Technical University of Denmark
National Institute for Aquatic Resources

Danish National Programme for collection of fisheries data for 2009 - 2010

by

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National Institute for Aquatic Resources
Danish Research Institute of Food Economics

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Contents

I. General framework

This document presents the Danish Programme for collection of data in the fisheries sector in 2009 and 2010. The programme has been developed in accordance with the rules laid down in the *"Commission Regulation (665/2008) and Commission Decision (XXXX/2008) adopting a multi annual Community programme pursuant to Council Regulation (EC) No 199/2008 establishing a Community framework for the collection, management and use of data in the fisheries sector and support for scientific advice regarding the Common Fisheries Policy"*, hereafter in this programme called the "DCR".

In Denmark all landings are registered and recorded – meaning census data on landings (amount in weight and value by species and EU size grade). In previous years national definitions of fisheries (metiérs) have been used. Going from these national metiérs to the new "Nantes" definitions of metiérs will affect future sampling plans. As the number of new metiérs is numerous it will be necessary to merge a large number of metiérs when setting up a national sampling scheme.

It is planned to use the same sampling procedure for sampling landings as previously used (see section III.C.2) and which is scientific evaluated as an acceptable approach. Otherwise, if going to use the concurrent sampling approach it would increase the cost of the Danish national programme significantly.

The research/chartered vessel surveys will be conducted as usually in accordance with the internationally agreed guidelines/manuals. For Denmark two new surveys (Nephrops survey in Div. IIIa and North Sea sandeel) will be carried out.

II. Organization of the National Programme

II.A National organization and co-ordination

Denmark has assigned the National institute of Aquatic Resources (DTU Aqua), Technical University of Denmark (former Danish Institute for Fisheries Research) as the coordinating institute in Denmark. Jørgen Dalskov, Head of section for Monitoring, DTU Aqua has been assigned as the National Correspondent.

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The work in Denmark is carried out by 3 partners:

1. **National institute of Aquatic Resources (DTU Aqua)** is an institute under the Technical University of Denmark. The institute 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. The institute is having an authority attendance contract with the Danish Ministry for Agriculture, Fisheries and Food.

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2. **Danish Directorate of Fisheries (FD)** works for commercial fisheries to be balanced and economically healthy, for sustainable fishing and to maintain recreational fishing. The Directorate is part of The Ministry of Food, Agriculture and Fisheries; it was established in its present form in 1995.

The main tasks of the Directorate are to give service to the Minister and the political level, help making law proposals and take part in international negotiations. To make rules and regulate and administer fishing in Denmark. Furthermore, to inspect and control fishing activities and finally to make primary statistics on fisheries.

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3. **The Danish Food and Resource Economics Institute (FOI)** is an institute under KU Life, a faculty of life science a part of the University of Copenhagen. 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.

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A Steering Group has been established with members from all three involved Institutes. The main objective of the Steering Group is to coordinate of the work to be carried out according to the DCR.

II.B International co-ordination

Denmark has for a number of years been the key-player in international coordination and cooperation of the data collection in the Baltic Sea. This cooperation has been further developed and will continue. Within the ICES Planning Group for Commercial Catch, Discard and Biological Sampling (PGCCDBS) Denmark has been very active as well in carrying out the joint EU Acoustic Survey in the Norwegian Sea. Denmark will actively participate in relevant international planning, cooperation and coordination group meeting held in 2009 and 2010.

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

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

Furthermore, Denmark will participate in relevant Planning Groups, Study Groups and other meeting that facilitate and improve international coordination and task sharing (see Table II.B.1).

II.C Regional co-ordination

Denmark will participate in the relevant Regional Co-ordination Meetings, namely those concerning the Baltic Sea and the North Sea & East Arctic (see Table II.B.1). If necessary for the coordination of e.g. surveys covering the North Atlantic region Denmark will participate in the RCM for the North Atlantic.

Denmark has for years made agreements with Sweden, Germany and Scotland on collection of biological sampling of landings. At the RCM's in 2008 Denmark will promote increased cooperation and task sharing between these MS as well together with other MS's.

III. Module of evaluation of the fishing sector

III.A General description of the fishing sector

The Commissions directive for preparing a national programme according to Article 4 in Council Regulation (EC) No 199/2008 of 25 February 2008 specifies in chapter III A. Collection of economic variables that the population should be the vessels in the Community Fishing Fleet Register on the 1st of January.

The Danish programme for collection of economic data covers all fishing activity for the year and includes both vessels that are registered the first of January as well as vessels that become registered during the year and commences fishery in the year. The number of vessel versions on the register in 2007 was 3,898, of which 1,473 had no activity in 2007. The 2,425 active vessel versions had a total value of landings at 364.7 Million EUR, of which 307.5 Million were registered on the vessel versions that were on the register on the 1st of January 2007. The remaining 57.2 Million EUR was registered on vessel versions that entered the Fishing Fleet Register during the year 2007.

Table 1. Number of active vessel versions on the Danish Fishing Fleet Register in 2007.

All register versions of vessels	(1)	(2)	(3)	(4)
with landings in 2007		Registered	Enters	Enters
		start of year	during year	during year
	Registered	Exits	Exits	Registered
Vessel segments	whole year	during year	during year	end of year
Beam trawlers: 12-18 m (Shrimp trawlers)	25	1	0	1
Beam trawlers: 24-40 m	4	2	1	1
Demersale trawlers and seiners: < 10 m	10	1	1	4
Demersale trawlers and seiners: 10-12 m	13	0	1	2
Demersale trawlers and seiners: 12-18 m	134	44	17	44
Demersale trawlers and seiners: 18-24 m	13	7	3	8
Pelagic trawlers: 18-24 m	44	20	4	12
Pelagic trawlers: 24-40 m	39	22	9	17
Purse Seiners and pelagic trawlers: >= 40 m	25	2	13	9
Dredges: 12-18 m	54	2	0	3
Polyvalent mobile gears: < 10 m	73	11	9	23

Polyvalent mobile gears: 10-12 m	24	13	4	6
Polyvalent mobile gears: 12-18 m	30	16	16	14
Drift nets, fixed nets and traps: < 10m	1150	91	24	119
Drift nets, fixed nets and traps: 10-12m	60	10	0	9
Drift nets, fixed nets and traps: 12-18 m	45	19	12	17
Drift nets, fixed nets and hooks: 18-24 m	3	8	0	7
All segments	**1746**	**269**	**114**	**296**
Total value of landings for 2007	281,2	26,3	19,5	37,7
Per cent share of total value of landings	77,1	7,2	5,4	10,3

The population of fishing units (vessels) in the Danish programme for collection of economic data for fisheries includes all vessel versions and covers therefore the whole production in the fishing sector. The method for identification of the vessel unit will be described in detail in the technical report.

The Danish fishing fleet consist mostly of smaller vessels less than 12 meters in length (see Text table 2).

Vessel length	< 10 m	10 < 12 m	12 < 18 m	18 < 24 m	24 < 40 m	40 m <	Total
No of vessels	2,191	153	382	119	78	39	2,962

Text table 2. Number of vessels in the Danish fishing vessel register 31/12 2007

It should be mentioned that by March 2007 a new national fisheries management system for demersal fisheries was implemented in Denmark. This system “Vessel Quota Shares” will probably cause a significant reduction in total number of vessels during 2007 and 2008.

The total landings by Danish fishing vessels in 2006 were app. 870,000 tonnes and in 2007 app. 650,000 tonnes. The fishery can be divided into three main groups of fisheries:

Year:	Industrial landings	Pelagic landings	Demersal landings	Total
2006	550,000 t.	164,000 t.	141,000 t.	855,000 t.
2007	350,000 t.	164,000 t.	66,000 t.	580,000 t.

Text table 3. Total Danish landings in tonnes by 4groups of species in 2006 and 2007.

The Danish fishery takes place in the Baltic, the Kattegat, the Skagerrak, the North Sea, the Norwegian Sea and waters west of Ireland and Scotland (see Text table 4). In the Danish fishery gears as trawls, Danish seines, purse seines, beamtrawls, gillnets and hooks, trapnets are used. Most landings are taken by trawlers.

	Baltic Sea	North Atlantic	North Sea and Eastern Arctic	Other	Total
Crustaceans					
Common Shrimp (Crangon crangon)			3,974	1	3,975
Northern shrimp (Paudalus borealis)	0	4,431	2,384		6,815
Norway Lobster (Nephrops norvegieus)	28		4,300	0	4,327
Other	18		363	53	435
Deep water species					
Ling (Molva molva)	1		535		536
Roundnose Grenadier (Coryphaenoides rupestris)			0		0
Tusk (Brosme brosme)	0		97		97
Other			242		242
Demersal fish					
Angler (Lophius piscatorius)	0		1,389	0	1,389
Atlantic Cod (Gadus morhua)	18,424		6,106	4	24,534
Brill (Scophthalmus rhombus)	62		172	0	234
Common Dab (Limanda limanda)	1,013		1,270	3	2,286
Common Sole (Solea solea)	120		857	5	982
European Eel (Anguilla anguilla)	477		10	32	519
European Hake (Merluccius merluccius)	1		1,235	0	1,235
European Plaice (Pleuronectes platesca)	1,985		14,796	3	16,785
Haddock (Melanogrammus aeglefinus)	14		1,757	0	1,771
Lemon Sole (Microstomus kitt)	9		1,511	0	1,520
Norway Pout (Trisopterus esmarki)			1,407		1,407
Saithe (Pollachius virens)	1		5,449	0	5,450
Sandeel (Ammodytes dubius)	5		167,740		167,745
Turbot (Psetta maxima)	96		447	1	543
Whiting (Merlaugius merlangus)	444		1,655		2,099
Witch Flounder (Glyptocephalus cynoglossus)	0		1,155		1,155
Other	2,182		2,906	124	5,212
Molluscs					
Blue Mussel (Mytilus edulis)			0	57,479	57,479
Other	0		197	1,246	1,443
Pelagic fish					
Atlantic Herring (Clupea batis)	5,731		121,166	3,930	130,828
Atlantic Horse Mackerel (Trachurus trachurus)	206	7,544	335		8,085
Atlantic Mackerel (Scomber scombus)	5	6	25,223	0	25,234
Atlantic Salmon (Salmo salon)	64		0	0	64

Blue Whiting (Micromsistius poutassou)		45,181	4,724		49,905
Sprat (Sprattus sprattus)	39,265		87,223	2,087	128,575
Other	441	52	232	33	759
Other	55	27	583	96	762
Total	70,648	57,242	461,438	65,097	654,426

Table 4. Total Danish landings in tones by species/species group and region in 2007

III.B Economic variables

The variables or "economic indicators" in the DCR report are aggregates of several detailed variables in the Danish fishery account system. All variables are collected in the individual accounts and aggregated to the specifications in the Commissions directive for preparing national programmes according to Article 4 in Council Regulation (EC) No 199/2008 of 25 February 2008

Data collected for the DCR (Appendix VI):

Income (turnover):

- *Gross value of landings.*
- *Income from leasing out quota or other fishing rights.*
- *Direct subsidies.*
- *Other income.*

Production costs:

- *Personnel cost (include social cost):* wages and salaries to all employees including owners/partners.
- *Imputed value of unpaid labour:* calculation of value of owner's work, if not registered. The calculation uses the average hourly pay rate for process- and machine operators including nuisance bonus from the Confederation of Danish Employers structural statistics. For the year 2007 the rate was 214.91 DKK (= 28.74 EUR) per hour.
- *Energy costs:* fuel costs excl. duties and bonus/discount, fuel quantity in litres.
- *Repair and maintenance:* maintenance of all physical fishing assets.
- *Other operational costs:* assembled into variable and non-variable costs plus lease/rental payments for quota or other fishing rights.

Capital costs: depreciation (use of capital) and net interest expenditure (cost of financing capital).

Capital value:

- *Replacement value or historical value of physical capital.*

- *Value of quota and other fishing rights.*

Investments: improvement to physical capital and purchase of physical capital (net).

Financial position (debt/asset ratio): debt as a percentage of total assets (end of year).

Employment:

- *Engaged crew:* Number of jobs.
- *FTE national:* Calculated using national threshold rate.
- *FTE harmonized:* Calculated using 2,000 hour rate.

Fleet:

- *Number of fishery units (vessels).*
- *LOA:* Average over all length for vessels in the fleet segment.
- *GT:* Average gross tonnage for the vessels in the fleet segment.
- *KW:* Average engine power (kilowatt) for the vessels in the fleet segment.
- *Age:* Average age of vessels in the fleet segment.

Effort:

- *Vessel days at sea.*
- *Energy consumption.*

Fishing enterprises:

- *Number of enterprises with one registered fishing vessel.*
- *Number of enterprises with 2-5 registered fishing vessels.*
- *Number of enterprises with more than 5 registered fishing vessels.*

Production value per species:

- *Value of landings per species:* first hand sale.
- *Average price per species:* prices in EUR per kilo live weight.

III.B.1 Data acquisition

The Danish programme for collection of economic data by groups of vessels 2009-2010 is a continuation of the programme implemented over the previous years. Nevertheless the data collection system has to be restructured in order to stay tuned according to changing circumstances in the fishing industry.

In 2007 a new fishery management scheme in the Danish fishery was implemented. Now all commercial fishing vessels have individual %-share of the quotas of all quota species. The new management system has caused an adjustment in the fleet structure, which is not yet entirely transparent. The years of transition constitute a challenge to the sampling programme for economic data for fishery, which should be met by temporarily increasing the sample size.

Also the database system for the account statistics must undergo changes to ensure an appropriate flexible handling of the accounts during the transition period and in the succeeding years.

The Danish programme will be completed by two sources of data. The first being data from the administrative and statistical registers of the Directorate of Fisheries (FD) and the second data from sample statistics compiled at the Institute of Food and Resource Economics (FOI).

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

Cost data, financial information and information on factor input like fuel consumption and labour input are not registered in the FD's register. These data are collected by FOI on the yearly accounting forms. FOI obtains each year an extract from the FD registers containing information on all active vessels for the year before. This extract is used to analyse and stratify the population of fishery units before the sample for the year is drawn. The population is stratified according to the fleet segmentation laid out in the DCR together with additional national length groups and economic size groups.

The possibility of stratification on economic size groups is an important cornerstone for the statistical sampling. It can only be done because Denmark has a total registration by economic agent (and fishing vessel) of all landings of fish intended for the market, which includes landings from both commercial and non-commercial fishermen. Only own consumption of fish is not registered. The Danish Tax authorities set rules for calculating the use of own production which also includes fishery products, and these rules are also applied to the Account Statistics for Fishery whereas the estimated own consumption of fish is added to the production in the individual accounts.

Only authorized persons can legally buy and sell fish on the first hand market. The authorized first hand purchasers of fish report daily the registered landings of fish to the Directorate of Fisheries. The

cost of having this exhaustive registration of all landings of fish is not a part of this national data collection program, and the data necessary for setting up the population of fishermen/fishing firms for the completion of the DCR has so far been delivered each year to FOI free of charge.

Having full knowledge of the yearly revenue (per species) of each individual vessel unit in the population makes it possible to stratify the entire population according to fleet segmentation and economic size groups and calculate an optimal sample size for each stratum. The optimal sample sizes are calculated in order to minimize the variances on the economic variables. Therefore the sample size varies from 12 per cent of the units with small revenue to 45 per cent of the units with high revenue.

For each stratum the sample is drawn randomly from a selection of fishermen/fishing firms who have beforehand agreed to participate. This method ensures that there are nearly no non-response in contrast to common random sampling, where non-response is a grave problem and often causes bias in the sample. If for some reason an account from any of the sampled units cannot be collected, that unit is replaced with a substitute from the same stratum. Finally based on our knowledge of the production of each vessel unit in the population we improve the sample by including all units (100%) for some important strata like beam trawlers and purse seiners.

Full knowledge of many variables for the total population has the effect that the weighting system is able to rectify for most of the sample uncertainty. The calculation of the economic variables is done in a goal programming model with restrictions on the number of units and the known production of each species for each stratum, groups of strata and the entire population.

The method is similar to the method used for many years for the sampling of accounts for the FADN statistics to the DG Agriculture.

As every landing of fish is registered the population will include vessel units with landings of only a few fish like for instance sideline fishermen. These units have to be separated, because it is totally unrealistic to get solid information about costs from these part-time/leisure fishermen, as they are not setting up yearly accounts. Instead of using the accounting form in these cases, the exhaustive data on production, revenue, equipment and capacity are used to calculate a costs estimate based on the parameters for similar vessels/fishery.

In previous reports to JRC the non-commercial or part-time fishermen were reported separately and marked “less active”. That cannot be continued, because JRC has changed the codification for the report and cut off this option. Therefore in the future DCR reports each fleet segment will include both “full active” and “less active” vessels. The official Danish statistics will still separate the “less active” vessels as those with total revenue for the year at less that EUR 34,000 (DK threshold for 2007). The main differences between the figures in the DCR-reports and the Danish statistics will be in the groups of vessels less that 12 metres using polyvalent gear or passive polyvalent gear (netters).

All data on the accounting form refers to a “fishery unit” defined as a Fisherman or Fishing firm with one separately operating vessel that is a vessel which is active in fishery and has its own separate crew. When a Fisherman or Fishing firm owns more than one separately operating vessel, the account for that economic agent is split into separate accounts for each fishery unit.

III.B.2 Data quality

In order to ensure an adequate data quality FOI is collecting data from the fisherman’s professional accountants. Furthermore there are several steps taken to achieve the best possible measures for the economic data.

- A full balanced accounting form to ensure, that the data on the individual level is 100% correct.
- A beforehand obtained consent from the fishermen to allow their accountants to report all necessary data to avoid participation from a biased population of fishermen.
- Co-operation from professional accountants to achieve the best possible harmonized data.
- Full knowledge of the fishing activity of each individual vessel and fisherman.
- Make use of actual fishing activity in the selection process and the weighting scheme and thereby avoid miscalculation and vaporous estimates.
- Improving the calculations by using full scale survey for specific fleet segments like purse seiners and beam trawlers.
- Taking substitutes that match the categorization criteria when a selected fishery unit (vessel) has to be cancelled (less than 4% of the selected sample).
- Calculating statistical weights for each account in the sample by using known measures of vessel activity for row and column aggregates in the categorization matrix as targets in a quadratic goal programming model.

For the last five years FOI has collected about 300 accounts per year. In 2009 we expect to increase the sample size (accounts for 2008) in order to ensure continuation of the statistical calculations for all relevant fleet segments allowing for the impact on the structure of the fishing fleet caused by implementation of a new management system from 2007. The necessary sample size could be about 400 accounts, though it cannot be estimated before the actual population has been surveyed, and that is scheduled to March/April the year after the fishing year when all data has been processed on the FD registers.

The coherent structure of economic data makes it necessary to be able to validate all variables for each individual economic agent both in detail and consistently combined with other variables. The best way to do that is by setting up a balanced account. Therefore FOI has constructed a harmonized accounting form for fishery, which ensures that the data is broken down to meet the requirements of the Account Statistics for Fishery as well as the specifications in Regulation (EC) No 199/2008.

Specific information on the contents of the economic variables is listed below.

Income (turnover):

- Gross value of landings (total and per species).
- Additional payments regarding production from earlier years.
- Received/handed over amounts to cover landings by/for other vessels (pair-trawling).
- Other fishery income, for instance sale of self made gear.
- Leasing or hire out of vessels and other operative assets.
- Other sources, for instance salvage money.
- Subsidies, for instance for participation in research fishery.

Production costs - crew (include social costs):

- Salary to other partners/shareholders
- 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)

Production costs - fuel:

- Fuel costs excl. duties.
- Bonus and discount on fuel (-).
- Fuel quantity (Litres).

Production costs - repair and maintenance:

- Maintenance of vessel, hull etc.
- 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.

Production costs - other operational costs:

- Other expenses on energy and lubrications excl. duties
- 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)

Fixed costs:

- Depreciation on vessel, hull etc.
- 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.
- Net interest expenditure (recorded by 10 variables)

Financial position:

- Financial (debt / assets) recorded by (7 + 14) variables both beginning and end of year

“Investment” (assets): Value at the beginning of the year.

- Value of vessel, hull etc.
- Value of engines and winches
- Value of electronic equipment
- Value of fishing gear
- Value of van, truck etc.
- Value of buildings (gear sheds etc.)
- Value of stocks, for instance storage of fuel

- Value of fishing rights (IQ, ITQ)

Complement to the value at the beginning of the year regulation due to price changes, investment (purchase minus sale) during the year and depreciation are entered the accounting form, whereas the value at the end of the year is calculated.

Prices (species):

- Value of landings by species
- Quantity measured as live weight quantity in accounting form.
- 51 main species/species groups in the accounting form.

Labour input (FTE):

- Number of men (persons)
- 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)

Employment (persons/jobs):

- Crew on board (average number of persons)
- Rotating crew (number of men on land)
- Personnel working on land (number of persons)

III.B.3 Regional coordination

FOI expects to participate in the North Sea and the Baltic Sea RCM's when items concerning the collection and use of economic data for fisheries are on the agenda.

Table 5

Source	RCM Recommendations	Planned responsive actions
RCM Baltic & RCM North Sea & East Arctic (2007)	The RCM Baltic and RCM NS&EA recommend a workshop on optimizing sampling strategy for economic data.	If a workshop is organised Denmark will participate.
RCM Baltic	The RCM Baltic recommends the description	Information sampling procedure is

(2007)	of the source of the information, and when applying a sampling procedure, a description of method and strategy has to be clearly described in the national programme to give useful information on quality of the obtained data. In the technical report there should then be a qualitative quality report containing a thorough description of the methods and strategies used and the characteristics of the gathered data. The RCM Baltic recommends not to use the precision level as an indicator of heterogeneity but rather use the mean value and standard deviation.	given in this NP. .
RCM North Sea & East Arctic (2007)	RCM NS&EA recommends a dedicated workshop by those countries that have economic fleet data available for several years to examine if the data on the less active and inactive sector are stable.	If a workshop is organised Denmark will participate.
RCM North Sea & East Arctic (2007)	RCM NS&EA recommends setting up a workshop to clarify all outstanding issues concerning the fleet-based approach with regard to economic data collection.	If a workshop is organised Denmark will participate.

III.B.4 Derogations and non-conformities

No derogations or non-conformities are expected for the 2009-2010 programmes.

III.C Biological - métier-related variables

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

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

- Economic data. (FOI)

In order, for the three involved institutes, to use the same primary data on capacity, effort, and geographical distribution of the origin of the landings a common database will be produced every year, the Danish Fisheries Analyses Database (DFAD). This database is a database where data from the register on Danish fishing vessels, data from the Danish logbooks and the catch area declarations database together with data from the Danish sales notes database are merged. It is therefore possible to 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.

Selection of métiers based on effort, landings and value is based on data stored in the DFAD. Target species is defined as the species contributing most to the value per trip.

Trips without match of sales slips and logbooks are omitted from the ranking as information to assign these trips to level 6 is not available. Furthermore, for vessels with loa (length over all) of 8 m. respectively 10 m. no logbook should be used.

The total landings of these trips from the Baltic amount to 1228 tonnes or 1.65% of the total Danish landings from the Baltic, for the North Sea & East Artic the figures are 2329 tonnes or 0.42% and for the North Atlantic to 52 tonnes or 0.09% of the total Danish landings from that region.

The information for some logbook is not adequate or missing information e.g. missing mesh size consequently it is not possible to assign these trips to level 6 of the matrix. The same are trips where there wasn't enough information to create level_6 of the Nantes' matrix.

If fishing ground changed within trip, then effort (days_at_sea) per trip has been weighted within fishing grounds by catch size of all species.

At the ICES WKISCON meeting in January 2008 Denmark presented a study carried out by Ole Folmer, DTU Aqua on the sampling system used in Denmark and the statistical consequences. This study (Annex 1) shows that there are no significant differences between samples taken from different fisheries within the same commercial EU size grade and within the same area. The information contained within the sales slips register can give information on the size distribution and the species composition of the catch. Together with the logbook data this information can be used to estimate fishery related data. Further given the size grade data the catch from different fishery activities can be partition into length or age distributions.

Given the sampling design of the Danish sampling scheme, a shift towards a concurrent or fishery stratified sampling scheme is not possible without increasing the number of samples considerably.

The results from this study confirm that the Danish sampling system do not have to be changed in order to meet the same objectives as for concurrent sampling.

A description of the Danish sampling system for landings is given below:

The Danish harbour sampling scheme is stratified by year, area, harbour, quarter, species and EU size grade. Concurrent sampling of Danish fisheries are conducted during sea sampling where both the discarded and the retained part of the catch is measured, but during data collection in harbours the sampling scheme also include the commercial EU size sorting strata. Information about the quantity of each species in a landing is recorded in the Danish first-hand buyer register, where they are obliged also to report on catch area, size grades, value and vessel identity. The sampling scheme is further stratifies into four quarter, and for each quarter there are from two to five samples pr size grade group.

A description of the Danish sampling system for at-sea-sampling is given below:

Sampling directed towards the estimation of discard was initiated in 1995 both in the North Sea, Skagerrak, Kattegat and the Baltic Sea. The sampling was since 2002 directed towards fisheries where it was shown that discard occurred on a significant level. Based on sampling made from 1995 to 2000 it is verified that the discard rates obtained in the Danish gillnet fishery, the fishery using hooks and the small mesh size fishery are insignificant compared to the rest of the fisheries. Taking this into account and in order to maximize the level of certainty of the overall discard estimate the sampling is concentrated to the fisheries shoving significant discard: demersal trawl (for fish and/or nephrops) and Danish seine.

The vessels for monitoring will more or less be randomly selected within a given métier or group of metiérs among a group of vessels identified within this métier of group of métiers. In addition some considerations will be made in order to assure that different vessel sizes and various durations of the fishing trips are covered.

The fishery performed in different areas differs considerably in respect to duration, number of station per trip and handling of the catch. In the North Sea trips are up to 10 days of duration, while trips of 1-2 days duration are common in the Kattegat and the Baltic Sea.

Because of differences in the fisheries in the areas different sampling procedures are applied. If possible, all biological information from the catch will be sampled from each station.

Those are:

- Total weight of discard and landing by all species caught.
- Separate length distributions of discard and landings by all relevant species caught.

- Otoliths and individual mean weight per cm-length group of selected species.

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

Baltic Sea

III.C.1 Selection of métiers to sample

Marked sampling

The outcome of the ranking of the Danish fishery in the Baltic region is given in Table III.C.1 Selection of metiérs to be sampled – Baltic Sea. The metiérs to be samled and metiérs to be grouped is given in Table III.C.3 Baltic.

Even though a metiér according to the ranking guidelines has been selected to be sampled, not all metiérs are selected for sampling. Reasons for non selection for sampling are given in section III.C.5.

At sea-sampling

Based on results from discard sampling carried out since 2002 the planned Danish at sea-sampling is given in Table III.C.3 Baltic.

III.C.2 Data acquisition

The metiérs selected for sampling in the Baltic is given in Table III.C.3 – Baltic. When carrying out at-sea-sampling the sampling scheme 1 is used. It should though be mentioned that not all fishing events are sampled as this is not physically possible. One to three fishing events per day is sampled.

When sampling at the marked another method than scheme 1-3 is used. This method is described in this sections main text.

III.C.3 Data quality

The discard data are collected in agreement and in cooperation with the Danish Fishermen's organisation. This assures a continuous and fruitful communication between the industry and the fisheries biologists and facilitates the possibility of a continuous adjustment of the sampling scheme to the actual activity and trends in the industry. At the same time a careful going through the data collected looking at the premises for the sampling, not the results, assure that the data collected are in agreement with the reality defined as the understanding of the fishery based on discussions between in the fishermen and the biologists.

A very important spin-off from the discard sampling at sea is the opportunity to intensify the communication with the Danish Fishermen's organisations and the individual fisherman providing a natural possibility to explain and overcome the misunderstandings often existing between the

fishermen and the fisheries biologists. This has already involved changes toward a more constructive and responsible attitude by the fishermen and the Fishermen's Organisation.

Denmark will based on the experiences from the sampling made from 1995 to 2000 in the gillnet, trap net, pot and hook fishery not carry out any discard sampling on these fisheries because of insignificant discards in those fisheries

There are significant different between the metiérs fishing for cod no matter single or multirigget trawl nor otter trawl bottom, otter trawl midwater or pair trawls. The same meshsize and selection panel is used. Therefore, it is not necessary to parcelling out these metiérs into national metiérs as well.
Same approach can be sued for sprat and herring fisheries respectively.

III.C.4 Regional coordination

Denmark has for several years have had cooperation and task sharing with Sweden and Germany. Furthermore, Denmark has worked actively at the RCM for the Baltic for regional coordination of sampling for the region. Based on the outcome of the ranking exercise of the different MS national fishery fin the region Denmark will work towards task sharing and coordination.

Denmark has tried to apply to all recommendations made by the Regional Data Collection Meetings (RCM's) during the years since they were established in 2004. Below is a list of relevant recommendations each request accompanied by a comment of how Denmark has applied to the request. Some few of the requests has turned out to be not relevant at the time of realization because other decisions have changed the relevance of the recommendation. The introduction of the Regional Data Warehouses will in many ways solve the problems experienced until now with effective regional coordination by providing basic sampling and analysis results and real time information about sampling status and that way make the regional coordination much easier.

Table 1

Source	Recommendation	Action
RCM Baltic (2007)	The RCM Baltic recommends that all MS submit data in the agreed format when requested. The compiled regional data should be distributed to the members of RCM Baltic well before the meeting	DK compiled this data to the meeting in 2007 and will prepare requested data for future meeting to gain cooperation between MS in the RCM.
RCM Baltic (2007)	The RCM Baltic recommends that all MS upload data (effort, landings-all species, sea-sampling, sampling of landings) for the trawl fisheries targeting cod in the Baltic in order to allow analysis of the fisheries facilitating future	Done

	task sharing of discard sampling	
RCM Baltic (2007)	Until robust international guidelines for analysis of logbook data is available RCM Baltic made a few recommendations how to deal with allocation rules.	DK has complied with interim allocation rules made up in the RCM
RCM Baltic (2007)	The RCM Baltic recommends the description of the source of the information and when applying a sampling procedure a description of method and strategy has to be clearly described in the national programme to give useful information on quality of the obtained data. In the technical report there should then be a qualitative quality report containing a thorough description of the methods and strategies used and the characteristics of the gathered data. The RCM Baltic recommends to not use the precision level as an indicator of heterogeneity but to rather use the mean value and standard deviation.	DK has described sampling method and strategy in NP for 2009-10. A quality report in TR for 2009 will be presented in 2010.
RCM Baltic (Jan 2005)	Baltic RCM recommends that each MS on monthly basis updates “Real Time Monitoring Spreadsheet” giving the actual sampling status in each country and giving the coverage as defined according to the DCR.	DK are waiting for the Regional Data Warehouse to be lounced (January 2009) where facilities for real time sampling monitoring will be available.
RCM Baltic (Jan 2005)	Baltic RCM recommends in case where more than 5 percent of the national quota is landed in a foreign country, bilateral agreements should be made.	Bilateral agreements has been made on a yearly basis. For 2005 this was done between Denmark and Sweden in January 2005 and Denmark and Germany in May 2005.
RCM Baltic (Jan 2005)	The RCM recommend that both Eastern and Western Baltic cod, otoliths weight should on a routine basis be collected as a complement to age reading. This must start from 2005.	Denmark is recording weight on cod otoliths on a routine basis.
RCM Baltic	The RCM recommends that sampling should be carried out through out the entire tri annual	Denmark is sampling data on other biological parameters for most

(Jan 2005)	period.	species every year.
Baltic RCM (Oct 2005)	2.3. The RCM Baltic concludes that MS must conduct analysis of national data on which length groups yield the most homogenous economic structure.	To compile accurate and useful economic data it is important that MS analyze which length categories that achieve this goal.
Baltic RCM (Oct 2005)	7.18. RCM Baltic recommends providing aggregated maturity data to the assessment working groups on a yearly basis for those stocks that are sampled on a routine basis yearly, in a format agreed by the working group.	Denmark prepared maturity data on a yearly basis which are provided to the different working groups.
Baltic RCM (Oct 2005)	8.21. RCM Baltic recommends that MS upload landing statistics by fishing activity (level 6) and ICES statistical Rectangle from 2004 and 2005 starting from the beginning of 2006 and preferable can re-upload landing statistics on this low aggregation level a couple of years back.	Denmark will upload the required data when the definition of fisheries is ready.

III.C.5 Derogations and non-conformities

Denmark request for derogations for at sea-sampling sampling for the following metiérs:

Metiérs Level 6	Fishing ground	Reason for applying for derogation
FPN_CAT_ALL_0_0	27.SD22-24	Discard for this metiér is less than 10%.
GNS_DEF_>=157_0_0	27.SD22-24	Sampling carried out in 1995-2002 have shown that discard for this metiér is less than 5 %.
GNS_DEF_110-156_0_0	27.SD22-24	Sampling carried out in 1995-2002 have shown that discard for this metiér is less than 5 %.
GTR_DEF_157_0_0	27.SD22-24	Sampling carried out in 1995-2002 have shown that discard for this metiér is less than 5 %.
GTR_DEF_110_156_0_0	27.SD22-24	Sampling carried out in 1995-2002 have shown that discard for this metiér is less than 5 %.
LHP_FIN_ALL_0_0	27.SD22-24	This metiér is selected by effort. Effort for this metiér is not well defined and estimated as the logbook provisions not specific enough. Information on how this

		fishery is conducted confirms very low discard rates.
PTB_SPF_>=32_0_0	27.SD22-24	This is a fishery for herring. No discard occur for this fishery as all catches are landed unsorted in the harbours. Therefore, catches can be sampled in the harbours. This minimizes the cost for sampling.
PTB_SPF_16-31_0_0	27.SD22-24	This is a fishery for sprat. No discard occur for this fishery as all catches are landed unsorted and used for fish meal and oil production. Therefore, catches can be sampled in the harbours. This minimizes the cost for sampling.
PTM_SPF_>=32_0_0	27.SD22-24	This is a fishery for herring. No discard occur for this fishery as all catches are landed unsorted in the harbours. Therefore, catches can be sampled in the harbours. This minimizes the cost for sampling.
PTM_SPF_16-31_0_0	27.SD22-24	This is a fishery for sprat. No discard occur for this fishery as all catches are landed unsorted and used for fish meal and oil production. Therefore, catches can be sampled in the harbours. This minimizes the cost for sampling.
GNS_DEF_>=157_0_0	27.SD25-32	Sampling carried out in 1995-2002 have shown that discard for this metiér is less than 5 %.
GNS_DEF_110-156_0_0	27.SD25-32	Sampling carried out in 1995-2002 have shown that discard for this metiér is less than 5 %.
LHP_FIN_ALL_0_0	27.SD25-32	This metiér is selected by effort. Effort for this metiér is not well defined and estimated as the logbook provisions not specific enough. Information on how this fishery is conducted confirms very low discard rates.
LLD_ANA_ALL_0_0	27.SD25-32	This is a fishery for salmon. Sampling carried out in 1995-2002 have shown that discard for this metiér is less than 5 %.
PTB_SPF_16-31_0_0	27.SD25-32	This is a fishery for sprat. No discard occur for this fishery as all catches are landed unsorted and used for fish meal and oil production. Therefore, catches can be sampled in the harbours. This minimizes the cost for sampling.

PTM_SPF_16-31_0_0	27.SD25-32	This is a fishery for sprat. No discard occur for this fishery as all catches are landed unsorted and used for fish meal and oil production. Therefore, catches can be sampled in the harbours. This minimizes the cost for sampling.

North Sea and Eastern Arctic

III.C.1 Selection of métiers to sample

Marked sampling

The outcome of the ranking of the Danish fishery in the Baltic region is given in Table III.C.1 Selection of metiérs to be sampled – North Sea & East Artic. The metiérs to be samled and metiérs to be grouped is given in Table III.C.3 North Sea.

Even though a metiér according to the ranking guidelines has been selected to be sampled, not all metiérs are selected for sampling. Reasons for non selection for sampling are given in section III.C.5.

At sea-sampling

Based on result from discard sampling carried out since 2002 the planned Danish at sea-sampling is given in Table III.C.3 North Sea.

II.C.2 Data acquisition

The metiérs selected for sampling in theNorth Sea and East Artic is given in Table III.C.3 – NorthSea. When carrying out at-sea-sampling the sampling scheme 1 is used. It should though be mentioned that not all fishing events are sampled as this is not physically possible. One to three fishing events per day is sampled.

When sampling at the marked another method than scheme 1-3 is used. This method is described in this sections main text.

III.C.3 Data quality

For general information see Baltic section III.C.3.

When the COST project has been finalisation Denmark will prioritise analytical work to increase quality and knowledge of quality in sampling.

This work will include scientific analysis of possibilities to merge metiers, scientific analysis of necessary sampling levels (no. of trips and length measurements) to reach certain precision levels (length frequencies, discards etc) and cost-benefit analysis of sampling allocation to different metiers

III.C.4 Regional coordination

Denmark has for several years have had cooperation and task sharing with Germany and UK (Scotland). Furthermore, Denmark has worked actively at the RCM for the NS & EA for regional coordination of sampling for the region. Based on the outcome of the ranking exercise of the different MS national fishery fin the region Denmark will work towards task sharing and coordination.

III.C.5 Derogations and non-conformities

Denmark request for derogations for at sea-sampling sampling for the following metiérs:

Metiérs Level 6	Fishing ground	Reason for applying for derogation
OTM_SPF_32-69_0_0	27.I+II	This is a fishery for herring. Discard occur for this fishery but previous years experience when sampling this metiér has often shown change of fishing pattern when having observer onboard. Furthermore, when discarding it occurs seldom but when discarding it is large quantities. Catches can be sampled in the harbours. This minimizes the cost for sampling.
PS_SPF_ALL_0_0	27.I+II	This is a fishery for herring. Discard occur for this fishery but previous years experience when sampling this metiér has often shown change of fishing pattern when having observer onboard. Furthermore, when discarding it occurs seldom but when discarding it is large quantities. Catches can be sampled in the harbours. This minimizes the cost for sampling.
PTM_SPF_32-69_0_0	27.I+II	This is a fishery for herring. Discard occur for this fishery but previous years experience when sampling this metiér has often shown change of fishing pattern when having observer onboard. Furthermore, when discarding it occurs seldom but when discarding it is large quantities. Catches can be sampled in the harbours. This minimizes the cost for sampling.
GNS_DEF_120-219_0_0	27.IIIaN	Sampling carried out in 1995-2002 have shown that discard for this metiér is less than 5 %.
OTB_SPF_16-31_0_0	27.IIIaN	This is a fishery for sprat. No discard occur for this fishery as all catches are landed unsorted and used for fish meal and oil production. Therefore, catches can be sampled in the harbours. This minimizes the cost for

		sampling.
OTB_SPF_32-69_0_0	27.IIIaN	This is a fishery for herring. Discard occur for this fishery but previous years experience when sampling this metiér has often shown change of fishing pattern when having observer onboard. Furthermore, when discarding it occurs seldom but when discarding it is large quantities. Catches can be sampled in the harbours. This minimizes the cost for sampling.
OTM_SPF_32-69_0_0	27.IIIaN	This is a fishery for herring. Discard occur for this fishery but previous years experience when sampling this metiér has often shown change of fishing pattern when having observer onboard. Furthermore, when discarding it occurs seldom but when discarding it is large quantities. Catches can be sampled in the harbours. This minimizes the cost for sampling.
PS_SPF_ALL_0_0	27.IIIaN	This is a fishery for herring. Discard occur for this fishery but previous years experience when sampling this metiér has often shown change of fishing pattern when having observer onboard. Furthermore, when discarding it occurs seldom but when discarding it is large quantities. Catches can be sampled in the harbours. This minimizes the cost for sampling.
PTM_SPF_32-69_0_0	27.IIIaN	This is a fishery for herring. Discard occur for this fishery but previous years experience when sampling this metiér has often shown change of fishing pattern when having observer onboard. Furthermore, when discarding it occurs seldom but when discarding it is large quantities. Catches can be sampled in the harbours. This minimizes the cost for sampling.
GNS_DEF_100-119_0_0	27.IIIaS	Sampling carried out in 1995-2002 have shown that discard for this metiér is less than 5 %.
GNS_DEF_120-219_0_0	27.IIIaS	Sampling carried out in 1995-2002 have shown that discard for this metiér is less than 5 %.
GTR_DEF_120-219_0_0	27.IIIaS	Sampling carried out in 1995-2002 have shown that discard for this metiér is less than 5 %.
OTB_DEF_16-31_0_0	27.IIIaS	This is a fishery for sandeel. No discard occur for this

		fishery as all catches are landed unsorted and used for fish meal and oil production. Therefore, catches can be sampled in the harbours. This minimizes the cost for sampling.
OTB_SPF_16-31_0_0	27.IIIaS	This is a fishery for sprat. No discard occur for this fishery as all catches are landed unsorted and used for fish meal and oil production. Therefore, catches can be sampled in the harbours. This minimizes the cost for sampling.
OTM_SPF_16-31_0_0	27.IIIaS	This is a fishery for sprat. No discard occur for this fishery as all catches are landed unsorted in the harbours. Therefore, catches can be sampled in the harbours. This minimizes the cost for sampling.
PTB_DEF_16-31_0_0	27.IIIaS	This is a fishery for sandeel. No discard occur for this fishery as all catches are landed unsorted and used for fish meal and oil production. Therefore, catches can be sampled in the harbours. This minimizes the cost for sampling.
PTM_SPF_16-31_0_0	27.IIIaS	This is a fishery for sprat. No discard occur for this fishery as all catches are landed unsorted in the harbours. Therefore, catches can be sampled in the harbours. This minimizes the cost for sampling.
PTM_SPF_32-69_0_0	27.IIIaN	This is a fishery for herring. No discard occur for this fishery as all catches are landed unsorted in the harbours. Therefore, catches can be sampled in the harbours. This minimizes the cost for sampling.
GNS_DEF_100-119_0_0	27.IV+VIId	Sampling carried out in 1995-2002 have shown that discard for this metiér is less than 5 %.
GNS_DEF_120-219_0_0	27.IV+VIId	Sampling carried out in 1995-2002 have shown that discard for this metiér is less than 5 %.
GNS_DEF_90-99_0_0	27.IV+VIId	Sampling carried out in 1995-2002 have shown that discard for this metiér is less than 5 %.
GTR_DEF_120-219_0_0	27.IV+VIId	Sampling carried out in 1995-2002 have shown that discard for this metiér is less than 5 %.

OTB_DEF_<=15_0_0	27.IV+VIId	This is a fishery for sandeel. No discard occur for this fishery as all catches are landed unsorted and used for fish meal and oil production. Therefore, catches can be sampled in the harbours. This minimizes the cost for sampling.
OTB_DEF_16-31_0_0	27.IV+VIId	This is a fishery for sandeel. No discard occur for this fishery as all catches are landed unsorted and used for fish meal and oil production. Therefore, catches can be sampled in the harbours. This minimizes the cost for sampling.
OTB_SPF_16-31_0_0	27.IV+VIId	This is a fishery for sprat. No discard occur for this fishery as all catches are landed unsorted and used for fish meal and oil production. Therefore, catches can be sampled in the harbours. This minimizes the cost for sampling.
OTB_SPF_32-69_0_0	27.IV+VIId	This is a fishery for herring. Discard occur for this fishery but previous years experience when sampling this metiér has often shown change of fishing pattern when having observer onboard. Furthermore, when discarding it occurs seldom but when discarding it is large quantities. Catches can be sampled in the harbours. This minimizes the cost for sampling.
OTM_SPF_32-69_0_0	27.IV+VIId	This is a fishery for herring. Discard occur for this fishery but previous years experience when sampling this metiér has often shown change of fishing pattern when having observer onboard. Furthermore, when discarding it occurs seldom but when discarding it is large quantities. Catches can be sampled in the harbours. This minimizes the cost for sampling.
PS_SPF_ALL_0_0	27.IV+VIId	This is a fishery for herring and mackerel. Discard occur for this fishery but previous years experience when sampling this metiér has often shown change of fishing pattern when having observer onboard. Furthermore, when discarding it occurs seldom but when discarding it is large quantities. Catches can be sampled in the harbours. This minimizes the cost for sampling.
PTB_SPF_16-31_0_0	27.IV+VIId	This is a fishery for sprat. No discard occur for this fishery as all catches are landed unsorted and used for

		fish meal and oil production. Therefore, catches can be sampled in the harbours. This minimizes the cost for sampling.
PTM_SPF_16-31_0_0	27.IV+VIId	This is a fishery for sprat. No discard occur for this fishery as all catches are landed unsorted and used for fish meal and oil production. Therefore, catches can be sampled in the harbours. This minimizes the cost for sampling.
PTM_SPF_32-69_0_0	27.IV+VIId	This is a fishery for herring. Discard occur for this fishery but previous years experience when sampling this metiér has often shown change of fishing pattern when having observer onboard. Furthermore, when discarding it occurs seldom but when discarding it is large quantities. Catches can be sampled in the harbours. This minimizes the cost for sampling.

North Atlantic

III.C.1 Selection of métiers to sample

Marked sampling

The outcome of the ranking of the Danish fishery in the Baltic region is given in Table III.C.1 Selection of metiérs to be sampled – North Atlantic. The metiérs to be samled and metiérs to be grouped is given in Table III.C.3 North Atlantic.

Even though a metiér according to the ranking guidelines has been selected to be sampled, not all metiérs are selected for sampling. Reasons for non selection for sampling are given in section III.C.5.

At sea-sampling

Based on result from discard sampling carried out since 2002, no at sea-sampling will be carried out for that region as no discard occurs.

II.C.2 Data acquisition

The metiérs selected for sampling in the North Atlantic is given in Table III.C.3 – NorthAtlantic. When sampling at the marked another method than scheme 1-3 is used. This method is described in this sections main text. No at-sea-sampling for this region is carried out.

III.C.3 Data quality

For general information see Baltic section III.C.3.

When the COST project has been finalisation Denmark will prioritise analytical work to increase quality and knowledge of quality in sampling.

III.C.4 Regional coordination

Denmark has tried to apply to all recommendations made by the Regional Data Collection Meetings (RCM's) during the years since they were established in 2004. Below is a list of relevant recommendations each request accompanied by a comment of how Denmark has applied to the request. Some few of the requests has turned out to be not relevant at the time of realization because other decisions have changed the relevance of the recommendation. The introduction of the Regional Data Warehouses will in many ways solve the problems experienced until now with effective regional coordination by providing basic sampling and analysis results and real time information about sampling status and that way make the regional coordination much easier.

Denmark has had cooperation and task sharing with UK (Scotland). Based on the outcome of the ranking exercise of the different MS national fishery fin the region Denmark will work towards task sharing and coordination.

III.C.5 Derogations and non-conformities

No discard occurs in the Danish fisheries carried out for this region. The fisheries carried out are the blue whiting fishery and a limited fishery for horse mackerel. Therefore, Denmark request for derogation for discard sampling for this region.

III.D Biological - Recreational fisheries

The act of law shall apply to fishing with light hand fishing tackle in natural fresh-water systems and in the sea if you have reached the age of 18 and not reached the age of 65. According to the official statistics 161,206 persons that have registered for a whole year held such a license in 2007. Persons that have a license for a day or week are additional to the 38,281 persons. These figures are for all regions in Denmark.

All Danes at 12 years at age or more are allowed to fish with 6 passive gears (traps, gillnets or long lines) if they buy a special fishing license for this purpose. According to the official statistics 34,108 persons (all Danish regions) had a license for recreational fishery with passive gears in 2007.

Baltic

III.D.1 Data acquisition
Salmon

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

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

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

Denmark will in 2009 and 2010 as in previous years estimate the total fishing effort (i.e. the number of boat-days) by collecting information from local anglers, boat rental companies, the ferry company servicing Bornholm and from results from fishing competitions. From selected anglers information on the average catch-per-unit-effort (CPUE) will be collected, and from this the total catch by troll fishing will be estimated. Previous attempts on collecting information by questionnaires from a larger part of the anglers did not prove to be efficient, as the response was very poor.

The catch of salmon by non-professionals using fixed hook-lines and nets set for trout has previously been very uncertain. For the year 2009 and 2010 Denmark will try to gather information on the effort (number of hooks and nets used) from the local Fisheries Inspectors and on the average CPUE from interviews with selected fishermen. Based on these figures the total catch will be estimated.

Cod

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

The fishery is performed on commercial organized trips with vessels dedicated to the purpose or by individuals fishing from the coastline or from private boats near the shores. A small part of the anglers

are organized in local regional recreational fishermen associations under the umbrella of the Danish Sports fishing Society (Dansk Sportsfiskerforbund). These more than 200 associations cover typically marine fishery as well as freshwater fishery. App. 30,000 persons were in 2005 registered in one of those associations. An unknown number of other anglers associations are not connected to the Danish Sports fishing Society and a significant number of the anglers are not member of any association.

Eel

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

Sampling Strategy

Denmark has planed a sampling scheme for the collection from anglers in 2009 and 2010 that continues the survey on the recreational fishing that started in 2006. The plan is to collect data from the following sources:

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

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

On the initiative of the Danish Organization for Amateur Fishermen and the Danish Association of Recreational Fishermen, a number of gillnet and/or trap fishermen has since 2002 agree on reporting their catches to DTU-Aqua. In 2008 a total of 75 fishermen were engaged in the project fishing either with standard gillnet and/or a standard trap. Geographical these 75 fishermen cover most of the Danish coastal areas, see figure 1. Exceptions are; a low coverage along the West coast of Jutland and a total lack of coverage on Bornholm and along the Wadden Sea coast. If weather conditions allows, Fishermen engaged in the project will as a minimum perform fishery with either three gillnets 1-3 times a month and/or three traps 5 times a month. Fishing takes place on a fixed position chosen by the fishermen prior to the first registration and will not be change during the reporting period. The gears are provided by DTU-Aqua to ensure that the same gears are used in all areas. All fish caught are identified to species, counted and length measured. In cases of a high catch an average and maximum length might be reported instead of individual length.

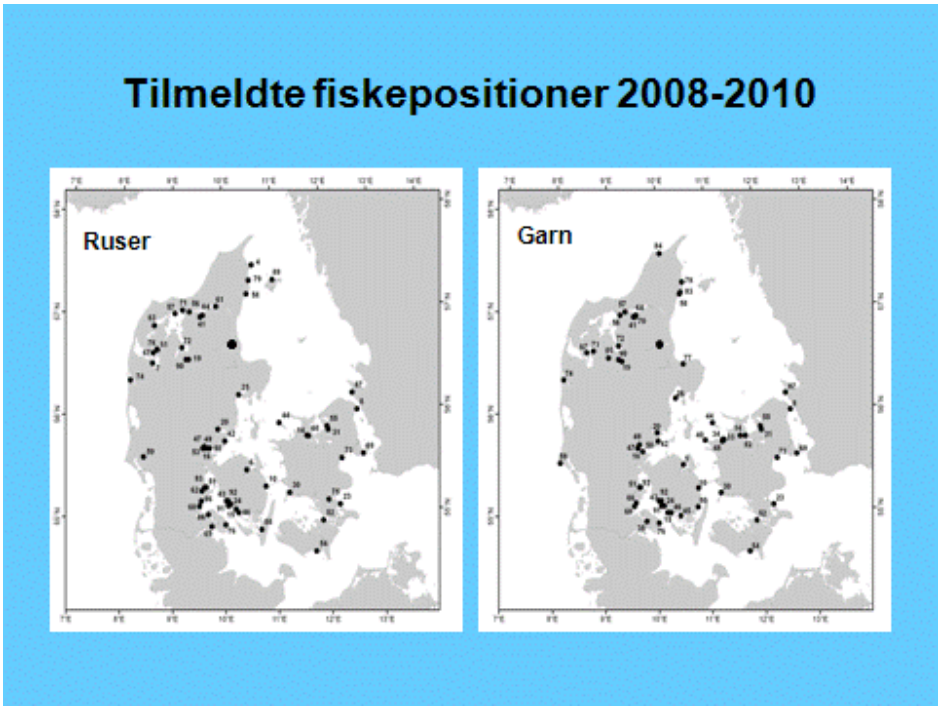


Fig. 1. Map showing the coverage of fishing positions 2008-2010. Map at left shows position of traps and the right map shows position of gillnets.

III.D.2 Data quality

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

III.D.3 Regional coordination

No regional coordination is anticipated.

III.D.4 Derogations and non-conformities

No derogation or non-conformities is anticipated

North Sea and East Arctic

II.D.1 Data acquisition

Fishing ground: IV and VIId

Denmark does not have any recreational fisheries for eel and a very limited fishery for cod.

Fishing ground: IIIaN

Denmark does not have any recreational fisheries for eel. A recreational fishery for cod takes place.

Fishing ground: IIIaS

Denmark does not have any creational fishery for eel. A limited recreational fishery for cod takes place.

More details on cod and eel are given in the section on the Baltic region. See also this section for sampling strategy.

III.D.2 Data quality

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

III.D.3 Regional coordination

Denmark has tried to apply to all recommendations made by the Regional Data Collection Meetings (RCM's) during the years since they were established in 2004. Below is a list of relevant recommendations each request accompanied by a comment of how Denmark has applied to the request. Some few of the requests has turned out to be not relevant at the time of realization because other decisions have changed the relevance of the recommendation. The introduction of the Regional Data Warehouses will in many ways solve the problems experienced until now with effective regional coordination by providing basic sampling and analysis results and real time information about sampling status and that way make the regional coordination much easier.

Table 2

Source	Recommendation	Action
RCM North Sea & East Arctic (2007)	The RCM NS&EA recommends that all MS submit data in the agreed format when requested. The regional data should be compiled well before the meeting and be distributed to the RCM participants.	Denmark compiled this data to the meeting in 2007 and will prepare requested data for future meeting to gain cooperation between MS in the RCM.
RCM North Sea & East Arctic (2007)	The RCM NS&EA recommends that, at a trip level, or at a fishing operation level when possible, the retained part of the catch should be classified by target assemblage (crustaceans, cephalopods, demersal,…) and sorted by weight (by total value in the case of valuable crustacean species, e.g. Nephrops). The target	Denmark has reported fishing activity data in the fleet-fishery matrix according to the recommendations made.

	assemblage that comes up at the first position should be considered as the target assemblage to report in the matrix. The RCM NS&EA understands that this way of doing does not allocate any information to the metiers targeting mixed target assemblages.	
RCM North Sea & East Arctic (2007)	The RCM NS&EA recommends that in general if an area is covered by one dedicated trip per year only, the effort put into this single trip could better be allocated to other fleet segments ensuring better coverage of these segments. The RCM further recommends updating the list of onboard observer trips by fishing activity on level 6 before the next meeting.	Such practise is already carried out in Denmark. Denmark has updated the list as requested.
RCM North Sea & East Arctic (2007)	The RCM NS&EA recommends that all MS take part in the case study on spatial aspects on growth patterns for North Sea cod by submitting data to France using the template in Annex 6.	No data has been sent.
RCM North Sea & East Arctic (2006)	RCM NS and EA To upload the 2004-2006 landings and effort statistics into FishFrame together with the associated data from market and on-board sampling, for all species within the remits of the WGNSSK by April 1st, 2007.	Done
RCM North Sea & East Arctic (2006)	The RCM NS &EA recommends that Denmark and Sweden prepare a working document proposing how regional data collection could be arranged by using the Kattegat as a test are. The WD will be presented at WGBFAS 2007 and for the RCM´s.	Not fulfilled to WGBFAS. The process will start by filling in suggested tables describing the present sampling methods.
RCM North Sea (2005)	RCM North Sea expects that all labs will update the spreadsheet with their cod sampling information on a monthly basis.	Denmark is waiting for the Regional Data Warehouse to be lounced (January 2009) where facilities for real time sampling monitoring will be

		available.
RCM North Sea (2005)	RCM North Sea recommends that all countries having data on NS cod participate in the proposed workshop on FishFrame (Chair: Henrik Degel, mid-January 2006, Copenhagen, Denmark).	The workshop was carried out as proposed
RCM North Sea (2005)	RCM North Sea recommended that data are submitted to FishFrame, starting with the 2004 and 2005 data for North Sea cod before 1 May 2006.	All relevant data from 1994 to present are submitted to FishFrame
RCM North Sea (2005)	RCM North Sea insists that all countries participate in the exercise of comparing sampling strategies on commercial catches and discards by providing the relevant information to the Swedish coordinators.	Done
RCM North Sea (2005)	RCM North Sea agreed that in order to co-ordinate activities effectively there was a need to develop a better method of presenting the coverage discard sampling and the Netherlands have agreed to prepare a template based on fleet segmentation (currently under review) and circulate before next year's meeting.	Denmark will prepare data as soon as the templates are delivered.
RCM North Sea (2005)	RCM North Sea recommended that where discard sampling coverage is restricted to a low level, the country concerned, considers the inputs from other countries and enter into bilateral agreements where appropriate.	Denmark is waiting for the Regional Data Warehouse to be lounced (January 2009) where facilities for international data extrapolation will be available.
RCM North Sea (2005)	RCM North Sea strongly supports the initiative to develop a Discard Atlas as it is regarded as a move which would provide useful information to support decision making in the coordination of discard surveys.	The initiative was never realized

RCM North Sea (2005)	The RCM North Sea reiterates its 2004 recommendation on the conclusion of formal bilateral agreements on the sampling of foreign flag vessels, and on the inclusion of these agreements in the MS' national programme proposals.	Bilateral agreements between Denmark and Sweden and Denamrk and Germany were updated in first quarter of 2006.
RCM North Sea (2004)	NS RCM recommends that the DCR should move to metier based sampling programme. Further it suggests that rather than establish a complete list of national metiers which could take a considerable time to be agreed, SGRN should be requested to endorse the definition of a metier based on work of expert groups such as SGDFF as part of the upcoming revision of the regulation. This definition should be used by MS to determine their metier list which can be reviewed in future by the Commission.	Denmark was participating in the first Fleet based approach meetings in Nantes 2005 where the fleet matrix was suggested. We have prepared fleet data for both RCMs which were requested. We have also participated in the hands-on workshop which took place in February 2006.
RCM North Sea (2004)	RCM recommends that MS start bilateral talks as soon as possible, with a view to establishing bilateral agreements on the issue of foreign flag vessel sampling.	A bilateral meeting was held between Denmark and Sweden in January 2005 and an agreement was established.
RCM North Sea (2004)	It was recommended that data for the North Sea cod stock should be entered into the sampling status spreadsheet covering the data collected during 2005 which will be hosted on the website of DIFRES (www.dfu.min.dk/samplingstatus).	The sampling spreadsheet was establish for both the Baltic and the North Sea and Denmark took active part in the development. The spreadsheet has not been used by any country including Denmark.
RCM North Sea (2004)	NS RCM recommends that MS carry out a precision analysis on at least one selected stock from within the NS RCM region, using the guidelines and protocols suggested at the precision Workshop held in Nantes 2004. The results of this analysis should be reported back to the NS RCM in time to be considered at its next meeting.	Precision level on cod in Skagerrak was calculated and brought to the meeting.
RCM North Sea	NS RCM recommends that in all cases the measured weight (either gutted or whole)	Fulfilled to the extent it is possible

(2004)	should be recorded rather that weights derived from gutted/whole weight conversion factors.	
RCM North Sea (2004)	NS RCM agreed that a preliminary analysis of the level of maturity sampling and sampling coverage by area and time should be carried out and presented to the next meeting of the RCM with a view of establishing task sharing agreements from 2007 onwards. It was agreed that Belgium would take responsibility for the demersal species and the Netherlands would describe the situation in relation to pelagic species.	Level of maturity sampling and sampling coverage were reported as requested prior to the meeting. (Number individuals per ICES rectangle and month). The overview highlighted several important aspects regarding maturity sampling, staging, timing of sampling etc. These aspects are planned to be taken care of within maturity Workshops in which Denmark will participate.
RCM North Sea (2004)	NS RCM recommends further work to be done on how to link biological and economic data. In this context, the possible implications on the collection of economic data also need to be further explored. In anticipation of result from such work, NS RCM recommends that MS, in the meantime, should be encouraged to collect economic data in a way that makes it possible to do regional economic analysis.	In order to conduct bio-economic modelling there is a need to establish a clear link between biological and economical data. This link has just at present been established by agrement of the vesslel length segments and tne fishing Activity categories (level 6)
RCM North Sea (2004)	NS RCM recommends that there should be a forum for regional economic analysis also in the future. Analyses of the economic development in specific regions have been done within the framework of Concerted Action Project that will end this year. There is a need, also in future, of a forum where this kind of work is done	The Concerted Action Project will be replaced by the new data regulation analysis. The STECF subgroups on economic affairs will meet on the 15-18 May to discuss how the transition from the Concerted Action Project into the new data regulation can be made.
RCM North Sea (2004)	The NS RCM agreed that the FishFrame database should be used on a exploratory basis to input raw level data from 2004 from both EU and non-EU countries. Countries should upload data in time to be used by the stock coordinators of the WGNSSK by	Recommendation fulfilled.

	May 2005. A database subgroup (chaired by Henrik Degel) will provide guidelines for data entry and the timing of data submission.	

III.D.4 Derogations and non-conformities

No derogation or non-conformities is anticipated

North Atlantic

Denmark does not have any recreational fisheries in this region.

III.E Biological - stock-related variables

Baltic Sea

III.E.1 Selection of stocks to sample

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

An overview of long term planning of sampling for stock related variables is given in table III.E.2, and an overview of the planned sampling for age, weight, sex, maturity and fecundity is given in table III.E.3.

III.E.2 Data acquisition

The Danish standard sampling scheme

The Danish standard sampling scheme will be carried out on a quarterly or monthly basis by ICES Division, Sub-division or statistical rectangle depending on the requirements. All sampling- and measurement procedures are described in internal manual. The Danish sampling schemes for sampling biological information from the landings can be divided into three sampling systems:

- **Harbour sampling of landings of demersal species for human consumption purposes.**
  Sampling of demersal species is mostly carried out in the harbours. For standard sampling a defined number of kilos of fish are collected from each size grade of the landings. These fish are length measured, weighted and aged.

- **Harbour sampling of landings of pelagic species for human consumption purposes.**
  Sampling of pelagic species is mostly carried out in the harbours. Standard samples are non-size grated samples and for these samples a defined minimum number of fish is collected of the landings. These fish are length measured, weighted and aged.

- **Harbour sampling of landings for reduction purposes.**
  The industrial fishery is divided into four types of fisheries; the sandeel fishery, the sprat fishery, the Norway pout fishery and the blue whiting fishery. These fish are length measured, weighted and aged.

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

The ageing is performed according to the standardized method. The aggregated data are stored in the Biological database ("Babelfish") at DTU Aqua.

Sex, maturity and fecundity will be sampled during surveys on all species as the samples of the commercial landings either are in such condition that histological measures are impossible or that the sampling is performed on gutted fish. For those species which is landed whole, sexual maturity data is collected in addition to the standard data. For cod, haddock and saithe sexual maturity is routinely collected.

Herring fishery

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

Standard sampling procedure will be used when sampling and analyzing these herring samples.

Herring in ICES subdivision 22-32

The Danish herring fishery in the Baltic Sea mainly takes place in ICES subdivision 22-24.

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

Planned sampling intensity is given in Table III.E.3.

Salmon fishery

The Danish salmon fishery is combined of a long line fishery from November to March and a driftnet fishery in the remaining months of the year except from a few summer-months, where there is no fishing for salmon. However, the majority of the fishing is taking place during September, October, and January. Approximately 5-6 vessels participate in the salmon fishery and none of these are full-time engaged in fishing.

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

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

Planned sampling intensity is given in Table III.E.3.

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

Standard sampling procedure will be used when sampling and analysing these cod samples.

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

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

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

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

If cod appears as by-catch in samples collected from other fisheries all individuals are sampled, length measured and aged.

Planned sampling intensity is given in Table III.E.3.

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

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

Standard sampling procedure will be used when sampling and analyzing these plaice samples.

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

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

Planned sampling intensity is given in Table III.E.3.

Planning of the data collection for eel – length and age samples
The Danish eel fisheries are found throughout the country in fresh and marine waters, but the marine fishery is concentrated to the Baltic. Local populations of yellow and silver eels are exploited from April – December by use of pound nets, fyke nets, hooks and fixed traps e.g. at the outlet of lakes. A significant part of the Danish catches are migrating silver eels originating from local populations and from the entire Baltic Sea. The silver eels are exploited by coastal pound nets from September to December while passing through the Danish Belts and Straits heading for the North Sea.

The annual, 2005-2007, catch of silver and yellow eel in the Baltic were 496 tons. The DCR requires one sample of a hundred specimens for each 20 tons landed eel to be age and length measured in 2009 and 2010. The samples will be collected from the most important catch areas, covering marine and freshwater fisheries. On locations with both yellow and silver fishery one sample from the summer fishery of yellow eel and one sample from the autumn fishery of silver eel will be collected and analyzed. From pure silver eel fisheries only one sample will be collected and analyzed. The size range of any sample will be selected to be representative of the total catch for the fishing area in concern. The samples will be bought from the fishermen and brought to the laboratory for length and age analyses.

Sprat fishery

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

The sampling follows the standard sampling scheme.

Sprat fishery in the Baltic

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

Planned sampling intensity is given in Table III.E.3.

III.E.3 Data quality

While waiting for the standard tool (COST) for analysing precision Denmark has been using different methods to calculate precision. When the tool is released, Sweden will be able to analyse the data in a standardized way, and the results will guide us to reconsider the sample size as well as sampling setup.

III.E.4 Regional coordination

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

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

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

At the ICES IBTSWG meeting in 2007 it was agreed for 2008 that in order to improve international co-ordination maturity data should be collected for a number of species. It is expected that such agreements will be made for future surveys.

III.E.5 Derogations and non-conformities

North Sea and Eastern Arctic

III.E.1 Selection of stocks to sample

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

An overview of long term planning of sampling for stock related variables is given in table III.E.2, and an overview of the planned sampling for age, weight, sex, maturity and fecundity is given in table III.E.3.

III.E.2 Data acquisition

The Danish standard sampling scheme

The Danish standard sampling scheme will be carried out on a quarterly basis by ICES Division, Sub-division or statistical rectangle depending on the requirements. All sampling- and measurement

procedures are described in internal manual. The Danish sampling schemes for sampling biological information from the landings can be divided into three sampling systems:

- **Harbour sampling of landings of demersal species for human consumption purposes.** Sampling of demersal species is mostly carried out in the harbours. For standard sampling a defined number of kilos of fish are collected from each size grade of the landings. These fish are length measured, weighted and aged.

- **Harbour sampling of landings of pelagic species for human consumption purposes.** Sampling of pelagic species is mostly carried out in the harbours. Standard samples are non-size grated samples and for these samples a defined minimum number of fish is collected of the landings. These fish are length measured, weighted and aged.

- **Harbour sampling of landings for reduction purposes.** The industrial fishery is divided into four types of fisheries; the sandeel fishery, the sprat fishery, the Norway pout fishery and the blue whiting fishery. These fish are length measured, weighted and aged.

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

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

Sex, maturity and fecundity will be sampled during surveys on all species as the samples of the commercial landings either are in such condition that histological measures are impossible or that the sampling is performed on gutted fish. For those species which is landed whole, sexual maturity data is collected in addition to the standard data. For cod, haddock and saithe sexual maturity is routinely collected.

Herring fishery

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

Standard sampling procedure as described in section 8 (introduction) will be used when sampling and analyzing these herring samples.

Herring in ICES division IIIa

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

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

The herring population in this area is composed of 3 stocks, and the sampling is performed on the following categories:

- Autumn spawners from the North Sea.

- Spring spawners from the Western Baltic.
- Winter spawners both from the English Channel and local populations.
-

Assessments are done on these spawning types. The spawning type is determined from the otoliths following an intern manual (Mosegaard, H, L.A. Worsøe, and M. Lindberg 1999)

Herring is also taken as by-catch in the small meshed fishery. These landings are counted against a by-catch quota. The landings will be sampled as described in section 8 (Introduction).

Planned sampling intensity is given in Table III.E.3.

Herring in the North Sea and Eastern Channel

The fishery is mainly occurring during October to May. By-catches of herring taken in the small meshed fishery for sand eel, sprat and Norway pout is estimated in 2006 to app. 12,000 tonnes and in 2007 to app. 6,700 tonnes.

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

The herring population in this area is composed of 3 stocks, and the sampling is performed on the following categories:

- Autumn spawners from the North Sea.
- Spring spawners from the Western Baltic.
- Winter spawners both from the English Channel and local populations.
-

Assessments are done on these spawning types. The spawning type is determined from the otoliths following an intern manual (Mosegaard, H, L.A. Worsøe, and M. Lindberg 1999)

Planned sampling intensity is given in Table III.E.3.

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

Atlanto-Scandian herring is landed during spring only for human consumption purposes. A part of Danish landings of NSS herring are taking place in Norway, Iceland or at the Faroes. Again for 2009 and 2010 an arrangement concerning sampling of these landings will tried to be set up with the landing countries, as a supplement to the standard sampling in Denmark.

Planned sampling intensity is given in Table III.E.3.

Mackerel fishery

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

Planned sampling intensity is given in Table III.E.3.

Cod fishery

The fishery of cod is taking place in the Baltic, the Kattegat, the Skagerrak and the North Sea. The fishery is carried out by trawlers and gill netters. The mesh size used by the trawlers depends on

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

Standard sampling procedure will be used when sampling and analysing these cod samples.

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

Cod in the Kattegat and the Skagerrak

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

As these stocks are managed under a recovery regime, the sampling level needs to be increased in order to collect adequate data for stock assessment purposes. Therefore, if possible, it is the intensions of sampling at a higher level than prescribed in the DCR. The intension is to sample at the EP level.

Planned sampling intensity is given in Table III.E.3.

Cod in the North Sea

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

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

In cases where cod appears as by-catch in the small meshed fishery all individuals are sampled, length measured and aged.

Planned sampling intensity is given in Table III.E.3.

Plaice fishery

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

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

Standard sampling procedure will be used when sampling and analyzing these plaice samples.

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

Plaice in the Skagerrak and the Kattegat

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

Planned sampling intensity is given in Table III.E.3.

Plaice in the North Sea

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

Planned sampling intensity is given in Table III.E.3.

Nephrops fishery

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

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

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

Nephrops is landed all year round and only for human consumption purposes by trawlers using gears with a mesh-size of 90 mm or larger.

Planned sampling intensity is given in Table III.E.3.

Nephrops in the North Sea

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

Planned sampling intensity is given in Table III.E.3.

Shrimps fishery (Crangon)

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

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

Deep-sea shrimp in the Skagerrak (Pandalus)

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

Planned sampling intensity is given in Table III.E.3.

Deep-sea shrimp in the North Sea

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

Planned sampling intensity is given in Table III.E.3.

Sole fisheries

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

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

Sole in the Kattegat and the Skagerrak

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

Planned sampling intensity is given in Table III.E.3.

Haddock fisheries in the North Sea and the Skagerrak

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

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

Planned sampling intensity is given in Table III.E.3.

Hake fisheries in the North Sea and the Skagerrak

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

The combined Danish quota share for hake landings from the North Sea and the Skagerrak is 74 % obliging Denmark to sample this stock. The total Danish landing is significant lower than the quota and the sampling will be adjusted according to the actual landings in 2009 and 2010.

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

Planned sampling intensity is given in Table III.E.3.

Saithe fisheries in the North Sea and the Skagerrak

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

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

Planned sampling intensity is given in Table III.E.3.

Anglerfish fisheries in the North Sea and the Skagerrak

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

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

Planned sampling intensity is given in Table III.E.3.

Turbot fisheries in the North Sea

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

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

Planned sampling intensity is given in Table III.E.3.

Lemon sole fisheries in the North Sea

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

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

Planned sampling intensity is given in Table III.E.3.

Sand eel fishery

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

The sampling follows the standard sampling scheme.

Planned sampling intensity is given in Table III.E.3.

Sprat fishery

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

The sampling follows the standard sampling scheme.

Sprat fishery in Division IIIa

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

Planned sampling intensity is given in Table III.E.3.

Sprat fishery in the North Sea

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

Planned sampling intensity is given in Table III.E.3.

Norway pout fishery

Norway pout fishery is mainly taking place during autumn and winter and mainly taking place in the northern North Sea. A limited fishery also takes place in the Skagerrak.All the landings are made by demersal trawlers using 16-18 mm mesh size. All landings are used for reduction purposes.

The fishery has been closed in some years. At present it is not known whether a fishery will be opened in 2008. If the fishery will be opened it will be sampled according to the guidelines.

The sampling follows the standard sampling scheme.

Planned sampling intensity is given in Table III.E.3.

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

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

Planned sampling intensity is given in Table III.E.3.

III.E.3 Data quality

While waiting for the standard tool (COST) for analysing precision Denmark has been using different methods to calculate precision. When the tool is released, Sweden will be able to analyse the data in a standardized way, and the results will guide us to reconsider the sample size as well as sampling setup.

III.E.4 Regional coordination

Other EC-members states landing in Denmark.
Sampling of landings in Danish harbours by other EC-members will be conducted by Denmark. The sampling principles and frequency will be the same as for national landings.

III.E.5 Derogations and non-conformities

As Denmark is not conducting any research vessel survey in areas and periods where data on fecundity for mackerel and horse mackerel can be collected, Denmark asks for derogation for collecting the data.

North Atlantic

III.E.1 Selection of stocks to sample

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

An overview of long term planning of sampling for stock related variables is given in table III.E.2, and an overview of the planned sampling for age, weight, sex, maturity and fecundity is given in table III.E.3.

III.E.2 Data acquisition

Blue whiting fishery

Blue whiting is landed all year round exclusively for reduction purposes. In the directed fishery for blue whiting trawl with a mesh size of 40 mm is used. Blue whiting is also caught as by-catch in the Norway pout fishery and in this fishery trawls with a mesh-size less than 32 mm are used.

The sampling follows the standard sampling scheme.

Planned sampling intensity is given in Table 8.1.

III.E.3 Data quality

While waiting for the standard tool (COST) for analysing precision Denmark has been using different methods to calculate precision. When the tool is released, Sweden will be able to analyse the data in a standardized way, and the results will guide us to reconsider the sample size as well as sampling setup.

III.E.4 Regional coordination

Other EC-members states landing in Denmark. Sampling of landings in Danish harbours by other EC-members will be conducted by Denmark. The sampling principles and frequency will be the same as for national landings.

III.E.5 Derogations and non-conformities

As Denmark is not conducting any research vessel survey in areas and periods where data on fecundity for mackerel and horse mackerel can be collected, Denmark asks for derogation for collecting the data.

III.F Transversal variables

III.F.1 Capacity

III.F.1.1 Data acquisition

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

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

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

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

Data on fishing capacity aggregated as required in Appendix VIII of the DCR can be delivered at any time.

III.F.1.2 Data quality

on a precision level of 3 as all fishing vessels is registered. As there is no lower limit on the size of the fishing vessel for registration in the Vessel Register and all vessels are registered, a 100% coverage of all Danish fishing vessels will be given.

III.F.1.3 Regional coordination

No regional coordination is anticipated for collection of data on capacity.

III.F.1.4 Derogations and non-conformities

No derogations and non-conformities are anticipated for collection of data on capacity.

III.F.2 Effort

III.F.2.1 Data acquisition

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

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

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

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

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

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

Effort for fishing vessels not carrying logbooks or vessels less than 10 meters are defined as if a sales note exist and the effort for the vessel concerned are defined as one fishing day.

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

The above measures of fishing effort aggregated as required in Appendix VIII of the DCR can be delivered at any time.

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

III.F.2.2 Data quality

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

III.F.2.3 Regional coordination

Denmark welcomes if end data users such as ICES or STECF could define their data needs. This would then lead to international/regional coordination of the data collection.

III.F.2.4 Derogations and non-conformities

'Hours fished': It is not possible to estimate 'Hours fished' since this is not recorded in the Danish logbooks and according to the EU logbook regulation it is not mandatory to record that. Therefore, Denmark request for derogation for recording and submitting "Hours fished".

The variables concerning numbers of gear ('Number of rigs', 'Number of fishing operations', 'Number of nets, length', 'Number of hook, number of lines', 'Number of pots, traps') and 'Soaking time' are not recorded in the Danish logbooks. According to the EU logbook regulation it is not mandatory to record this detailed information. Therefore, Denmark request for derogation for recording and submitting this information

III.F.3 Landings

III.F.3.1 Data acquisition

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

- Storage warehouses, cold storage warehouses, or other establishments receiving fish and shellfish with purpose for sale, storage, sorting, or other liking treatments before the fish is sold to first hand buyers.
- Persons or parties that as a part of their trade buy fish directly from the fishermen for sale purposes on the home-market, export including transistation, for conservation purposes or processing for later sale.

- Persons or parties receiving fish directly from the fishermen in cases where the sale has taken place before the landing of the fish.
- Fishermen selling the catch directly to the consumer, lands it directly in a foreign country, export it including transit or process the fish from own landing.

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

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

The information in the Sales Notes database is registered according to the provisions of Council Regulation (EC) No 2847/93 and No 104/2000. Conversion factors for raising from gutted weight to live weight is given in Table III.F.3.

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

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

Collecting data on landings designated human consumption

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

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

Collecting data on landings designated reduction purposes

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

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

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

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

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

The species composition of the landings is derived as follows:

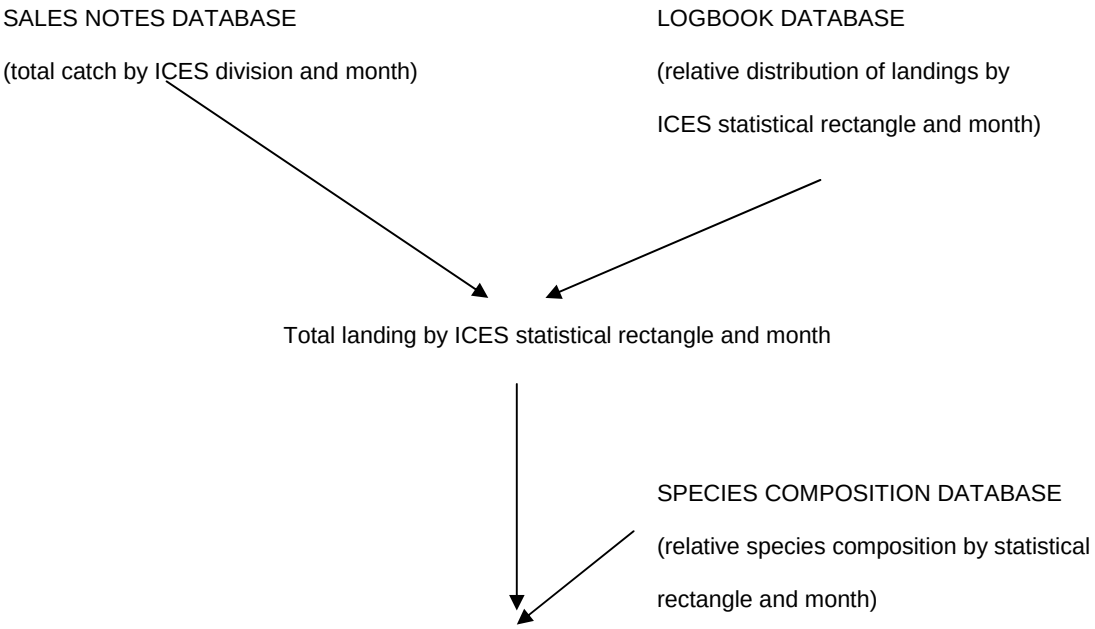
The total landings for reduction purposes by month and area are calculated using the sales note database. The landings are then allocated to statistical rectangle using the relative geographical distribution from the logbook database of landings identified as have been taken for reduction purposes. The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

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

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

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

The estimation procedure is illustrated by the flow diagram below.



Total landings by species, ICES statistical rectangle and month

The information on landings is merged with other fishery dependent data and stored in the DFAD as described in section VI.A.

III.F.3.2 Data quality

Data on landings for the stocks mentioned in Appendix VII of the DCR can be given as census data and on a detailed level.

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

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

III.F.1.3 Regional coordination

No regional coordination is anticipated for collection of data on landings.

III.F.1.4 Derogations and non-conformities

No derogations and non-conformities are anticipated for collection of data on landings.

III.G Research surveys at sea

The DTU Aqua command three fisheries research vessels. The R/V DANA is a stern trawler with a loa of 78 meters. The R/V DANA is used when conducting the International Bottom Trawl Survey (IBTS), the Baltic International Trawl Survey (BITS), the Acoustic Survey in the Norwegian Sea (ASH) and the Herring Acoustic Survey (HERSUR).

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

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

All member states are obligated to undertake scientific research at sea to evaluate the abundance and distribution of stock independently of the data provided by the commercial fisheries in the case of stocks mentioned in of the DCR. The below described surveys are all listed in the DCR appendix IX. Denmark will undertake 5 different surveys in the North Sea, the Skagerrak, the Kattegat and the Baltic Sea.

In 2009 and 2010 Denmark will as in the two previous years try to organize cooperation with Germany, Ireland, the Netherlands, Sweden and UK on a joined EU participation in the ICES international coordinated survey on the Norwegian Spring Spawning Herring and blue whiting in the Norwegian Sea. It is the intention that the Danish R/V Dana will be used and that the scientific staff onboard the cruise should be a joined staff. Denmark will offer to act as coordinator of the joined EU survey.

Denmark has agreed in participation in the Blue whiting survey west of Ireland and staff from Denmark participates on the two vessels – R/V Tridens and R/V Celtic Explorer. Denmark will also have staff onboard the German R/V Solea when conducting the Acoustic Herring survey in the southern Kattegat, the Belt Sea and the Western Baltic. This cooperation and participation will continue in 2009 and in 2010.

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

III.G.1 Planned surveys

An overview of the planned surveys at sea is given in table III.G.1.

Baltic International Trawl Survey (BITS)

The survey is undertaken twice a year, in the 1st and 4th quarter, BITS Q1 and BITS Q4, respectively. Denmark participates with two vessels RV DANA, a 2483 GRT stern trawler, and RV HAVFISKEN, a 20 GRT side trawler.

The primary purpose of the survey, to estimate abundance indices for recruitment and stock abundance of the Baltic cod stocks, is undertaken by RV DANA. The cod population is estimated by means of establishing catch-rates in bottom-trawls in different depths and areas in the ICES subdivisions 24, 25, 26, and 28. Besides data on maturity, weight of individual cod and organs are collected to establish sex specific maturity, mean weight and condition at age for cod. Hydrographical data are collected with a CTD.

The second part is undertaken by RV HAVFISKEN and provides in addition to cod also abundance indices for flatfish in ICES subdivision 21-23. The species composition and the length distributions of all caught fish are recorded, and samples for ageing are taken of cod, plaice and sole. Hydrographical data are collected with a CTD.

The sampling procedure and the level of precision are defined in the Manual for the Baltic International Trawl Surveys,

(http://www.ices.dk/reports/LRC/2008/WGBIFS/Addendum%201%20BITS%20Manual.pdf)

Data are stored in a national and an international (ICES) database and used by relevant ICES Working Groups.

Data for calculation of ecosystem indicator will be collected.

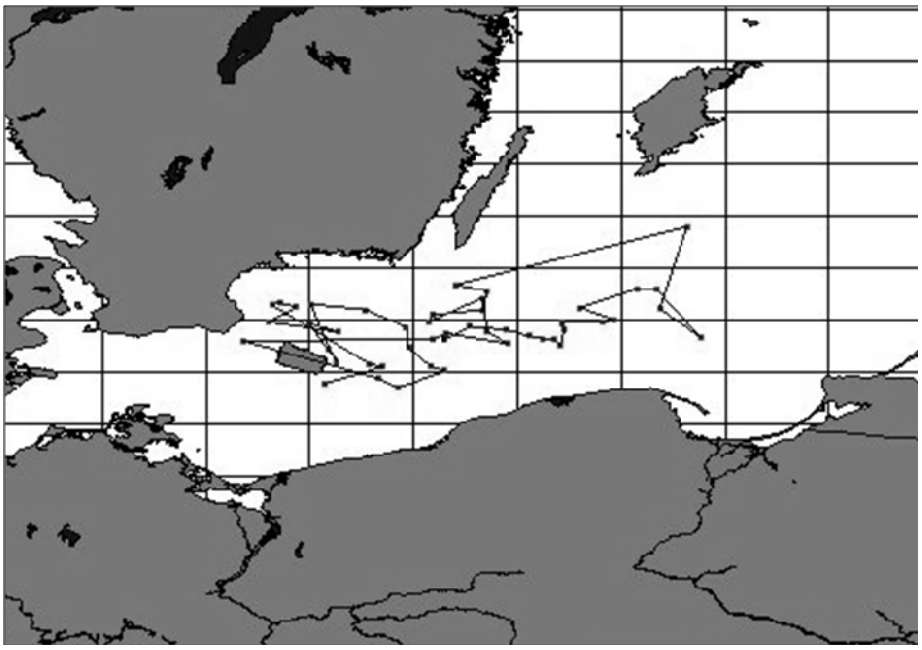


Figure III.G.1 Map showing the RV Dana BITS Q1 2007 survey grid. The survey area will be app. the same for the BITS Q1 in 2009 and 2010.

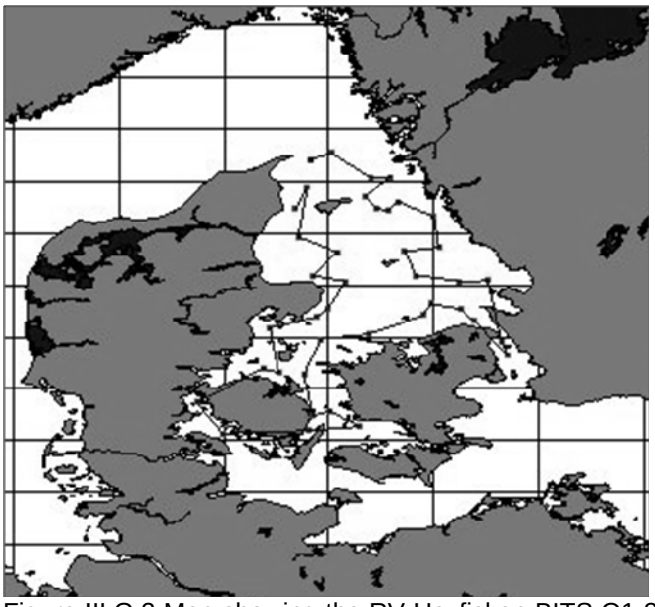


Figure III.G.2 Map showing the RV Havfisken BITS Q1 2007 survey grid. The survey area will be app. the same for the BITS Q1 in 2009 and 2010.

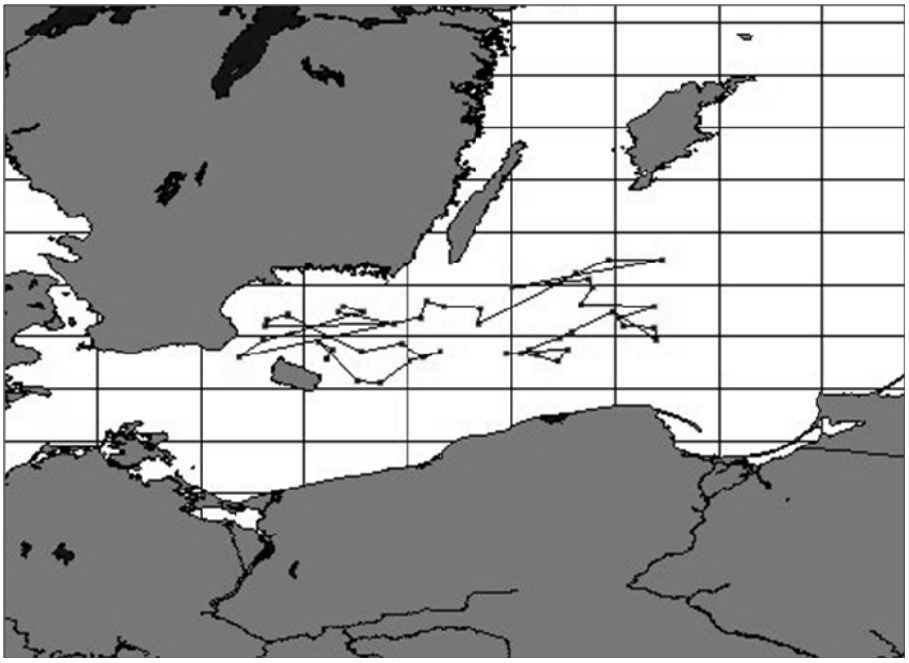


Figure III.G.3 Map showing the RV Dana BITS Q4 2007 survey grid. The survey area will be app. The same for the BITS Q4 in 2009 and 2010.

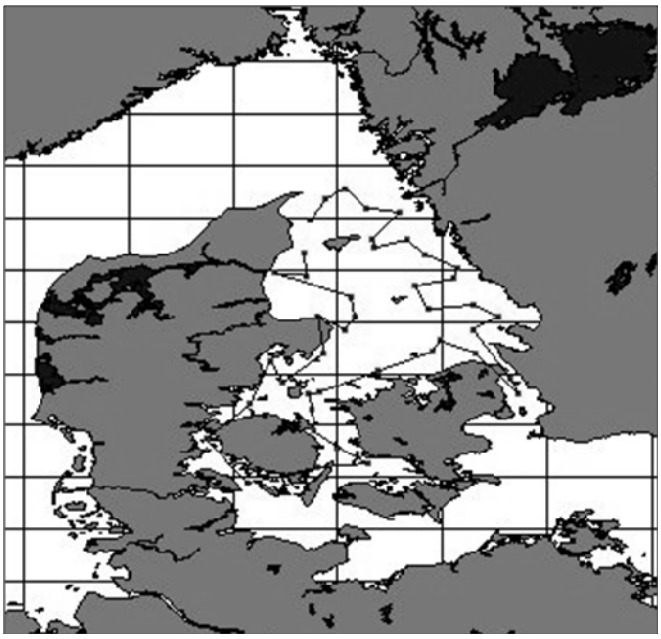


Figure III.G.4 Map showing the RV Havfisken BITS Q4 2007 survey grid. The survey area will be app. 4 the same for the BITS Q4 in 2009 and 2010.

International Bottom Trawl Survey (IBTS)

The survey is undertaken by RV DANA twice a year, in the 1st and 3rd quarter, IBTS Q1 and IBTS Q3, respectively.

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

The survey is ICES coordinated and performed in collaboration with research vessels from France, Norway, England, Germany, The Netherlands, Scotland and Sweden. The survey is carried out as a bottom trawl survey deploying a GOV trawl during daylight hours as a standard aboard all research vessels involved.

The sampling procedure and the level of precision are defined in the Manual for the International Bottom Trawl Surveys (Revision VII):

(http://www.ices.dk/datacentre/datras/NSIBTSmanualRevVIIdraft.pdf)

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

Data for calculation of ecosystem indicator will be collected.

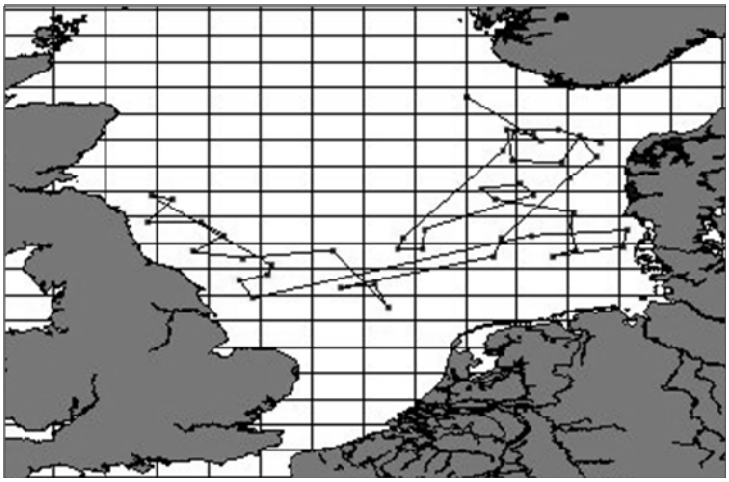


Figure III.G.5 Map showing the RV Dana IBTS Q1 2007 survey grid. The survey area will be app. the same for IBTS Q1 2009 and 2010

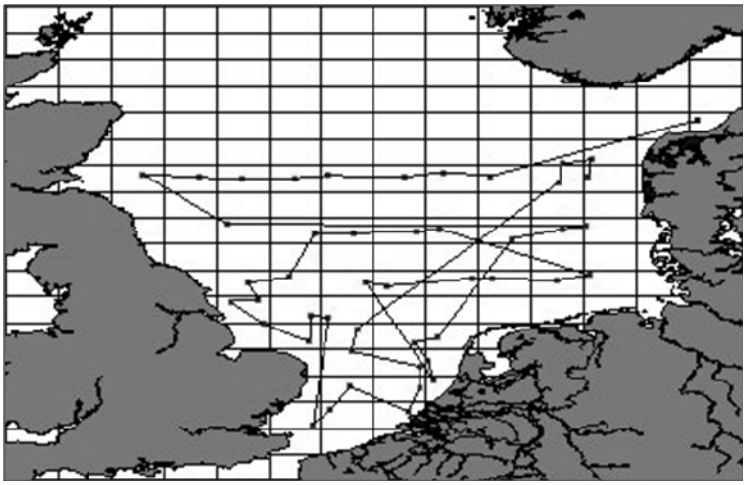


Figure III.G.6 Map showing the RV Dana IBTS Q3 2007 survey grid. The survey area will be app. the same for the IBTS Q3 in 2009 and 2010.

International Ecosystem Survey in the Nordic Sea (ASH)

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

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

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

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

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

Denmark has offered to act as co-ordinator of conducting the survey and will contact other member states (Germany, Ireland, the Netherlands, Sweden and UK) which have quota shares of more than 5 % on the EU Norwegian Spring Spawning quota. A proposal for costs sharing for conducting the survey will be distributed to Germany, Ireland, the Netherlands, Sweden and UK. If not **all** involved member states participate in conducting the survey are willing to pay their share of the costs, Denmark will ask for derogation for running the survey.

A description of the survey can be found in 'Report of the planning group on Northeast Atlantic pelagic ecosystem survey(PGNAPES)' at

http://www.ices.dk/reports/RMC/2007/PGNAPES/pgnapes07.pdf

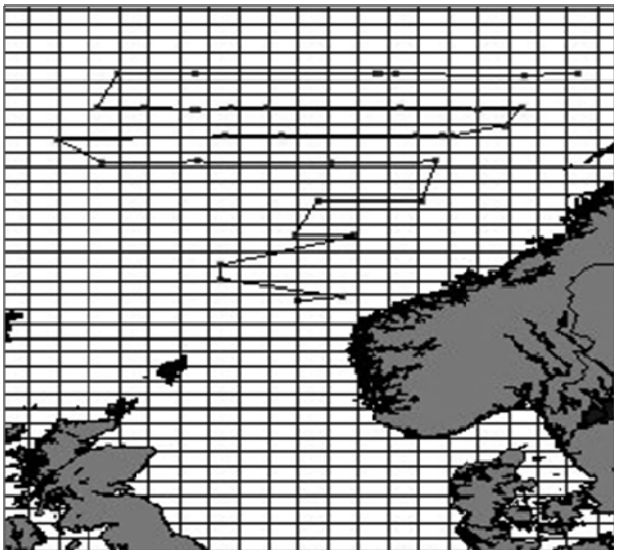


Figure G.III.7 Map showing the RV Dana ASH 2007 survey grid. The survey area will be app. the same for the survey in 2009 and 2010.

Herring larvae survey (IHLS)

The survey is undertaken during 1.

The purpose is to provide abundance indices for fish larvae, in particular herring- and sprat larvae. Method Isaac Kidd trawl is deployed during night and hydrographical data are collected with a CTD.

The manual for the IHLS can be fund in 'REPORT OF THE PLANNING GROUP FOR HERRING SURVEYS (PGHERS)' at

http://www.ices.dk/reports/LRC/2008/PGHERS/PGHERS08.pdf

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

NS Herring Acoustic Survey (NHAS)

The survey is undertaken during the 2nd and 3rd quarter and consists of a calibration part (2 days) and an acoustic abundance estimate of herring stocks (12 days) in the North Sea, the Skagerrak, and the Kattegat.

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

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

Hydrographical data are collected using a CTD.

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

The sampling procedure and the level of precision are defined in the 2002 (Version 3.1).

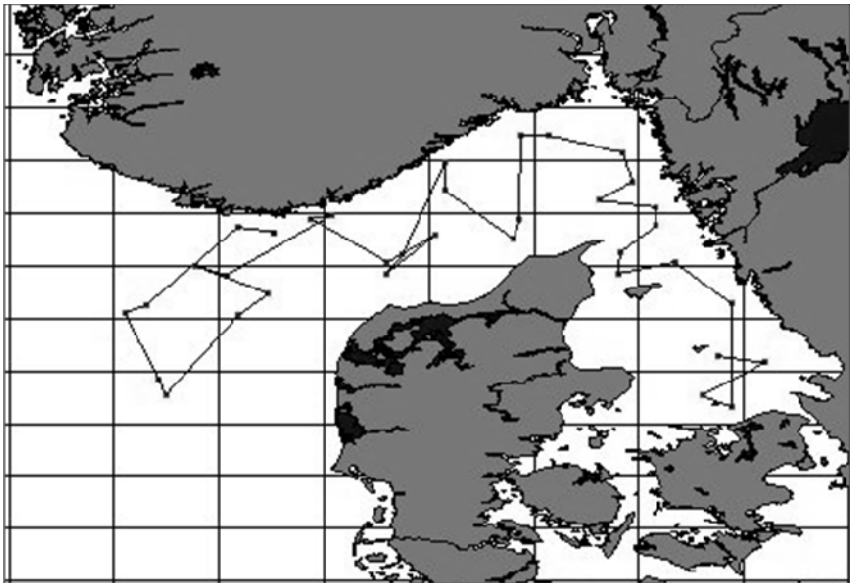


Figure G.III.8 Map showing the RV Dana 2007 NS Herring acoustic survey grid. The survey area will be app. the same for the 2009 and 2010 survey.

Baltic International Acoustic Survey (BIAS)

Denmark has agreed in participation at Baltic International Acoustic Survey (BIAS) and staff from will be onboard the German RV Solea when conducting the Acoustic Herring survey in the southern Kattegat, the Belt Sea and the Western Baltic. This cooperation and participation will continue in 2009 and 2010.

Blue whiting survey

In 2009 and 2010 Denmark will participate in the Blue whiting survey west of Ireland and staff from Denmark participates on the two vessels – RV Tridens and RV Celtic Explorer.

The survey is planed to take place in March – April and it is planed that the Dutch RV Tridens and the Irish RV Celtic Explorer will conduct the survey. The survey is conducted in cooperation with Norway and Russia. The total survey time is 18 days for RV Tridens and 20 days for RV Celtic explorer

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

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

Nephrops UVTV survey in Functional unit IIIa

Denmark will carry out a new Nephrops TV survey in Div. IIIa. Details on this survey are at the moment discussed with Sweden and as soon a detailed plans for the survey has been made they will

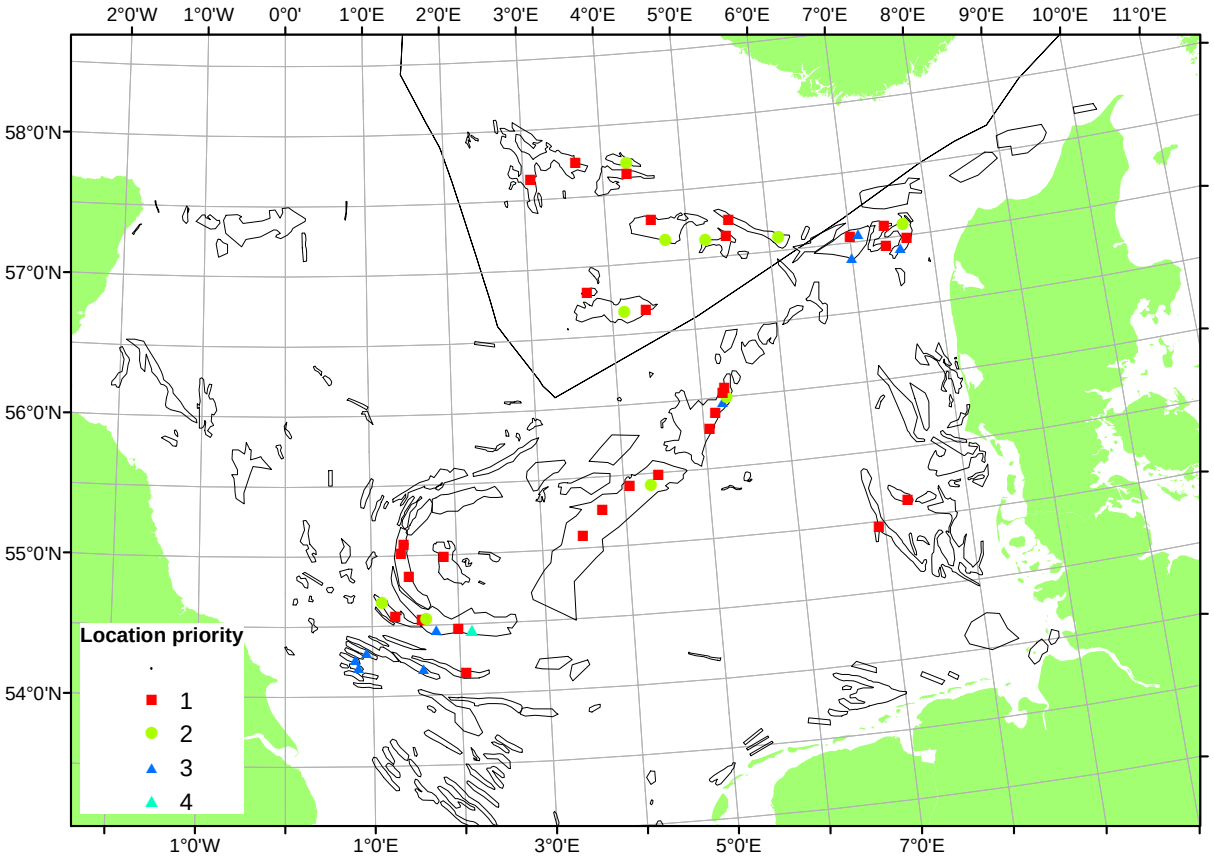
be provided to the Commission and included in the Danish National Programme for 2009 and 2010 as an amendment.

North Sea sandeel survey

In order to improve the scientific advice on sandeel Denmark started five years ago a survey series for establishing a fishery independent recruitment index. This index should provide information that could support the scientific advice ion sandeel and should be the basis for setting a preliminary index for the sandeel fishery for the coming year.

It is planned that sampling should be carried out at 35 predefined station.

Survey location definition used for sampling of sandeels with the modified scallop dredge. Sandeel fishing grounds and Norwegian EEZ indicated on the map. The colours show sampling priority for individual locations (1 is highest and 4 lowest).



III.G.2 Modifications in the surveys

Denmark has offered to act as co-ordinator of conducting the Atlan/Scand. Herring survey and will contact other member states (Germany, Ireland, the Netherlands, Sweden and UK) which have quota shares of more than 5 % on the EU Norwegian Spring Spawning quota. A proposal for costs sharing for conducting the survey will be distributed to Germany, Ireland, the Netherlands, Sweden and UK. If not **all** involved member states participate in conducting the survey are willing to pay their share of the costs, Denmark will ask for derogation for running the survey.

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

IV.A Collection of data concerning the aquaculture

IV.A.1 General description of the aquaculture sector

According to the Danish Directorate of Fisheries (FD) the gross output in value from the Danish aquaculture sector in 2006 was 111 million EUR, and the total volume was 37,500 tons. The total population of farms counted in 2006 was 325 owned by 189 companies. The total number of persons employed was 690, of whom 421 were full-time, 124 part-time and 145 seasonally employed according to Statistics Denmark.

The main species produced in Denmark is rainbow trout with a volume of 35,300 tons and a gross value of 93.7 million EUR and European eel with a volume of 1,700 tons and a gross value of 15.5 million EUR in 2006. The number of persons employed in trout farming was 632 and the number of persons employed in eel farming was 25.

The following results are from the Danish Aquaculture Account Statistics, which presents results on costs and earnings on an annual basis. The Danish Aquaculture Account Statistic has been carried out by the Institute of Food and Resource Economics (FOI) as a pilot study from 2004 to 2007.

There are some differences in the volume and value collected by the Danish Directorate of Fisheries and FOI. The main difference is that data collected by FOI are account data and the accounts do not necessarily follow the calendar year. For account statistics, accounts finalized within the year are used. In the total population used by FOI there are also a higher number of companies and farms. In general both volume and value are consequently higher in the Aquaculture Account Statistics.

Sea based farming

Sea cage farms in Denmark produce only rainbow trout in cages. In 2006 there was 19 farms distributed on 6 companies. All 6 companies participated in the survey. The production volume was 8,364 ton and the value was 36.2 million EUR. The production in each farm is quite homogeneous even though there are both small and large producers. The difference in volume and value is caused by the production of trout eggs (Roe). The most valuable products from the Danish sea farms are roe.

The value from roe is not collected by the Danish Directorate of Fisheries, because they only collect data for the volume and value of whole fish.

Shellfish farms producing blue mussels on long lines have been starting up production activity since 2004 and are still at a low production level. In 2006 there were 11 farms distributed on 10 companies. 6 farms from 5 companies participated in the survey. The production volume was 650 ton and the value was 0.6 million EUR. The production methods in the segment are up until now very homogeneous.

Land based farming

The land based fish farming is dominated by pond farms producing rainbow trout and recirculation systems producing European eel. Recently new farm types producing rainbow trout by the use recirculation technology has evolved.

Traditional pond farms in Denmark produce almost exclusively rainbow trout. In 2006 there was 248 farms distributed on 139 companies. 137 farms from 62 companies participated in the survey. The production volume was 23,263 ton and the value was 62.2 million EUR. Companies producing more than one species of trout, can for most part be clearly allocated to this segment, because their main income comes from production of rainbow trout. Most of the companies have an integrated production from hatchery to portion size fish. Even though there are both small and large producers the segment are very homogenous.

Recirculation systems producing rainbow trout consisted in 2006 of 32 farms distributed on 19 companies. 22 farm from 11 companies participated in the survey. The production volume was 7,623 ton and the value was 19.0 million EUR. Most of the companies have an integrated production from hatchery to portion size fish. It is expected that this segment will grow in the coming years, because the environmental impact from these recirculation farm is less than from the traditional pond farms.

Recirculation system producing European eel constituted in 2006 of 9 farms distributed on 9 companies. 7 farms from 7 companies participated in the survey. The production volume was 1,926 ton and the value was 17.0 million EUR. The segment is very homogeneous, where all farms are very intensive and re-circulate more than 95% of the water. All companies have the same kind of production from glass eel to the final product.

Other recirculation system farms are producing turbot, pike perch, pollan, perch, barramundi and a few other species in very small scale. The segment had in 2006 only 6 companies. All 3 farms from 3 companies participated in the survey. The on-growing technique is very similar in this segment, but the species produced are very different. The segment is not presented separately.

Nurseries and hatcheries are for most part an integrated part of the production process inside each company. Only a few companies have specialised in production of eyed eggs or fingerling. This segment is not surveyed separately.

IV.A.2 Data acquisition

The Danish programme will be completed by at least sources of data. The first being data from the administrative and statistical registers of the Directorate of Fisheries (FD) and the second data from sample statistics compiled at the Institute of Food and Resource Economics (FOI) and third employment data from the central statistical bureau, Statistics Denmark. Supplementary data on e.g. feed quota is drawn from Danish environmental registers.

The administrative and statistical registers in FD are the basic source to information about the Danish aquaculture sector. The data relevant to the collection of economic information for aquaculture includes data on all units. The statistical unit in the FD register is the physical farm, not the owner/enterprise. Available data include farm type (farming technology) and data on production in volume and value.

Cost data, financial information and information on factor input like feed consumption and labour input are not registered in the FD's register. These data are collected yearly by FOI in uniform accounting forms. FOI obtains each year an extract from the FD registers containing information on all farms with production. This extract is used to analyse and stratify the population of aquaculture units before the sample for the year is drawn. The population is stratified according to main farming technique and economic size groups based on production value. Only the segment of traditional pond farms is large enough to allow for segmentation into economic size groups.

The overall method behind the Aquaculture Account Statistics is the same as the one that FOI is using for the Account Statistics for Fishery and the Account Statistics for Agriculture which is the basis for the Danish contribution to the data collection for the Farm Accountancy Data Network (FADN).

Participation in the statistics is voluntarily and FOI is paying the aquaculture enterprises hired accountants for delivery of data in a specific account form. In the pilot phase of the Aquaculture Account Statistics the survey population has counted all aquaculture enterprises who on beforehand have agreed to participate. This method ensures that there are nearly no non-response in contrast to common random sampling, where non-response is a grave problem and often causes bias in the sample. As a supplement to the voluntary data collection publicly available accounts are bought from the Danish Commerce and Companies Agency (DCCA).

The use of register data gives FOI knowledge of many variables for the total population and in this sense the sampling strategy is exhaustive. This approach also makes it possible to impute some detailed variables for those units that do not have complete specification on the detailed level. The imputation is based partly on production data (product category, volume and value) from FD registers and partly on economic data (costs and earnings relationships) from the surveyed population at stratum level.

The imputation method is similar to the method used for many years for the account statistics for processing industry of Statistics Denmark.

All data on the accounting form refers to the physical unit of an aquaculture farm. When an enterprise owns more than one farm, the account for that economic agent is split into separate accounts for each

farm or physical unit. For DCR purposes farm account data are aggregated to company level in order to live up to DCR requirements.

Since FOI buys farm accounts from the aquaculture units on farm level and DCR require data on enterprise level the number of accounts paid for will be larger than the number of enterprises in the statistical tables delivered for DCR purposes.

Data collected in 2009 refers to activities in 2008 and results such as the Danish Aquaculture Account Statistics and data for DCR will be available mid October 2009.

IV.A.3 Data quality

In order to ensure an adequate data quality FOI is collecting the economic data from the enterprises professional accountants. Furthermore there are several steps taken to achieve the best possible measures for the economic data.

- A full balanced accounting form to ensure, that the data on the individual level is delivered correctly in a in a uniform format.
- A beforehand obtained consent from the enterprise to allow their accountants to report all necessary data to avoid participation from a biased population of agents.
- Co-operation from professional accountants to achieve the best possible harmonized data.
- For every unit in the population actual production volume, production value and product type are gathered from FD registers thereby avoiding vaporous estimates.

The coherent structure of economic data makes it necessary to be able to validate all variables for each individual economic agent both in detail and consistently combined with other variables. The best way to do that is by setting up a balanced account. Therefore FOI has constructed a harmonized accounting form for aquaculture, which ensures that the data is broken down to meet the requirements of the Account Statistic for Aquaculture as well as the specifications in DCR.

For every unit in the population actual production volume, production value and product type are gathered from FD registers.

IV.A.4 Regional coordination

FOI expects to participate in the Regional Coordination Meetings when items concerning the collection and use of economic data on aquaculture are on the agenda.

IV.A.5 Derogations and non-conformities

IV.B Collection of data concerning the processing industry

IV.B.1 Data acquisition

Definition of population

In this investigation the Danish fish processing industry is defined by the Business Register. In the Business Register the fish processing industry is defined by the NACE code 15.20.

NACE code 15.20 includes:

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 Danish data collection is based on data collected by Statistics Denmark. In collaboration with Statistics Denmark data from the Industrial Commodity-, Account- and Raw Materiel Statistics is combined to comply with the requests listed in the Commissions directive for preparing national programmes according to Article 4 in Council Regulation (EC) No 199/2008 of 25 February 2008.

Segmentation

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 2006. This investigation has provided the background for dividing the enterprises into 13 sub branches on the basis of the enterprise's commodity production (see 11.1). 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 2004 represent 73 Kind of Activity Units with a total sales of commodities of approximately EUR 1.3 billion, which covers 97 % 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.

Planned sampling

The planned sampling covers the whole population defined by the Business Register NACE 15.20 based on the data collected by Statistics Denmark in the following 3 statistics.

The Account Statistics covers all business enterprises. Data for the Account Statistics is collected from different sources and combined in such a way that a complete set of accounting items is computed for each business enterprise.

The Industrial Commodity Statistics describe manufacturers' sales of commodities measured in volume and value. The Industrial Commodity Statistics are based on questionnaires. It covers industrial enterprises with at least 10 fulltime-employees.

The Raw Material Statistics describes the use of raw materials, semi-manufactured- and intermediary products, purchase of services, packing costs and use of water in the production of industrial commodities. It covers industrial enterprises with at least 50 fulltime-employees.

Definition of population

The Danish fish processing industry is defined by the Business Register. In the Business Register the fish processing industry is defined by the NACE code 15.20.

NACE code 15.20 includes:

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 collection is based on data collected by Statistics Denmark. In collaboration with Statistics Denmark data from the Industrial Commodity-, Account- and Raw Materiel Statistics is combined to comply with the requests listed in the Commissions directive for preparing national programmes according to Article 4 in Council Regulation (EC) No 199/2008 of 25 February 2008.

Contents of the Account Statistics

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.

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 Statistics 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 that 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.

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.

Contents of the Industrial Commodity Statistics

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.

The Statistics are based on questionnaires. The population is defined on the basis of Statistics 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.

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 installation.

- 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 Combined Nomenclature (CN). The first 8 digits in the commodity nomenclature are always identical with the CN.

Contents of the Raw Materiel Statistics

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

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.

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.

Definitions of variables

- **Raw material (volume) (Calculated from the Industrial Commodity Sales Statistics)**

The data on volume for raw materiel is not yet available, but data can be calculated from the Industrial Commodity Sales Statistics. The Institute is 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 (turnover) (Company account)**

- 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, and 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 (Company account)**

Include other operating income exclusive of turnover, financial- and extraordinary income in company accounts. Contains other secondary working profits, and changes in stock goods.

- **Production costs (Company account)**

- 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.

- Raw material is divided into 3 subcategories

1. **Raw material fish** contains fish and fish product auxiliaries.
2. **Packaging** purchased as raw material.
3. **Resale commodities** purchased as raw material for resale without transformation.

- Other running costs include payments for agency workers, subcontracts, rents, minor inventories, and leasing, ordinary losses on debtors, other and secondary expenses.

- Fixed costs (Depreciations) includes write offs and write downs.

- Financial costs, net includes income and expenses from interest and returns from capital assets

- Extraordinary costs, net include extraordinary income and expenses.

- Tax includes all taxes.

- **Financial position (Calculated from company account)**

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

- **Investment (Assets) (Company account)**

- 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.”

- **Investment (Gross investment in tangible goods) (Company account)**

- Investment during the reference period in all tangible goods. Included are new and existing tangible capital goods, whether bought from third parties or produced for own use (i.e. capitalised production of tangible capital goods), having a useful life of more than one year including non-produced tangible goods such as land. The threshold for the useful life of a good that can be capitalised may be increased according to company accounting practices where these practices require, a greater expected useful life than the one-year threshold indicated above.

All investments are valued prior to (i.e. gross of) value adjustments, and before the deduction of income from disposals. Purchased goods are valued at purchase price, i.e. transport and installation charges, fees, taxes and other costs of ownership transfer are included. Own produced tangible goods are valued at production cost. Goods acquired through restructuring (such as mergers, take-overs,

break-ups, split-off) are excluded. Purchases of small tools which are not capitalised are included under current expenditure.

Also included are all additions, alterations, improvements and renovations which prolong the service life or increase the productive capacity of capital goods.

Current maintenance costs are excluded as is the value and current expenditure on capital goods used under rental and lease contracts. Investments in intangible and financial assets are excluded.

- **Price/Product (Calculated from the Industrial Commodity Sales Statistics)**

- Price/product is calculated from the Industrial Commodity Statistics, which covers 97% of the total sales of commodities in the Danish fish processing industry.

- **Employment (Company account)**
- **Employment** is equal to full-time equivalents (FTE).
- **Number of enterprises (Company account)**

IV.B.2 Data quality

Raw material volume can be calculated from the output of the enterprises, presented in the Industrial Commodity Statistics, but FOI are still working to improve the calculation-model for the raw material volume.

IV.B.3 Regional coordination

FOI expects to participate in the Regional Coordination Meetings when items concerning the collection and use of economic data for the fish processing industry are on the agenda.

IV.B.4 Derogations and non-conformities

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

VI. Module for management and use of the data

VI.A Management of the data

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

- Vessel register. Data on fishing capacity. (FD)

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

In order, for the three involved institutes, to use the same primary data on capacity, effort, and geographical distribution of the origin of the landings a common database will be produced every year, the Danish Fisheries Analyses Database (DFAD). This database is a database where data from the register on Danish fishing vessels, data from the Danish logbooks and the catch area declarations database together with data from the Danish sales notes database are merged. It is therefore possible to 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.

Biological data will be collected by DTU Aqua and stored in a database ("Babelfisk") managed by the institute. These primary data are surrounded by confidentiality and will not be passed on to other persons or authorities without permission.

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

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

International database development and data management

"FishFrame"

The "FishFrame" is a web based database and warehouse application that can be accessed on www.FishFrame.org.

The main objectives of "FishFrame" are:

- To provide consistent centrally calculated biological data input across countries to assessment models (CANUM, WECA etc.) on dynamic aggregation level.

- To establish a logbook which describes the historical details of the raising procedure?
- To facilitate easy access to basic analysis of biological information on dynamic aggregation level.
- To provide the data background for additional analysis on un-aggregated data.
- To provide an easy overview of the sampling status on national and international level.
- To be the data portal for end users

“FishFrame” contains all fisheries assessment relevant data except data for establishing commercial tunings fleets. The assessment relevant data include:

- Biological information of the landings obtained by sampling from market.
- Biological information of the catch (discard as well as retained part compiled separately) obtained by observers participating in regular fishery.
- Biological information of the catch (discard as well as retained part compiled separately) collected by the fishermen themselves.
- Official landings statistics by two different aggregation levels.
- Effort statistics by two different aggregation levels.
- Scientific survey data on exchange format.

The “FishFrame” data warehouse is under continuous development and the number of available predefined dynamic reports and analysis are growing as a consequence of the increasing demands for functionality from various Assessment Working Groups Study Groups. Furthermore, the general request from managers for high quality and more transparency in data makes “FishFrame” a central tool in the process. The “FishFrame” has the potential to be a very important tool for the international coordination of sampling schemes and have already proved its value in the Baltic area as a very useful and convenient tool for analyzing of data. Both the Baltic and the North Sea Regional Coordinating Meeting (RCM) have expressed their support to the “FishFrame”.

In 2007 DTU Aqua stated development of a new version FishFrame v. 5 based on the ideas and findings of the existing FishFrame v. 4.3. The FishFrame v.5 should be able to hold all data relevant for the scientific advisory process in ICES and relevant STECF expert groups. It is the plan that all new facilities developed in the national FishFrame also will be implemented in the international FishFrame and visa versa. Furthermore, it is the plan that the FishFrame should be able to fulfil the requirements that has been suggested in the newly presented proposal for framework regulation for future data collection. Finally the FishFrame v. 5 should be the data portal for all end users.

VI.B Use of the data

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

Furthermore, Denmark will provide data to other end user if requested.

VII. Follow-up of STECF recommendations

The evaluations made by SGRN/STECF on the Danish proposals and Technical reports for 2002 to 2007 have been rather favourable and the requests from the Commission for clarifications and explanations have in all cases been delivered in time and accepted.

VIII. List of derogations

Denmark request for derogations for at sea-sampling sampling for the following metiérs in the Baltic Region:

Metiérs Level 6	**Fishing ground**	**Reason for applying for derogation**
FPN_CAT_ALL_0_0	27.SD22-24	Discard for this metiér is less than 10%.
GNS_DEF_>=157_0_0	27.SD22-24	Sampling carried out in 1995-2002 have shown that discard for this metiér is less than 5 %.
GNS_DEF_110-156_0_0	27.SD22-24	Sampling carried out in 1995-2002 have shown that discard for this metiér is less than 5 %.
GTR_DEF_157_0_0	27.SD22-24	Sampling carried out in 1995-2002 have shown that discard for this metiér is less than 5 %.
GTR_DEF_110_156_0_0	27.SD22-24	Sampling carried out in 1995-2002 have shown that discard for this metiér is less than 5 %.
LHP_FIN_ALL_0_0	27.SD22-24	This metiér is selected by effort. Effort for this metiér is not well defined and estimated as the logbook provisions not specific enough. Information on how this fishery is conducted confirms very low discard rates.
PTB_SPF_>=32_0_0	27.SD22-24	This is a fishery for herring. No discard occur for this fishery as all catches are landed unsorted in the harbours. Therefore, catches can be sampled in the harbours. This minimizes the cost for sampling.

PTB_SPF_16-31_0_0	27.SD22-24	This is a fishery for sprat. No discard occur for this fishery as all catches are landed unsorted and used for fish meal and oil production. Therefore, catches can be sampled in the harbours. This minimizes the cost for sampling.
PTM_SPF_>=32_0_0	27.SD22-24	This is a fishery for herring. No discard occur for this fishery as all catches are landed unsorted in the harbours. Therefore, catches can be sampled in the harbours. This minimizes the cost for sampling.
PTM_SPF_16-31_0_0	27.SD22-24	This is a fishery for sprat. No discard occur for this fishery as all catches are landed unsorted and used for fish meal and oil production. Therefore, catches can be sampled in the harbours. This minimizes the cost for sampling.
GNS_DEF_>=157_0_0	27.SD25-32	Sampling carried out in 1995-2002 have shown that discard for this metiér is less than 5 %.
GNS_DEF_110-156_0_0	27.SD25-32	Sampling carried out in 1995-2002 have shown that discard for this metiér is less than 5 %.
LHP_FIN_ALL_0_0	27.SD25-32	This metiér is selected by effort. Effort for this metiér is not well defined and estimated as the logbook provisions not specific enough. Information on how this fishery is conducted confirms very low discard rates.
LLD_ANA_ALL_0_0	27.SD25-32	This is a fishery for salmon. Sampling carried out in 1995-2002 have shown that discard for this metiér is less than 5 %.
PTB_SPF_16-31_0_0	27.SD25-32	This is a fishery for sprat. No discard occur for this fishery as all catches are landed unsorted and used for fish meal and oil production. Therefore, catches can be sampled in the harbours. This minimizes the cost for sampling.
PTM_SPF_16-31_0_0	27.SD25-32	This is a fishery for sprat. No discard occur for this fishery as all catches are landed unsorted and used for fish meal and oil production. Therefore, catches can be sampled in the harbours. This minimizes the cost for sampling.

Denmark request for derogations for at sea-sampling sampling for the following metiérs in the North Sea and East Artic Region:

Metiérs Level 6	Fishing ground	Reason for applying for derogation
OTM_SPF_32-69_0_0	27.I+II	This is a fishery for herring. Discard occur for this fishery but previous years experience when sampling this metiér has often shown change of fishing pattern when having observer onboard. Furthermore, when discarding it occurs seldom but when discarding it is large quantities. Catches can be sampled in the harbours. This minimizes the cost for sampling.
PS_SPF_ALL_0_0	27.I+II	This is a fishery for herring. Discard occur for this fishery but previous years experience when sampling this metiér has often shown change of fishing pattern when having observer onboard. Furthermore, when discarding it occurs seldom but when discarding it is large quantities. Catches can be sampled in the harbours. This minimizes the cost for sampling.
PTM_SPF_32-69_0_0	27.I+II	This is a fishery for herring. Discard occur for this fishery but previous years experience when sampling this metiér has often shown change of fishing pattern when having observer onboard. Furthermore, when discarding it occurs seldom but when discarding it is large quantities. Catches can be sampled in the harbours. This minimizes the cost for sampling.
GNS_DEF_120-219_0_0	27.IIIaN	Sampling carried out in 1995-2002 have shown that discard for this metiér is less than 5 %.
OTB_SPF_16-31_0_0	27.IIIaN	This is a fishery for sprat. No discard occur for this fishery as all catches are landed unsorted and used for fish meal and oil production. Therefore, catches can be sampled in the harbours. This minimizes the cost for sampling.
OTB_SPF_32-69_0_0	27.IIIaN	This is a fishery for herring. Discard occur for this fishery but previous years experience when sampling this metiér has often shown change of fishing pattern when having observer onboard. Furthermore, when discarding it occurs seldom but when discarding it is large quantities. Catches can be sampled in the

		harbours. This minimizes the cost for sampling.
OTM_SPF_32-69_0_0	27.IIIaN	This is a fishery for herring. Discard occur for this fishery but previous years experience when sampling this metiér has often shown change of fishing pattern when having observer onboard. Furthermore, when discarding it occurs seldom but when discarding it is large quantities. Catches can be sampled in the harbours. This minimizes the cost for sampling.
PS_SPF_ALL_0_0	27.IIIaN	This is a fishery for herring. Discard occur for this fishery but previous years experience when sampling this metiér has often shown change of fishing pattern when having observer onboard. Furthermore, when discarding it occurs seldom but when discarding it is large quantities. Catches can be sampled in the harbours. This minimizes the cost for sampling.
PTM_SPF_32-69_0_0	27.IIIaN	This is a fishery for herring. Discard occur for this fishery but previous years experience when sampling this metiér has often shown change of fishing pattern when having observer onboard. Furthermore, when discarding it occurs seldom but when discarding it is large quantities. Catches can be sampled in the harbours. This minimizes the cost for sampling.
GNS_DEF_100-119_0_0	27.IIIaS	Sampling carried out in 1995-2002 have shown that discard for this metiér is less than 5 %.
GNS_DEF_120-219_0_0	27.IIIaS	Sampling carried out in 1995-2002 have shown that discard for this metiér is less than 5 %.
GTR_DEF_120-219_0_0	27.IIIaS	Sampling carried out in 1995-2002 have shown that discard for this metiér is less than 5 %.
OTB_DEF_16-31_0_0	27.IIIaS	This is a fishery for sandeel. No discard occur for this fishery as all catches are landed unsorted and used for fish meal and oil production. Therefore, catches can be sampled in the harbours. This minimizes the cost for sampling.
OTB_SPF_16-31_0_0	27.IIIaS	This is a fishery for sprat. No discard occur for this fishery as all catches are landed unsorted and used for fish meal and oil production. Therefore, catches can

		be sampled in the harbours. This minimizes the cost for sampling.
OTM_SPF_16-31_0_0	27.IIIaS	This is a fishery for sprat. No discard occur for this fishery as all catches are landed unsorted in the harbours. Therefore, catches can be sampled in the harbours. This minimizes the cost for sampling.
PTB_DEF_16-31_0_0	27.IIIaS	This is a fishery for sandeel. No discard occur for this fishery as all catches are landed unsorted and used for fish meal and oil production. Therefore, catches can be sampled in the harbours. This minimizes the cost for sampling.
PTM_SPF_16-31_0_0	27.IIIaS	This is a fishery for sprat. No discard occur for this fishery as all catches are landed unsorted in the harbours. Therefore, catches can be sampled in the harbours. This minimizes the cost for sampling.
PTM_SPF_32-69_0_0	27.IIIaN	This is a fishery for herring. No discard occur for this fishery as all catches are landed unsorted in the harbours. Therefore, catches can be sampled in the harbours. This minimizes the cost for sampling.
GNS_DEF_100-119_0_0	27.IV+VIId	Sampling carried out in 1995-2002 have shown that discard for this metiér is less than 5 %.
GNS_DEF_120-219_0_0	27.IV+VIId	Sampling carried out in 1995-2002 have shown that discard for this metiér is less than 5 %.
GNS_DEF_90-99_0_0	27.IV+VIId	Sampling carried out in 1995-2002 have shown that discard for this metiér is less than 5 %.
GTR_DEF_120-219_0_0	27.IV+VIId	Sampling carried out in 1995-2002 have shown that discard for this metiér is less than 5 %.
OTB_DEF_<=15_0_0	27.IV+VIId	This is a fishery for sandeel. No discard occur for this fishery as all catches are landed unsorted and used for fish meal and oil production. Therefore, catches can be sampled in the harbours. This minimizes the cost for sampling.
OTB_DEF_16-31_0_0	27.IV+VIId	This is a fishery for sandeel. No discard occur for this fishery as all catches are landed unsorted and used for fish meal and oil production. Therefore, catches can

		be sampled in the harbours. This minimizes the cost for sampling.
OTB_SPF_16-31_0_0	27.IV+VIId	This is a fishery for sprat. No discard occur for this fishery as all catches are landed unsorted and used for fish meal and oil production. Therefore, catches can be sampled in the harbours. This minimizes the cost for sampling.
OTB_SPF_32-69_0_0	27.IV+VIId	This is a fishery for herring. Discard occur for this fishery but previous years experience when sampling this metiér has often shown change of fishing pattern when having observer onboard. Furthermore, when discarding it occurs seldom but when discarding it is large quantities. Catches can be sampled in the harbours. This minimizes the cost for sampling.
OTM_SPF_32-69_0_0	27.IV+VIId	This is a fishery for herring. Discard occur for this fishery but previous years experience when sampling this metiér has often shown change of fishing pattern when having observer onboard. Furthermore, when discarding it occurs seldom but when discarding it is large quantities. Catches can be sampled in the harbours. This minimizes the cost for sampling.
PS_SPF_ALL_0_0	27.IV+VIId	This is a fishery for herring and mackerel. Discard occur for this fishery but previous years experience when sampling this metiér has often shown change of fishing pattern when having observer onboard. Furthermore, when discarding it occurs seldom but when discarding it is large quantities. Catches can be sampled in the harbours. This minimizes the cost for sampling.
PTB_SPF_16-31_0_0	27.IV+VIId	This is a fishery for sprat. No discard occur for this fishery as all catches are landed unsorted and used for fish meal and oil production. Therefore, catches can be sampled in the harbours. This minimizes the cost for sampling.
PTM_SPF_16-31_0_0	27.IV+VIId	This is a fishery for sprat. No discard occur for this fishery as all catches are landed unsorted and used for fish meal and oil production. Therefore, catches can be sampled in the harbours. This minimizes the cost

		for sampling.
PTM_SPF_32-69_0_0	27.IV+VIId	This is a fishery for herring. Discard occur for this fishery but previous years experience when sampling this metiér has often shown change of fishing pattern when having observer onboard. Furthermore, when discarding it occurs seldom but when discarding it is large quantities. Catches can be sampled in the harbours. This minimizes the cost for sampling.

No discard occurs in the Danish fisheries carried out for in the North Atlantic Region. The fisheries carried out are the blue whiting fishery and a limited fishery for horse mackerel. Therefore, Denmark request for derogation for discard sampling for this region.

As Denmark is not conducting any research vessel survey in areas and periods where data on fecundity for mackerel and horse mackerel can be collected, Denmark asks for derogation for collecting the data.

IX. List of acronyms and abbreviations

Acronym/Abbreviation	Description
DCCA	Danish Commerce and Companies Agency
DCR	Data Collection Regulation (EC) No 199/2008
DTU Aqua	National Institute for Aquatic Resources
FD	Danish Directorate of Fisheries
FOI	Danish Food and Resource Economics Institute, Denmark
FTE	Full Time Equivalent
IQ/ITQ	Individual quota / Individual transferable quota
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
ICES WKISCON	Joint STECF/ICES Workshop on Implementation Studies on Concurrent Length Sampling
SCV	Standard Catch Value = landings per species multiplied by 3-year average prices.

X. Comments, suggestions and reflections

XI. References

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XII. Annexes

See attached annex 1.