geographical subdivisions, so the overall sensitivity of the sector, including the social and economic impact on the processing industry located in different regions, can be evaluated.

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 2005.

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8. 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.

					Beforehand estimates			Sampling frequency rules[1]				Sampling frequency			
Species	Area (*)	DK landings in DK in 2003 (tonnes)	Discard percentage of landing	Estimated discard in 2003 (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 individuals to be measured	Number of samples to be aged	Number of fish to be aged
Anglerfish	IV, VIId	1,597	0	0	<10%	<20%	N	1:200	1:200	25	25				
Atlanto-Scandian Herring	IIa, V	8,081	0	0	<10%	<20%	N	1:1000	1:1000	50	25				
Blue whiting	IIIaN	7,667	0	0	<10%	<20%	N	1:1000	1:1000	50	50				
Blue whiting	IV, VIId	23,570	0	0	<10%	<20%	N	1:1000	1:1000	50	50				
Blue whiting	I-IX, XII, XIV	11,890	0	0	<10%	<20%	N	1:1000	1:1000	50	25				
Brill	IV, VIId	51	8	4	<10%	<20%	N	1:200	1:200	25	25				
Cod	IIIaN	3,054	15	458	>10%	>20%	Y	1:100	1:100	50	25	5	229	5	115
Cod	IIIaS	1,441	22	317	>10%	>20%	Y	1:100	1:100	50	50	3	159	3	159
Cod	IIIb-d	21,413	12	2570	>10%	>20%	Y	1:200	1:200	50	25	13	642	13	321
Cod	IV, VIId	4,516	12	542	>10%	>20%	Y	1:200	1:200	50	25	3	135	3	68
Haddock	IIIaN	1,435	14	201	>10%	>20%	Y	1:100	1:100	50	50	2	100	2	100
Haddock	IV, VIId	2,947	20	589	>10%	>20%	Y	1:200	1:200	50	25	3	147	3	74
Hake	IIIaN	293	9	26	<10%	<20%	N	1:100	1:100	50	50				
Herring	IIIaS	8,112	2	162	<10%	<20%	N	1:1000	1:1000	100	100				
Herring	IIIaN	24,265	3	728	<10%	<20%	N	1:1000	1:1000	100	100				
Herring	IIIb-c	2,438	2	49	<10%	<20%	N	1:1000	1:1000	100	25				
Herring	IIId	5,231	5	262	<10%	<20%	N	1:1000	1:1000	100	50				
Herring	IV, VIId	55,420	5	2771	<10%	<20%	N	1:1000	1:1000	50	25				
Horse mackerel	IV, VIId	3,041	5	152	<10%	<20%	N	1:1000	1:1000	100	25				
Horse mackerel	IIa, V, VI, VII, VIII, IX	10,499	5	525	<10%	<20%	N	1:1000	1:1000	50	25				
Lemon sole	IV, VIId	954	8	76	<10%	<20%	N	1:200	1:200	25	25				
Mackerel	IIIaN	1,254	1	13	<10%	<20%	N	1:500	1:500	100	100				
Mackerel	IV, VIId	17,151	1	172	<10%	<20%	N	1:1000	1:1000	50	25				
Norway lobster	IIIaS (Funcional unit)	1,328	42	558	>10%	>20%	Y	1:100		200	0	6	1116	0	0
Norway lobster	IIIaN (Funcional unit)	1,414	38	537	>10%	>20%	Y	1:100		200	0	5	1075	0	0
Norway lobster	IV, (Funcional unit)	2,042	15	306	>10%	<20%	Y	1:50	1:1000	400	50	6	2450	0	15
Norway pout	IIIaN	3,240	0	0	<10%	<20%	N	1:1000	1:1000	50	50				
Norway pout	IV	12,414	0	0	<10%	<20%	N	1:2000	1:2000	50	50				
Plaice	IIIaS	2,037	25	509	>10%	>20%	Y	1:100	1:100	50	50	5	255	5	255
Plaice	IIIaN	4,847	27	1309	>10%	>20%	Y	1:100	1:100	50	50	13	654	13	654
Plaice	IIIb-d	1,661	21	349	>10%	>20%	Y	1:100	1:100	50	50	3	174	3	174
Plaice	IV	12,665	8	1013	<10%	>20%	Y	1:500	1:500	50	25	2	101	2	51
Saithe	IIIaN	3,109	40	1244	>10%	>20%	Y	1:100	1:100	50	50	12	622	12	622
Saithe	IV, VIId	3,231	20	646	>10%	<20%	Y	1:200	1:200	50	25	3	162	3	81
Salmon (in numbers)	IIIb-d	102,293	0	0	<10%	<20%	N	1:100	1:100	50	50				
Sandeel	IIIaN	8,127	0	0	<10%	<20%	N	1:1000	1:1000	50	50				
Sandeel	IV	274,096	0	0	<10%	<20%	N	1:2000	1:2000	50	50				
Shrimp (Pandalid)	IIIaN	2,215	0	0	<10%	<20%	N	1:100		400	0				
Shrimp	IV	1,576	0	0	<10%	<20%	N	1:500		100	0				
Sole	IIIaS	194	24	47	>10%	>20%	Y	1:50	1:50	100	100	1	93	1	93
Sole	IIIaN	77	3	2	<10%	>20%	Y	1:50	1:50	50	50	0	2	0	2
Sole	IV	495	5	25	<10%	<20%	N	1:200	1:200	50	25				
Sprat	IIIaS	24,297	0	0	<10%	<20%	N	1:1000	1:1000	100	50				
Sprat	IIIaN	2,379	0	0	<10%	<20%	N	1:1000	1:1000	100	50				
Sprat	IIIb-d	37,499	0	0	<10%	<20%	N	1:2000	1:2000	100	50				
Sprat	IV, VIId	193,768	0	0	<10%	<20%	N	1:1000	1:1000	100	100				
Turbot	IV, VIId	753	7	53	<10%	<20%	N	1:200	1:200	25	25				

Annex III. Danish landings made in Danish harbours in 2001, 2002 and 2003. (for calculation of average landings for annex IV)

Species	Area (*)	DK landings in DK in 2001 (tonnes)	DK landings in DK in 2002 (tonnes)	DK landings in DK in 2003 (tonnes)
Anglerfish	IV, VIId	1,758	1,497	1,597
Atlanto-Scandian Herring	IIa, V, (landed in DK)	7,288	6,625	8,081
Atlanto-Scandian Herring	IIa, V (landed in NW)	16,504	18,986	6,064
Blue whiting	IIIaN	1,929	10,292	7,667
Blue whiting	IV, VIId	30,271	16,272	23,570
Blue whiting	I-IX, XII, XIV	14,839	3,078	11,890
Brill (*1)	IV, VIId	57	48	51
Cod	IIIaN	5,041	5,511	3,054
Cod	IIIaS	2,407	1,751	1,441
Cod	IIIb-d	25,462	20,904	21,413
Cod	IV, VIId	8,814	8,658	4,516
Haddock	IIIaN	1,334	3,352	1,435
Haddock	IV, VIId	2,390	5,096	2,947
Hake	IIIaN	303	398	293
Herring	IIIaS	7,424	7,631	8,112
Herring	IIIaN	25,359	24,190	24,265
Herring	IIIb-c	22,032	6,375	2,438
Herring	IIId	24,266	11,824	5,231
Herring	IV, VIId	36,910	42,234	55,420
Horse mackerel	IV, VIId	2,203	907	3,041
Horse mackerel	IIa, V, VI, VII, VIII, IX	21,156	9,374	10,499
Lemon sole (*2)	IV, VIId	1,184	1,666	954
Mackerel	IIIaN	1,826	899	1,254
Mackerel	IV, VIId	19,428	18,812	17,151
Norway lobster	IIIaS (Funcional unit)	1,452	1,223	1,328
Norway lobster	IIIaN (Funcional unit)	1,414	2,051	1,414
Norway lobster	IV, (Funcional unit)	1,907	2,127	2,042
Norway pout	IIIaN	12,867	2,568	3,240
Norway pout	IV	45,754	69,160	12,414
Plaice	IIIaS	2,069	1,803	2,037
Plaice	IIIaN	9,039	6,461	4,847
Plaice	IIIb-d	1,854	2,148	1,661
Plaice	IV	12,061	11,668	12,665
Saithe	IIIaN	1,043	2,447	3,109
Saithe	IV, VIId	2,361	2,993	3,231
Salmon (in numbers)	IIIb-d	90,388	76,122	102,293
Sandeel	IIIaN	18,792	27,822	8,127
Sandeel	IV	646,892	623,511	274,096
Shrimp (Pandalid)	IIIaN	1,078	1,702	2,215
Shrimp	IV	1,864	1,530	1,576
Sole	IIIaS	236	359	194
Sole	IIIaN	263	177	77
Sole	IV	611	580	495
Sprat	IIIaS	25,403	22,260	24,297
Sprat	IIIaN	8,347	3,268	2,379
Sprat	IIIb-d	51,242	41,485	37,499
Sprat	IV, VIId	169,577	164,308	193,768
Turbot (*1)	IV, VIId	457	753	436

(*) According to Commission Regulation (EC) No 1639/2001 (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 habours.

Species	Area (*)	Total EU TAC in 2004	Danish TAC in 2004	Danish TAC in %	DK landings in DK in 2001-2003 (tonnes) Avrg.
Anglerfish	IV, VIId	7,000	546	7.8	1,617
Atlanto-Scandian Herring	IIa, V (landed in DK)				7,331
Atlanto-Scandian Herring	IIa, V (landed in NW)	71,542	24,945	34.9	13,851
Blue whiting	IIIaN				6,629
Blue whiting	IIa, IV, VIId	72,934	71,984	98.7	23,371
Blue whiting	I-IX, XII, XIV	297,566	4,333	1.5	9,936
Brill (*1)	IV, VIId				52
Cod	IIIaN	3,773	3,119	82.7	4,535
Cod	IIIaS	1,363	841	61.7	1,866
Cod	IIIb-d	58,520	16,917	28.9	22,593
Cod	IV, VIId	23,085	4,635	20.1	7,329
Haddock	IIIaN	2,143	1,802	84.1	2,040
Haddock	IV, VIId	65,467	4,773	7.3	3,478
Hake	IIIaN	1,178	1,086	92.2	331
Herring	IIIaS				7,722
Herring	IIIaN	60,164	29,177	48.5	24,605
Herring	IIIb-c				10,282
Herring	IIId	196,280	8,279	4.2	13,774
Herring	IV, VIId	327,510	78,722	24.0	44,855
Horse mackerel	IIa, IV, VIId	46,788	31,811	68.0	2,050
Horse mackerel	IIa, V, VI, VII, VIII, IX	131,879	11,966	9.1	13,676
Lemon sole (*2)	IV, VIId	7,023	1,048	14.9	1,268
Mackerel	IIIaN				1,326
Mackerel	IV, VIId	21,381	11,951	55.9	18,464
Norway lobster	IIIaS (Funcional unit)				1,334
Norway lobster	IIIaN (Funcional unit)	4,600	3,380	73.5	1,626
Norway lobster	IV, (Funcional unit)	18,987	993	5.2	2,025
Norway pout	IIIaN				6,225
Norway pout	IIa, IV	223,000	220,340	98.8	42,443
Plaice	IIIaS	1,863	1,658	89.0	1,970
Plaice	IIIaN	9,310	7,397	79.5	6,782
Plaice	IIIb-d	3,766	2,697	71.6	1,888
Plaice	IIa, IV	57,923	11,585	20.0	12,131
Saithe	IIIaN				2,200
Saithe	IV, VIId	91,200	7,879	8.6	2,862
Salmon (in numbers)	IIIb-d	483,005	93,512	19.4	89,601
Sandeel	IIIaN				18,247
Sandeel	IV	902,200	851,922	94.4	514,833
Shrimp (Pandalid)	IIIaN	5,719	3,717	65.0	1,665
Shrimp	IV	5,920	4,526	76.5	1,657
Sole	IIIaS				263
Sole	IIIaN	520	436	83.8	172
Sole	IV	17,000	648	3.8	562
Sprat	IIIaS				23,987
Sprat	IIIaN	46,250	33,504	72.4	4,665
Sprat	IIIb-d	377,665	37,254	9.9	43,409
Sprat	IV, VIId	247,600	219,803	88.8	175,884
Turbot (*1)	IV, VIId	4,877	764	15.7	549

(*) According to Commission Regulation (EC) No 1639/2001 (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 2001-2003.

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 2001-2003	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	7	350	175
Atlanto-Scandian Herring	IIa, V (landed in NW)	1000	1000	50	25	14	700	350
Blue whiting	IIIaN	1000	1000	50	50	7	350	350
Blue whiting	IV, VIId	1000	1000	50	50	23	1150	1150
Blue whiting	I-IX, XII, XIV	1000	1000	50	25	10	500	250
Brill	IV, VIId	200	200	25	25	0	0	0
Cod (*1)	IIIaN	100	100	50	25	90	4500	2250
Cod (*1)	IIIaS	100	100	50	50	38	1900	1900
Cod (*1)	IIIb-d	200	200	50	25	226	11300	5650
Cod (*1)	IV, VIId	200	200	50	25	74	3700	1850
Haddock	IIIaN	100	100	50	50	20	1000	1000
Haddock	IV, VIId	200	200	50	25	17	850	425
Hake	IIIaN	100	100	50	50	3	150	150
Herring	IIIaS	1000	1000	100	100	8	800	800
Herring	IIIaN	1000	1000	100	100	25	2500	2500
Herring	IIIb-c	1000	1000	100	50	10	1000	500
Herring	IIId	1000	1000	100	100	14	1400	1400
Herring	IV, VIId	1000	1000	50	25	45	2250	1125
Horse mackerel	IV, VIId	1000	1000	100	25	2	200	50
Horse mackerel	IIa, V, VI, VII, VIII, IX	1000	1000	50	25	14	700	350
Lemon sole	IV, VIId	200	200	25	25	6	150	150
Mackerel	IIIaN	500	500	100	100	3	300	300
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		16	3200	0
Norway lobster	IV, (Funcional unit)	50		400		41	16400	0
Norway pout	IIIaN	1000	1000	50	50	6	300	300
Norway pout	IV	2000	2000	50	50	21	1050	1050
Plaice	IIIaS	100	100	50	50	20	1000	1000
Plaice	IIIaN	100	100	50	50	68	3400	3400
Plaice	IIIb-d	100	100	50	50	19	950	950
Plaice	IV	500	500	50	25	24	1200	600
Saithe	IIIaN	100	100	50	50	22	1100	1100
Saithe	IV, VIId	200	200	50	25	14	700	350
Salmon (in numbers)	IIIb-d	20000	20000	50	50	4	200	200
Sandeel	IIIaN	1000	1000	50	50	18	900	900
Sandeel	IV	2000	2000	50	50	257	12850	12850
Shrimp (Pandalid)	IIIaN	100		400		17	6800	0
Shrimp	IV,	500		100		3	300	0
Sole	IIIaS	50	50	100	100	5	500	500
Sole	IIIaN	50	50	50	50	3	150	150
Sole	IV	200	200	50	25	3	150	75
Sprat	IIIaS	1000	1000	100	50	24	2400	1200
Sprat	IIIaN	1000	1000	100	100	5	500	500
Sprat	IIIb-d	2000	2000	100	50	22	2200	1100
Sprat	IV, VIId	2000	2000	50	50	88	4400	4400
Turbot	IV, VIId	200	200	25	25	3	75	75

(*) According to Commission Regulation (EC) No 1639/2001 (Appendix XV -section H)

(*1) Extended sampling are in calculated on occassion of the low level of cod stocks in IV, IIIa, IIId

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 2001 (tonnes)	Other EU member states landings in DK in 2002 (tonnes)	Other EU member states landings in DK in 2003 (tonnes)
Anglerfish	IIIa, IV, Vb, VIa, VIId	103	167	104
Atlanto-Scandian Herring	IIa, V	2,013	1,413	1,015
Blue whiting	IIIaN	563	6,546	3,591
Blue whiting	IV, VIId	11	203	235
Blue whiting	I-IX, XII, XIV	24,448	16,447	15,534
Brill (*1)	IV, VIId	3	2	4
Cod	IIIaN	357	355	206
Cod	IIIaS	197	99	99
Cod	IIIb-d	4,238	1,911	1,298
Cod	IV, VIId	2,055	2,839	1,863
Haddock	IIIaN	218	388	246
Haddock	IV, VIId	1,298	1,080	1,952
Hake	IIIaN	8	10	11
Herring	IIIaS	3,266	881	4,616
Herring	IIIaN	16,905	12,626	8,275
Herring	IIIb-c	641	4,011	3,288
Herring	IIId	42,265	15,881	15,292
Herring	IV, VIId	6,738	6,793	6,676
Horse mackerel	IV, VIId	31	217	141
Horse mackerel	IIa, V, VI, VII, VIII, IX	6	34	-
Lemon sole (*2)	IV, VIId	91	142	162
Mackerel	IIIa	407	204	110
Mackerel	IV, VIId	4,997	5,613	6,670
Mackerel	II, V, VI, VII,VIII, IX	7,211	8,341	3,431
Norway lobster	IIIaS (Funcional unit)	9	9	13
Norway lobster	IIIaN (Funcional unit)	15	28	14
Norway lobster	IV, (Funcional unit)	29	16	2
Norway pout	IIIaN	-	-	-
Norway pout	IV	-	-	-
Plaice	IIIaS	8	9	10
Plaice	IIIaN	9	36	1,170
Plaice	IIIb-d	6	18	8
Plaice	IV	1,051	1,489	1,466
Saithe	IIIaN	218	256	179
Saithe	IV, Vb, VIa, VIId	5,070	9,742	8,074
Salmon (in numbers)	IIIb-d	29,400	23,600	
Sandeel	IIIaN	1,813	12,308	18
Sandeel	IV	35,297	35,124	18,541
Shrimp (Pandalid)	IIIaN	-	2	-
Shrimp	IV	-	10	-
Sole	IIIaS	2	13	18
Sole	IIIaN	-	-	2
Sole	IV	21	50	49
Sprat	IIIaS	698	-	3,416
Sprat	IIIaN	1,417	-	626
Sprat	IIIb-d	41,276	41,423	52,679
Sprat	IV, VIId	1,245	-	35
Turbot (*1)	IV, VIId	36	52	40

(*) According to Commission Regulation (EC) No 1639/2001 (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 2001-2003 (tonnes) Avrg.
Anglerfish	IV, VIId	7,000	125
Atlanto-Scandian Herring	IIa, V	71,542	1,480
Blue whiting	IIIaN		3,567
Blue whiting	IV, VIId	72,934	150
Blue whiting	I-IX, XII, XIV	297,566	18,810
Brill (*1)	IV, VIId		3
Cod	IIIaN	3,773	306
Cod	IIIaS	1,363	132
Cod	IIIb-d	58,520	2,482
Cod	IV, VIId	23,085	2,252
Haddock	IIIaN	2,143	284
Haddock	IV, VIId	65,457	1,443
Hake	IIIaN	1,178	10
Herring	IIIaS		2,921
Herring	IIIaN	60,164	12,602
Herring	IIIb-c		2,647
Herring	IIId	196,280	24,479
Herring	IV, VIId	327,510	6,736
Horse mackerel	IV, VIId	46,788	130
Horse mackerel	IIa, V, VI, VII, VIII, IX	131,879	13
Lemon sole (*2)	IV, VIId	7,023	132
Mackerel	IIIaN		240
Mackerel	IIa, IV, VIId	21,381	5,760
Mackerel	V, VI, VII,VIII, IX	345,509	6,328
Norway lobster	IIIaS (Funcional unit)		10
Norway lobster	IIIaN (Funcional unit)	4,600	19
Norway lobster	IV, (Funcional unit)	18,987	16
Norway pout	IIIaN		-
Norway pout	IV	223,000	-
Plaice	IIIaS	1,863	9
Plaice	IIIaN	9,310	405
Plaice	IIIb-d	3,766	11
Plaice	IV	57,923	1,335
Saithe	IIIaN		218
Saithe	IV, VIId	91,200	7,629
Salmon (in numbers)	IIIb-d	483,005	17,667
Sandeel	IIIaN		4,713
Sandeel	IV	902,200	29,654
Shrimp (Pandalid)	IIIaN	5,719	1
Shrimp	IV	5,920	3
Sole	IIIaS		11
Sole	IIIaN	520	1
Sole	IV	17,000	40
Sprat	IIIaS		1,371
Sprat	IIIaN	46,250	681
Sprat	IIIb-d	377,665	45,126
Sprat	IV, VIId	247,600	427
Turbot (*1)	IV, VIId	4,877	43

(*) According to Commission Regulation (EC) No 1639/2001 (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 2001-2003

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 2001-2003	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	1	50	25
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	19	950	475
Brill (*1)	IV, VIId	200	200	25	25	-	-	-
Cod (*2)	IIIaN	100	100	50	25	6	300	150
Cod (*2)	IIIaS	100	100	50	50	2	100	100
Cod (*2)	IIIb-d	200	200	50	25	24	1,200	600
Cod (*2)	IV, VIId	200	200	50	25	22	1,100	550
Haddock	IIIaN	100	100	50	50	3	150	150
Haddock	IV, VIId	200	200	50	25	7	350	175
Hake	IIIaN	100	100	50	50	-	-	-
Herring	IIIaS	1000	1000	100	100	3	300	300
Herring	IIIaN	1000	1000	100	100	13	1,300	1,300
Herring	IIIb-c	1000	1000	100	50	3	300	150
Herring	IIId	1000	1000	100	100	24	2,400	2,400
Herring	IV, VIId	1000	1000	50	25	7	350	175
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	6	300	150
Mackerel	II, IIIa, IV, V, VI, VII,VIII,	1000	1000	50	25	6	300	150
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	2	100	100
Saithe	IV, VIId	200	200	50	25	38	1,900	950
Salmon (in numbers)	IIIb-d	20000	20000	50	50	1	50	50
Sandeel	IIIaN	1000	1000	50	50	5	250	250
Sandeel	IV	2000	2000	50	50	15	750	750
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	1	100	50
Sprat	IIIaN	1000	1000	100	100	1	100	100
Sprat	IIIb-d	2000	2000	100	50	23	2,300	1,150
Sprat	IV, VIId	2000	2000	50	50	-	-	-
Turbot (*1)	IV, VIId	200	200	25	25	-	-	-

(*) According to Commission Regulation (EC) No 1639/2001 (Appendix XV -section H)

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

Annex IX. Questionnaire for Salmon catches in the recreational fishery.

Spørgeskema
TROLLINGFISKERI EFTER LAKS
2003

1. **Båd.**
   Trollingfiskede du i 2003 fra egen båd?
   ❒ Ja ❒ Nej
   Trollingfiskede du i 2003 fra lejet båd?
   ❒ Ja ❒ Nej

2. **Besvares kun hvis du fiskede fra egen båd eller lejet båd (ja i et af spørgsmålene 1 eller 2).**
   a) Bådens længde.
   ❒ 4 – 4,9 m ❒ 5 – 5,9 m ❒ 6 – 6,9 m ❒ 7- 7,9 m ❒ > 8 m

   b) Motorkraft.
   ❒ 20 - 49 hk ❒ 50 - 74 hk ❒ 75 - 99 hk ❒ 100 - 125 hk ❒ > 125 hk

   c) Bådens hjemhavn:……..

   d) hvis du kørte båden på trailer til fiskeriet skriv da hvilken havn eller hvilke havne oftest gik ud fra? Rangordn fra 1 (mest hyppigt) til 3 (mindst hyppigt).

   1……

   2…….

   3…….

   ❒ Kørte aldrig båden på trailer til fiskeri

3. **Antal personer.**
   Hvor mange personer fiskede du oftest sammen med?
   ❒ alene
   ❒ med ……. pers.

4. **Antal stænger.**
   Hvor mange stænger anvendte du oftest samtidig i 2003?

   Jeg har i gennemsnit anvendt …….. stykker trollingstænger

5. **Anvendte du normalt downrigger, planerboard eller sideparavaner ved dit fiskeri?**
   Downrigger ❒ Ja ❒ Nej
   Sideparavane ❒ Ja ❒ Nej

6. Fiskeområde.

Rangordn fra 1 (mest hyppigt) til 3 (mindst hyppigt) – hvis du har fisket i flere områder - de områder hvor du fiskede mest i 2003.

❒ Nord for Bornholm ❒ Syd for Bornholm
❒ Nordøst for Bornholm ❒ Sydvest for Bornholm
❒ Øst for Bornholm ❒ Vest for Bornholm
❒ Sydøst for Bornholm ❒ Nordvest for Bornholm
❒ Andre steder (skriv hvor).....

8. Antal dage

Skriv det totale antal dage du har trollingfisket hver måned i 2003.

Måned	Antal dage	Måned	Antal dage	Måned	Antal dage
Jan		Maj		Sep	
Feb		Jun		Okt	
Mar		Jul		Nov	
Apr		Aug		Dec	

9. Antal timer.

Skriv det gennemsnitlige antal trolling-timer per fiskedag i 2003.

Jeg har trollingfisket gennemsnitligt ca …….. timer/fiskedag.

Mine længste ture var ca……. ..timer/fiskedag.

Mine korteste ture var ca……timer/fiskedag.

10. Fangst i 2003.

Anfør kun egen fangst

	Antal fisk	**Antal kg (urenset)**	**Tungeste fisk i kg**
Laks			
Havørred			
Torsk			
Andet (skriv art)			

11. Fangst af laksefisk under mindstemålet (60 cm for laks, 40 cm for havørred).

Hvor mange fisk under mindstemålet fangede og genudsatte du i 2003?

Antal laks ca …….. Antal havørred ca……..

12. Kommentarer:

Navn..... Oplysninger om Navn og Adresse registreres
Adresse..... ikke elektronisk. De anvendes udelukkende til
Telefon..... kontakt for eventuelle opklarende spørgsmål.
E-mail.....

Tak for din indsats.
Skemaet bedes returneret til

Danmarks Fiskeriundersøgelser
Vejlsøvaj 39
8600 Silkeborg
Att.Stig Pedersen
Eventuelle spørgsmål om dette skema kan rettes til Stig Pedersen tlf. 89213100 mail. sp@dfu.min.dk

Annex X. Description of sub-branches in the 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 or 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 or preserved product industry** "Herring", provides more than 50% of the enterprises turnover.
15.20.17	**Prepared or preserved product industry** "Molluscs", provides more than 50% of the enterprises turnover.
15.20.18	**Prepared or 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 15.20.21-15.20.24
15.20.21	**Primary industry** "Salmonoids", provides more than 50% of the enterprises turnover.
15.20.22	**Secondary industry** "Salmonoids", provides more than 50% of the enterprises turnover.
15.20.23	**Mixed industry** "Salmonoids", provides more than 50% of the enterprises turnover.
15.20.24	**Smokehouses** "Salmonoids", Herring, Mackerel and Eel.
15.20.30	**"Fish meal factories"**