

Technical Report on the Danish National Data Collection Programmes for 2009

by

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I. General framework

This document presents the Technical Report (TR) on the work carried according to the Danish National Programme (NP) for data collection in the fisheries sector for the year 2009. The programme has been carried out in accordance with the rules laid down in the “*Commission Regulation (665/2008) and Commission Decision (2010/949/EC) 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 referred to as “DCF” in this TR.

The format of this report is structured following the most recent guidelines from the Commission¹. The TR is structured in a number of modules. In the following chapters a description is given of the activities related to the DCF that have been carried out by Denmark.

Furthermore, the EC has established provisions to facilitate the cooperation between MS with the regard to the collection of data. These are Regional Coordination Meetings (RCM), formal (bilateral) agreements with other MS and in the future regional databases. As far as the conclusions and agreements of the meetings are relevant for the regional data collection and for Denmark they have been taken into account in this TR.

In addition to this TR a financial report for the 2009 programme has been made. The financial report of the costs is presented in separate spreadsheets in the FinForms formats as provided by the Commission.

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 Public Sector Consultancy, DTU Aqua has been assigned as the National Correspondent.

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¹ Guidelines for the submission of Technical Report on the National Data Collection Programmes under Council Regulation (EC) 199/2008, Commission Regulation (EC) 665/2008 and Commission Decision 2008/949/EC, Version 2009

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The work in Denmark has been carried out by 4 partners:

1. **National institute of Aquatic Resources (DTU Aqua)** is an institute under the Technical University of Denmark. The institute carries out research, monitoring and provides advice concerning sustainable exploitation of live marine and fresh water resources. Furthermore, the institute is responsible for providing data for ICES stock assessment work and participates in various ICES assessment working groups, planning and expert groups as well as in the ACOM work. The institute is having a public sector consultancy 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 provide service to the Minister and the political level, assist in law proposals and contribute to international negotiations. Furthermore, FD are responsible for making rules and regulations in the Danish fisheries as well as administer the Danish fishing, 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.

Danish Food and Resource Economics Institute (FOI)

Rolighedsvej 25
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4. Statistics Denmark (DST) The aim of the institution is to collect, process and publish statistical information on social and economic conditions. Additional DST contributes to the international statistical cooperation. Furthermore, DST is also actively involved in the statistical activities in the UN, OECD, IMF and in the Nordic countries, etc. DST is also carrying out statistical tasks for private and public customers.

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

National coordination between the involved partners has been undertaken through electronic communication techniques regularly.

II.B Regional and International coordination

II.B 1 Attendance of International meetings

Most of the planned meetings have been attended by Danish representation in 2009. Denmark attended the DCF coordination meetings for the Baltic region and for the North Sea and Eastern Arctic region. The meeting attendance is listed in table II.B.1. A Danish-Swedish intercalibration age-reading of plaice meeting was planned but not undertaken during 2009. All surveys are coordinated internationally by ICES planning groups. The survey planning groups, which were relevant to Denmark the BIFSWG, IBTSWG, WGIPS, WGNAPES were in 2009 attended by representatives from Denmark.

Denmark has for years made agreement on collection of biological sampling of landings or bilateral cooperation with a number of MS such as Sweden, Belgium, Germany, Ireland, the Netherlands and Scotland. This bilateral coordination has been continued in 2009.

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.

II.B 2 Follow-up of regional and international recommendations

General recommendations made by RCM Baltic and RCM NS &EA from 2007 to 2009 and actions taken by Denmark are listed below.

Source	Recommendation	Action
RCM Baltic (2009)	In order to make analyses of the data collected within DCF and to optimize the coordination work, the developed regional database FishFrame 5.0 should be used within the RCM Baltic.	Denmark has uploaded most of the data for 2009 and will upload all data for 2007 and onwards for all species and all metiers at level 6.
RCM Baltic (2008)	In order to use the time of the RCM more efficient, the pre-processing of the exchange data tables, namely the merging of the data on fisheries statistics and planned sampling NP proposal tables in the NPs, for the harmonization of the NPs, including the quality checks, should be carried out before the next RCM.	Denmark actively participated in the work for the 2009 and 2010 before and at the RCMs.
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	Denmark compiled the data to the meeting in 2007 and has prepared requested data for future meeting in order 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 task sharing of discard sampling	Denmark has done that.
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	Denmark has describe sampling method and strategy in NP for 2009-10.

	and standard deviation.	
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III. Module of evaluation of the fishing sector

III.A General description of the fishing sector

The number of vessels registered for Denmark in the Community Fishing Fleet Register on the 1st of January 2008 was 2,954, of which 1,028 had no activity in 2008. The 1,926 vessels which were active during 2008 had landings of fish to a total value of EUR 287 million or 85.8 per cent of the total value of the Danish fishery in 2008. The remaining 14.2 per cent of the value of the Danish fishery in 2008, totalling EUR 47.6 million, were landed from vessels entering the register after the beginning of the year (cf. table 1).

Table 1. Active registered vessels in the Danish Fishery 2008.

	Vessels registered the whole year	Exits register during year	Enters and stay in register during year	Enters and exits during year	Active fishermen with no vessels	Total active register units
Vessel segments	----- Active registered vessels -----					
Dredgers: < 12 m	33	-	-	-	-	33
Demersal trawl and seine: < 12 m	25	2	3	1	-	31
Using polyvalent passive gears: < 12m	1,085	73	100	12	31	1,301
Using active and passive gears: < 12m	118	18	26	5	-	167
Dredgers: 12-18 m	37	0	0	0	-	37
Demersal trawl and seine: 12-18 m	155	42	37	11	-	245
Polyvalent passive gears: 12-18 m	59	9	12	1	-	81
Active and passive gears: 12-18 m	40	11	12	1	-	64
Beam trawlers (Shrimp): 12-18 m	12	4	5	1	-	22
Demersal trawl and seine: 18-24 m	66	18	15	2	-	101
Active and passive gears: 18-24 m	11	5	3	1	-	20
Beam trawlers (Shrimp): 18-24 m	14	-	2	-	-	16
Pelagic trawl and seine: 24-40 m	42	13	14	6	-	75
Pelagic trawl and seine: > 40 m	22	12	8	-	-	42
All segments	1,719	207	237	41	31	2235
Total value of landings in 1000 EUR	254,742	32,257	43,838	3,766	69	334,671
Per cent share of value of landings	76.1%	9.61%	13.1%	1.1%	0.0%	100.0%

During the year 2008 an additional 512 vessels were registered of which 278 vessels became active. So the total number of Danish vessels with landings of fish in 2008 was 2204. Many of these vessels are small boats used part time by fishermen, who have more than a single vessel at hand, and shift between one and the other dinghy depending on the work to be done (setting out poles for nets and/or traps, emptying gear, fishing for bait etc.). Also the fishery regulation system has for many years linked the right to fish a certain amount of fish to the

vessel. So some fishermen have additional vessels, which are not used as separate production units, in order to keep the right to fish and ensure their income. Though all quotas today no longer are stuck to the physical vessel there are still a number of “additional or secondary” vessels registered, and some of the landings of fish are registered on those vessels. Also 31 fishermen with no vessels had (small) landings of fish.

In order to calculate the production for each fisherman and fishing firm it is necessary to identify the production unit that has been in use for the year. In most cases that is a single vessel, which has been owned and used by the same fisherman the whole year. Another situation exists when a fisherman sometime during the year shifts vessel and carry on fishery with his crew from the other vessel, or if he some months uses two vessels simultaneously like fishermen using fixed nets and traps sometimes does. In those cases the production and other economic data for each part time of the year must be added up to form a complete operating year.

After identification and combining of all part time use of small vessels and shift of vessels during the year, the number of production units (vessels) in the Danish fishery in 2008 measures 1,810 units.

615 of the 1,028 vessels that were registered at the beginning of the year, but did not become active in fisheries during the year, were owned by fishermen or fishing firms with other active vessels (cf. table 2).

Table 2. Inactive vessels registered in Denmark 2008.

	Vessels registered the whole year	Exits register during year	Enters and stay in register during year	Enters and exits register during year	Total inactive register units
Owner groups:	----- Inactive registered vessels -----				
Owners with active vessels < 12 m	393	63	37	58	551
Owners with active vessels 12-18 m	50	30	27	22	129
Owners with active vessels 18-24 m	28	16	14	9	67
Owners with active vessels 24-40 m	19	10	5	9	43
Owners with active vessels > 40 m	3	3	3	2	11
Owners with no active vessels	323	90	31	17	461
Total	816	212	117	117	1,262

The Danish programme for collection of economic data covers all fishing activity for the year and includes both vessels that are registered from the start of the year as well as vessels that become registered during the year and commences fishery in the year. The population of fishing units (vessels) covers therefore the whole production in the fishing sector.

III.B Economic variables

Supra Region: Baltic Sea, North Sea and Eastern Arctic, and North Arctic.

The total volume of the Danish fishery in 2008 was 685,844 tonnes to a value of 334.7 million EUR. The main part of the fishery takes place in the North Sea, Skagerak/Kattegat, and the Baltic Sea, but some vessels are also fishing in the Norwegian Sea and the waters west of Ireland and Scotland. In the Danish fishery gears as trawls, Danish seines, purse seines, beam trawls, gillnets and hooks, trap nets are used.

III.B.1 Achievements: Results and deviation from NP proposal

When the programme for 2009/2010 was written in the fall of 2008 it was planned to enlarge the sample size from the usual 250-280 accounts to about 400 accounts for 2008 and 2009, in order to carry out a more thorough analyse of the economy of the fishing fleet after the implementation of the new fishing regime in 2007. Also a reconstruction of the IT-system for collection of economic data for the fishery and calculation of the economic statistics to the DCF reports were planned.

Before initiating the data collection in 2009 it was decided to postpone both the two years of increased sample size and the renewal of the IT-system. The data collection for 2008 has been carried through with the usual sample size based on the then known changes in the structure and size of the fleet.

The methods used for collecting data and estimating the parameters correspond with the approach in the program.

III.B.2 Data quality: Results and deviation from NP proposal

The accuracy indicator shows a high variation for the income from direct subsidies. That is not a problem from the sample selection or the statistical calculations, but comes from the fact that direct subsidies are close to not existing. The only type of subsidy has been contribution given to some fishermen based on having their homeport on islands without connection to land by bridge or regular ferry.

Also investments show high variation. That is no surprise, as large investments for most fishermen only takes place in the years when they have good possibility for financing. Furthermore, the collection of data on investments in the fishery based on the population being the fleet registered the first of January is not sufficient, as new vessels often enter the fleet as new individuals (new company ownership) and therefore do not represent investment in the existing fleet.

III.B.3 Follow-up on Regional and international recommendations

None.

III.B.4 Actions to avoid shortfalls

The distinction between demersale and pelagic in the grouping of vessels according to the type of fishing gear that have been used during the year is about to be implemented based on the directions given in the Commission Decision No. 949, 6 November 2008. We expect that to be complete before the sampling of data for 2010. Although this distinction has not been in effect for the selection of data for 2009, we will try to separate demersale and pelagic vessels in statistical calculations.

III.C Metier-related variables

The Danish NP concern sampling schemes for three areas the Baltic Sea (ICES areas III b-d), the North Sea (ICES areas IIIa, IV and VIIId) and Eastern Arctic (ICES areas I and II) and North Atlantic (ICES areas V-XIV and NAFO areas).

DTU Aqua has used the FD databases and combined logbook data with the sales slip data and vessel register data and created a database the DFAD. Here total annual commercial landings by métier can be provided by all species and areas, according to level 2, level 3, level 4, level 5 and level 6, of geographical disaggregation according to Appendix II of Commission Decision 2008/949/EC. The figures are based on all recorded landings stored in this database. The recorded landings in this database are census data.

Results of the sampling in 2009 in relation to what was planned are presented in tables III.C.3, III.C.4, III.C.5 and III.C.6. The achievements of sampling in 2009 were in general improved. A main overall reason for deviations from what was planned is that it sometimes can be difficult to predict fishing pattern by métier for the sampling year at the time of compilation of the National Programme. Denmark has in 2010 initiated a work to improve the sampling design of the métier based sampling following the outcomes of ICES WKACCU and WKPRECISE. Deviations from aim on a métier basis are expressed below.

Baltic Sea (ICES areas III b-d)

III.C.1 Achievements: Results and deviation from NP proposal

Sampling below the planned sampling

Stationary uncovered pound nets targeting ell (FPN_CAT_ALL 0 0), sub 22-24

Denmark has not sampled ells in later years and new connections to the industry have to be build up. Ells from pond nets are fished alive and often kept in pounds until buyers are ready to get them. As cost of eel are very high and very difficult to measure alive DTU Aqua has made an agreement with some local fishermen in order to measure ells when the fishermen are ready to slaughter a batch of eels. However, the ell fishery was very limited in 2009. Some of the fishermen that have agreed to cooperate with DTU Aqua had cancel the appointment on ell measurement to carried out several times due to limited catches of eels. These arrangements are still under development and therefore only 67% of the planned trips in 2009 were carried out.

Pair trawl targeting small pelagic fish (PTB_SPF >=32 0 0), sub 22-24

In 2009, 88% of the planned trips were conducted from this métier. However 78% of landings from this métier were in 1st quarter in 2009 and the coverage is therefore assumed to be substantial.

Set gillnet fisheries targeting demersal fish (GNS_DEF 110-156 0 0), sub 25-32

In 2009 Denmark sampled 50% of the planned trips for this métier in subdivision 25-32. The main part of these landings takes place on the Island Bornholm and it can be difficult to plan in advance when the samples are landed. However, in order to compensated for the sampling below the planned sampling in subdivision 25-32 the sampling in subdivision 22-24 has been increased significantly helped by an easier logistics for this area. The sampling design will during 2010 be further developed in order to take the logistical aspects into consideration.

Longline fisheries targeting demersal fish (LLD ANA ALL 0 0), Sub 25-32

In 2009, 88% of the planned trips were conducted from this métier. Again the main landings are on the Island of Bornholm and it can be difficult to plan in advance when the samples are landed. The sampling design will during 2010 be further developed in order to take the logistical aspects into consideration.

Sampling exceeding the planned programme

In general at-sea sampling in the Baltic area seems to be sampled at high level. This is due to very short duration of the trips often the trips are carried out on a daily basis compared to sampling in other areas. The Danish sampling program is planned on days at sea and not on a trip basis. However, to be able to fulfill our obligations in numbers samples on length and ages more trips had to be implemented.

Landings collected from fishery targeting small pelagic are in Denmark sampled in co-operation with the fisheries control unit. They are collecting 1 sample per visit and these samples are handed over to DTU Aqua on a regular basis. Therefore, many of the small pelagic fisheries will be oversampled although this is not connected to a higher cost compare to the program ex. OTB_SPF_16-31_0_0 targeting sprat.

III.C.2 Data quality: results and deviation from NP proposal

Denmark has been waiting for the outcome of the COST project to get tools for estimation of quality indicators such as CVs. During 2010 Denmark started working with the provided COST tool. Results obtained so far are presented in table III.C.5. However, the CV values are calculated by métiers and the table only allows presenting the CV values on a species level. Denmark has during 2010 initiated a work to improve the designs of the métier sampling programmes on the basis of the outcome of the two ICES workshops WKACCU and WKPRECISE. The work includes identification of proper sampling frames and probability based ways to select primary sampling units. The new designs will improve the possibilities to evaluate possible bias and thereby also accuracy.

III.C.3 Follow-up of regional and international recommendations

Source	Recommendation	Action
RCM Baltic (2009)	For the purposes of ranking métiers to sample, National data on effort, landings and value by métier and fishing ground should be compiled regionally in advance of the next meeting. To enable this, participants from MS should strictly respect the agreed naming conventions of fishing ground, métiers and units of the variables as well as the deadline for submission of the national data.	Denmark uses the agreed naming and respects the deadline.
RCM Baltic (2009)	For the purposes of regional understanding of sampling activities, National information on sampling should be compiled regionally in advance of the next meeting. To enable this, participants from MS should strictly respect the agreed naming conventions of fishing ground and métiers as well as the deadline for submission of the data.	Denmark uses the agreed naming and respects the deadline.
RCM Baltic	For the purposes of understanding the heterogeneity of métiers and the consequences for task sharing and discard sampling, national descriptions of	Denmark will produce the descriptions of the

(2009)	the regionally ranked métiers should be compiled using the format in annex 3. To enable this, participants from the MS should strictly respect the agreed naming conventions of fishing ground and métiers as well as the deadline for submission of the information. Appointed persons are responsible for requesting the data and compiling it on a regional level.	metiers using the format in annex 3 Before the RCM's 2010.
RCM Baltic (2008)	In the NP proposals, a short description of all métiers selected by the 90% ranking procedure should be provided. Such a table would enable RCM to identify whether a métier with the same name covers the same or different fisheries in different NPs.	Denmark has included a short description of all metiers in programme for 2011-2013 and for the RCM 2010
RCM Baltic (2007)	Regional sampling 4.1 Until robust international guidelines for analysis of logbook data is available RCM Baltic made a few recommendations how to deal with allocation rules.	Denmark has complied with interim allocation rules made up in the RCM

III.C.4 Actions to avoid shortfalls

A proper statistically sound sampling frame will hopefully reduce the problem and this is planned to be developed and implemented in the Danish sampling program during 2010-2011. However, this has in practice been more difficult to achieve than expected and more focus on the regional sampling level and sampling frame could solve some of the problem. Another reason for inconsistencies between planned no of trips and achieved number is the dynamic in the fishery making it difficult to predict spatial and temporal fishing patterns for some metiers at the time of planning the NP. Furthermore, DTU Aqua has got online access to the VMS data and it is expected that online information of the fishing fleet behavior in time and place can facilitate easier planning of the sampling to be carried out.

North Sea (ICES areas IIIa, IV and VIIId)

III.C.1 Achievements: Results and deviation from NP proposal

Under-sampling from sampling on shore and at sea

Beam trawl targeting demersal fish (TBB_DEF >=120 0 0), sub IV+VIIId

The beam trawl fishery has decreased even further in 2009 and there is now only 1 ship left in the North Sea in this métier. Due to the very low numbers of trip conducted it was not possible to get samples from the ship or to come and sample on board.

Bottom otter trawl targeting Crustaceans (OTB_CRU >=120 0 0), sub IV+VIIId

This fishery is operating rather far from shore and the trips are often very long in the average of 10 days. Therefore only 25% of the trips have been sampled although the levels of hauls covered a very large due to the long duration of the trip.

Bottom otter trawl targeting demersal fish (OTB_DEF 90-119 0 0), sub IV+VIIId

The fishery has decreased by 25% between the reference year and 2009. The main area for this fishery is in IIIaN and at the border between IIIaN and IV. As the fishery in the North Sea from this métier is only 12% of the

fishery with the same métier in IIIaN and most of the trips are just in the border area it can be difficult if not possible to pre select the trips that will be carried in the North Sea. However, as the two areas are very similar in the fishery and species distribution there is some compensation for the lack of sampling as the IIIaN has been with 13% above the planned sampling.

Anchored seine targeting demersal fish (SDN DEF >=120 0 0), sub IV+VIIId

This fishery has decreased with more than 60% compared to the reference year and it has become difficult to get the planned trips. However, it was possible to sample 25% of the planned trips.

Bottom otter trawl targeting Crustaceans (OTB CRU 35-69 0 0), sub IIIaN

This métier is targeting common shrimps (*Crangon vulgaris*) and this is for Denmark a new species to sample. Due to a misunderstanding and lack of arrangements with the industry the sampling programme was first started up in the 3 quarter and therefore only 38% of the planned trips were achieved. The fishery is equally divided over the whole year. However, the total number of fishing trips has also been decreasing with 25% in 2009 compared to the reference year.

Midwater otter trawl targeting small pelagic fish (OTM SPF 32-69 0 0), sub VII fghj

The fishery for blue whiting has not been conducted in 2009 and no sampling has therefore been conducted. The midwater otter trawl fishery in 2009, were targeting other species in this area.

Anchored seine targeting demersal fish (SDN DEF 90-119 0 0), sub IIIaN

Even this fishery has increased by 28% between the reference year and 2009 it has only been possible to obtain 38% of the planned trips at sea. Besides these 38% coverage, furthermore 38% has been obtained in the same type of fishery but with 120 mm mesh, - in all 76% coverage at planned trips at sea. We have compensated by increasing the numbers of samples from shore which has increased by 625%.

Bottom otter trawl targeting small pelagic (OTB DEF 16-31 0 0) sub IIIaS

The fishery has not been conducted in 2009 and therefore no sampling has therefore been conducted.

Bottom pair trawl targeting small pelagic (PTB SPF 32-69 0 0), sub IIIaS

This fishery has been insignificant compared with the reference year and the lowest ever.

Bottom otter trawl targeting Crustaceans (OTB CRU 90-119 0 0), sub IIIaS

This métier is mainly targeting *Nephrops* although it is a mixed fishery. The sampling strategy has been changed and we are now conducting a concurrent sampling on more vessels at sea where the whole catch is measured. This was a recommendation from the scientist in Denmark as they could not use the information from the harbor sampling on *Nephrops*. This is also the reason for increasing the samples at sea for this métier. In future sampling programmes this métier will only be sampled at sea.

Bottom otter trawl targeting demersal fish (OTB DEF 90-119 0 0), sub IIIaS

The fishery in this area has in 2009 been hampered by the closure of a large area which was implemented in order to protect the cod stock in the Kattegat (IIIaS). This has affected the cooperation with the fishermen and it has complicated the execution of the sampling programme. A dialog between the fishermen's organization has been established to improve the sampling for this métier. Furthermore, there has been a decrease in the numbers

of trips by 38%. It has been compensated for by increasing the numbers of samples from shore which has increased by 825%.

Anchored seine targeting demersal fish (SDN DEF 90-119 0 0), sub IIIaS

This area has in 2009 experienced a large closed area to protect the cod in subdivision IIIaS. This has affected the cooperation with the fishermen in the area and it has complicated our sampling at sea. Furthermore there has been a catch reduction at 42% compared to the reference year, and as only a very few small vessels was active in very short periods, it has all together made it difficult to get the planed number of trips at sea. It has been compensated by increasing the numbers of samples from shore which have increased by 150%. A dialog between the fishermens cooperation's has been established to improve the sampling for this métier.

III.C.2 Data quality: results and deviation from NP proposal

Denmark has been waiting for the outcome of the COST project to get tools for estimation of quality indicators such as CVs. During 2010 Denmark started working with the provided COST tool. Results obtained so far are presented in table III.C.5. However, the CV values are calculated by metiers and the table only allows presenting the CV values on a species level. Denmark has during 2010 initiated a work to improve the designs of the metier sampling programmes on the basis of the outcome of the two ICES workshops WKACCU and WKPRECISE. The work includes identification of proper sampling frames and probability based ways to select primary sampling units. The new designs will improve the possibilities to evaluate possible bias and thereby also accuracy.

III.C.3 Follow-up of regional and international recommendations

Source	Recommendation	Action
RCM NS & EA (2009)	RCM NS&EA recommends Sweden and Denmark to explore whether the discrepancy identified between the Swedish and Danish métier definition of vessels operating in Div. IIIa have any effect on the raising of the input data during HAWG and to provide a definition of the métier exploiting the herring stock in IIIa.	The work has been carried out and dealt with by the ICRE HAWG
RCM NS & EA (2009)	For the purposes of ranking métiers to sample, National data on effort, landings and value by métier and fishing ground should be compiled regionally in advance of the next meeting. To enable this, participants from MS should strictly respect the agreed naming conventions of fishing ground, métiers and units of the variables as well as the deadline for submission of the national data.	Denmark will use the agreed naming of fishing grounds, metiers and units of the variables as well as respect deadlines.
RCM NS & EA (2009)	For the purposes of regional understanding of sampling activities, National information on sampling should be compiled regionally in advance of the next meeting. To enable this, participants from MS should strictly respect the agreed naming	see above

	conventions of fishing ground and métiers as well as the deadline for submission of the data.	
RCM NS & EA (2009)	For the purposes of understanding the heterogeneity of métiers and the consequences for task sharing and discard sampling, national descriptions of the regionally ranked métiers should be compiled using the format in annex 9. To enable this, participants from the MS should strictly respect the agreed naming conventions of fishing ground and métiers as well as the deadline for submission of the information. Appointed persons are responsible for requesting the data and compiling it on a regional level	Denmark will produce the description of the metiers using the format in annex 3 Done before the RCM 2010.
RCM NS & EA (2009)	MS to use the average landing figures over the years 2007-2008 as the basis for ranking métiers within the NP 2011-2013	done
RCM NS & EA (2008)	In the NP proposals, a short description of all métiers selected by the 90% ranking procedure should be provided. Such a table would enable RCM to identify whether a métier with the same name covers the same or different fisheries in different NPs.	Denmark has already included a short description of all metiers in programme for 2011-2013.
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 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 métiers targeting mixed target assemblages.	Denmark will report fishing activity data in the fleet-fishery matrix according to the recommendations made.
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.	Denmark will contribute with this information.

III.C.4 Actions to avoid shortfalls

A proper statistically sound sampling frame will hopefully reduce the problem and this is planned to be developed and implemented in the Danish sampling program during 2010-2011. However, this has in practice been more difficult to achieve than expected and more focus on the regional sampling level and sampling frame

could solve some of the problem. Another reason for inconsistencies between planned no of trips and achieved number is the dynamic in the fishery making it difficult to predict spatial and temporal fishing patterns for some metiers at the time of planning the NP. Furthermore, DTU Aqua has got online access to the VMS data and it is expected that online information of the fishing fleet behavior in time and place can facilitate easier planning of the sampling to be carried out.

North Atlantic (ICES areas V-XIV and NAFO areas)

III.C.1 Achievements: Results and deviation from NP proposal

Midwater otter traw targeting small pelagic (OTM SPF 32-69 0 0), Sub VI
This fishery did not exist in 2009 and no samples could be taken

Midwater otter traw targeting small pelagic (OTM SPF 32-69 0 0), Sub VIIbck
This fishery is very limited as only 1 trip was conducted and has therefore not been sampled.

Midwater otter traw targeting small pelagic (OTM SPF 32-69 0 0), Sub VIIfghj
This fishery did not exist in 2009 and no samples could be taken

III.C.2 Data quality: results and deviation from NP proposal

See Baltic section

III.C.3 Follow-up of regional and international recommendations

No action to be taken into account for Denmark.

III.C.4 Actions to avoid shortfalls

See under Baltic Sea

III.D Biological - Recreational fisheries

In order to estimate cod and eel catches in the Danish recreational fishery an interview survey was in 2009 planned and conducted by DTU Aqua in cooperation with Statistic Denmark. Recreational fishing was separated into anglers (with rod and reel) and passive gear fishing (fyke – and gillnets). In 2009 a total of 196,000 anglers and 34,000 passive gear fishermen had issued the compulsory license. In September 2009 Statistic Denmark and DTU Aqua developed a concept for a combined telephone and internet survey for the Danish recreational fishery. To estimate the seasonal and annual fluctuations in the catches the survey are intended to be conducted on a quarterly basis during the next years. The survey was carried out for three months October, November and December as part of an Omnibus investigation. This telephone survey highlighted the amount of people fishing without a license. The next investigation was much more detailed and was only carried out on the people with a valid license.

Anglers - domestic as well as tourists - between 18 and 65 years of age have to purchase a license for a year, week or day. All passive gear fishers have to have a early license and you are not allowed to fish before the age of 12. The license is personal and non-transferable.

See further information under Baltic Sea and the total report in annex (“Eel and cod catches in Danish recreational fishing, Survey design and 2009 catches”)

The Baltic Sea and the North Sea and Eastern Arctic

III.D.1 Achievements: results and deviation from NP proposal

For the Baltic Sea, salmon, eel and cod are to be reported and for the North Sea only cod and eel. Denmark has provided a report with the landings estimated for 2009 that has been delivered to the relevant ICES working groups (WGBFAS, WGNSSK and WGBAST) for them to include in the assessments. However, as this is the first year of the survey it has not been possible for the WG to use the data directly in assessment.

Salmon has not been included in the telephone survey as it was judged that this fishery was not suited for this kind of investigation. The salmon fishery is in a very short time frame and involving few people. An alternative way of receiving more detailed information from the Salmon fishery has to be further developed.

The majority of recreational fishermen in Denmark are occasional anglers using private boats or fishing from piers or using waders along the Danish coasts. A survey conducted by Bohn & Roth (1997) showed that around 13 of all recreational fishermen were members of an association. In Denmark there are several associations for recreational fishermen, with three dominant associations active in advisory committees to the government. These are the Sports Fishermen’s Association, the Danish Amateur Fishermen’s Association and the Danish Recreational Fishermen’s Organization.

Recreational fishermen are not allowed to sell their catches. Angler fishermen between 18 and 65 years need a licence to fish. This costs DKr. 140 for one year, DKr. 100 for one week and DKr 35 for one day. Recreational fishermen above 12 years of age, using gillnets or trap-nets also need a license, which costs DKr. 275 per year.

Results from the survey of recreational fishery from the first Omnibus investigation:

Respondents			Do you fish?	Do you have a license?				
			Yes	Yes	No	No- legal	No-illegal	% illegal
Dec	968	Angling	116	58	58	30	28	24.1
		Passive gear	9	7	2	0	2	22.2
Nov	957	Angling	132	69	63	33	30	22.7
		Passive gear	17	8	9	2	7	41.2
Oct	958	Angling	119	59	60	34	26	21.8
		Passive gear	14	8	6	3	3	21.4

Results from the second part of the survey were only fishermen holding a license have been interviewed:

Salmon in the Baltic

The Danish recreational fishery for salmon is increasing in popularity, as catches have been good in some recent years and the activity is further promoted by popular fishing contests. It is especially popular around the island Bornholm, but fishing also takes place further to the west in the Baltic Sea. The fishery is primarily done by trolling; i.e. dragging lures at different depths after small vessels. The area to the north, east and south of the island Bornholm is very popular and some small harbours on the north of the island have specialised on servicing the trolling fishery.

The fishing season starts in September and ends in May. Both Danish nationals and visitors from abroad attend the fishery, either for short fishing trips or as participants in angling competitions.

In addition to trolling, a number of fixed hook lines with only a few hooks is operated part of the year by local inhabitants around the island Bornholm.

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

The total Danish recreational catch of Salmon in the Baltic Sea in 2009 was estimated to be on the same level as in previous years, i.e. approx. 3000 salmon. Approx. 1000 was registered in the 3 local trolling competitions, and the remaining 2000 was estimated from local trolling fishery and from 20-30 non-commercial boats fishing with drifting, and fixed long-lines. These catches was corresponding to less than 5% of the total Danish quota in 2009, but 23% of the commercial catch as the quota was little utilised in 2009.

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

- Results from an angling competition with several hundred participants, where catches are registered by the convenors,
- Boat rental companies,
- Information from local anglers,

Recreational fishermen using trap-nets and gillnets

The work with collection of data from the recreational fishermen using trap-nets and gillnets continues over the next two years, this project commencing in 2008. In 2009 a further effort was made to bring in more fishermen into the project and cover a larger geographic area. As shown in Fig. 1 this was successful and about 75 fishermen are now part of this new project. The low coverage on the west coast reflects the low interest in this type of fishery along this rather exposed coastline, and the fishermen fish in the fjords along that coast. 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. As in the previous project, 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.

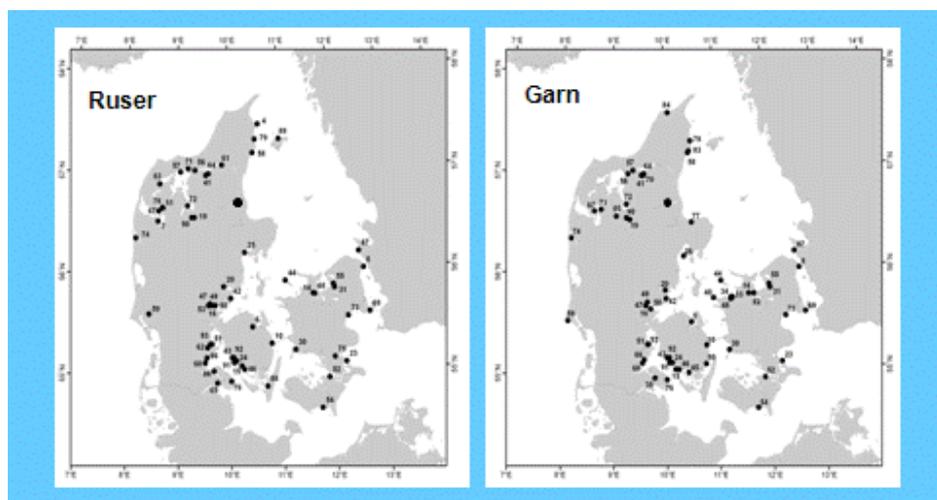


Fig.1. Maps showing distribution of fishermen and their fishing position during 2008. Trap-net (left map) and for gill-net (right map)

III.D.3 Follow-up of regional and international recommendations

Source	Recommendation	Action
RCM Baltic (2008)	The RCM Baltic recommends that MS follow the request for preparation of the WKSMRF (Workshop on Sampling Methods for Recreational Fisheries), given in the ICES resolution (see http://www.ices.dk/iceswork/recs/2008recs.asp).	Denmark participated in WK and actions was taken as recommended
RCM NS & EA (2009)	RCM NS&EA recommends MS to provide an overview of their inland sampling of the recreational fishery on eel.	Denmark is still working on this overview and it the plan to have it ready for the ICES WGEEL.

III.D.4 Actions to avoid shortfalls

Denmark has in 2009 optimised the knowledge and sampling level on the recreational fishery and it is planned that this survey will continue on twice a year in the future. However, the same level of knowledge has not been achieved for Salmon and a proper way to sample this fishery has to be developed.

III.E Biological - stock-related variables

To get catch-in-numbers (CANUM) and weight-in-catch (WECA) by age group, sampling of the landing and discard is undertaken. Simple random sampling was used for pelagic stocks, plaice, eel and flounder and simple random sampling with extra length measurements was used for the cod stocks. The simple random sampling

means that a fixed number of individuals were sampled randomly within market size category (if sorted) /unit (unit =area, quarter and gear). All individuals in a sample were analyzed according to length, weight and age. For cod stocks, the idea is to sample all age classes in the population equally in number within a unit to build a robust Age Length Key. In order to distinguish between the different fisheries, extra length measurements are collected for each fishery (5 boats / sampling unit). The reason to add extra length measurements to the simple random sampling design is to get age-dis-aggregated information from three fisheries without increasing the number of age samples further.

To receive high quality age dis-aggregated data, a certain number of individuals for a stock were sampled per unit (area/quarter/gear) independent of landing size. This sampling strategy was aiming towards a more precision based sampling approach and CV on the different variables is presented for some of the stocks.

Sampling strategy on surveys and onboard fishing vessels differs from market sampling and was performed as follows: all individuals (or a sub sample) were length measured and a fixed number per length class was sampled for age, sex, maturity and weight. For stocks sampled on surveys and onboard fishing vessels, the length can be given an age by using an Age-Length-Key.

International survey manuals give guidelines on number of individuals / length class to be sampled for age, sex and maturity. These were followed and the actual sampled number is therefore dependent on the amount of catch. In table III.E.3 planned numbers has therefore been marked as NA.

The Baltic Sea (ICES areas IIIb-d)

III.E.1 Achievements: results and deviation from NP proposal

All stocks sampled during 2009 for biological variables, age, length, weight, sex and sexual maturity are listed in table III.E.3. The variables are collected from different sources like survey, market or sea sampling and sampling strategy differs. For most stocks the sampling sources are listed and the results presented in separate rows.

Deviation from proposal

In the Baltic following species were not sampled as stated in the NP:

Cod in sub. 22-24 and 25-32

By mistake incorrect numbers of planned sampled maturity and sex-ratio data was given in the Danish National Programme for 2009, and therefore the calculated lack of 52% of these data is also erroneous. The total number of the sampled maturity and sex-ratio data is ok.

Sole in sub. 22-24.

87% of the length, weight and age data and 69% sex-ratio were sampled as planned. Soles are landed in very small quantities per lot in this area, and therefore difficulties in reaching the 100% was experienced.

Eel in sub. 22-32

Only 24 % of the length, weight and age data were sampled as planned, as the catches in the harbours where agreements were made were at a historical low level. As a supplement to the lack of data, length and weight distributions from 2400 eels have been collected. In 2010 length, weight and age data will be collected as planned, but in other harbours.

Herring in sub. 22-24

By mistake incorrect numbers of planned sampled maturity and sex-ratio data was given in the Danish National Programme for 2009, and therefore the calculated lack of 39% and 35% of these data is also erroneous. The total number of the sampled maturity and sex-ratio data is ok.

Sprat in sub. 22-24

By mistake incorrect numbers of planned sampled maturity and sex-ratio data was given in the Danish National Programme for 2009, and therefore the calculated lack of 30% and 21% of these data is also erroneous. The total number of the sampled maturity and sex-ratio data is ok.

III.E.2 Data quality: results and deviation from NP proposal

As precision estimates have to be achieved on a regional there is still missing some coordination work between countries. Denmark has taken the lead in 2010 to conduct regional precision analysis on the North Sea cod stock were involved countries will upload there data to a regional database (FishFrame). This exercise will highlight the need for sampling coordination between countries.

The COST tool package has also been used to conduct exploratory runs as well as the CV analyses. COST there are still crucial parts missing and the tool cannot deal with some basic sampling strategies used in Denmark.

III.E.3 Follow-up of regional and international recommendations

Source	Recommendation	Action
RCM Baltic (2009)	In order to use the time of the RCM more efficient and for the harmonisation of the NPs, including the quality checks, the exchange data tables from all NPs, namely planned number of individuals to be sampled for age, length, weight, sex and maturity should be compiled before the next RCM.	Done
RCM Baltic (2009)	MS to use the average landing figures over the years 2007-2008 as the basis for ranking métiers within the NP 2011-2013	Done
RCM Baltic (2008)	Member states are recommended to seek for task sharing when starting ageing new species.	Denmark has seek and agreed for task sharing in these cases

III.E.4 Actions to avoid shortfalls

Most of the deviations from the proposal are caused by incorrect numbers of planned sampled maturity and sex-ratio data given in the Danish National Programme for 2009. This is partly due to the fact that juvenile fish are matured but have not been given a sex. After finishing the Technical Report, DTU Aqua will make an effort to give better prognoses for collection of these data in the future.

Sole in sub. 22-24.

To achieve planned number of samples of length, age and weight, and sex-ratio, Denmark is planning to intensify the collection of data in the area.

Eel in sub. 22-32

To achieve planned number of samples of length, age and weight, Denmark is planning to get closer co-operation with fishermen and exporters in the area.

The North Sea and Eastern Arctic (ICES areas IIIa, IV and VIId)

III.E.1 Achievements: results and deviation from NP proposal

All stocks sampled during 2009 for biological variables, age, length, weight, sex and sexual maturity are listed in table III.E.3. The variables are collected from different sources like survey, market or sea sampling and sampling strategy differs. For most stocks the sampling sources are listed and the results presented in separate rows.

Deviation from proposal

In the North Sea following species were not sampled as stated in the NP:

Plaice in IIIa

By mistake incorrect numbers of planned sampled maturity data was given in the Danish National Programme for 2009, and therefore the calculated lack of 75% of these data is also erroneous. The total number of the sampled maturity and sex-ratio data is ok

Hake in IIIa, IV, VI and VIIab

The achievement of collected maturity data was 82%. The lack of data was caused by mistakes in the sampling procedures. As a supplement to the small lack of data, we have collected length, age and weight distributions from 374% of the planned samples.

Monk fish in IV (Norwegian waters)

The achievement of the sampled maturity and sex-ratio data was at only 20%, caused by very small catches in the survey

Mackerel in North Sea

The achievement of the sampled maturity and sex-ratio data was at 85%. As a supplement to the small lack of data, we have collected length, age and weight distributions from 212% of the planned samples.

Sprat in IIIa

By mistake incorrect numbers of planned sampled length, age and weight data was given in the Danish National Programme for 2009, and therefore the calculated lack of 57% of age and weight data is also erroneous. The total number of the sampled age and weight data is ok, and at a much higher level than earlier years.

Sprat in IV

By accident it is stated in table III E3 that only 355 samples (71%) are collected for sex-ratio. The correct number was 930 (186%)

Blue Whiting in IV

The Catches was in 2009 only at 194 tonnes, and therefore the collected 171 numbers of length, weight and age data still is at an acceptable level.

Norway pout in IV, IIIa

The achievement of collected sex-ratio data was 73%, and the maturity data was 52%. The lack of data was caused by mistakes in the sampling procedures at the survey.

III.E.2 Data quality: results and deviation from NP proposal

A coordination scheme has been set up in the RCM North Sea to improve and ease the task sharing of age reading. This will be of great help as every country do not have to work up the expertise for age readings in all species but can set up a bilateral agreement with the MS with the best expertise, as the numbers of species to be read has increased in later years.

As precision estimates have to be achieved on a regional there is still missing some coordination work between countries. Denmark has taken the lead in 2010 to conduct regional precision analysis on the North Sea cod stock were involved countries will upload their data to a regional database (FishFrame). This exercise will highlight the need for sampling coordination between countries.

The COST tool package has also been used to conduct exploratory runs as well as the CV analyses. COST there are still crucial parts missing and the tool cannot deal with some basic sampling strategies used in Denmark.

III.E.3 Follow-up of regional and international recommendations

Source	Recommendation	Action
RCM NS & EA (2009)	In order to use the time of the RCM more efficient and for the	Done

	harmonisation of the NPs, including the quality checks, the exchange data tables from all NPs, namely planned number of individuals to be sampled for age, length, weight, sex and maturity should be compiled before the next RCM.	
RCM NS & EA (2008)	Stock variables: Minimum required taxonomical levels for identification	After approval by STECF, Denmark has adopted the changes.
RCM NS & EA (2008)	Stock variables: Group 3 on a higher taxonomical level	After approval by STECF, Denmark has adopted the changes.
RCM NS & EA (2008)	Stock variables: Recommended changes in G-status	After approval by STECF, Denmark has adopted the changes.
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.

III.E.4 Actions to avoid shortfalls

Plaice in IIIa

DTU Aqua has increased effort in giving better prognoses for collection of maturity data in the future.

Hake in IIIa, IV, VI and VIIab

Denmark has planned to get a higher efficiency in collection of maturity data in 2010.

Monk fish in IV (Norwegian waters)

Denmark has planned to get a higher efficiency in collection of maturity and sex-ratio data in 2010.

Mackerel in North Sea

Denmark has planned to get a higher efficiency in collection of maturity and sex-ratio data in 2010.

Sprat in IIIa

DTU Aqua has increased effort in giving better prognoses for collection of maturity data in the future.

Sprat in IV

No further effort in the sampling.

Blue Whiting in IV

No further effort in the sampling.

Norway pout in IV, IIIa

Denmark has planned to get a higher efficiency in collection of maturity and sex-ratio data at surveys in 2010.

The North Atlantic (ICES areas V-XIV and NAFO areas)

III.E.1 Achievements: results and deviation from NP proposal

No landings from fisheries in this area have been made in Denmark. It should also be mentioned very few fishing trip in that area have been made.

Deviation from proposal

In the North Atlantic following species were not sampled as stated in the NP:

Blue Whiting in all areas

There was no catches at all, and therefore no sampling has been carried out.

III.E.2 Data quality: results and deviation from NP proposal

As precision estimates have to be achieved on a regional there is still missing some coordination work between countries. Denmark has taken the lead in 2010 to conduct regional precision analysis on the North Sea cod stock were involved countries will upload there data to a regional database (FishFrame). This exercise will highlight the need for sampling coordination between countries.

The COST tool package has also been used to conduct exploratory runs as well as the CV analyses. COST there are still crucial parts missing and the tool cannot deal with some basic sampling strategies used in Denmark.

III.E.3 Follow-up of regional and international recommendations

None

III.E.4 Actions to avoid shortfalls

None

III.F Transversal variables

III.F.1 Capacity

III.F.1.1 Achievements: results and deviation from NP proposal

No shortfalls and/or deviations exist in relation to what was stated in the national programme.

III.F.1.2 Data quality: results and deviation from NP proposal

No shortfalls and/or deviations exist in relation to what was stated in the national programme.

III.F.2 Effort

III.F.2.1 Achievements: results and deviation from NP proposal

No shortfalls and/or deviations exist in relation to what was stated in the national programme.

III.F.2.2 Data quality: results and deviation from NP proposal

No shortfalls and/or deviations exist in relation to what was stated in the national programme.

III.F.2.3 Follow-up of regional and international recommendations

No relevant recommendations have been made about the collection of effort data.

III.F.3 Landings

III.F.3.1 Achievements: results and deviation from NP proposal

No shortfalls and/or deviations exist in relation to what was stated in the national programme.

III.F.3.2 Data quality: results and deviation from NP proposal

No shortfalls and/or deviations exist in relation to what was stated in the national programme.

III.F.3.3 Follow-up of regional and international recommendations

No related recommendations have been made about the collection of landings data.

III G Research surveys at sea

III G 1 Achievements: results and deviation from NP proposal

In table III.G.1 an overview is given of the planned and achieved numbers of days at sea and the number of fishing hauls/echo nm.

The biological data from surveys are stored in the national biological database “Babelfisk” (see section 14.1). The acoustic data are stored in a national acoustic database. MIK data are stored in a national MIK database. CTD data are stored in a national CTD database.

The BITS and IBTS survey data have been submitted to ICES and are stored in the ICES DATRAS database.

Baltic International Trawl Survey (BITS)

The survey is carried out in both the first and fourth quarters with participation of the research vessel R/V DANA and the smaller research vessel R/V HAVFISKEN. The primary purpose of the part undertaken by R/V

DANA is to estimate abundance indices for recruitment and stock abundance of the Baltic cod stocks. The second part undertaken by R/V HAVFISKEN provides in addition to cod also abundance indices for flatfish. The BITS survey is coordinated by the ICES Baltic International Fish Survey Working Group.

Types of data collected:

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

In the summary table below the planned and achieved days at sea and fish hauls on R/V DANA and on R/V HAVFISKEN are listed.

Survey	Vessel	Planned days at sea	Achieved days at sea	Planned fish hauls	Achieved fish hauls
BITS 1 st quarter	Dana	18	18	50	50
BITS 1 st quarter (KASU)	Havfisken	20	18	49	40
BITS 4 th quarter	Dana	18	16	50	47
BITS 4 th quarter (KASU)	Havfisken	20	19	48	45

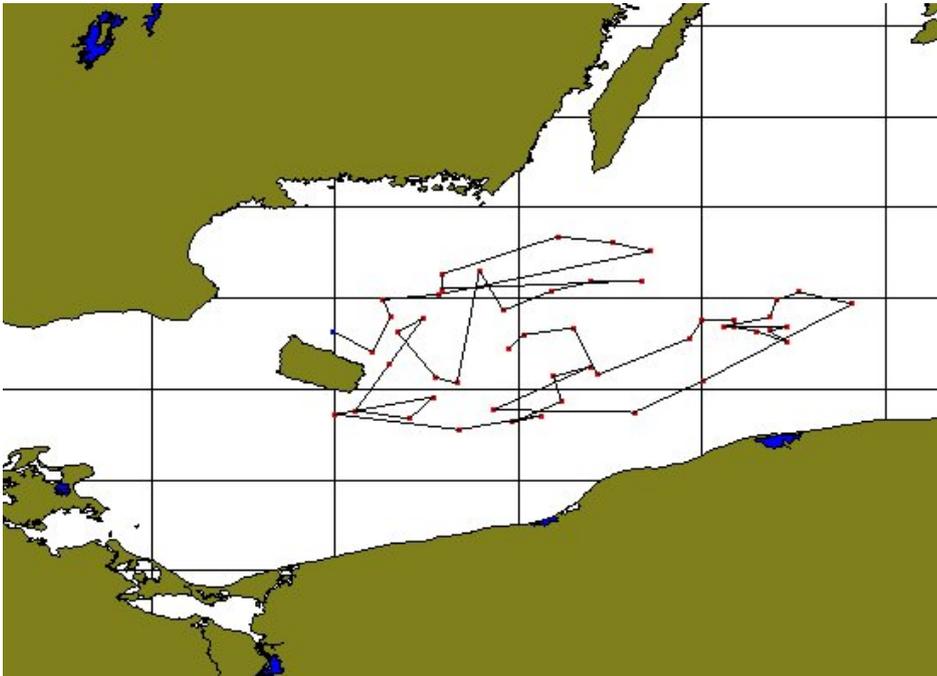


Figure III.G.1 Map showing BITS first quarter 2009 RV Dana cruise track.

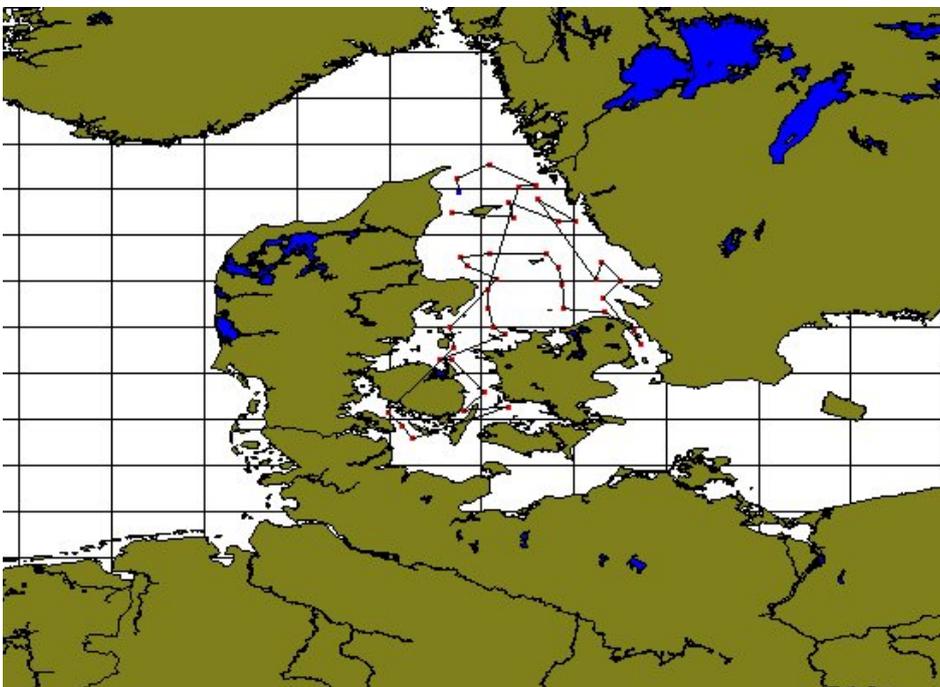


Figure III.G.2 Map showing BITS first quarter 2009 RV Havfisker cruise track.

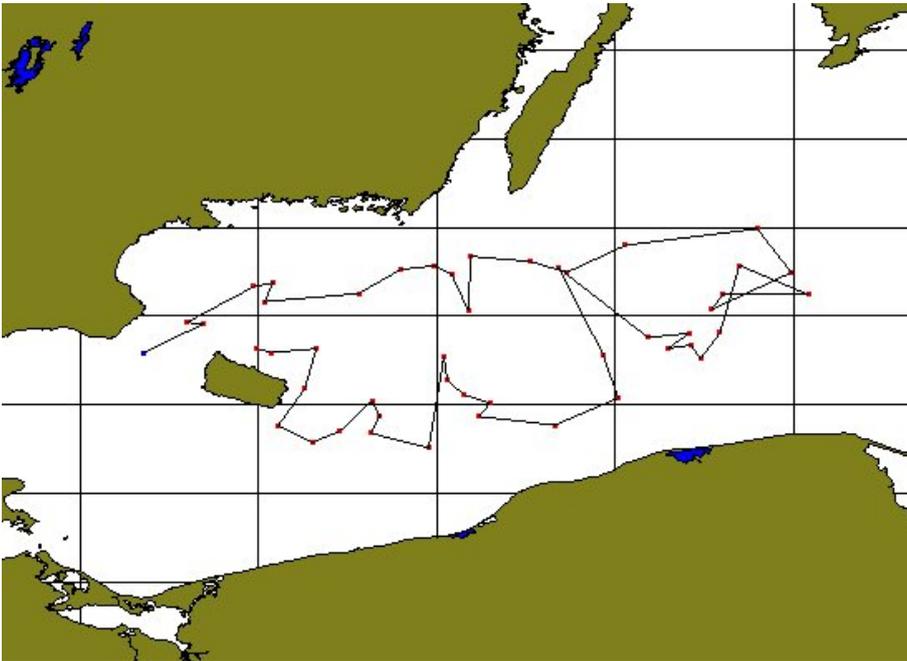


Figure III.G.3 Map showing BITS second quarter 2009 RV Dana cruise track.

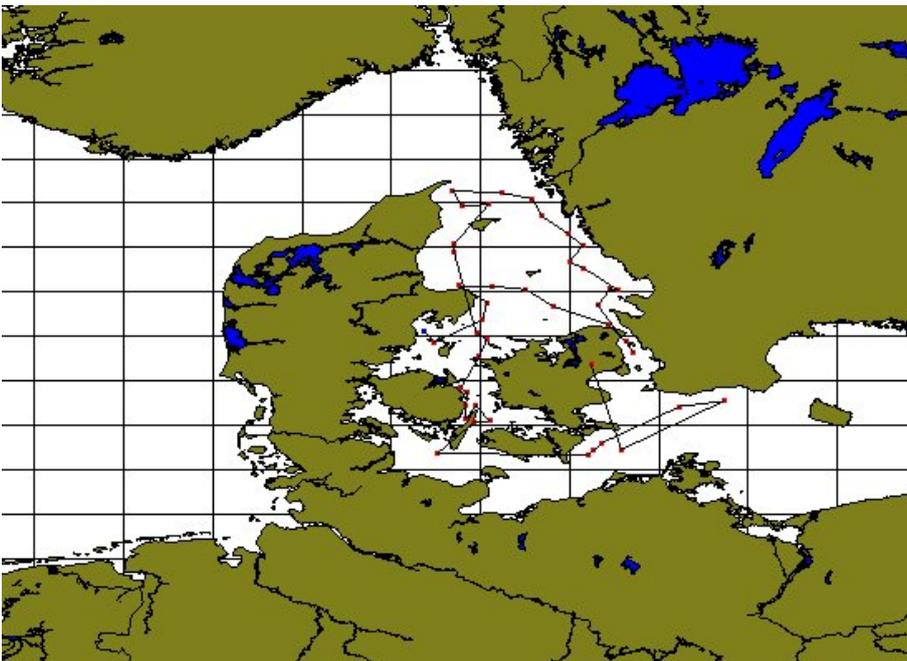


Figure III.G.4 Map showing BITS second quarter 2009 RV Havfisken cruise track.

International Bottom Trawl Survey (IBTS)

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

Types of data collected:

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

RV Dana covered in the first and the third quarter 2009 the areas allocated to Denmark by the coordinator as planned (Figs. III.G.1 and 2).

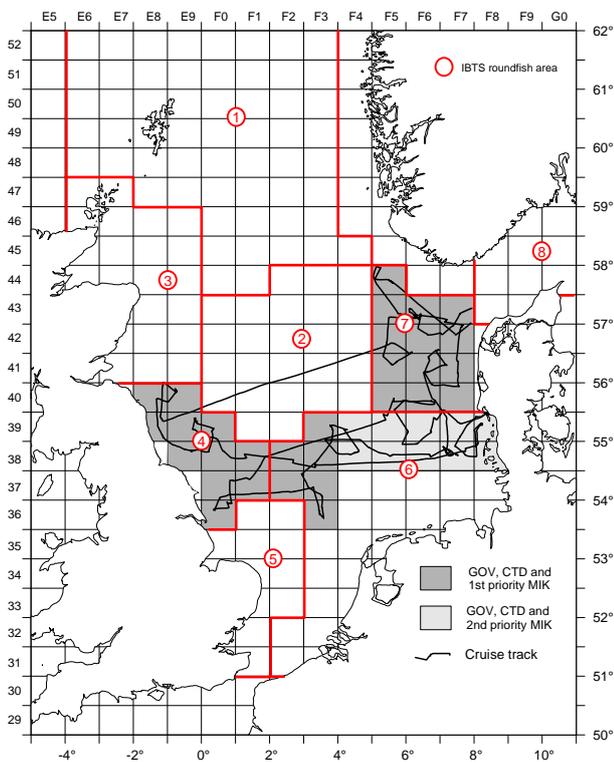


Figure III.G.5 Map showing IBTS first quarter 2009 RV Dana survey area and cruise track.

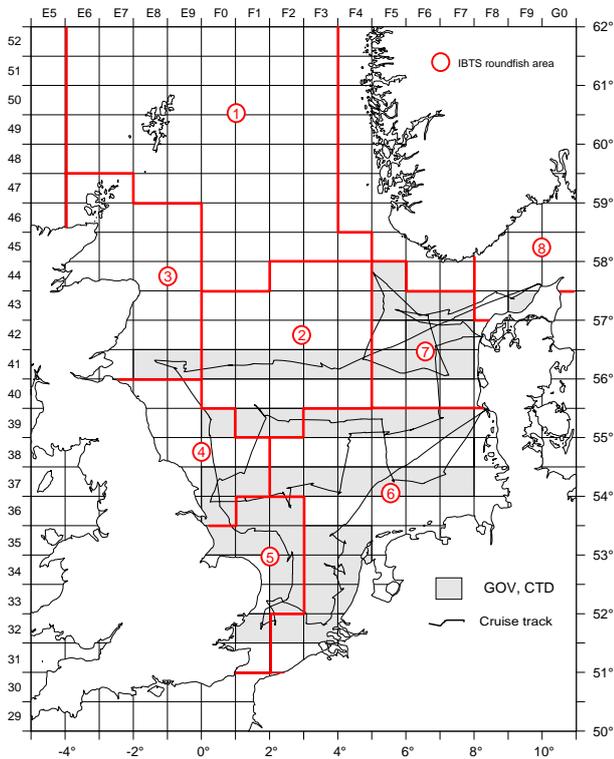


Figure III.G.6 Map showing IBTS third quarter 2009 RV Dana survey area and cruise track.

International Ecosystem in the Nordic Sea (ASH)

The main objectives of this survey are to map the distribution and migrations of herring, blue whiting and other pelagic fish and to assess their biomass. Furthermore to monitor the hydrographical and plankton conditions of the Norwegian Sea and adjacent waters and describe how feeding and migration of herring and other pelagic fish are influenced by this. During the survey fishery was carried out regularly on acoustic registrations to verify the species detected and to give information about the size composition to be used in the biomass estimation. The survey is coordinated by the ICES Planning Group on North East Atlantic Pelagic Ecosystem Surveys, PGNAPES. The survey is carried out as a joint EU survey with participation of UK, Ireland, Netherlands, Germany, Sweden and Denmark.

Types of data collected:

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

Achievements in 2009:

- 30 days was planned and 30 days was achieved
- 38 trawl hauls
- 43 CTD stations
- 43 WP2 casts
- 2594 Nm acoustic integration

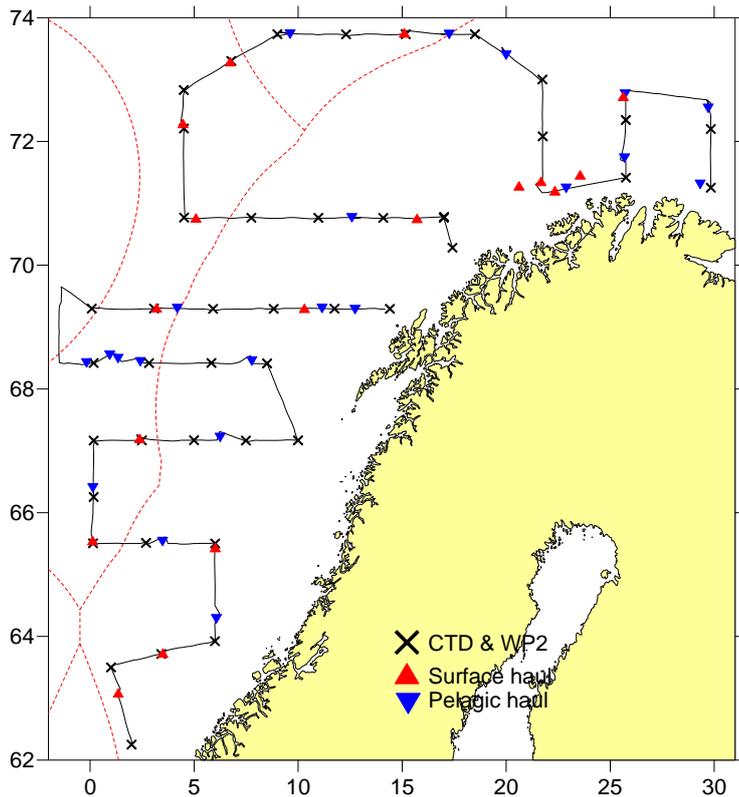


Figure III.G.7 Map showing the RV Dana ASH 2009 survey track.

Herring larvae survey (IHLS)

The sampling for this survey was done during the 1st quarter IBTS and all 80 MIK (Method Isaac Kidd trawl) stations were covered in 2009 as planned.

NS Herring Acoustic Survey (NHAS)

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

Types of data collected:

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

Achievements in 2009:

- 14 days was planned and 14 days was achieved
- 34 trawl hauls
- 34 CTD stations
- 1619 Nm acoustic integration

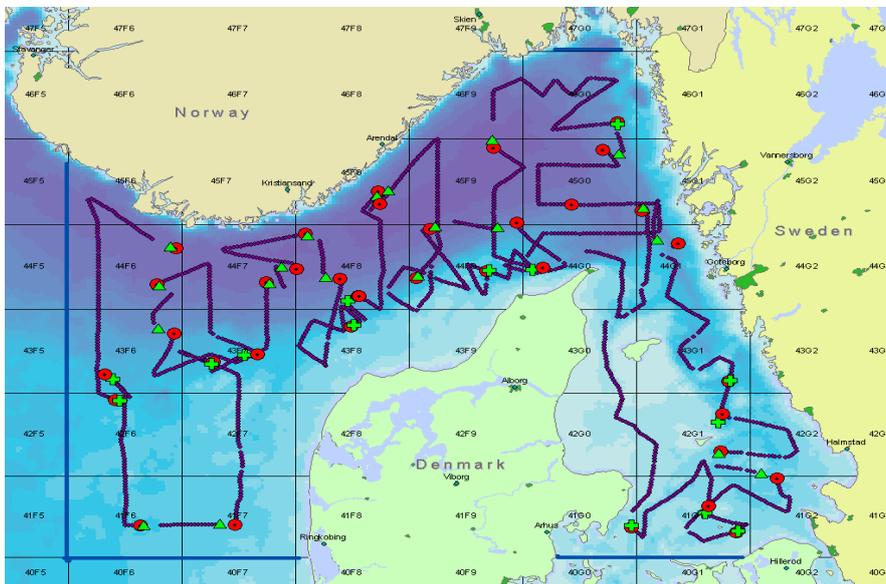


Figure III.G.8 Map showing the RV Dana NHAS 2009 survey track (triangles: pelagic trawl, cross: bottom trawl, circles: CTD).

Baltic International Acoustic Survey (BIAS)

Denmark has participated with one scientific staff member on the German R/V Solea in 2009.

Blue Whiting Survey in area VI and VII

Denmark has participated with one scientific staff members on the Dutch R/V Tridens and one on the Irish R/V Celtic Explorer in 2009.

Nephrops UTV survey in functional unit IIIa

The 2009 surveys were conducted with R/V Havfisken, but only a part of the planned area coverage was achieved due to technical problems with the sampling equipment and bad weather conditions:

- 15 days at sea (planned: 15)
- 47 stations (planned: 78).

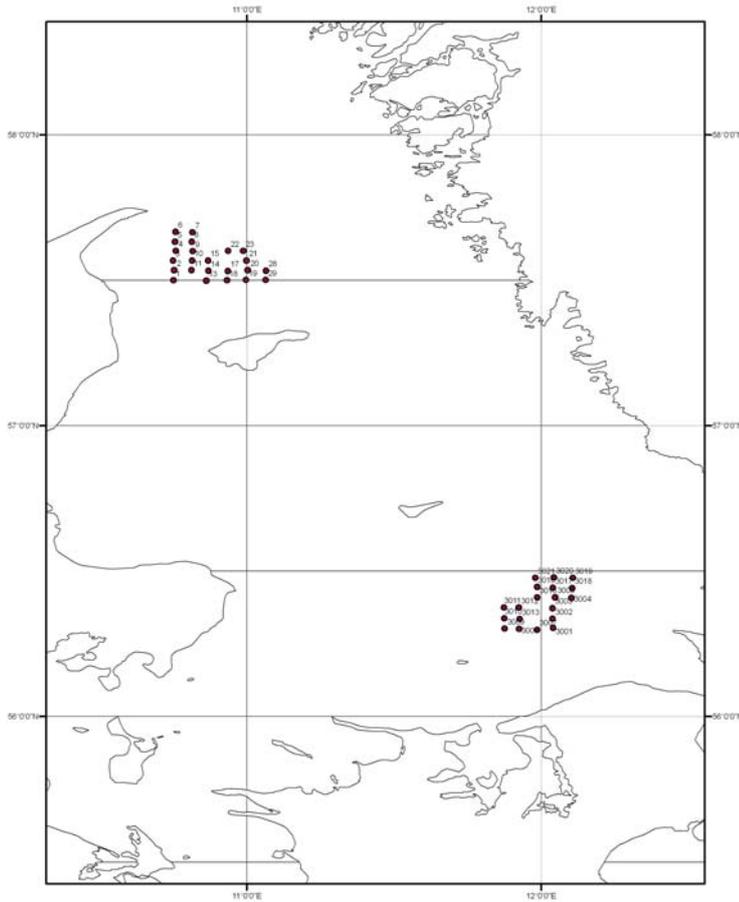


Figure III.G.9 Map showing the sampling locations in the 2009 Nephrops UTV survey.

North Sea sandeel survey

The 2009 survey was conducted with the commercial fishing vessel Pernille Kim L151 as planned:

- 12 days at sea
- 43 stations
- 231 sandeel samples
- 34 sediment samples

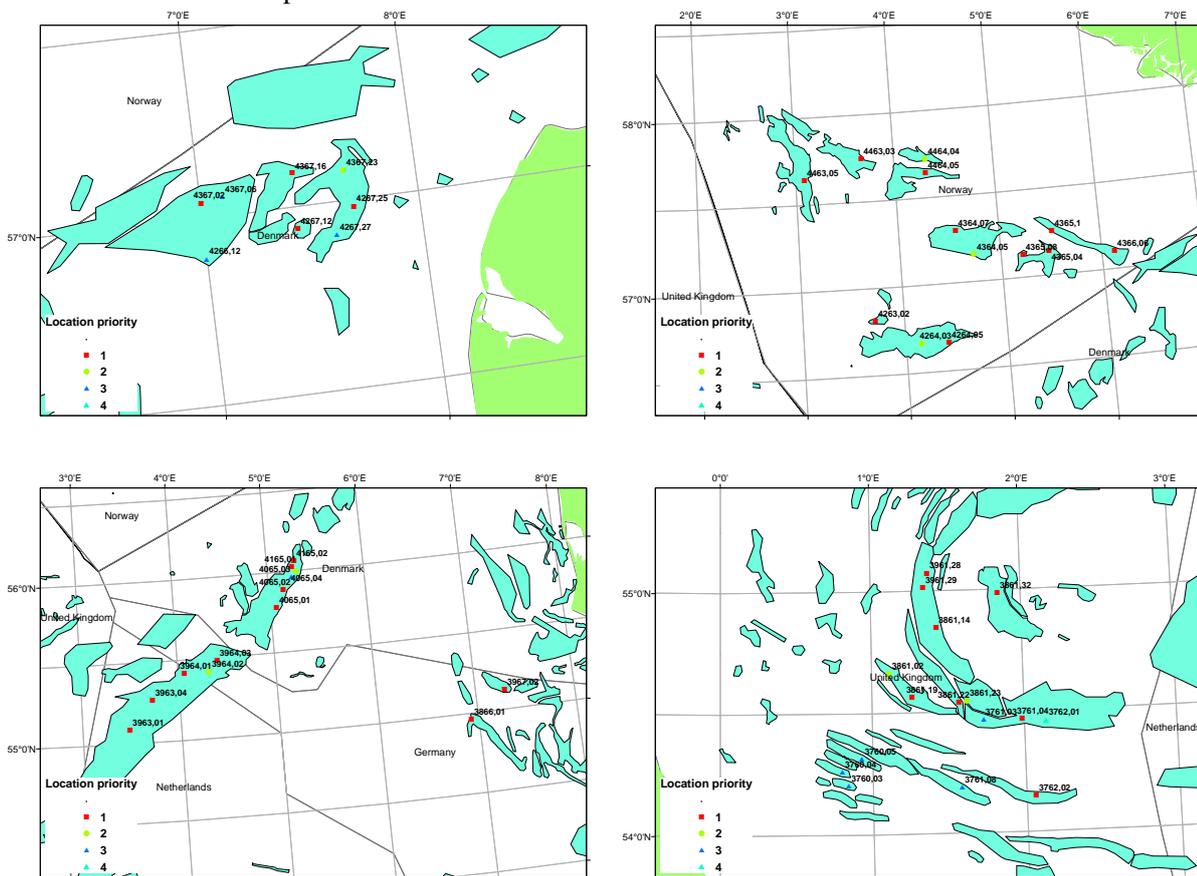


Figure III.G.10 Map showing the sampling locations in the 2009 sandeel survey with Pernille Kim L151 in the four survey subareas (Little Fisher, Norwegian EEZ, Tail end / off south Jutland and Dogger Bank) .

III G 2 Data quality: results and deviation from NP proposal

No serious data quality problems or deviations from the NP occurred in 2009 except for the Nephrops UTV survey due to technical problems with the sampling equipment.

III G 3 Follow-up of Regional and international recommendations

All surveys were conducted according to international or national manuals and guidelines.

III G 4 Action taken to avoid shortfalls

No major shortfalls. See section III.G.1. The technical problems with the sampling equipment for the Nephrops UTV survey have been identified and solved.

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

IV.A Collection of data concerning the aquaculture

The work concerning the Danish Aquaculture Account Statistics was carried out by the Institute of Food and Resource Economics (FOI) from 2004 to 28 February 2009 and by Statistics Denmark from 1 March 2009 and onwards. Hence, the collection of data concerning the Danish aquaculture sector was in the period 1 March to 31 December 2009 part of a research programme with an alternative source of financing. This technical report, therefore, mainly relates to the work carried out in the period from 1 January to 28 February 2009.

IV.A.1 Achievements: Results and deviation from NP proposal

Definition of the population

The Danish aquaculture sector is defined by the Business Register. In the Business Register the aquaculture sector is defined by the European NACE code 03.2. (European NACE rev. 2). There are no deviations from definition given by the DCF.

Segmentation

Data is segmented into 4 groups according to their main farming technique, determined on the basis of production value, corresponding to Appendix XI of Commission Decision 2008/949/EC.

Part of the population is further segmented according to economic size based on turnover. Only the segment of traditional pond farms is large enough to allow for this segmentation.

Land based farming

The land based fish farming is dominated by pond farms producing rainbow trout and recirculation systems producing European eel. New farm types producing rainbow trout by the use recirculation technology has been in production since 2006.

Traditional pond farms in Denmark produce almost exclusively rainbow trout. In 2008 there were 208 farms distributed on 120 companies. The production volume was 24,407 tonnes and the value was 62.6 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. There are both small and large producers but otherwise the segment is very homogenous.

Recirculation systems producing rainbow trout in 2008 consisted of 27 farms distributed on 14 companies. The production volume was 8,198 tonnes and the value was 18.4 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 farms is considered less than from the traditional pond farms.

Recirculation system producing European eel in 2008 consisted of 8 farms distributed on 8 companies. The production volume was 1,606 tonnes and the value was 12.9 million EUR. The segment is very homogeneous; 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. In 2008 this segment consisted of 3 farms from 3 companies. 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 presented separately.

Sea based farming

Sea cage farms in Denmark produce rainbow trout in cages. In 2008 there were 20 farms distributed on 6 companies. The production volume was 8,911 tonnes and the value was 36.4 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 mainly by the production of trout eggs, roe, which estimated at 11.8 million EUR is the most valuable product from the Danish sea farms.

Shellfish farms producing blue mussels on long lines began production activity in 2004 and are still at a low production level. In 2008 there were 10 farms distributed on 10 companies. The production volume was 1,481 tonnes and the value was 1.4 million EUR. The production methods in the segment are very homogeneous.

IV.B.2 Data quality: Results and deviation from NP proposal

The data collected for the aquaculture sector give a complete coverage of all enterprises covered by NACE 03.2. In order to ensure an adequate data quality DST 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 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 possible 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 DST 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. Hence, there are no deviations from the NP proposal.

IV.B.3 Follow-up of regional and international recommendations

DST expects to participate in the Regional Coordination Meetings when none foreseen items concerning the collection and use of economic data for the aquaculture sector are on the agenda.

In Appendix XI of Commission Decision 2008/949/EC it is suggested that the segmentation of the aquaculture sector should be according to the number of persons employed (SBS 16 11 0) in each enterprise. The Danish aquaculture sector only contains very few enterprises with more than 5 persons employed. Hence, for reasons of discretion the suggested segmentation is not carried out.

IV.B.4 Action to avoid shortfalls

There are no shortfalls in the data collection program for the aquaculture sector in Denmark.

IV.B Collection of data concerning the processing industry

IV.B.1 Achievements: Results and deviation from NP proposal

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.

Planned sampling

The type of data collection is census (A).

The Danish data collection is based on data from the Account Statistics collected by Statistics Denmark. The Account Statistics covers all enterprises in the Danish fish processing industry. In collaboration with Statistics Denmark data from the Industrial Commodity- and Account Statistics are combined to comply with the variables listed in Appendix XII of Commission Decision 2008/949/EC.

The data is collected and processed by Statistics Denmark. The final segmentation and validation of data concerning the processing industry is done in cooperation between FOI and Statistics Denmark.

Segmentation

In the national proposal the processing industry was divided into 13 sub branches. Do to the limited numbers of enterprises and rules of confidentiality, the 13 sub branches is merge to 6 sub branches.

FOI has examined the composition of commodities from each enterprise in the processing industry for the years 2000 until 2007. This investigation has provided the background for dividing the enterprises into 6 sub branches on the basis of the enterprise's commodity production. The first criteria for the division of the sub branches is the species that the enterprise processes and secondly the degree of processing. The 6 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 6 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.

Data can also be segmented into 4 groups based on the number of employed calculated as Full-time equivalents according to Appendix XII of Commission Decision 2008/949/EC.

IV.B.2 Data quality: Results and deviation from NP proposal

All requested indicators listed in Appendix XII of Commission Decision 2008/949/EC are collected in the Danish data collection program for the fish processing industry.

In the data collection program it is suggested that the segmentation of the fish processing industry should be according to the number of persons employed (SBS 16 11 0) in each enterprise (SGECA 08 01 Lisbon). Using the number of persons employed is not the common methodology used by the statistical offices in Europe, including Eurostat. It is, therefore; suggested that the segmentation should instead be according to the number of FTE employed in the enterprise (SBS 16 14 0). The Danish segmentation is based on the segmentation in Statistics Denmark, which is based on the number of FTE employed in the enterprise.

Furthermore, the calculation of imputed value of labour is only relevant for small scale enterprises where the owner and his family are the main source of labour input, like in fisheries and agriculture production. The fish processing industry is not a small scale business in Denmark where the main labour input is based on the owner and his family. The value of imputed labour in Denmark is therefore non existing or insignificant. It is suggested that this parameter "Imputed value of unpaid labour" is left out of the data collection for the processing industry.

IV.B.3 Follow-up of regional and international recommendations

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.

Follow-up on recommendation 1 according to STECF SGECA-06-01 meeting in Ispra, 13-17 February 2006 (page 25). Multi-activity enterprises: Enterprises are normally classified by EUROSTAT on the basis of dominant activity. The group is aware that if large companies involved in fish processing are not allocated to the fish processing sector, this might bias the results of the collected data. Similarly, non fish processing activities

of multi-activity enterprises, which have been allocated to the fish processing industry, may also skew results. Hence, it is recommended – if necessary - to carry out additional surveys to investigate the problem.

In the Danish data collection program it has been investigated, whether or not, the Danish fish processing industry is dominated by multi-activity enterprises. 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, and that the Danish fish processing industry is not characterized by multi-activity enterprises.

IV.B.4 Action to avoid shortfalls

There are no shortfalls in the data collection program for the processing industry in Denmark.

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

V.1 Achievements: results and deviation from NP proposal

The indicators 1, 2 and 3 listed in Commission Decision 2008/949/EC Appendix XIII of the Commission Decision require data on species abundance and length distribution by species from fishery independent research surveys. These data has been collected through the annual surveys carried out by DTU Aqua. The spatial and temporal coverage of data collection for the evaluation of effects of the fishing sector will consist of area IV in the first and third quarters and in area IIIId in the first and fourth quarters 2009.

VMS data has been used for indicators 4-7 require. VMS data has been made available for DTU Aqua for research purpose under certain conditions such as safeguarding the confidentiality of the identity of individual the vessels. The data are available on a resolution of one record every 1 hour. As described below in section VI A “Management and the use of the data” logbooks, selling slips and VMS data are available. Therefore, it has been possible to link VMS, Logbook and sales slips data.

Indicator 8 can be calculated by using the collected at sea observer data.

Indicator 9. The economic data collection carried out by DST includes data on fuel consumption. It is therefore possible to estimate fuel costs per quarter and métier for some segments.

There has been no deviation from the NP.

V.2 Actions to avoid shortfalls

No action is needed.

VI. Module for management and use of the data

VI.1 Achievements: results and deviation from NP proposal

Primary data collected under the Danish programme has been as planned 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. (DST)

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 has been 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.

The collected biological data has been stored in a database (“Babelfisk”) managed by DTU Aqua. These primary data are surrounded by confidentiality and will not be passed on to other persons or authorities without permission.

Economic data has been collected by DST 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 DST 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 has been produced and are 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.

Regional 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 and STECF expert 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 regional 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 & Eastern Arctic Regional Coordinating Meeting (RCM) have expressed their support to the “FishFrame”.

In 2009 DTU Aqua has released a new version FishFrame v. 5 based.

The FishFrame v.5 is able to hold the following DCF required data:

- “Biological metier related variables” data,
- “Biological recreational fisheries” data,
- “Biological stock-related variable” data,

- “Transversal variables” Landings and Effort data and
- BITS and IBTS survey data.

This summarizes to all the relevant for the scientific advisory process in ICES and relevant STECF expert groups. The FishFrame v. 5 can now be used as a data portal for all end users.

Denmark has provided 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 has provided data to other end user if requested.

VI. 2 Actions to avoid shortfalls

No action is needed.

VII. Follow-up of STECF recommendations

Denmark has taken the recommendations made by SGRN (Evaluation of the 2008 Technical report and the evaluation of 2009 National Programme) under consideration while writing the Technical report for 2009.

Source	Recommendation	Danish actions
SGRN February 2009. Evaluation of NP 2009	General: Although the proposal metiers mergers are sensible there is no statistical evidence put forward to justify them.	The merging of metiers for the planned sampling is not always based on a thorough scientific analysis but on the knowledge of the exploitation pattern, management of the fisheries. Scientific analysis of the metiers and the possibilities to merge them based on scientific analysis will be a prioritised issue during the programme period and Denmark will participate in the relevant ICES meeting on this issue.
SGRN February 2009. Evaluation of NP 2009	General: No metiers stratification table is missing	The national métiers stratification table was included in the submitted Danish NP tables
SGRN February	General: In the economical part, fishing sector and	Concerning the economical part

Source	Recommendation	Danish actions
2009. Evaluation of NP 2009	processing industry, Denmark refers only to 2009 while the reference period should cover 2008-2009.	of the Danish NP it should be mentioned that the work in 2009-10 deals with data referring to the years 2008-09.
SGRN February 2009. Evaluation of NP 2009	Module V is missing. Discard level for métiers which are not selected by ranking is not included in the NP. Denmark is invited to take into account the SGRN general comments on discard and landing sampling.	Module V was included in the revised Danish NP. All Danish métiers are and has been included in the Danish NP. See Danish NP tables, table III_C_1 Baltic, table III_C_1 NorthSea and table III_C_1 NorthAtlantic.
SGRN February 2009. Evaluation of NP 2009	Denmarks asks for derogation regarding some effort variables based on the non-obligation to record them in the logbook. The Commission invites invites Denmark to seek for methods other than logbooks to collect this information.	Denmark has started investigating other ways of collecting information on ‘Number of rigs’, ‘Num-ber of fishing operations’, ‘Number of nets, length’, ‘Number of hook, number of lines’, ‘Number of pots, traps’ and ‘Soaking time’ as the information is not recorded in the Danish logbooks and according the EU logbook regulation not is mandatory to record. Whether it would be possible to find ways of collecting this information without setting up a programme that need double work – an official logbook plus an additional logbook – has not yet been fully investigated.
SGRN February 2009. Evaluation of NP 2009	Denmark has requested derogations for 31 métiers (see table below). The justification is mostly due to an “expected change of behaviour when observers are send on board ” or “proved low discarding”. In the later case derogation for sampling discards can be given. However, SGRN notes that at least some of the métiers listed below have been merged with others for sampling and the derogation should be asked for the group métier	Denmark (DTU Aqua) has started negotiation with the fishing industry on how a reference fleet can be established. In addition a small scale reference fleet pilot project has been started in order to gain experience on how to establish

Source	Recommendation	Danish actions
	<p>which have been merged. Also it appears that the derogation is asked for sampling discards only and suggest that landings will be sampled in harbours. SGRN found this difficult to clarify because the name of the métier cannot be found in the sampling table because it is merged with others.</p>	<p>and to run a reference fleet and the associated cost for doing so. It is expected that reference fleets will be established during 2009 and will be up running in 2010.</p>
<p>SGRN February 2009. Evaluation of NP 2009</p>	<p>There appears to be an inconsistency in table III_E_1_Baltic, as species that are not landed have been included in the sampling for biological variables. To be clarified by the MS.</p>	<p>The errors have been corrected in the revised table. Revised table was submitted to the Commission.</p>
<p>SGRN February 2009. Evaluation of NP 2009</p>	<p>MS seeks a derogation for sampling fecundity data for horse mackerel and mackerel because no survey is conducted by the MS in the time period appropriate for sampling the data. SGRN recommends MS to investigate other means of collecting this data (e.g. commercial fisheries, sentinel fisheries).</p>	<p>Mackerel is spawning in May-June. The Danish fishery is taken place in September – November. No Danish research vessel surveys are conducted in May-June and catching mackerel. To carry out a research vessel survey or a sentinel fishery just for catching for fecundity data collection will be very resource demanding.</p> <p>The Danish fishery for horse mackerel takes place in the Western English Channel and amounts app. 2000 t per year. The fishery is a fishery for fish meal- and oil production. The fish when they are landed is not in a quality condition that they can be used fecundity data collection. If this has to be done, Denmark has to put scientific observers onboard which is very costly as the fishing trips are app. 10 days.</p> <p>Denmark is still of the opinion that derogation for sampling fecundity for mackerel and horse mackerel should be approved as other MS is having</p>

Source	Recommendation	Danish actions
		sampling programmes for fecundity data collection and the aim of the DCF is provide internationally data for the providing scientific advice to support the CFP.

VIII. List of acronyms and abbreviations

Acronym/Abbreviation	Description
DCCA	Danish Commerce and Companies Agency
DCF	Data Collection Regulation (EC) No 199/2008
DST	Statistics Denmark
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 Megrin
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
WKMERGE	Joint ICES/STECF Workshop on Methods for Merging Fleet Metiers for Fishery based Sampling
WKPRECISE	Workshop on Methods to evaluate and estimate the precision of fisheries data used for assessment
WKSMRF	Workshop on Sampling Methods for Recreational Fisheries
WGWIDE	Working Group on Widely Distributed Stocks
SCV	Standard Catch Value = landings per species multiplied by 3-year average prices.

IX. Comments, suggestions and reflections

None

X. Appendix

Report on the Danish data collection on the recreational fishery is given as appendix 1.