Technical Report on the Danish National Programme for collection of fisheries data in 2004

by

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1. Introduction

In accordance with the Council Regulation (EC) N^{o} 1543/2000 and in the framework of Commission Regulation (EC) N^{o} 1639/2001 (DCR) establishing the Minimum and Extended Community Programmes for the collection of data in the fisheries sector, this report details the results of the Danish sampling for 2004 as proposed in "Danish National Progamme for collection of fisheries data for 2004".

This report gives a technical report of activity of the work carried out in 2004 with reference to the aims described in the proposal and the requirements listed in the DCR.

2. Participating institutes

2.1 National correspondent

Denmark has assigned the Danish Institute for Fisheries Research as the National Correspondent. Contact person has for 2004 been Fishery Adviser Jørgen Dalskov.

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2.2 Participating institutes

The work in Denmark was carried out by 3 partners:

1. 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 Institute for Fisheries Research (DIFRES)
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www.difres.dk

2. Danish Directorate of Fisheries (FD) performs control and authority exercises at the commercial fisheries and the recreational and game fisheries.

Danish Directorate of Fisheries (FD)
Nyropsgade 30
DK-1780 København V
Denmark
Phone: +45 33 96 30 00
Fax: +45 33 96 39 03
www.fd.dk

3. The Danish Food and Resource Economics Institute (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.

Danish Food and Resource Economics Institute (FOI)
Rolighedsvej 25
DK-1958 Frederiksberg C
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Phone: +45 35 28 68 00
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3. Precision levels

3.1 Required and achieved precision levels

In table 3.1 an overview is given of the required and achieved precision levels for each Module of the DCR.

3.2 Methods used to calculate precision levels

The precision calculations are still at a development stage. DIFRES has tried to calculate precision on age and length distributions using the analytical method on Baltic cod. The disadvantage in using the analytical method is the problems in handling the number of strata in our data collection, as there are empty cells (strata with no samples). Not enough samples in each stratum have been sampled to use the bootstrap method.

Denmark have participated in the ICES Workshop on Sampling Design for Fisheries (WKSDFD) in 2004 and 2005 where methods to calculate precision have been discussed. DIFRES is actively participating in further development of the CASA package, which is an open source tool for calculating precision using the analytical method or the bootstrap method.

4. Data transmission

4.1 Data transmitted

In table 4.1 an overview is given of the data that were transmitted to ICES working groups. All data requested by STECF, STECF sub-groups and Regional Coordination Meetings (RCM's) have been delivered. Furthermore, all data requested at the control exercise initiated by the Commission in November-December 2004 were delivered within the fixed 20 days.

4.2 Reasons for non-transmission of data

All data requested by the working groups have been transmitted if data have been collected according to the DCR.

5. Module C – Fishing capacities

5.1 MP – Required and achieved sampling

The Danish Directorate of Fisheries operates a complete register of Danish vessels, containing all dimensional information from fishing vessels flying the Danish flag. This database contains, among others, data about:

- Vessel name, vessel number
- Vessel type
- Age of the hull
- Dimensions of the vessel; GT, length, width, draught
- Engine power

The database allows extracting the information required on fishing capacity as specified in Annex III of the DCR.

5.2 MP – Deviations from aim

There are no deviations from aim

5.3 EP – Required and achieved sampling

Denmark did not apply for an extended programme.

6. Module D – Fishing effort

6.1 MP – Required and achieved sampling

The required data in Denmark have been collected through the EU logbook system and comprise the information for all vessels and all activities. The data are available in the Danish Directorate of Fisheries logbook database.

The database contains data on landings by:
- Species
- Vessel
- Day
- Fishing ground, area and square
- Duration of trips in fishing days
- Gear type employed

At any time, data on fishing effort, aggregated as required in Annex V, VI and VII of the DCR can be provided by FD. Costs for fuel and the cost price are not available in the database. Whenever needed, these data can be estimated based on the economic data provided by the FOI.

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) one fishing day can be recorded. This will give a census of effort for all vessels less that 10 m.

6.2 MP – Deviations from aim

No precision level is calculated for fuel consumption (table 3.1).

6.3 EP – Required and achieved sampling

Denmark did not apply for an extended programme.

7. Module E – Catches and landings

7.1 MP – Landings – Required and achieved sampling

From the FD database total annual commercial landings can be provided by all species and area, according to level 2, level 3 or level 4 (depending on species), of geographical disaggregation of Appendix I in the DCR. The figures are based on all recorded landings in this database. The recorded landings in this database are census data.

For stocks mentioned in Appendix XII in the DCR, commercial landings can be disaggregated as indicated in that Appendix. Landings by weight of each segment identified in Appendix III in the regulation can be provided by species and quarter and, as regards the geographical origin of the catches, at the level of geographical disaggregation 2 according to Appendix I in the DCR. The value of the landings is also available in the FD database from the first sales registration. Landings from vessels less than 10 m are included in the sales slips database.

7.2 MP – Landings – Deviations from aim

There are no deviations from aim.

7.3 EP – Landings – Required and achieved sampling

Denmark did not apply for an extended programme.

7.5 MP & EP – Discards – Required and achieved sampling

The discard sampling in 2004 has been performed according to the policy laid down in the contract "Danish National Programme for collection of fisheries data" revised 15th of March 2004. Discard is sampled for demersal trawlers, nephrops trawlers and Danish seiners. 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 demersal trawlers, nephrops trawlers and Danish seiners, and discard is therefore not sampled for these fisheries.

In table 7.1 an overview is given of the achieved numbers of sea-going observer trips per fleet segment, the achieved number of hauls analysed for discards, the proportions of fishing trips sampled, and the species covered by discard sampling.

The Danish discard sampling is planned by days at sea for different gear types, and not by trips as requested in table 7.1. Planning the number of trips is difficult, as they can vary in number of days. Below is a table showing the planned and achieved number of days for discard sampling in 2004.

Area	Planned number of days	Achieved number of days	% achieved
IV	160	120	75%
IIIaN	96	69	72%
IIIaS	58	45	78%
IIIb-d	101	66	65%

7.6 MP & EP – Discards – Deviations from aim

Deviations from aim can't be calculated in table 7.1 at trip and haul level because discard sampling is planned by days at sea, as described in section 7.5. Instead the deviations from aim can be calculated for planned and achieved number of days in the table in section 7.5. The reasons that the achieved number of days is lower than the planned are that fishermen in some

periods resisted taking observers onboard due to their dislike the management of the fisheries in 2004. Furthermore, two of the observers staff got working injury.

No precision levels have been calculated for the discard sampling (table 3.1).

7.7 MP – Recreational – Required and achieved sampling

No substantial catches are made in Denmark in recreational fisheries except for salmon. The Danish recreational fishery for salmon is increasing in popularity, as catches have been good in recent years. It is especially popular around the island Bornholm, but also further to the west in the Baltic Sea catches have been recorded. The fishery is primarily done by trolling; i.e. dragging lures at different depths after small vessels. The exact position of the trolling fishery depends on the season, but the area to the east and north of the island Bornholm is very popular. The fishing season starts in September and ends in May. Both Danish nationals and visitors from abroad attend the fishery, either for short fishing trips or as participants in angling competitions. In addition to trolling, a number of fixed hook lines with only a few hooks is operated part of the year by local inhabitants around the island Bornholm.

In the North Sea there is no recreational fishery for salmon.

The total Danish recreational catch in the Baltic Sea in 2004 was estimated to be approx. 3000 salmon, corresponding to 3.6 % of the total Danish catch.

The catch by the recreational fishery is not officially registered and the estimate is based on

- Telephone interviews with four boat rental companies,
- Interviews with editors of a fishing magazine,
- Interviews with local anglers,
- Results from an angling competition with several hundred participants, where catches are registered by the convenors,
- Information from a local employee collecting samples from the professional fishery,
- Information from the ferry company servicing Bornholm on the number of cars with trolling boats visiting the island.

A questionnaire, accessible via the Internet, gave a very poor response, as only two anglers responded. It is believed that the poor response was due to fear of possible restrictions on the catch possibilities.

From the available information the total number of boat trips was estimated. This number was multiplied with an estimated average catch of 1 salmon per boat per trip, resulting in an estimate of approximately 1700 salmon. The total catch recorded at a competition (1000 salmon) was added, resulting in an estimated catch of 2700 salmon. Finally an estimated catch of 300 salmon on fixed hook lines was added, resulting in a total estimate of 3000 salmon caught in 2004. The number caught on fixed hook lines is very uncertain.

The total number estimated is the same as in 2003. It could be underestimated since the catch-per-unit-effort in the professional fishery was very high in 2004, probably as a result from high densities of salmon in the sea around Bornholm.

7.8 MP – Recreational – Deviations from aim

The amount of data collected in the pilot study on recreational fishery of salmon in 2004 was less than expected.

7.9 EP – Recreational – Required and achieved sampling

Denmark did not apply for an extended programme.

7.11 Action taken to remedy shortfalls

Regarding calculation of precision levels, DIFRES is participating in ICES workshops where precision calculation issues are discussed, and is participating in the development of the open source tool CASA for calculating precision levels (see section 3.2).

DIFRES has employed more staff for going at sea as observers.

8. Module F – Catches per unit effort

8.1 MP – Required and achieved sampling

In table 8.1 the CPUE data series are specified. All CPUE series have been provided as requested by the ICES working groups.

8.2 MP – Deviations from aim

There are no deviations from aim.

8.3 EP – Required and achieved sampling

Denmark did not apply for an extended programme.

9. Module G – Scientific evaluation surveys

9.1 MP – Required and achieved Priority 1 surveys

In table 9.1 an overview is given of the planned and achieved numbers of days at sea and the number of fishing hauls/echo nm.
The biological data from surveys are stored in the national biological database “Babelfisk” (see section 14.1). The acoustic data are stored in a national acoustic database. MIK data are stored in a national MIK database. CTD data are stored in a national CTD database.

IBTS first quarter and IBTS fourth quarter
The purpose of the survey is to estimate abundance of commercial (cod, haddock, whiting, Norway pout, saithe, herring, sprat, and mackerel) and non-commercial fish species by means of bottom trawling and to collect otoliths of commercial species to assess abundance by age, in particular for the recruiting year classes in the North Sea, Skagerrak and Kattegat. It is a trawl survey using GOV-trawl. The IBTS survey is coordinated by the ICES International Bottom Trawl Survey Working Group.

Types of data collected:
- Species composition
- Length and age measurements
- MIK: plankton, fish larvae (only first quarter)
- CTD: temperature and salinity at fishing stations

BITS first quarter and BITS fourth quarter
The primary purpose of the part undertaken by R/V DANA is to estimate abundance 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 surveys are

carried out in both the first and fourth quarters by both the research vessel R/V DANA and the smaller research vessel R/V HAVFISKEN participated. The BITS survey is coordinated by the ICES Baltic International Fish Survey Working Group.

Types of data collected:
- Species composition
- Length and age measurements
- Samples of cod for estimating age composition, sex ratios, maturity and growth parameters
- CTD: temperature, salinity and oxygen level

NS herring acoustic survey
The purpose is to provide acoustic abundance estimates of herring and sprat in the North Sea (eastern part), Skagerrak and Kattegat. The survey is coordinated by the ICES Planning Group for Herring Surveys.

Types of data collected:
- Acoustic data
- Biological data: species composition, length measurements
- For herring age and maturity measurements
- Hydrographical data using CTD

Atlan/Scand. Herring survey
The main objectives of this survey were to map the distribution and migrations of herring, blue whiting and other pelagic fish and to assess their biomass. Furthermore to monitor the hydrographic and plankton conditions of the Norwegian Sea and adjacent waters and describe how feeding and migration of herring and other pelagic fish are influenced by this. During the survey fishery was carried out regularly on acoustic registrations to verify the species detected and to give information about the size composition to be used in the biomass estimation. The survey is coordinated by the ICES Planning Group on North East Atlantic Pelagic Ecosystem Surveys.

Types of data collected:
- Acoustic data
- Biological data: species composition, length measurements
- For herring and blue whiting samples following parameters was measured on 50 individuals from each haul: length, weight, sex, maturity and age (from scales of herring and otoliths of blue whiting)
- Zooplankton using a WP2 net
- CTD: hydrographical data

9.2 MP – Deviations from aim
There are no deviations from aim.

9.3 EP – Required and achieved Priority 2 surveys
Denmark did not apply for an extended programme.

10. Module H – Length and age sampling

10.1 MP – Landings – Required and achieved sampling

DIFRES has been responsible for carrying out the age- and length measurements of the landings. These include landings by other member states vessels landed in Denmark.

Human consumption species are landed and sold at the fish markets, where samples are taken by DIFRES. In most human consumption sampling schemes the length measured individuals are age determined and hence no age-length key is applied. This implies for these species that the number of age readings is equal to the number of length measurements, while the DCR is generally requiring a larger number of length measurements than age readings. For human consumption species that are sold in size grade categories, the sampling is stratified on size grades. In general, whole boxes are sampled from the market.

Landings for reduction purposes are sampled by inspectors in the landing harbours. Since it is not known in advance, which areas are visited and which species are targeted, DIFRES has limited control on the origin and species composition of these samples. Therefore some areas may be sampled less than required and others may be sampled in excess of what is required according to the Danish National Programme. All the fish in these samples are length measured and a sub-sample is aged. This way of sampling for age and length results in some cases in a much higher number of length measurements than required the DCR.

In table 10.1 an overview is given of length and age measurements required, planned and achieved. The number of measurements achieved in table 10.1 is only from the harbour sampling, as these measurements are used to calculate length distribution. The length measurements from sea-going observer trips are not included as they are not size graded, and for calculating length distributions on landings, DIFRES is using the size grades on the samples and on the landings.

An exception to this is that for Norway lobster the number of length samples in table 10.1 is from sea going observer trips and not from harbour sampling. The reason that the nephrops working groups is using data from sea going observer trips instead of harbour sampling is that a high proportion of the catch is discarded due to the minimum landing size regulations.

10.2 MP – Landings – Deviations from aim

Herring (Clupea harengus)

Summary table of deviations from aim for herring.

Area	Type of measurement	Deviation
IIa, V (landed in DK)	Length	156%
	Age	56%
IIa, V (landed in NO)	Length	0%
	Age	0%
IIIaS	Length	761%
	Age	361%
IIIaN	Length	240%
IIIb-c	Length	1220%
	Age	1219%
IV, VIId	Length	318%

The reasons for sampling in excess of the requirements of herring are that the stratifications have to be covered and that a sample is a full box of herring. Following strata have to be covered:

- Time: quarter or month depending on area and period.
- Areas
- Landings for human consumption and landings for reduction purposes.
- Different herring spawning stocks

The reason that no length and age measurements were achieved for landings in Norway from area IIa and V is that the landings took place in the Faroe Islands and Iceland instead of in Norway.

The reason that the achieved number of age measurements in area IIa and V for landings in Denmark was 56% compared to what was required, is that our sampling plan is based on expected landings in Danish harbours. The actual number of landings in Denmark appeared to be fewer than expected.

Blue whiting (Micromesistius poutassou)

Summary table of deviations from aim for plaice.

Area	Type of measurement	Deviation
IIIaN	Length	506%
	Age	46%
IV, VIId	Length	45%
	Age	10%

The reason that the number of length measurements in area IIIaN was 506% compared to what was required is that a substantial part of the blue whiting is landed as by-catch in the herring fishery and it is very difficult to know when and whether blue whiting is landed. The number of age measurements in area IIIaN was lower than required due to poor quality of the samples and misunderstandings.

Furthermore, a reason that the achieved number of length and age measurements in the North Sea for landings in Denmark was lower than what was required is that our sampling plan is based on expected landings in Danish harbours. The actual number of landings in Denmark appeared to be fewer than expected.

Cod (Gadus morhua)

Summary table of deviations from aim for cod.

Area	Type of measurement	Deviation
IIIaN	Age	260%
IIIaS	Length	249%
	Age	248%
IIIb-d	Age	204%
IV, VIId	Length	45%
	Age	89%

The cod stocks in the North sea, IIIa and the Baltic sea are all on a critical level or managed under recovery regime, and therefore Danish sampling was increased according to this, in order to get better basic data for stock assessment purposes.

As cod in area IV and VIId is under recovery plan, the deviation is the actual measurements compared to the planned. The planned sampling was based on mean catches of the period 2000-2002, whereas the actual landings for 2004 were about half of this level.

Haddock (Melanogrammus aeglefinus)

Summary table of deviations from aim for haddock.

Area	Type of measurement	Deviation
IIIa	Length	227%
	Age	226%
IV, VIId	Length	308%
	Age	572%

The reason for the sampling in excess of the requirements is that strata have to be covered: areas, time (quarters) and size grade and that when taking a sample, a full box is taken.

Horse mackerel (Trachurus spp.)

Summary table of deviations from aim for horse mackerel.

Area	Type of measurement	Deviation
IV, VIId	Length	70%
	Age	45%
IIa, V, VI, VII, VIII, IX	Age	43%

The achieved number of measurements was less than required. The reason is that our sampling plan is based on expected landings in Danish harbours. The actual number of landings in Denmark appeared to be fewer than expected.

Lemon sole (Microstomus kitt) in area IV, VIId
The achieved number of length measurements were 663% compared to what was required.
The achieved number of age measurements were 468% compared to what was required.
This is caused by the number of strata that have to be covered: areas, time (quarters) and size grade and that when taking a sample, a full box is taken.

Mackerel (Scomber scombrus) in area IV, VIId
The achieved number of age measurements were 338% compared to what was required. The reason for the sampling in excess of the requirements is that a number of strata needed to be covered: areas, time (quarters) and size grade and that when taking a sample, a full box is taken.

Norway lobster (Nephrops norvegicus)

Summary table of deviations from aim for Norway lobster.

Area	Type of measurement	Deviation
IIIaS	Length	533%
IIIaN	Length	240%
IV	Length	50%

The reasons for the deviations for Norway lobsters are that the figures are not based on harbour samples, but on samples from sea going observers (see section 10.1). In the North Sea only one trip of this fishery has been monitored (see table 7.1). The number of samples taken depends on the number of hauls on monitored trips.

Norway pout (Trisopterus esmarki)

Summary table of deviations from aim for Norway pout.

Area	Type of measurement	Deviation
IIIa	Length	3940%
	Age	2120%
IV	Length	64%
	Age	39%

In area IIIa the Norway pout catches are by-catches from other fisheries. When sampling industrial landings or species are at least length measured. Therefore the sampling is not comparable to the landings.

In area IV the Norway pout fishery was historically low and only a few landings took place. Logistically it has been difficult to sample these landings.

Plaice (pleuronectes platessa)

Summary table of deviations from aim for plaice.

Area	Type of measurement	Deviation
IIIaS	Length	267%
	Age	200%
IIIb-d	Length	260%
	Age	160%
IV	Length	234%
	Age	459%

The sampling in excess of the requirements is caused by the number of strata that need to be covered: areas, time (quarters) and size grade and that when taking a sample, a full box is taken.

Saithe (Pollachius virens) in area IV, VIId
The achieved number of length measurements were 248% compared to what was required.
The achieved number of age measurements were 491% compared to what was required.
The sampling in excess of the requirements is caused by the strata that have to be covered: areas, time (quarters) and size grade and that when taking a sample, a full box is taken.

Salmon (Salmo salar) in area IIIb-d
The achieved number of length measurements were 340% compared to what was required.
The achieved number of age measurements were 339% compared to what was required.
The sampling in excess of the requirements is caused by the ICES Baltic Salmon and Trout Working Group decision that the number of samples taken by Denmark should be increased in order to get a good coverage of the significant salmon fishery in the Baltic Main Basin and because other countries in the working group have difficulties in getting data regarding open sea fisheries of salmon in the Baltic Sea.

Sandeel (Ammodytidae)

Summary table of deviations from aim for sandeel.

Area	Type of measurement	Deviation
IIIa	Length	602%
IV	Length	154%
	Age	63%

The reason for length measurements in excess of the requirements is that the sampling scheme is monthly based due to significant increase in mean weight from month to month.

Regarding the sampling below the requirements of otoliths in area IV, in addition to the data collection in harbours, in agreement with EC, Denmark implemented a real time monitoring scheme for managing the sandeel fishery. In this real time monitoring 6400 sandeel from area IV have been aged in 2004. The real time monitoring programme is not founded according to the provision of the DCR.

Shrimps (Pandalus spp.) in area IIIa
The achieved number of length measurements were 41% compared to what was required.

Sole (Solea solea)

Summary table of deviations from aim for sole.

Area	Type of measurement	Deviation
IIIaS	Length	199%
	Age	196%
IIIaN	Length	191%
	Age	188%

The reason for the sampling in excess of the requirements is that a number of strata have to be covered: areas, time (quarters) and size grade and that when taking a sample, a full box is taken.

Sprat (Sprattus sprattus)

Summary table of deviations from aim for sprat.

Area	Type of measurement	Deviation
IIIaS	Length	437%
	Age	211%
IIIaN	Length	891%
	Age	201%
IIIb-d	Length	542%
	Age	259%
IV, VIId	Age	24%

The reason for sampling in excess of the requirements is the number of strata that need to be covered: areas and time (month).

The reason for sampling below the requirements in the North Sea is that due to misunderstandings the planned number of otoliths to be taken failed.

10.3 EP – Landings – Required and achieved sampling

Denmark did not apply for an extended programme.

10.5 MP & EP – Discards – Required and achieved sampling

In table 10.3 the length and age sampling of catches and discards from observer trips are summarized. Age sampling of the landed part of the catches recorded on observer trips has not been done because according to our National Programme, harbour sampling of human consumption landings are used. Samples of all other species than listed in table 10.3 are counted and length measured.

10.6 MP & EP – Discards – Deviations from aim

There are no deviations from aim.

10.7 Action taken to remedy shortfalls

Initiatives for improving the sampling in order to ensure adequate sampling and to avoid shortfalls are constantly in focus. Better cooperation between DIFRES staff dealing with sampling and Fishery control staff has been initiated.

Regarding calculation of precision levels, DIFRES is participating in ICES workshops where precision calculation issues are discussed, and DIFRES is participating in the development of the open source tool CASA for calculating precision levels (see section 3.2).

11. Module I – Other biological sampling

11.1 MP – Required and achieved sampling

In table 11.1 an overview is given of the long-term sampling strategy of other biological parameters. In tables 11.2 and 11.3 an overview is given of achieved sampling for length at age, sex ratios, sexual maturity and fecundity. The numbers achieved are based on the data sources listed in the table.

11.2 MP – Deviations from aim

No precision level is calculated for length and weight at age, sexual maturity and sex ratios (table 3.1).

Fecundity is not sampled for mackerel and horse mackerel in area IV as required.

11.3 EP – Required and achieved sampling

Denmark did not apply for an extended programme.

11.5 Action taken to remedy shortfalls

Regarding calculation of precision levels, DIFRES is participating in ICES workshops where precision calculation issues are discussed, and DIFRES is participating in the development of the open source tool CASA for calculating precision levels (see section 3.2).

Attempts to sample fecundity information for mackerel and horse mackerel in area IV will be carried out in 2005.

12. Module J – Economic data on fishing vessels

12.1. MP - Required and achieved sampling

In order to ensure an adequate data quality the economic data on Danish fishing vessels 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. 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 and the specifications in appendix XVII of the Data Collection Regulation (EC) No 1639/2001 (hereafter referred to as DCR). The table 12.1.1 below shows exactly ***what data is being collected*** referring to the relevant parts of the Appendices in the DCR.

Table 12.1.1 Specification of collected data referring to DCR appendices.

Commission Reg. No. 1639/2001 Appendix XVII	**Danish Accounting Form for Fishery**	**SGECA Report Oct 2004**
General description of parameters	Specification of the recorded variables in detail	Definitions and specification of Economic Indicators for Fishery
Appendix XVII: Income (turnover)	Gross value of landings (total and per species)	Turnover: 1. Gross value of landings (including processing onboard) whatever the marketing channels – total and per species 2. Income accruing from other activities of the vessel (e.g. tourism, recreational fishing) 3. Incoming rents from quotas or fishing rights 4. Other income, e.g. revenues from POs 5. Do not include social benefits of persons
	Additional payments regarding production from earlier years	
	Received/handed over amounts to cover landings by/for other vessels (pair-trawling)	
	Other fishery income	
	Leasing or hire out of vessels and other operative assets	
	Other sources, for instance salvage money	
	Subsidies, for instance for participation in research fishery, or compensation for temporary decommission during cod closure in the Baltic.	Gross revenue: 1. Turnover 2. Subsidies connected to the production including compensation for bans on fishing

Continues …

Table 12.1.1 (continued). Specification of collected data referring to DCR appendices.

Commission Reg. No. 1639/2001 Appendix XVII	**Danish Accounting Form for Fishery**	**SGECA Report Oct 2004**
General description of parameters	Specification of the recorded variables in detail	Definitions and specification of Economic Indicators for Fishery
Appendix XVII: Production costs - crew (include social costs)	Salary to other partners/shareholders	Labour costs: 1. Wages and salaries of crew 2. Imputed value of owner's labour on board (and other unpaid family workers) 3. Social security costs
	Salary to hired skipper	
	Salary to hired crew (including pension)	
	Paid/received salary from other vessels for instance when pair-trawling (+/-)	
	Subsidies and repayments e.g. for trainees or long-term unemployed (-)	
	Other personnel expenses (insurance, social expenses etc.)	
	Salary to the owner/fisherman (skipper/owners share)	
Appendix XVII Production costs: – Fuel	Fuel costs excl. duties	1. Only fuel costs, excluding lubricant 2. Value
	Bonus and discount on fuel (-)	
	Fuel quantity (Litres)	Recommend that fuel volume is considered as an optional indicator of "Effort"
Appendix XVII Production costs: – Repair and maintenance	Maintenance of vessel, hull etc.	Repair and maintenance costs
	Maintenance of engines and winches	
	Maintenance of electronic equipment	
	Maintenance of fishing gear (purchase should be added to assets)	
	Maintenance of land-based plants and equipment, e.g. truck or van	
	Stores, various articles for consumption	
Continues …		

Table 12.1.1 (continued). Specification of collected data referring to DCR appendices.

Commission Reg. No. 1639/2001 Appendix XVII	**Danish Accounting Form for Fishery**	**SGECA Report Oct 2004**
General description of parameters	Specification of the recorded variables in detail	Definitions and specification of Economic Indicators for Fishery
Appendix XVII Production costs: – Other operational costs	Other expenses on energy and lubrications excl. duties	Other costs: Separate variable and non-variable costs 1. Variable costs: landings costs, sales, lubricant, treatment, ice, bait, boxes, salt, food, transport, harbour dues, pilot services, PO fees 2. Non-variable costs: administration (shore staff, communications, etc.), netting, insurance, general expenses, net leasing of technical equipment, costs of hiring/renting of quota or other fishing rights Comment: 1. Separation of variable and non-variable costs was agreed by the Concerted Action for the purpose of bio-economic analysis 2. Separation of these costs should be optional for MS 3. It is desirable if information on costs of quota and fishing rights can be separated
	Tax and duties on energy	
	Ice, salt and bait etc., used on the fishing vessel	
	Provisions	
	Harbour dues, pilot service and brokerage	
	Collecting, sorting and auctioneering	
	Packing, chilling and freight	
	Other landing service costs (not hired crew)	
	Landing service provided by own crew (not included in crew share/salary)	
	Market regulation fees	
	Subscription to fishermen's union, fishery duties	
	Purchase of fishing rights or quotas (incl. quota in 3'rd country fishing zones)	
	Rent of equipment, incl. leasing for a period less than a year	
	Rent of buildings (gear sheds), incl. leasing of less than a year	
	Insurance of vessel, equipment and fishing gear etc.	
	Other expenses on insurance (land-based plants, van, liability etc., excl. personnel insurance).	
	Administration, accounting etc.	
	Communication, telephone etc. (exclusive private use)	
	Operating share of cost on private vehicles (exclusive depreciation)	
	Other service costs	
	Tax on real property (fishery assets)	
Not specified in App. XVII	Net interest expenditure (recorded by 10 variables)	Interest payments. Should be optional for MS

Continues …

Table 12.1.1 (continued). Specification of collected data referring to DCR appendices.

Commission Reg. No. 1639/2001 Appendix XVII	**Danish Accounting Form for Fishery**	**SGECA Report Oct 2004**
General description of parameters	Specification of the recorded variables in detail	Definitions and specification of Economic Indicators for Fishery
Appendix XVII Fixed costs	Depreciation on Vessel, hull etc.	**Capital costs** Depreciation of the physical capital, including very expensive netting. Discussion and clarification is needed on the depreciation system, depreciation of fishing rights, application of different depreciation rates to different assets, different ways of valuing assets
	Depreciation on Engines and winches	
	Depreciation on Electronic equipment	
	Depreciation on Fishing gear	
	Depreciation on Van, truck etc.	
	Depreciation on Buildings (gear sheds etc.)	
	Operating share of depreciation on private vehicles etc.	
Appendix XVII Financial position	Financial (debt / assets) recorded by (7 + 14) variables both beginning and end of year	Financial position Borrowed capital divided by total capital
Appendix XVII Investment (asset)	Capital stock (Perpetual Inventory Method) of Vessel, hull etc.	**Capital value** Include value of fishing rights, as a separate item if possible. 1. Codes should be used as guidance to the definition of the indicator 2. Discussion on the specifications for fisheries is required, in line with discussions of “Capital costs”
	– Engines and winches	
	– Electronic equipment	
	– Fishing gear	
	– Van, truck etc.	
	– Buildings (gear sheds etc.)	
	– Stocks	
	– Fishing rights (IQ, ITQ)	
	Net investment (purchase minus sale) of Vessel, hull etc.	**Investments** Include value of fishing rights, as a separate item if possible. 1. Codes should be used as guidance to the definition of the indicator 2. Discussion on the specifications for fisheries is required, in line with discussions of “Capital costs”
	– Engines and winches	
	– Electronic equipment	
	– Fishing gear	
	– Van, truck etc.	
	– Buildings (gear sheds etc.)	
	– Stocks	
	– Fishing rights (IQ, ITQ)	

Continues …

Table 12.1.1 (continued). Specification of collected data referring to DCR appendices.

Commission Reg. No. 1639/2001 Appendix XVII	**Danish Accounting Form for Fishery**	**SGECA Report Oct 2004**
General description of parameters	Specification of the recorded variables in detail	Definitions and specification of Economic Indicators for Fishery
Appendix XVII Prices/species (Quarterly)	Value of landings by species (45 main species/species groups in the accounting form). All species recorded in the Sales Note Register.	Prices/species Use country statistics
	Quantity measured as live weight quantity in accounting form. All possible measures available in Sales Note Register	
Appendix XVII Employment (FTE)	Number of men (persons)	Employment 1. Full-time equivalents 2. Full-time 3. Part-time Recommend a study on defining full-time equivalent, with Eurostat collaboration
	Number of (men * fishing trips)	
	Number of (men * days at sea)	
	Average number of hours worked per day at sea	
	Number of (men * working days at land)	
Appendix XVII Fleet	Number of units (vessels)	Fleet Vessels in fishing vessel register
	GT	
	kW	
	Age	
Appendix XVII Effort	Vessel activity – Number of days at sea in the North Sea	1. Days at sea 2. Data should conform to that produced under module D of 1639/2001
	Vessel activity – Skagerrak	
	Vessel activity – Kattegat	
	Vessel activity – Baltic area	
	Vessel activity – Distant waters	
	Other days of vessel activity (make ready / rig up / maintenance)	

Who the data is being collected from

According to article 2.2 of the DCR the "commercial fishing fleet" consist of vessels registered and licensed or otherwise authorized to fish for the purpose of commercial exploitation of fisheries. All these vessels are registered in the Danish fishing vessel register at the Directorate of Fisheries. The fishing vessel register is linked to a register of fishermen, which consists of legal persons (persons or firms) who can own fishing vessels. All vessels are registered by a version (starting date, end date), for which the vessel is considered active. The end date is unlimited for active vessels data. If a vessel is sold, or the identification or vessel type is changed, a new version of that vessel is created starting the day immediately after the end date of the former version. Furthermore the Directorate of Fisheries records all landings and first hand sale of fish in the Sales note register.

The population or "commercial fishing fleet" is drawn up by combining the three registers so every kilogramme of fish sold is attached to a vessel and the legal owner (the economic agent) of that vessel.

In 2004 there have been registered fishery landings by 2,828 vessel versions. All recorded landings are aggregated by vessel and owner. For owners with more than one separately operated vessel, each of these vessels will form an active vessel unit. The number of active vessel units in 2004 was 2,378 units. These active vessel units have total revenue from fisheries ranging from EUR 3 (three) to more than EUR 6 Million.

The variation in economic activity or revenue accentuates the necessity to introduce a threshold value, below which the term commercial fishing unit is not valid. For instance a vessel unit with total yearly revenue of EUR 3 does certainly not qualify as a "commercial fishing unit". In the Danish account statistics for fishery the threshold value was set to DKK 150,000 for 1995 (EUR 20,565), and have been regulated since by a weighted index for fish prices as shown in table 12.1.2.

Table 12.1.2. Population of commercial fisheries share of total Danish landings.

Year	Calculated fish price index	Threshold level in EUR	Total SCV (1) in 1000 EUR for the population	Total Danish landings SCV (1) in 1000 EUR	**Share of total SCV (1) in %**	Total value (2) of Danish landings in 1000 EUR
1995	1.0000	20,565	413,108	422,784	97.7	411,480
1996	0.9992	20,139	384,784	388,111	99.1	399,602
1997	1.0581	21,074	392,759	397,682	98.8	447,885
1998	1.1917	23,998	391,751	396,903	98.7	454,045
1999	1.2737	25,671	420,899	424,643	99.1	429,242
2000	1.3040	26,203	422,804	430,808	98.1	429,273
2001	1.3406	27,033	417,972	427,868	97.7	476,862
2002	1.4613	29,509	441,660	449,379	98.3	500,984
2003	1.5352	30,932	385,449	389,688	98.9	366,887
2004	1.4956	30,161	382,652	388,923	98.4	352,976

(1) Standard Catch Value SCV = landings per species multiplied by 3-year average prices
(2) Value of all landings by Danish fishermen excluding "R38" (own segment / see below)

From table 12.1.2 is seen that the commercial fishing fleet covers more than 98% of the total value of fish from all Danish fishermen including part-time fishermen.

Only 1,257 vessel units, out of the 2,378 active vessel units in 2004, had an annual turnover from fish above the threshold value. Sixteen of the 1,257 vessel units were excluded from the population because the operating period were less than 6 month, and finally one vessel the "R38" was excluded for reasons of confidentiality, as this vessel form a separate segment as the sole actor in the Danish fishery for Northern Prawn in Greenland waters.

The remaining 1,240 vessel units constitute the Danish "commercial fishing fleet" for the year 2004. The table below show the population of commercial fishing vessels distributed by fleet segments as set out in Appendix III (MP).

Table 12.1.3. Population of commercial vessel units distributed by fleet segments

Vessel length [code] >>		[VL0012]	[VL1224]	[VL2440]	[VL40xx]
Type of fishing technique [code]		< 12 m	12 -< 24 m	24 -< 40 m	>= 40 m
Mobile gears [MB]	Beam trawl [TBB]	-	-	8	-
	Demersal trawl and demersal seiner [DTS]	26	136/102/107 15/21/33 26	40 / 77	17 / 17
	Pelagic trawl and seiners [PTS]	-	-	-	9
	Dredges [DRB]	29	31	1	-
	Polyvalent mobile gears [MGP]	-	-	-	-
Passive gears [PG]	Gears using hooks [HOK]	-	-	-	-
	Drift nets and fixed nets [DFN]	249	65 / 32 / 21	-	-
	Pots and traps [FPO]	63	-	-	-
	Polyvalent passive gears [PGP]	-	-	-	-
	Others (to be specified) [PGO]	-	-	-	-
Polyvalent gears[PVG]	Combining mobile and passive gear [PVGP]	56	40 / 9 / 5	5	-

In the Danish account statistics some of the fleet segments have been disaggregated further. For instance the length group 12-24m has been split into three groups (12-15 m., 15-18 m., and 18-24 m.). Further the demersal trawl and demersal seiner [DTS] group has been split between, bottom trawlers, Danish seiners, and shrimpers. Finally the trawlers over 24 m. have been split into industrial trawlers, who have more that 80% of the yearly revenue from industrial fish, and other trawlers. The total number of fleet segments for Denmark is 25.

Besides fleet segments the population is also stratified according to economic size based on the total Standard Catch Value (SCV) for the vessel unit. The population is divided into 11 economic size groups, which when the statistic is calculated are aggregated to 5 groups. The selection share for the groups varies, as the optimal sample size for each group is calculated in order to give the best possible estimate on the total value of landings by Danish fishermen.

Table 12.1.4 Selection share in per cent for the 5 economic size groups (‘000 EUR)

Economic size groups for 2004	30 to 70	70 to 161	161 to 302	302 to 603	More than 603 EUR
Selection share	13%	20%	25%	36%	42%

The sample is randomly drawn using the selection percentages shown in table 12.1.4 for each fleet segments / economic size group. Only vessel owners who previously have given permission to their accountants to report their figures to FOI are selected. Table 12.1.5 shows the units available for selection and the selected sample for 2004.

Table 12.1.5 Population of commercial vessels and sample 2004 by fleet segments

Fleet segment: vessel length / vessel type		Total population	No promise given	Available units for selection	Selected sample	Units available for complement
Under 12 metres	[DFN]	249	190	59	38	21
	[FPO]	63	45	18	12	6
	[PVGP]	56	46	10	8	2
	Trawlers	26	23	3	3	-
12-14.9 metres	[DFN]	65	53	12	12	-
	[PVGP]	40	35	5	4	1
	Danish seiners	15	12	3	3	-
	Trawlers	136	91	45	31	14
15-17.9 metres	[DFN]	32	24	8	6	2
	[PVGP]	9	6	3	3	-
	Danish seiners	21	13	8	6	2
	Trawlers	102	60	42	29	13
18-23.9 metres	[DFN]	21	13	8	8	-
	[PVGP]	5	3	2	1	1
	Danish seiners	33	23	10	9	1
	Trawlers	107	52	55	35	20
24-39.9 metres	[TBB]	8	1	7	7	-
	[PVGP]	5	3	2	2	-
	[PTS] Trawl industrial fish	40	18	22	17	5
	[DTS] Trawl other	77	47	30	28	2
Over 40 metres	Purse seiners	9	-	9	9	-
	[PTS] Trawl industrial fish	17	10	7	6	1
	[DTS] Trawl other	17	6	11	8	3
Special fisheries	Shrimpers	26	14	12	8	4
	Mussel-dredgers	61	45	16	16	-
All commercial vessels		1240	833	407	309	98

The number of vessels in the sample amounts to about 25% of the total number of vessels in the commercial fishing fleet. Due to the optimal sample size calculation more than 44% of the vessels over 24 metres are included in the sample. For two segments, the purse seiners and the beam trawlers, FOI has decided to include all vessels (100%) in the sample, which has been achieved, except for one reluctant beam trawler skipper.

The economic indicators are computed by a weighting scheme using register information for the whole population to calculate individual weights for each separate account. The statistics are prepared as totals and average per vessel for each fleet segment.

There is no evidence that the vessel units available for selection shows any kind of bias compared with the total population. It is clear though, that an increase in the number of units available for selection would be most welcome, as there are no extra vessel units available for complementing in 7 of the 25 fleet segments.

How the data are being collected

Table 12.1.1 shows in detail the definitions and the content of the economic parameters for practical data collection. The data are collected using a balanced account filled out by the fisherman's officially authorized accountant. The reported accounts are being thoroughly tested by FOI, for instance using registered information from the Directorate of Fisheries to validate fishing activity (logbooks) and value of landings (sales note register). Also accounts, that has been recorded the year before are tested for inconsistence between the closing balance and opening balance the year after.

Measuring capital is a theme that needs more attention during the process of revision of the DCR. As it is now in DCR Chapter IV J 1 (a) second paragraph the insured value should be preferred to the replacement value, which only comes second best. This is not the case for the Danish data and should not stand in the way for applying the best information available.
An important reason for using replacement value prior to insurance value is to avoid using a term, which has a very uncertain methodological grounding and thereby no chance of ever being harmonized within the EU. The term replacement value can also be questioned, as to what is being replaced. It would be wise to consider rephrasing this paragraph in the appendix, as has been suggested by the subgroup on economic data SGECA workshop (May 2004).

The valuing of capital can be assessed by three kind of prices:

- historic prices (acquisition prices)
- current prices (prices of the current year) [instead of using the word replacement]
- constant prices (prices of a selected year)

The Danish fishery account statistics uses the current prices. As a reference we recommend to use the OECD Manual (2001) Measurement of Capital Stocks, Consumption of Fixed Capital and Capital Services:

"This Manual serves two complementary purposes:
To clarify the conceptual issues concerning stocks and flows of fixed capital in the national accounts, and to provide practical guidelines for estimation.

The 1993 System of National Accounts (1993 SNA) includes capital stocks as an integral part of the accounting system and shows how the opening and closing stocks are reconciled by transactions in assets and other changes. The 1993 SNA also provides detailed definitions of fixed capital formation, stocks of fixed assets and consumption of fixed capital and these definitions underlie the guidelines contained in this Manual.

This Manual also deals with the definition and measurement of capital services. There is now wide agreement that the contribution of capital to production should be measured in terms of the flow of services produced by capital assets rather than by the stock of those assets. The Manual shows how a volume index of capital services can be constructed in a way that is consistent with the measurement of capital stocks and consumption of fixed capital.

It is important not to introduce new insecure methods into this field, when there is a good measure of agreement on the definitions in the context of the national accounts.

Also the use of the Perpetual Inventory Method (PIM), which is commonly used in SNA, should be stated in the regulation. A full description of the method is available in the OECD manual, from where can be read (page 43):

"The Perpetual Inventory Method (PIM) generates an estimate of the capital stock by accumulating past purchases of assets over their estimated service lives. The standard, or traditional, procedure is to use the PIM to estimate the gross capital stock, to apply a

depreciation function to calculate consumption of fixed capital and to obtain the net capital stock by subtracting accumulated capital consumption from the gross capital stock."

12.2. MP - Deviations from aim

Only one item from appendix XVII in the DCR has not yet been implemented in the system on Fishery Accounting that is the gear use. The information on main fishing gear and subsidiary fishing gear has now been included in the Danish fishing vessel register through the implementation of Commission Regulation No 26/2004 on the Community fishing fleet register, which came into force on 1 September 2004. From 2005 these data will complement the Fishery Accounting system and provide an easy access to all data stipulated in appendix XVII.

Another theme that has been in focus is the importance of using a threshold value in the definition of commercial fishing fleet, even though the concept of having a threshold value is beginning to catch on. The activity of the vessels below the threshold level is registered just as for the commercial fishing fleet, and work is carried out to include relevant data for these "semi-active" or part-time fishing vessels.

In 2004 the number of vessels with revenue from fishery below the threshold value was 1,121 of which 1,089 vessels was less than 12 metre length over all. Table 12.2.1 below shows the non-commercial vessels distributed by fleet segment and revenue groups.

Table 12.2.1 Number of non-commercial vessels by segments and revenue groups 2004.

Fleet segment: vessel length / vessel type		Less than 1000 EUR	1000-4999 EUR	5000-9999 EUR	10000-19999 EUR	20000-30160 EUR	All vessels
Under 12 metres	[DFN]	101	190	97	70	56	514
	[FPO]	138	226	70	49	26	509
	[PVGP]	4	18	13	16	4	55
	Trawlers	1	4	1	4	1	11
12-14.9 metres	[DFN]	0	1	0	1	6	8
	[FPO]	0	0	0	1	2	3
	[PVGP]	0	0	1	0	1	2
	Trawlers	0	2	2	2	1	7
18-23.9 metres	Trawlers	0	1	0	0	0	1
24-39.9 metres	[DTS] Trawl other	1	0	1	0	1	3
Special fisheries	Shrimpers	1	0	1	0	0	2
	Vessels not fishing	2	2	0	2	0	6
Non-commercial vessels		248	444	186	145	98	1121

The four vessels in length group 18-23.9 m and 24-39.9 m are all vessel versions with very short period of operation. The table show that not even 100 vessels have total revenue of over 20,000 EUR. The total revenue for the 1,121 vessels is 7 Mio EUR, which gives an overall average of 6,498 EUR per vessel. Table 12.2.2 gives the average revenue in 2004 for the different fleet segments and revenue groups.

Table 12.2.2 Average revenue 2004 in EUR per vessel for non-commercial vessels by segments and revenue groups.

Fleet segment: vessel length / vessel type		Less than 1000 EUR	1000-4999 EUR	5000-9999 EUR	10000-19999 EUR	20000-30160 EUR	All vessels
Under 12 metres	[DFN]	444	2714	6962	14213	26652	7243
	[FPO]	382	2527	7203	14409	25694	4916
	[PVGP]	368	2450	7491	15118	27254	8979
	Trawlers	67	3880	7028	13602	31382	9855
12-14.9 metres	[DFN]	0	4145	0	18735	30291	25578
	[FPO]	0	0	0	15345	23466	20759
	[PVGP]	0	0	5505	0	25979	15742
	Trawlers	0	2117	6639	17852	30069	11898
18-23.9 metres	Trawlers	0	2647	0	0	0	2647
24-39.9 metres	[DTS] Trawl other	131	0	7448	0	22848	10142
Special fisheries	Shrimpers	944	0	8254	0	0	4599
	Vessels not fishing	377	2131	0	14108	0	5538
Non-commercial vessels		407	2616	7088	14450	26618	6498

12.3. EP - Required and achieved sampling

There has not yet been the need for extra sampling for the extended programme, as the objectives in the scheduled EP for Denmark so far has been met by ensuring sufficiently details in the data recorded in the accountant form for fishery. The main task for achieving the objectives has been to adjust the system for fishery accounts and build in the parameters needed to register, calculate and analyse the data.

12.4. EP - Deviations from aim

So far there are no deviations to focus on.

12.5. Action taken to remedy shortfalls

Actions concerning the extended program are closely linked to the work performed in the SGRN and SGECA working groups, which has been intensified during 2004. FOI has contributed to in this work, and will continue to do so as an active partner.

13. Module K - Data concerning the processing industry.

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

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

Flowchart of study phases

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

13.1. MP – Required and achieved sampling

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

This investigation will include data from NACE groups

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

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

FOI has examined the composition of commodities from each enterprise in the processing industry for the years 2000 until 2004. This investigation has provided the background for dividing the enterprises into 13 sub branches on the basis of the enterprise's commodity production (see 13.6.1). The first criteria for the division of the sub branches is the species that

the enterprise processes and secondly the degree of processing. From these 13 sub branches it will probably be possible to evaluate the supply of raw materiel going into the processing industry from the Danish market and from abroad. The 13 sub branches also reflect the most important species in the Danish primary sector, and if there is a change in the supply of raw material, it will probably reflect on these groups. The 13 sub branches will probably also reflect the social and economic impact, on the processing industry of measures taken on behalf of the common fisheries policy.

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

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

13.1.1 Contents of the Account Statistics

What data is being collected?
The statistics are essentially aggregations of items of the annual accounts of business enterprises, notably items of the profit and loss account, the balance sheet and the statement of fixed assets. Thus, a wide range of subjects are covered, e.g. turnover, purchases, expenses, profits, assets, liabilities and investment.

Who the data is being collected from?
The accounts statistics are a reliable indicator of the activity level and of the structure of the Danish business sector. The highest data quality is achieved at the enterprise level, primarily because the enterprises prepare their annual accounts at that level. But also at the establishment level the published results for major activity groups and for counties are highly reliable.

Source: The Statistics are based on questionnaires, The Central Customs and Tax Administration (SLS-E data), The business register. The population is defined on the basis of Statistic Denmark's Central Business Register covering all businesses in Denmark (ESR).

Complete set of accounts: The data collected from all sources are combined in such a way that a complete set of accounting items is computed for each business enterprise.

A. Direct surveying. The most thorough coverage is extended to the enterprises that are selected for direct surveying. They are given the choice of either filling in a lengthy questionnaire or submitting their annual accounts plus detailed specifications. The questionnaire is modelled on the list of items set out in the Danish annual accounts legislation, so as to facilitate responding. The data obtained by direct surveying are keyed into a data entry system which comprises error detection and verification procedures. Thus, the data are checked for accounting inconsistencies, and warning messages are written out if significant deviations are found when comparing with last year's data or with figures for enterprises in the same stratum (form of ownership / activity / size group). Frequently the respondents are contacted for clarification.

B. The SLS-E system of the Danish tax authorities does not comprise so many items as Statistics Denmark's questionnaire, but the quality of the data is regarded as high, because they are used for individual tax assessment. By stratified imputation the data aggregates of the SLS-E system are distributed among the more detailed items, and in the opinion of Statistics Denmark the

resulting item values are reasonably reliable for profit and loss account as well as balance sheet. The SLS-E system does not include information about investment (spending on fixed capital).

C. The enterprises who are not covered by the sources A and B are mainly small enterprises, so the available information is limited. For these enterprises stratified imputation based on employment size groups is used to fill out the missing information.

How the data are being collected?
The reporting unit is the Kind of Activity Unit which is the total sum of workplaces engaged in the same economic activity (industry).

Industrial groupings: Kind of activity. This concept, which is sometimes termed branch or industry, refers to the 6-digit code numbers found in the Danish activity classification DB03, which is based on the European NACE nomenclature.

13.1.2 Contents of the Industrial Commodity Statistics

What data is being collected?
The industrial commodity statistics describe manufacturers' sales of commodities measured in volume and value. In addition to this the statistics comprise a survey of the commodity sales distributed by industries.

Who the data is being collected from?
The Statistics are based on questionnaires. The population is defined on the basis of Statistic Denmark's Central Business Register covering all businesses in Denmark (ESR).

Survey population: The statistics cover industrial enterprises with at least 10 fulltime-employees as well as sales of enterprises registered as non-industrial enterprises, but with workplaces within manufacturing and with at least 10 fulltime-employees, are included in the statistics.

The reporting unit is the Kind of Activity Unit which is the total sum of workplaces engaged in the same economic activity (industry).

How the data are being collected?
The value is calculated as invoice sales ex factory or free delivery inside Denmark. Turnover taxes and production taxes are excluded from the sales value. Invoiced discounts are deducted. General packaging, freight charges and insurance costs are included if they can be distributed to individual commodities.

The total turnover is divided into different kinds of sales
- Sales of own commodities, i.e. commodities which are manufactured, processed or assembled by the enterprise itself.
- Construction work done for other enterprises, where the other enterprises own the machinery etc., which relates to the work involved in mounting.
- Reconditioning and mending for other enterprises, where the other enterprises own the machinery.
- Paid work (contract work) performed for other enterprises, where the other enterprises own the raw materials etc.
- Commercial turnover or resale turnover
- Other turnover including income from licences, commissions, income from know how etc.

Information on quantities is declared as net weight, including the wrapping normally used when the commodity is sold in the retail trade. The transport packaging is not included.

Industrial groupings: Enterprises are grouped in the 4-digit NACE-classes and in the more detailed 6-digit DB03 national branch grouping based on NACE.

Commodity nomenclature: The commodities are grouped in a 10-digit nomenclature based on the 8-digit Combinated Nomenclature (CN). The first 8 digits in the commodity nomenclature are always identical with the CN.

13.1.3 Contents of the Raw Materiel Statistics

What data is being collected?
The survey describes the use of raw materials, semi-manufactured products, intermediary products, purchase of services, packing costs and use of water in the production of industrial commodities.

Who the data is being collected from?
The statistics contain a survey of the raw materials etc. distributed to groups of industries.

The Statistics are based on questionnaires. The population is defined on the basis of Statistic Denmark's Central Business Register covering all businesses in Denmark (ESR).

Survey population: The statistics cover industrial enterprises with at least 50 fulltime-employees. Enterprises with more than 20 but under 50 fulltime-employees are added to the population in industrial groups with only a few enterprises with at least 50 employees.

How the data are being collected?
Industrial groupings: The survey is based on the 6-digit Danish Branch nomenclature of which the 4 first digits are the NACE nomenclature.

Commodity groupings: The raw materials etc. are collected on basis on the 8-digit CN nomenclature also used in External Trade Statistics. The first 4 digits of the CN are used as basis in the raw material nomenclature.

13.1.4. Definitions of parameter (Table 13.1, and paragraph 13.6.2 and 13.6.3)

- **Raw material (volume)**

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

- **Income**

- Income (turnover) represents the net sales. Included are capitalised work performed by the enterprise for own purposes and all charges (transport, packaging, etc.) passed on to the customer. Excluded is reduction in prices, rebates, discounts, VAT and excise duties. Income classified as other operating income, financial income and extraordinary income in company accounts is also excluded from turnover.

- **Other income** is classified as other operating income, financial income and extraordinary income in company accounts.

- **Production costs**

- **Labour** cost is defined as the total remuneration, in cash or in kind, payable by an employer to an employee (regular and temporary employees as well as home-workers) in return for work done by the latter during the reference period. Personnel costs also include taxes and employees' social security contributions retained by the unit as well as the employer's compulsory and voluntary social contributions. These include employer's social security contributions to schemes for retirement pensions, sickness, maternity, disability, unemployment, occupational accidents and diseases, family allowances as well as other schemes. These costs are included regardless of whether they are statutory, collectively agreed, contractual or voluntary in nature. Payments for agency workers are not included in personnel costs.

- **Energy** includes purchases of all energy products during the reference period for electricity, heating and production. Fuel for vehicles is not included.

- **Resale Commodities** purchased as raw material for resale without transformation.

- **Raw material** contains mainly fish and fish product auxiliaries.

- **Packaging** purchased as raw material.

- **Other running costs** include payments for agency workers, subcontracts, rents, minor inventories, leasing, and other expenses.

- **Depreciations** includes write offs and write downs.

- **Financial transaction** includes income and expenses from interest, returns from capital assets and extraordinary income and expenses.

- **Tax** includes corporation taxes.

- **Fixed costs**

- **Fixed costs** are the share of Depreciations calculated from the Total investment (assets).

- **Financial position**

- **Financial position** is the share of Net capital calculated from the Total liabilities.

- **Investment (assets)**

- **Investment (assets)** current prices. The Perpetual Inventory method is used. "The Perpetual Inventory Method" (PIM) generates an estimate of the capital stock by accumulating past purchases of assets over their estimated service lives. The standard, or traditional, procedure is to use the PIM to estimate the gross capital stock, to apply a depreciation function to calculate consumption of fixed capital and to obtain the net capital stock by subtracting accumulated capital consumption from the gross capital stock."

- **Price/Product**

- **Price/product** is calculated from the Industrial Commodity Statistics, which covers 98% of the total sales of commodities in the Danish fish processing industry.

- **Employment**

- **Employment** is equal to full-time equivalents (FTE).

- **Capacity utilisation**

- Capacity utilisation is not estimated for the Danish fish processing industry at present.

13.2 MP- Deviation from aims

It have not been possible to show all 13 new sub branches in paragraph 13.6.2, because the population in these branches is too small, that there will be problems referring to confidentiality of the data given by the industry. Instead following sub branches is merged “Prepared or preserved product industry” for mackerel (15.20.13) and herring (15.20.16), “primary- and secondary industry” for herring (15.20.14) and (15.20.15), “Prepared or preserved products industry” for molluscs, shrimps and crustaceans (15.20.17) and (15.20.18).

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

13.3. EP – Required and achieved sampling

Denmark has no extended program for 2004

13.4. EP – Deviation from aim

Denmark has no extended program for 2004

13.5. Action taken to remedy shortfalls

On the basis of the new 13 sub branches the data from the Industrial Commodity-, Account- and Raw Materiel Statistics will be distributed as shown in paragraph 13.6.1. 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, as shown in paragraph 13.6.2 and 13.6.3.
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 enterprises with more than 50 employees are covered in the Raw Material Statistics.

It has also 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.
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.

13.6. Collected data on the 13 new sub branches

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

Sub branches (NACE)	General description
15.20.10	**"Fish processing and preservation".** Total for the sub branches 15.20.11-15.20.19
15.20.11	**Primary industry** "Cod, flatfish etc.", provides more than 50% of the enterprises turnover.
15.20.12	**Mixed industry** "Cod, flatfish etc.", provides more than 50% of the enterprises turnover.
15.20.13	**Prepared 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 15.20.21-15.20.23
15.20.21	**Smoking of salmon** "Salmonoids", provides more than 50% of the enterprises turnover.
15.20.22	**Mixed industry** "Salmonoids", provides more than 50% of the enterprises turnover.
15.20.23	**Smokehouses** "Salmonoids", Herring, Mackerel and Eel.
15.20.30	**"Fish meal factories"**

13.6.2 – Data collected from the Account Statistics

Account Statistics for 2002 in 1.000 EUR **1 EUR= 7,44 DKK**

Branches (NACE)	**15.20.10**	**15.20.11**	**15.20.12**	**15.20.13 + 15.20.16**	**15.20.14 + 15.20.15**	**15.20.17 + 15.20.18**	**15.20.19**
	Total 15.20.11-19	Cod, flatfish etc.	Cod, flatfish etc.	Mackerel and Herring	Herring	Molluscs, shrimps and crustaceans	Mixed production
Degree of processing		**Primary**	**Mixed**	**Preserved/ Prepared**	**Primary**	**Preserved/ Prepared**	**Mixed**
Number of enterprises	**69**	**11**	**5**	**4**	**14**	**10**	**25**
Operating result:							
+ Income	**1.069.283**	110.989	284.722	84.886	142.805	127.276	318.606
+ Other income	**22.948**	3.232	5.496	7.926	3.318	994	1.982
- Labour	**130.969**	17.593	41.055	12.205	20.861	13.088	26.166
- Energy	**14.094**	1.240	3.645	3.624	1.493	1.639	2.454
- Resale commodities	**237.603**	19.328	126.420	4.891	9.780	6.591	70.592
- Raw material	**509.770**	63.184	79.020	42.910	79.265	72.093	173.299
- Packaging	**49.982**	1.032	5.399	16.980	6.812	6.470	13.288
- Other running costs	**86.749**	8.754	23.656	4.970	18.654	12.122	18.593
- Depreciation	**23.450**	1.537	4.493	4.055	4.895	3.649	4.820
- Financial transactions	**9.074**	663	3.774	-1.154	976	1.368	3.446
- Tax	**8.433**	541	1.099	1.386	1.082	3.538	788
Net profit	**22.108**	**347**	**1.656**	**2.945**	**2.305**	**7.713**	**7.142**
Fixed cost (Depreciations)	**4%**	6%	3%	4%	6%	5%	3%
Financial position	**31%**	36%	46%	29%	28%	34%	19%
+ Total fixed assets	**247.570**	8.601	49.137	44.624	40.332	25.550	79.324
+ Total current assets	**345.781**	18.692	84.027	54.108	44.263	40.955	103.736
Investments (assets)	**593.351**	**27.294**	**133.164**	**98.732**	**84.595**	**66.505**	**183.060**
Net capital	**181.078**	**9.832**	**60.720**	**28.725**	**23.996**	**22.601**	**35.204**
+ Provisions	**15.331**	627	4.483	5.639	2.515	1.383	682
+ Long-term debt	**96.407**	2.512	14.283	21.997	28.858	11.248	17.508
+ Short-term debt	**300.535**	14.322	53.678	42.371	29.225	31.273	129.666
Total liabilities	**593.351**	**27.294**	**133.164**	**98.732**	**84.595**	**66.505**	**183.060**
Employment (FTE)	**3.438**	461	1.130	300	540	321	686

Account Statistics for 2002 in 1.000 EUR

1 EUR= 7,44 DKK

Branches (NACE)	**15.20.20**	**15.20.21**	**15.20.22**	**15.20.23**	**15.20.30**	**Total**
	Total 15.20.21-23	Smoked salmon	Salmonoids	Smoke-houses	Fish meal factories	
Degree of processing		**Preserved/ Prepared**	**Mixed**	**Preserved/ Prepared**	**Preserved/ Prepared**	
Number of enterprises	**47**	12	14	21	**7**	**123**
Operating result:						
+ Income	**248.849**	112.387	128.458	8.004	**357.430**	**1.675.561**
+ Other income	**-658**	1.057	-1.925	210	**19.002**	**41.292**
- Labour	**52.074**	23.695	26.873	1.505	**21.658**	**204.701**
- Energy	**3.361**	1.379	1.840	142	**17.765**	**35.221**
- Resale commodities	**9.280**	999	8.117	164	**18.847**	**265.729**
- Raw material	**139.007**	63.473	70.346	5.188	**196.308**	**845.085**
- Packaging	**16.190**	9.016	7.174	0	**2.651**	**68.823**
- Other running costs	**23.373**	11.977	10.396	1.001	**90.972**	**201.094**
- Depreciation	**6.247**	2.964	3.102	181	**9.099**	**38.795**
- Financial transactions	**2.353**	1.091	1.111	151	**1.855**	**13.282**
- Tax	**144**	710	-570	4	**937**	**9.513**
Net profit	**-3.837**	**-1.861**	**-1.855**	**-122**	**16.339**	**34.610**
Fixed cost (Depreciations)	**5%**	5%	5%	4%	**7%**	**5%**
Financial position	**24%**	17%	31%	18%	**19%**	**28%**
Investments (assets)						
+ Total fixed assets	**48.284**	21.364	24.893	2.027	**31.038**	**326.891**
+ Total current assets	**72.657**	33.374	36.764	2.519	**99.382**	**517.820**
Total assets	**120.941**	**54.738**	**61.657**	**4.546**	**130.419**	**844.712**
Net capital	**29.075**	**9.321**	**18.943**	**811**	**25.319**	**235.473**
+ Provisions	**1.557**	1.024	349	185	**457**	**17.345**
+ Long-term debt	**19.422**	8.213	10.415	794	**22.640**	**138.469**
+ Short-term debt	**70.887**	36.180	31.951	2.756	**82.003**	**453.425**
Total liabilities	**120.941**	**54.738**	**61.657**	**4.546**	**130.419**	**844.712**
Employment (FTE)	**1.436**	655	711	70	**428**	**5.302**

13.6.3 – Data collected from the Industrial Commodity Statistics on prices/product

Example of price per product calculated from the Industrial Commodity Statistics 2002.

Industrial Commodity Statistics 2002 in EUR. 1 EUR= 7,44 DKK

	NACE	15.20.10-30	
Commodity numbers (EC's Combined nomenclature)	**Branches**	**Total 15.20.10-30**	**Price per kilogram EUR**
302119000	1.000 EUR ton	4.882 1.839	2,65
302120000	1.000 EUR ton	70 18	3,83
302211000	1.000 EUR ton	90 16	5,56
302213000	1.000 EUR ton	7 1	11,93
302220000	1.000 EUR ton	489 127	3,86
302230000	1.000 EUR ton	8 1	11,34
302299000	1.000 EUR ton	118 57	2,05
302400000	1.000 EUR ton	8.107 6.500	1,25
302501000	1.000 EUR ton	1.081 205	5,26
302620000	1.000 EUR ton	6 2	3,36
302630000	1.000 EUR ton	231 67	3,43
302640000	1.000 EUR ton	3.188 3.554	0,90

14 Databases

14.1 Database development and data management

Danish Fisheries Analysis Database (DFAD)
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 are 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 is 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 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.

Babelfisk
The data from biological sampling are stored in a MS SQL Server based database at DIFRES. This database contains data collected at surveys, harbour sampling and sea-going observer trips. It contains length and age measurements, discards information, sex and maturity of the individuals and also additional information regarding the sampling. Still further development of the data base takes place in order to conduct a better quality assurance of the collected and analyzed data and samples.

FishFrame
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 will 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. The ICES Baltic Fish Assessment Working Group is using this database for compiling basic input data for their stock assessment work.

15. National and international co-ordination

15.1 National co-ordination

The Danish Institute for Fisheries Research is acting as coordinator for the Danish Programme. A Steering Group has been established with members from the three Institutes involved in the programme:

1. Danish Institute for Fisheries Research (DIFRES)
2. Danish Directorate of Fisheries (FD)
3. Danish Food and Resource Economics Institute

The main objective of the Steering Group is to coordinate the work under the programme.

15.2 International co-ordination

Collection of information on fishing capacity, fishing effort, economic and landing statistics have been carried out entirely on a national basis. Biological information on catches, information collected by research vessels and information on discards have been co-ordinated internationally by several ICES working-, study- and planning groups and carried out in close co-operation with research institutes in Member States and third countries (see table 15.1).

16. List of acronyms and abbreviations

Acronym/Abbreviation	Description
DCR	Commission Regulation (EC) No 1639/2001 (Data Collection Regulation)
DIFRES	Danish Institute for Fisheries Research
FD	Danish Directorate of Fisheries
FOI	Danish Food and Resource Economics Institute, Denmark
FTE	Full Time Employed
ICES HAWG	ICES Herring Assessment Working Group for the Area South of 62° N
ICES SGABC	ICES Study Group on Ageing Issues in Baltic Cod
ICES SGBYSAL	ICES Study Group on the Bycatch of Salmon in Pelagic Trawl Fisheries
ICES SGSIMUW	ICES Study Group on Stock Identity and Management Unit of Whiting
ICES WGBAST	ICES Baltic Salmon and Trout Working Group
ICES WGBFAS	ICES Baltic Fisheries Assessment Working Group
ICES WGDEEP	ICES Working Group on the Biology and Assessment of Deep Sea Fisheries Resources
ICES WGEF	ICES Working Group on Elasmobranch Fishes
ICES WGHMM	ICES Working Group on the Assessment of Southern Shelf Stocks of Hake, Monk and Megrim
ICES WGMHSA	ICES Working Group on the Assessment of Mackerel, Horse Mackerel, Sardine and Anchovy
ICES WGNEPH	ICES Working Group on Nephrops Stocks
ICES WGNSDS	ICES Working Group on the Assessment of Northern Shelf Demersal Stocks
ICES WGNPBW	ICES Northern Pelagic and Blue Whiting Fisheries Working Group
ICES WGNSSK	ICES Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak
ICES WGPAND	ICES Pandalus Assessment Working Group

ICES WGSSDS	ICES Working Group on the Assessment of Southern Shelf Demersal Stocks
IQ/ITQ	Individual quota / Individual transferable quota.
SCV	Standard Catch Value = landings per species multiplied by 3-year average prices.

Annex I: Set of standard tables

Table 3.1

Summary table Precision levels					Country	Denmark	MP+EP
					Reference year	2004	
Module	**Type of data**	**MP/EP**	**Required level of precision**	**Achieved level of precision**	**Data sources and data collection methods used**	**Calculation method used**	
C	Fleet capacity	MP	All or Level 3	All	Vessel register		
D	Fuel consumption	MP	All or Level 2	NA	Voluntary random sampling		
	Fishing effort	MP	All or Level 2	All	Logbooks		
	Species-specific fishing effort	MP	All or Level 1	All	Logbooks		
E	Landings	MP	Level 1, 2 or 3, depending on management type	All	Sales notes database		
	Discards	MP	Level 1	NA	Observer at sea sampling		
	Recreational fisheries	MP	Not specified	NR	Questionnaire		
F	CPUE data series	MP	Not specified	All	Logbooks and sales notes		
G	Surveys	MP	Not specified	NR	Survey		
H	Age compositions of stocks under a Recovery Plan	MP	Not specified Level 2 from 2006 onwards	NR	Harbour sampling		
	Age compositions of other mandatory stocks	MP	Not specified Level 1 from 2006 onwards	NR	Harbour sampling		
I	Length & weight at age for species that can be aged	MP	Level 3	NA	Survey		
	Length & weight at age for species that cannot be aged	MP	Level 2	NA	Survey		

	Sexual maturity	MP	Level 3	NA	Survey	
	Fecundity	MP	Level 3	NA	Not sampled	
	Sex ratios	MP	Level 3	NA	Survey	
J	Economic data fishing vessels	EP	Level 1	NA	Vessel register, sales notes Register, logbook register. Voluntary random economic Sampling.	
K	Data processing industry	MP	Not specified	NR	Pilot study	

Table 4.1

Summary table Data transmission			Country	Denmark	MP+EP													
			Reference year	2004														
Expert group or Project	Species or Fleet segment	Area / Stock	Types of data transmitted															
			Effort	Species specific effort	Quantities landed	Quantities discarded	CPUE data	Survey data	Length comp landings	Age comp landings	Length comp discards	Age comp discards	Growth	Sexual maturity	Fecundity	Sex ratios	Economic data fleets	Fish processing industry
ICES HAWG	Clupea harengus	IIa, IIIaN, IIIaS, IIIb-d, IV			X			X	X	X								
	Sprattus sprattus	IIId, IIIaN, IIIaS, IV			X			X	X	X								
ICES WGBFAS	Clupea harengus	IV, III			X			X	X	X								
	Gadus morhua	IIIaS, IIIb-d		X	X	X	X	X	X	X	X	X						
	Platichthys flesus	IV, III			X													
	Pleuronectes platessa	IV, III			X													
	Scophthalmus rhombus	IV, III			X													
	Solea solea	IIIaN, IIIaS		X	X	X	X	X	X	X	X	X						
	Sprattus sprattus	IV, III			X			X	X	X								
ICES WGNSSK	Gadus morhua	IV, IIIaN, VIId			X	X		X	X	X	X	X						

	Melanogrammus aeglefinus	IV, IIIa			X	X		X	X	X	X	X						
	Pollachius virens	IV, IIIa, VI			X	X		X	X	X	X							
	Merlangius merlangus	IV, IIIa			X	X		X			X							
	Pleuronectes platessa	IV, IIIa		X	X	X	X	X	X	X	X							
	Solea solea	IV			X			X	X									
	Ammodytidae	IV, Shetland, IIIa			X		X	X	X	X								
	Trisopterus esmarki	IV, IIIa, VI			X		X	X	X	X								
ICES WGHMM	Merluccius merluccius	IV			X	X			X		X							
ICES WGPAND	Pandalus spp.	IV, IIIaN		X	X	X	X		X	X				X		X		
ICES WGDEEP	Argentina silus	IIIa			X		X											
	Coryphaenoides rupestris	IIIa			X		X											
	Brosme brosme	IIIa, IV			X		X											
	Molva molva	IIIa, IV			X		X											
ICES WGNEPH	Nephrops norvegicus	IIIa, IV		X	X	X	X		X		X			X		X		
ICES SGBYSAL	Clupea harengus	II IV			X													
	Scomber scombrus	VI VII			X													
ICES WGBAST	Salmo salar	IIIb-d			X				X	X								
ICES WGNSDS	Lophius piscatorius	IIIa, IV, VI			X				X									
ICES SGABC	Gadus morhua	IIIb-d						X	X	X								
ICES WGEF	Raja radiata	IV, IIIa			X	X	X				X							
ICES WGNPBW	Clupea harengus	IIa			X			X	X	X								
	Micromesistius poutassou	IIa, IIIa, IV, V, VIa			X			X	X	X								

ICES WGMHSA	Scomber scombrus	IIIa, IV, V, VII			X				X	X									
	Sardina pilchardus	IIIa, IV, V, VII			X														
	Engraulis encrasicholus	IIIa, IV, V, VII			X														
	Trachurus spp.	IIIa, IV, V, VII			X														

Table 7.1

Summary table Discard sampling												Country	Denmark	MP+EP
												Reference year	2004	
Fleet segment or métier	Area	No. Observer trips			No. Hauls sampled			% fishing trips covered	Specied analysed					
		Planned	Achieved	% achieved	Planned	Achieved	% achieved		App XII	App XIII	Restricted list			
Demersal trawl	IIIaS	-	17	-	-	36	-	0,27	X					
Demersal trawl	VI	-	10	-	-	59	-	0,40	X					
Demersal trawl	25-32	-	12	-	-	23	-	0,53	X					
Demersal trawl	IIIaN	-	16	-	-	35	-	0,18	X					
Demersal trawl	22-24	-	31	-	-	48	-	0,28	X					
Nephrops trawl	IIIaS	-	7	-	-	19	-	1,15	X					
Nephrops trawl	IV	-	1	-	-	8	-	0,09	X					
Nephrops trawl	IIIaN	-	3	-	-	3	-	0,63	X					
Danish seine	IIIaS	-	1	-	-	6	-	0,15	X					
Danish seine	IIIaN	-	5	-	-	22	-	0,26	X					
Danish seine	22-24	-	5	-	-	24	-	0,78	X					

Table 8.1

Summary table Catches per Unit Effort	Country	Denmark	MP+EP
	Reference year	2004	

Species	Area	Reference fleet	MP/EP	Data sources
Gadus morhua	IIIbc	Danish gillnetters Danish trawlers Danish seiners	MP	Logbooks combined with sales slips
Gadus morhua	IIIaS	Danish trawlers 70-89 mm mesh size Danish trawlers 105-120 mm mesh size Danish seiners	MP	Logbooks combined with sales slips
Pleuronectes platessa	IIIaS	Danish gillnetters Danish trawlers Danish seiners	MP	Logbooks combined with sales slips
Solea solea	IIIaS	Danish trawlers 70-89 mm mesh size Danish trawlers 90-104 mm mesh size	MP	Logbooks combined with sales slips
Ammodytidae	IV	Small mesh gears catching more than 70% ammodytidae	MP	Logbooks combined with sales slips
Trisopterus esmarki	IV	Small mesh gears, 16 mm mesh size	MP	Logbooks combined with sales slips
Pandalus spp.	IV, IIIaN	Danish demersal trawlers 35-70 mm mesh	MP	Logbooks combined with sales slips
Nephrops norvegicus	IV, IIIa	Nephrops fleet 70-89 mm mesh	MP	Logbooks combined with sales slips

Table 9.1

Summary table Priority 1 surveys				Country	Denmark			MP
				Reference year	2004			
Name of survey	Aim of survey	Area covered	Period	Days at sea		Sampling activities		Reference to map (optional)
				Planned	Achieved	Type	Planned	Achieved	% achieved	
IBTS first quarter	Abundance of species	IVa, IVb	February	18	18	Fish Hauls	40	40	100	
IBTS fourth quarter	Abundance of species	IVb, IVc, IIIa	August, September	18	16	Fish Hauls	46	46	100	
BITS first quarter	Abundance of species	IIIa-d	March, April	40	43	Fish Hauls	90	80	100	
BITS fourth quarter	Abundance of species	IIIa-d	October, November	40	36	Fish Hauls	90	90	100	
NS herring acoustic survey	Herring abundance	IV, IIIa	July	14	14	Echo Nm	1700	1700	100	
						Fish Hauls	–	35		
Atlan/Scand. Herring survey	Abundance of herring and blue whiting	IIa	April, May	30	30	Echo Nm	3200	3200	100	
						Fish Hauls	–	63		

Table 10.1

Summary table Length & age sampling of Landings		Country	Denmark	MP
		Reference year	2004	

Species	Area / Stock	Length sampling					Age sampling						Recovery stock	Tuning series
		Required ----- R	Planned ----- P	Achieved ----- A	% achieved ----- A/R*100	% achieved ----- A/P*100	Required ----- R	Planned ----- P	Achieved ----- A	% achieved ----- A/R*100	% achieved ----- A/P*100	Precision achieved		
Lophius piscatorius	IV, VIId	217	200	244	112	122	217	200	228	105	114	NA	N	N
Clupea harengus	IIa, V (landed in DK)	564	400	882	156	221	282	200	158	56	79	NA	N	N
Clupea harengus	IIa, V (landed in NO)	0	1050	0	0	0	0	525	0	0	0	NA	N	N
Micromesistius Poutassou	IIIaN	273	300	1382	506	461	273	300	126	46	42	NA	N	N
Micromesistius Poutassou	IV, VIId	2301	1350	1031	45	76	2301	1350	229	10	17	NA	N	N
Micromesistius poutassou	II,V,VI,VII, VIII,IX,X, XII,XIV	739	300	1044	141	348	370	150	369	100	246	NA	N	N
Gadus morhua	IIIaN	1505	6100	1975	131	32	752	3050	1953	260	64	NA	N	N
Gadus morhua	IIIaS	419	2500	1045	249	42	419	2500	1040	248	42	NA	N	Y
Gadus morhua	IIIb-d	4965	12900	5082	102	39	2482	6450	5064	204	79	NA	N	Y
Gadus morhua	IV, VIId	1442	5000	2234	155	45	721	2500	2217	307	89	NA	Y	N
Melanogrammus aeglefinus	IIIa	555	950	1261	227	133	555	950	1252	226	132	NA	N	N
Melanogrammus aeglefinus	IV, VIId	509	750	1567	308	209	254	375	1453	572	387	NA	N	N

Merluccius merluccius	IIIa	202	150	279	138	186	202	150	279	138	186	NA	N	N
Clupea harengus	IIIaS	643	800	4894	761	612	643	800	2323	361	290	NA	N	N
Clupea harengus	IIIaN	1809	2400	4348	240	181	1809	2400	2197	121	92	NA	N	N
Clupea harengus	IIIb-c	148	1500	1806	1220	120	74	750	902	1219	120	NA	N	N
Clupea harengus	IIId	671	2300	992	148	43	671	2300	863	129	38	NA	N	N
Clupea harengus	IV, VIId	3793	1900	12046	318	634	1897	950	2604	137	274	NA	N	N
Trachurus spp.	IV, VIId	1076	400	755	70	189	269	100	122	45	122	NA	N	N
Trachurus spp.	IIa, V, VI, VII, VIII, IX	558	800	507	91	63	279	400	121	43	30	NA	N	N
Microstomus kitt	IV, VIId	131	175	868	663	496	131	175	613	468	350	NA	N	N
Scomber scombrus	IIIa	74	300	102	138	34	74	300	100	135	33	NA	N	N
Scomber scombrus	IV, VIId	888	1000	1582	178	158	444	500	1499	338	300	NA	N	N
Nephrops norvegicus	IIIaS (Functional unit)	2719	2800	14492	533	518	0	0	0	0	0	NA	N	Y
Nephrops norvegicus	IIIaN (Functional unit)	3174	3600	7623	240	212	0	0	0	0	0	NA	N	Y
Nephrops norvegicus	IV (Functional unit)	17155	15200	8579	50	56	0	0	0	0	0	NA	N	Y
Trisopterus esmarki	IIIa	5	500	197	3940	39	5	500	106	2120	21	NA	N	N
Trisopterus esmarki	IV	281	2050	180	64	9	281	2050	109	39	5	NA	N	Y
Pleuronectes platessa	IIIaS	699	900	1869	267	208	699	900	1401	200	156	NA	N	Y
Pleuronectes platessa	IIIaN	2865	3700	3090	108	84	2865	3700	3016	105	82	NA	N	N
Pleuronectes platessa	IIIb-d	679	1050	1763	260	168	679	1050	1089	160	104	NA	N	N
Pleuronectes platessa	IV	1106	1200	2588	234	216	553	600	2538	459	423	NA	N	N
Pollachius virens	IIIaN	1560	700	2145	138	306	1560	700	2134	137	305	NA	N	N

Pollachius virens	IV, VIId	1166	700	2890	248	413	583	350	2863	491	818	NA	N	N
Salmo salar	IIIb-d	196	200	667	340	334	196	200	665	339	333	NA	N	N
Ammodytidae	IIIa	565	1050	3402	602	324	565	1050	741	131	71	NA	N	N
Ammodytidae	IV	7194	15200	11084	154	72	7194	15200	4542	63	30	NA	N	Y
Pandalus spp.	IIIa	9926	6000	4085	41	68	0	0	0	0	0	NA	N	Y
Pandalus spp.	IV	158	300	226	143	75	0	0	0	0	0	NA	N	Y
Solea solea	IIIaS	497	700	987	199	141	497	700	972	196	139	NA	N	Y
Solea solea	IIIaN	109	250	208	191	83	109	250	205	188	82	NA	N	N
Sprattus sprattus	IIIaS	1952	2100	8536	437	406	976	1050	2055	211	196	NA	N	N
Sprattus sprattus	IIIaN	463	600	4127	891	688	463	600	929	201	155	NA	N	N
Sprattus sprattus	IIIb-d	2144	2400	11626	542	484	1072	1200	2777	259	231	NA	N	N
Sprattus sprattus	IV, VIId	5142	4400	4893	95	111	5142	4400	1232	24	28	NA	N	N
Psetta maxima	IV, VIId	58	75	69	119	92	58	75	67	116	89	NA	N	N

Table 10.3

Summary table Length & age sampling of Catches & discards				Country		Denmark			MP+EP
				Reference year		2004			
Fleet or métier	Area	Species	MP/EP	Achieved length sampling			Achieved age sampling		
				Unsorted catches	Landings	Discards	Unsorted catches	Landings	Discards	Precision achieved
Demersal trawl	IIIaS	Nephorps norvegicus	MP		6706	2990	–	–	–	NR
		Pleuronectes platessa	MP		1479	2414			25	NR
		Solea solea	MP		3862	873			45	NR
		Gadus morhua	MP		520	2558			363	NR
Demersal trawl	IV	Nephorps norvegicus	MP		3484	2619	–	–	–	NR
		Merlangius merlangus	MP		24	556			137	NR
		Merluccius merluccius	MP		404	287			5	NR
		Melanogrammus aeglefinus	MP		962	727			72	NR
		Solea solea	MP		18					NR
		Gadus morhua	MP		1350	1099			317	NR
		Pleuronectes platessa	MP		770	872			3	NR
Demersal trawl	25-32	Gadus morhua	MP		3734	2822			502	NR
		Nephorps norvegicus	MP		3499	3384	–	–	–	NR
Demersal trawl	IIIaN	Merlangius merlangus	MP		143	933			171	NR
		Merluccius merluccius	MP		212	132				NR

		Melanogrammus aeglefinus	MP		671	1046			209	NR
		Solea solea	MP		141	5				NR
		Gadus morhua	MP		1331	2916			609	NR
		Pleuronectes platessa	MP		1356	1985			275	NR
Demersal trawl	22-24	Solea solea	MP		3					NR
		Gadus morhua	MP		5304	3165			552	NR
		Nephorps norvegicus	MP		2556	2240	–	–	–	NR
Nephrops trawl	IIIaS	Pleuronectes platessa	MP		1056	1040			130	NR
		Solea solea	MP		1501	961			71	NR
		Gadus morhua	MP		847	1068			228	NR
		Nephorps norvegicus	MP		1587	889	–	–	–	NR
Nephrops trawl	IV	Merlangius merlangus	MP		4	659			90	NR
		Merluccius merluccius	MP		2	1				NR
		Melanogrammus aeglefinus	MP		280	163			46	NR
		Solea solea	MP		51					NR
		Gadus morhua	MP		110	91			54	NR
		Nephorps norvegicus	MP		316	424	–	–	–	NR
Nephrops trawl	IIIaN	Merlangius merlangus	MP		6	321			122	NR
		Merluccius merluccius	MP		6	4				NR
		Melanogrammus aeglefinus	MP		7	70			36	NR
		Solea solea	MP		2					NR
		Gadus morhua	MP		26	412			62	NR

		Pleuronectes platessa	MP		772	797				NR
Danish seine	IIIaS	Solea solea	MP		6					NR
		Merlangius merlangus	MP		18	70			13	NR
Danish seine	IIIaN	Merluccius merluccius	MP		12					NR
		Melanogrammus aeglefinus	MP		154	9			3	NR
		Solea solea	MP		1					NR
		Gadus morhua	MP		259	772			132	NR
Danish seine	22-24	Pleuronectes platessa	MP		189	334			67	NR
		Gadus morhua	MP		1068	1030			170	NR

Table 11.1

Summary table Long-term planning Other biological parameters		Country	Denmark	MP
		Reference year	2004	

Species	Area / Stock	Length at age					Sex ratio					Sexual maturity					Fecundity				
		2002	2003	2004	2005	2006	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
Lophius piscatorius	IV, VIId	X	X	X	X	X															
Clupea harengus	IIa, V	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
Micromesistius poutassou	IIIaN	X	X	X	X	X															
Micromesistius poutassou	IV, VIId	X	X	X	X	X															
Micromesistius poutassou	II,V,VI,VII,VIII, IX,X,XII	X	X	X	X	X			X					X							
Scopthalmus rhombus	IV, VIId																				
Gadus morhua	IIIaS	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
Gadus morhua	IIIaN	X	X	X	X	X		X	X	X	X		X	X	X	X					
Gadus morhua	IIIb-d	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
Gadus morhua	IV, VIId	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
Merlanguis merlangus	IV	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
Melanogrammus aeglefinus	IIIaN	X	X	X	X	X															
Melanogrammus aeglefinus	IV, VIId	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
Merluccius merluccius	IIIaN	X	X	X	X	X															

Clupea harengus	IIIaS	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
Clupea harengus	IIIaN	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
Clupea harengus	IIIb-c	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
Clupea harengus	IIId	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
Clupea harengus	IV, VIId	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
Trachurus spp.	IV, VIId		X	X	X	X		X					X								
Microstomus kitt	IV, VIId	X	X		X	X	X	X	X												
Scomber scombrus	IIIaN	X		X	X	X															
Scomber scombrus	IV, VIId	X	X	X	X	X		X	X	X	X		X	X	X	X					
Nephrops norvegicus	IIIaS						X	X	X	X	X	X	X	X	X	X					
Nephrops norvegicus	IIIaN						X	X	X	X	X	X	X	X	X	X					
Nephrops norvegicus	IV						X	X	X	X	X	X	X	X	X	X					
Trisopterus esmarki	IIIaN	X	X	X	X	X															
Trisopterus esmarki	IV	X	X	X	X	X		X	X	X	X		X	X	X	X					
Pleuronectes platessa	IIIaS	X	X	X	X	X	X	X	X	X	X		X								
Pleuronectes platessa	IIIaN	X	X	X	X	X	X	X	X	X	X										
Pleuronectes platessa	IIIb-d	X	X	X	X	X	X	X	X	X	X										
Pleuronectes platessa	IV	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
Pleuronectes platessa	VIId																				
Pollachius virens	IIIaN	X	X	X	X	X															
Pollachius virens	IV, VIId	X	X	X	X	X				X	X				X	X					
Salmo salar	IIIb-d	X	X	X	X	X															

Ammodytidae	IIIaN	X	X	X	X	X															
Ammodytidae	IV	X	X	X	X	X															
Pandalus spp.	IIIaN						X	X	X	X	X										
Pandalus spp.	IV							X	X	X	X										
Solea solea	IIIaS	X	X	X	X	X	X	X	X	X	X			X							
Solea solea	IIIaN	X	X	X	X	X	X	X	X	X	X			X							
Solea solea	IV		X					X													
Sprattus sprattus	IIIaS	X	X	X	X	X		X	X				X	X	X						
Sprattus sprattus	IIIaN	X	X	X	X	X		X	X				X	X							
Sprattus sprattus	IIIb-d	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
Sprattus sprattus	IV, VIId	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
Psetta maxima	IV, VIId		X	X	X	X		X	X												

Table 11.2

Summary table Growth and Sex ratios		Country	Denmark	MP
		Reference year	2004	

Species	Area / Stock	Length at age			Sex ratios		
		Nos. achieved	Data sources	Precision achieved	Nos. achieved	Data sources	Precision achieved
Ammodytidae	IIIaN	1589	Harbour sampling	NA			
Ammodytidae	IV	37697	Harbour sampling	NA	4	Surveys and harbour sampling	NA
Clupea harengus	IIIaN	3642	Surveys and harbour sampling	NA	2526	Surveys and harbour sampling	NA
Clupea harengus	IIIaS	3079	Surveys and harbour sampling	NA	1188	Surveys and harbour sampling	NA
Clupea harengus	IIIb-c	902	Harbour sampling	NA	272	Harbour sampling	NA
Clupea harengus	IIId	1960	Surveys and harbour sampling	NA	1299	Surveys and harbour sampling	NA
Clupea harengus	IIa, V	158	Harbour sampling	NA	1230	Surveys and harbour sampling	NA
Clupea harengus	IV, VIId	5211	Surveys and harbour sampling	NA	3014	Surveys and harbour sampling	NA
Gadus morhua	IIIaN	2821	Surveys, harbour sampling and Observer at sea sampling	NA	65	Surveys	NA
Gadus morhua	IIIaS	1797	Surveys, harbour sampling and Observer at sea sampling	NA	352	Surveys	NA
Gadus morhua	IIIb-d	9273	Surveys, harbour sampling and Observer at sea sampling	NA	4953	Surveys	NA
Gadus morhua	IV, VIId	2832	Surveys, harbour sampling and Observer at sea sampling	NA	200	Surveys	NA
Lophius piscatorius	IV, VIId	279	Harbour sampling and Observer at sea sampling	NA			
Melanogrammus Aeglefinus	IIIa	1501	Harbour sampling and Observer at sea sampling	NA			

Melanogrammus Aeglefinus	IV, VIId	2264	Surveys, harbour sampling and Observer at sea sampling	NA	687	Surveys	NA
Merlangius merlangus	IV, VIId	1190	Surveys, harbour sampling and Observer at sea sampling	NA	907	Surveys	NA
Micromesistius poutassou	IIIaN	126	Harbour sampling	NA			
Micromesistius poutassou	IV, VIId	229	Harbour sampling	NA	6	Surveys	NA
Micromesistius poutassou	II,V,VI,VII VIII,IX,X, XII	369	Harbour sampling	NA	389	Surveys	NA
Microstomus kitt	IV, VIId	613	Harbour sampling	NA	488	Harbour sampling	NA
Nephrops norvegicus	IIIaS				20102	Surveys, harbour sampling and Observer at sea sampling	NA
Nephrops norvegicus	IIIaN				7874	Surveys, harbour sampling and Observer at sea sampling	NA
Nephrops norvegicus	IV				7223	Surveys, harbour sampling and Observer at sea sampling	NA
Pandalus spp.	IIIaN				2330	Harbour sampling	NA
Pandalus spp.	IV				266	Harbour sampling	NA
Pleuronectes platessa	IIIaN	3335	Surveys, harbour sampling and Observer at sea sampling	NA	3204	Surveys, harbour sampling and Observer at sea sampling	NA
Pleuronectes platessa	IIIaS	2045	Surveys, harbour sampling and Observer at sea sampling	NA	2139	Surveys, harbour sampling and Observer at sea sampling	NA
Pleuronectes platessa	IIIb-d	1856	Surveys, harbour sampling and Observer at sea sampling	NA	660	Surveys, harbour sampling and Observer at sea sampling	NA
Pleuronectes platessa	IV	3391	Surveys, harbour sampling and Observer at sea sampling	NA	3322	Surveys and harbour sampling	NA
Pollachius virens	IIIaN	2145	Harbour sampling and Observer at sea sampling	NA			
Pollachius virens	IV, VIId	2878	Harbour sampling and Observer at sea sampling	NA			
Psetta maxima	IV, VIId	67	Harbour sampling	NA	69	Harbour sampling	NA
Salmo salar	IIIb-d	665	Harbour sampling	NA			
Scomber scombrus	IIIaN	100	Harbour sampling	NA			

Scomber scombrus	IV, VIId	1731	Surveys and harbour sampling	NA	223	Surveys	NA
Solea solea	IIIaN	318	Surveys and harbour sampling	NA	322	Surveys and harbour sampling	NA
Solea solea	IIIaS	2062	Surveys, harbour sampling and Observer at sea sampling	NA	1402	Surveys, harbour sampling and Observer at sea sampling	NA
Sprattus sprattus	IIIaN	929	Harbour sampling	NA	103	Harbour sampling	NA
Sprattus sprattus	IIIaS	2447	Surveys and harbour sampling	NA	718	Surveys and harbour sampling	NA
Sprattus sprattus	IIIb-d	3308	Surveys and harbour sampling	NA	1160	Surveys and harbour sampling	NA
Sprattus sprattus	IV, VIId	2289	Surveys and harbour sampling	NA	660	Surveys and harbour sampling	NA
Trachurus spp.	IV, VIId	122	Harbour sampling	NA			
Trisopterus esmarki	IIIa	106	Harbour sampling	NA			
Trisopterus esmarki	IV	206	Surveys and harbour sampling	NA	97	Surveys	NA

Table 11.3

Summary table Sexual maturity and Fecundity		Country	Denmark	MP
		Reference year	2004	

Species	Area / Stock	Sexual maturity			Fecundity		
		Nos. achieved	Data sources	Precision achieved	Nos. achieved	Data sources	Precision achieved
Ammodytidae	IIIaN	5	Harbour sampling	NA			
Ammodytidae	IV	3	Harbour sampling	NA			
Clupea harengus	IIIaN	3595	Surveys and harbour sampling	NA			
Clupea harengus	IIIaS	2928	Surveys and harbour sampling	NA			
Clupea harengus	IIIb-c	833	Harbour sampling	NA			
Clupea harengus	IIId	1802	Surveys and harbour sampling	NA			
Clupea harengus	IIa, V	1275	Surveys and harbour sampling	NA			
Clupea harengus	IV, VIId	5097	Surveys and harbour sampling	NA			
Gadus morhua	IIIaN	65	Surveys	NA			
Gadus morhua	IIIaS	352	Surveys	NA			
Gadus morhua	IIIb-d	4962	Surveys	NA			
Gadus morhua	IV, VIId	200	Surveys	NA			
Melanogrammus Aeglefinus	IV, VIId	497	Surveys	NA			
Merlangius merlangus	IV, VIId	593	Surveys	NA			

Micromesistius poutassou	IV, VIId	6	Surveys	NA			
Micromesistius poutassou	II,V,VI,VII, VIII,IX,X, XII	454	Surveys	NA			
Nephrops norvegicus	IIIaS	6321	Surveys, harbour sampling and Observer at sea sampling	NA			
Nephrops norvegicus	IIIaN	2362	Surveys, harbour sampling and Observer at sea sampling	NA			
Nephrops norvegicus	IV	1897	Surveys, harbour sampling and Observer at sea sampling	NA			
Pleuronectes platessa	IV	666	Surveys	NA			
Scomber scombrus	IV, VIId	184	Surveys	NA			
Solea solea	IIIaN	114	Surveys	NA			
Solea solea	IIIaS	911	Surveys	NA			
Sprattus sprattus	IIIaN	671	Harbour sampling	NA			
Sprattus sprattus	IIIaS	1321	Surveys and harbour sampling	NA			
Sprattus sprattus	IIIb-d	2253	Surveys and harbour sampling	NA			
Sprattus sprattus	IV, VIId	1409	Surveys and harbour sampling	NA			
Trisopterus esmarki	IV	70	Surveys	NA			

Table 12.1

Summary table Economic data by Group of vessels					Country	Denmark	MP	
					Reference year	2004		
Fleet segment	**Parameter**	**Measure(s) used**	**Data source(s)**	**Methodology**	**Population**	**Sampling strategy**	**Sample rate %**	**Precision achieved**
Fixed net/traps Gill netters Trawlers Danish seiners Polyvalent Shrimpers Mussel dredgers	Income (turnover)	**All fishery and vessel related Income**	Yearly Company accounts (split on vessel units in case of companies with more than one vessel which are separately operated with own crew)	Prepared by approved professional accountants	Entire segment	Stratified random sampling on a selection of the total population willing to participate	13 to 42%	1
	Capital (asset) Investment Fixed costs	Perpetual Inventory Method						
	Production cost	Actual cost paid						
	-- crew (incl. social cost)							
	-- fuel							
	-- etc.							
	Effort	Days at Sea	Company accounts	+ Logbook	Entire segment	Stratified random	13 to 42%	1
	Employment	Men * Days	Company accounts	+ Paycheck + Logbook	Entire segment	Stratified random	13 to 42%	1
	Landings/species Prices/species	Ex-vessel price per t	Sales notes	Sales note Register	All recorded landings	All commercial landings are recorded	100	3
Purse seiners Beam trawlers 24-40m	Same as above	Same as above	Same as above	Same as above	Entire segment	Census	100	3

Table 12.2

Summary table Economic data by Group of vessels					Country	Denmark	EP	
					Reference year	2004		
Fleet segment	**Parameter**	**Measure(s) used**	**Data source(s)**	**Methodology**	**Population**	**Sampling strategy**	**Sample rate %**	**Precision achieved**
Fixed net/traps Gill netters Trawlers Danish seiners Polyvalent Shrimpers Mussel dredgers	Income (turnover)	**All fishery and vessel related Income**	Yearly Company accounts (split on vessel units in case of companies with more than one vessel which are separately operated with own crew)	Prepared by approved professional accountants	Entire segment	Stratified random sampling on a selection of the total population willing to participate	13 to 42%	1
	Capital (asset) Investment Fixed costs	Perpetual Inventory Method						
	Production cost	Actual cost paid						
	-- crew (incl. social cost)							
	-- fuel							
	-- etc.							
	Effort	Days at Sea	Company accounts	+ Logbook	Entire segment	Stratified random	13 to 42%	1
	Employment	Men * Days	Company accounts	+ Paycheck + Logbook	Entire segment	Stratified random	13 to 42%	1
	Landings/species Prices/species	Ex-vessel price per t	Sales notes	Sales note Register	All recorded landings	All commercial landings are recorded	100	3
Purse seiners Beam trawlers 24-40m	Same as above	Same as above	Same as above	Same as above	Entire segment	Census	100	3

Table 13.1

Summary table Economic data Fish processing industry					Country	Denmark	MP	
					Reference year	2004		
Sector	**Parameter**	**Measure(s) used**	**Data source(s)**	**Methodology**	**Population**	**Sampling strategy**	**Sample rate %**	**Precision achieved**
	Raw material	Not available						
Entire sector	**Operating result:**							
	+ Income (turnover)	Actual income	Company accounts	Questionnaire	Entire sector	Stratified random	**100**	**3**
	+ Other income	Actual income	Company accounts	Questionnaire	Entire sector	Stratified random	**100**	**3**
Entire sector	**Production cost:**							
	- labour	Actual cost paid	Company accounts	Questionnaire	Entire sector	Stratified random	**100**	**3**
	- energy	Actual cost paid	Company accounts	Questionnaire	Entire sector	Stratified random	**100**	**3**
	- raw material	Actual cost paid	Company accounts	Questionnaire	Entire sector	Stratified random	**100**	**3**
	- fish material	Actual cost paid	Company accounts	Questionnaire	Entire sector	Stratified random	**100**	**3**
	- packaging	Actual cost paid	Company accounts	Questionnaire	Entire sector	Stratified random	**100**	**3**
	- other running costs	Actual cost paid	Company accounts	Questionnaire	Entire sector	Stratified random	**100**	**3**
	- depreciation	Actual cost paid	Company accounts	Questionnaire	Entire sector	Stratified random	**100**	**3**
	- financial transaction	Actual cost paid	Company accounts	Questionnaire	Entire sector	Stratified random	**100**	**3**
	- tax	Actual cost paid	Company accounts	Questionnaire	Entire sector	Stratified random	**100**	**3**

Table 13.1 continued

Summary table Economic data Fish processing industry					Country	Denmark	MP	
					Reference year	2004		
Sector	**Parameter**	**Measure(s) used**	**Data source(s)**	**Methodology**	**Population**	**Sampling strategy**	**Sample rate %**	**Precision achieved**
Entire sector	**Fixed cost**	(Depreciation) / (Investment (asset))	Company accounts	Questionnaire	Entire sector	Stratified random	**100**	**3**
Entire sector	**Financial position**	(Net capital) / (Total liabilities)	Company accounts	Questionnaire	Entire sector	Stratified random	**100**	**3**
Entire sector	**Investment (asset)**	Perpetual inventory method	Company accounts	Questionnaire	Entire sector	Stratified random	**100**	**3**
Entire sector	**Employment**	Numbers FTE	Company accounts	Questionnaire	Entire sector	Stratified random	**100**	**3**
Entire sector	**Prices/product**	Factory gate price per ton	Company accounts	Questionnaire	Entire sector	Stratified random	**98**	**3**
	Capacity utilisation	Not available						

Table 15.1

Summary table International co-operation		Country	Denmark	
		Reference year	2004	
Meeting / Workshop / Inter-calibration exercise	**Venue**	**Month**	**No. MS's participants**	**Eligible under DCR**
RCM North Sea	Oostende, Belgium	September 2004	3	Yes
ICES, Planning Group on Commercial Catch Discards and Biological Sampling	Palma, Spain	March 2004	3	Yes
ICES, Workshop on Sampling and Calculation Methodology for Fisheries Data	Nantes, France	January 2004	1	Yes
Workshop on Age-reading of Hake	Vigo, Spain	October 2004	1	Yes
Workshop on Age-reading of Monkfish	Lisbon, Portugal	November 2004	2	Yes
Workshop on Age-reading of Megrim	Sukarrieta, Spain	November 2004	1	Yes
Workshop on Economic Indicators and Sampling Methods	Paris, France	May 2004	2	Yes
ICES, Study Group on Ageing Issues in Baltic Cod	Riga, Latvia	May 2004	3	Yes
ICES, International Bottom Trawl Working Group	Lisbon, Portugal	March 2004	2	Yes
ICES, Planning Group for Herring Surveys	Flødevigen, Norway	January 2004	3	Yes
ICES, Planning Group on Surveys on Pelagic Fish in the Norwegian Sea	Murmansk, Russia	August 2004	1	Yes
ICES, Baltic International Fish Survey Working Group	Rostock, Germany	March 2004	1	Yes
ICES, Working Group on Fisheries Acoustic Science and Technology	Gdynia, Poland	April 2004	2	Yes