Technical University of Denmark
National Institute for Aquatic Resources

Annual Report on the Danish National Data Collection Programmes for 2012

National Institute for Aquatic Resources
Danish Directorate of Fisheries
Department of Food and Resource Economics
Statistics Denmark

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Contents

I. General framework

This document presents the Annual Report (AR) on the work carried according to the Danish National Programme (NP) for data collection in the fisheries sector for the year 2012. The programme has been carried out in accordance with the rules laid down in the *"Commission Regulation (665/2008) and Commission Decision (2010/93/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 AR.

The format of this report is structured following the most recent guidelines from the Commission[1].The AR 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 AR.

In addition to this AR a financial report for the 2012 programme has been made. The financial report of the costs is presented in separate spreadsheets in the FinForms formats as provided by the Commission.

In general the Danish national data collection programme has been carried out as in the previous years. No major changes to the 2011 NP and the 2011 AR have been made.

Short title of derogation	NP proposal section	Type of data - variables	Region	Derogation approved or rejected	Year of approval or rejection	Reason / Justification for derogation
Discard sampling FPN_MDC_>0_0_0	III.C.6	Discard length/weight information	Baltic 27.SD22-24	Approved	Every year since 2008	Historic sampling information has confirmed that discard (release) for this metiér in periods is higher than 10%. However the survival of the released fish is assumed very high and this metier is therefore not selected for discard sampling.

[1] Guidelines for the submission of Annual Report on the National Data Collection Programmes under Council Regulation (EC) 199/2008, Commission Regulation (EC) 665/2008 and Commission Decision 2008/93/EC, Version 2013

Discard sampling PTM_SPF_32-89_0_0	III.C.6	Discard length/weight information	Baltic 27.SD22-24	Approved	Every year since 2008	This is a fishery for herring. No discard occur for this fishery as all catches are landed unsorted in the harbours. Therefore, catches can be sampled in the harbours. This minimizes the cost for sampling. It is not physical possible for the vessels participating in this fishery to discard the catches when it has been taking onboard.
Discard sampling PTM_SPF_16-31_0_0	III.C.6	Discard length/weight information	Baltic 27.SD22-24	Approved	Every year since 2008	This is a fishery for sprat. No discard occur for this fishery as all catches are landed unsorted and used for fish meal and oil production. Therefore, catches can be sampled in the harbours. This minimizes the cost for sampling. It is not physical possible for the vessels participating in this fishery to discard the catches when it has been taking onboard.
Discard sampling OTB_DEF_90-104_0_0	III.C.6	Discard length/weight information	Baltic 27.SD22-24	Approved	Every year since 2008	This is a very small fishery landing only 170t in average a year mostly conducted on smaller vessels. Therefore it would be very expansive to case the few trips conducted by this metier
Discard sampling PTM_DEF_<16_0_0	III.C.6	Discard length/weight information	Baltic 27.SD22-24	Approved	Every year since 2008	This is a fishery for sandell. No discard occur for this fishery as all catches are landed unsorted and used for fish meal and oil production. Therefore, catches can be sampled in the harbours. This

						minimizes the cost for sampling. It is not physical possible for the vessels participating in this fishery to discard the catches when it has been taking onboard.
Discard sampling GNS_DEF_110-156_0_0	III.C.6	Discard length/weight information	Baltic 27.SD22-24	Approved	Every year since 2008	The metier is at present not included in the sea-sampling programme as the discard rate has been estimated to be below 10% and derogations is therefore applied for.
Discard sampling GNS_DEF_110-156_0_0	III.C.6	Discard length/weight information	Baltic 27.SD25-32	Approved	Every year since 2008	The metier is at present not included in the sea-sampling programme as the discard rate has been estimated to be below 10% and derogations is therefore applied for.
Discard sampling LLS_DEF_0_0_0	III.C.6	Discard length/weight information	Baltic 27.SD25-32	Approved	Every year since 2008	This is a very small (125 t) and very clean fishery for cod. Historic information confirms that the discard is below 10% for this metier and therefore there is applied for derogations
Discard sampling PTM_SPF_16-104_0_0	III.C.6	Discard length/weight information	Baltic 27.SD25-32	Approved	Every year since 2008	This is a sprat fishery. No discard occur for this fishery as all catches are landed unsorted and used for fish meal and oil production. Therefore, catches can be sampled in the harbours. This minimizes the cost for sampling. It is not physical possible for the vessels participating in this fishery to discard the catches when it has been taking onboard.
Discard sampling OTM_SPF_32-	III.C.6	Discard length/weight	NS&EA 27.I+II	Approved	Every year	This is a fishery for herring. Discard occur

69_0_0		information			since 2008	for this fishery but previous years' experience when sampling this metiér has often shown change of fishing pattern when having observer onboard. Furthermore, discarding occurs seldom however if it occurs discarding is in large quantities. Catches can be sampled in the harbours. This minimizes the cost for sampling. It is not physical possible for the vessels participating in this fishery to discard the catches when it has been taking onboard.
Discard sampling OTB_SPF_32-69_0_0	III.C.6	Discard length/weight information	NS&EA 27.IIIaN	Approved	Every year since 2008	This is a fishery for herring. Discard occur for this fishery but previous years' experience when sampling this metiér has often shown change of fishing pattern when having observer onboard. Furthermore, when discarding it occurs seldom but when discarding it is large quantities. Catches can be sampled in the harbours. This minimizes the cost for sampling. It is not physical possible for the vessels participating in this fishery to discard the catches when it has been taking onboard.
Discard sampling OTB_DEF_<16_0_0	III.C.6	Discard length/weight information	NS&EA 27.IIIaN	Approved	Every year since	This is a fishery for sandeel. No discard occur for this fishery as all

					2008	catches are landed unsorted and used for fish meal and oil production. Therefore, catches can be sampled in the harbours. This minimizes the cost for sampling. It is not physical possible for the vessels participating in this fishery to discard the catches when it has been taking onboard.
Discard sampling OTM_SPF_16-31_0_0	III.C.6	Discard length/weight information	NS&EA 27.IIIaS	Approved	Every year since 2008	This is a fishery for sprat. No discard occur for this fishery as all catches are landed unsorted in the harbours. Therefore, catches can be sampled in the harbours. This minimizes the cost for sampling. It is not physical possible for the vessels participating in this fishery to discard the catches when it has been taking onboard.
Discard sampling PTM_SPF_32-69_0_0	III.C.6	Discard length/weight information	NS&EA 27.IIIaS	Approved	Every year since 2008	This is a fishery for herring. No discard occur for this fishery as all catches are landed unsorted in the harbours. Therefore, catches can be sampled in the harbours. This minimizes the cost for sampling. It is not physical possible for the vessels participating in this fishery to discard the catches when it has been taking onboard.
Discard sampling GNS_DEF_100-119_0_0	III.C.6	Discard length/weight information	NS&EA 27.IV+VIId	Approved	Every year since 2008	This is a sole fishery with a very small amount of annual landings accounting for below 200 t. in average in the

						reference period. To sample this metier with observers would be much cost consuming compared to the very small fishery.
Discard sampling GNS_DEF_>=220_0_0	III.C.6	Discard length/weight information	NS&EA 27.IV+VIId	Approved	Every year since 2008	This is a turbot fishery with large mesh sizes. It is a relatively small fishery 282t in average and due to the very large mesh sizes it is believed to have relatively little discard. To sample this metier with observers would be much cost consuming compared to the very small fishery.
Discard sampling OTB_DEF_<16_0_0	III.C.6	Discard length/weight information	NS&EA 27.IV+VIId	Approved	Every year since 2008	This is a fishery for sandeel. No discard occur for this fishery as all catches are landed unsorted and used for fish meal and oil production. Therefore, catches can be sampled in the harbours. There is a cooperation between the industry and DTU Aqua and samples a collected by haul. This minimizes the cost for sampling. It is not physical possible for the vessels participating in this fishery to discard the catches when it has been taking onboard.
Discard sampling OTB_DEF_16-31_0_0	III.C.6	Discard length/weight information	NS&EA 27.IV+VIId	Approved	Every year since 2008	This is a fishery for Norway pout. No discard occur for this fishery as all catches are landed unsorted and used for fish meal and oil production. Therefore, catches can be sampled

						in the harbours. This minimizes the cost for sampling. It is not physical possible for the vessels participating in this fishery to discard the catches when it has been taking onboard.
Discard sampling OTB_SPF_32-69_0_0	III.C.6	Discard length/weight information	NS&EA 27.IV+VIId	Approved	Every year since 2008	This is a fishery for herring. Discard occur for this fishery but previous years' experience when sampling this metiér has often shown change of fishing pattern when having observer onboard. Furthermore, when discarding it occurs seldom but when discarding it is large quantities. Catches can be sampled in the harbours. This minimizes the cost for sampling. It is not physical possible for the vessels participating in this fishery to discard the catches when it has been taking onboard.
Discard sampling PTM_SPF_16-31_0_0	III.C.6	Discard length/weight information	NS&EA 27.IV+VIId	Approved	Every year since 2008	This is a fishery for sprat. No discard occur for this fishery as all catches are landed unsorted and used for fish meal and oil production. Therefore, catches can be sampled in the harbours. This minimizes the cost for sampling. It is not physical possible for the vessels participating in this fishery to discard the catches when it has been taking onboard.

Discard sampling All fleets	III.C.6	Discard length/weight information	NA	Approved	Every year since 2010	No discard occurs in the Danish fisheries carried out for this region. The fisheries carried out are historically the blue whiting fishery and a limited fishery for horse mackerel. In 2009 no blue whiting fishery took place. Therefore, Denmark request for derogation for discard sampling for this region.
Salmon genetics	III.E.5	Genetics	Baltic	Approved	Every year since 2008	Denmark asks derogation not to carry out any genetically analysis on salmon.
Fecundity	III.E.5	Fecundity	NS&EA	Approved	Every year since 2008	As Denmark is not conducting any research vessel survey in areas and periods where data on fecundity for mackerel and horse mackerel can be collected, Denmark asks for derogation for collecting the data.
Transversal data	III.F.2.5	'Hours fished', 'Number of rigs', 'Number of fishing operations', 'Number of nets, length', 'Number of hook, number of lines', 'Number of pots, traps' and 'Soaking time'	All regions	Approved	Every year since 2008	'Hours fished': It is not possible to estimate 'Hours fished' since this is not recorded in the Danish logbooks and according to the EU logbook regulation it is not mandatory to record that. Therefore, Denmark request for derogation for recording and submitting "Hours fished". The variables concerning numbers of gear ('Number of rigs', 'Number of fishing operations', 'Number of nets, length', 'Number of hook, number of lines',

						'Number of pots, traps') and 'Soaking time' are not recorded in the Danish logbooks. According to the EU logbook regulation it is not mandatory to record this detailed information. Therefore, Denmark request for derogation for recording and submitting this information.
Aquaculture	IV.A.7	Number of persons employed	All regions	Approved	Every year since 2008	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 may not be carried out.

II. National Data Collection Organisation

II.A National correspondent and participating institutes

Denmark has assigned the National institute of Aquatic Resources (DTU Aqua), Technical University of Denmark as the coordinating institute in Denmark. Jørgen Dalskov, Senior Fisheries Advisor, Secretariat for Public Sector Consultancy, DTU Aqua has been assigned as the National Correspondent.

Jørgen Dalskov

Senior Fisheries Advisor
Secretariat for Public Sector Consultancy
National Institute of Aquatic Resources
Charlottenlund Slot
DK-2920 Charlottenlund
Phone: +45 35 88 33 80

Fax: +45 35 88 33 33
E-mail: jd@aqua.dtu.dk

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 varies 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.

National Institute of Aquatic Resources
Charlottenlund Slot
DK-2920 Charlottenlund
Denmark
Phone: +45 35 88 33 00
Fax: +45 35 88 33 33
www.aqua.dtu.dk

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.

It should be mentioned that from 1st October 2011 the FD has been merged into two other organisations now called the Danish AgriFish Agency.

Danish AgriFish Agency
Nyropsgade 30
DK- 1780 København V
Denmark
Phone: +45 72 18 56 00
Fax: +45 33 45 58 00
www.fd.dk

3. Department of Food and Resource Economics (IFRO) 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 (IFRO)

Rolighedsvej 25
DK-1958 Frederiksberg C
Denmark
Phone: +45 35 28 68 00
www.ifro.ku.dk

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.

Statistics Denmark
Sejrøgade 11
DK-2100 Copenhagen Ø
Denmark
Phone: +45 39 17 39 17
www.dst.dk

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.

Once or twice a year representatives from the involved institutes meet for discussing the coming year or present years programme. Usually these meetings take 1-2 hours. Main topics to discuss are the production and the content of the DFAD data base (see section VI.1 for details) and participation in various expert working group meetings. As it is very clear which of the partners are responsible for the various tasks it is only necessary to make sure deadlines for providing data to each other are agreed.

The daily cooperation can be made by using e-mails or phone calls. The representatives from the involved institutes have been working together for a number of years and therefore, no major disagreements or other issues are troublesome.

The national DCF website is under construction as all websites at the Technical University of Denmark have to be moved to another platform. The DCF website is expected to be up running in June/July 2013.

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 2012. 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. 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 2012 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 and the Netherlands. This bilateral coordination has been continued in 2012.

In the economic field IFRO 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.

Denmark is a member of a large number of ICES WG, WK or PG groups. Those groups which have a major interest for Denmark one or more DTU Aqua staff members participate at the meeting. Some other ICES group meeting have minor interest and DTU staff members only participate at correspondence level and all Danish data is provided to the group. Furthermore, some meetings did not have Danish participation due to conflicting data with regards to other commitments.

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

General recommendations made by RCM Baltic and RCM NS &EA from 2007 to 2012 and endorsed at the Liaison meeting and actions taken by Denmark are listed below.

RCM 2012 recommendations

Source	Recommendation	Action
RCM Baltic 2012 and endorsed by the LM.	Concerning Métier variables - Intersessional work between Sweden and Denmark in order to give the RCM Baltic the possibility to evaluate where task sharing in métier sampling could be achieved.	Denmark, Sweden and Norway have set up a project on developing regional data in the auspices of the Nordic Council. The work will be finalised in 2014.
RCM Baltic 2012 and endorsed by the LM.	Concerning Sampling of Métier related variables including foreign landings: Requirement of on-line information on fleet behaviour – In order to ensure possibilities for adequate sampling of biological and métier related data including landings in foreign	DTU Aqua has online access to VMS

	MS, national institutes need to have online access to national logbook data and national VMS data. LM notes that this recommendation is common to the Baltic, NS&EA and NA regions.	
RCM Baltic 2012 and endorsed by the LM.	The RCM Baltic 2012 recommends that landings should not be sampled abroad by landings countries as these data cannot be used but should be compensated by the flag countries by a higher sampling level in the flag country.	Denmark has made agreement with other MS following this recommendation.
RCM Baltic 2012	RCM Baltic recommends that some standard reports should be estab-lished in FF that present overview of sampling intensities in maps, tables and figures. The reports would give the regional coordination, assessment working groups and other end users an overview of the quality of the data in an efficient way.	Denmark is supporting this idea and is actively working in the RDB Steering Committee for developing these tables
RCM NS&EA 2012 Recommendation	RCM NS&EA 2012 recommends to review the summaries on the derogations reached during RCM NS&EA 2011, to provide a final list of current derogations. From these lists the Liaison Meeting could review the derogations and where appropriate put forward a list of derogations that could be approved to cover métiers across all RCM's.	Denmark included a list of derogation in this AR 2012.
RCM NS&EA 2012 Recommendation	Access to data hold in RDB-FishFrame is restricted to persons with a password. Different roles are defined within the system and different users have access to a certain level of data and functionalities. To facilitate future regional coordination work it is recommended that members in the RCMs are given a specific role in the system in accordance with their needs.	Denmark support this recommendation.
RCM NS&EA 2012	Where it was identified that bilateral agreement is required, according to the rules agreed upon at the RCM NS&EA 2011 and endorsed by the LM8 and STECF 11-19, MS are requested to establish or update a bilateral agreement on sampling of landings abroad.	Denmark has made bilateral agreement with a number of MS.
RCM NS&EA 2012 Recommendation	RCM NS&EA recommends that the Oostende declaration is reviewed by RCM NA, RCM Baltic, the Liaison meeting and STECF EWG 12-15 as the appropriate framework for proposing, carrying out and reporting on regionally coordinated data collection from commercial marine fisheries under the proposed DC MAP.	Denmark supports the idea behind the Oostende Declaration.
RCM Baltic 2011	To ensure possibilities for adequate sampling of biological and métier related data including landings in foreign MS, national institutes need to have online access to national logbook data and national VMS.	DTU-Aqua has online access to VMS data and logbook information
RCM Baltic	1. MS should upload all landing data into the Regional Data Base allowing the RCM to analyse the possible needs for bilateral	Denmark has uploaded all relevant data to the

2011	agreements. 2. The RCMs should each year perform an analysis on landings in foreign countries and conclude were bilateral agreements needed to be made. MS should set up agreements, fixing the details of sampling, compilation and submission of data in each case when it is indicated by the RCM that a bilateral agreement is needed. To include the agreed analysis in FishFrame would be very convenient and time saving. 3. MS should set up agreements, fixing the details of sampling, compilation and submission of data in each case it is concluded by the RCM that a bilateral agreement is needed.	RDB
RCM NA 2011	RCM NA recommends that the collection of otoliths of John Dory is continued but not proceed with age readings until an agreed standardised method is developed.	Denmark has none or insignificant catch of John Dorry.
RCM NA 2011	RCM NA recommends MS to describe in detail the methodology on the separation of the catches of the 2 Lophius species. This information should be available to the 2012 benchmark assessment.	Denmark has no significant catch of Lophius sp.
RCM NA 2011	RCM NA recommends MS to check in their NP proposal 2012 that sufficient coverage of deep-water fisheries on-board sampling is planned, in order to meet the EWG needs.	Demark has no deep-sea fishery.
RCM NS & EA 2011	The RCM NS&EA recommends that that all MS respond to the data call in 2012 from the chair of RCM NS&EA and load their data to FishFrame or make it available in the FishFrame format. This data call will include Commercial Landings (CL), Commercial Effort (CE) and Commercial Samples (CS) records for 2010 and 2011.	All relevant data is uploaded to RDB FishFrame.
RCM Baltic (2010)	In order to move forward and get data into FF, a workplan was set up to support the MS in the upload process. Landing data, sampling and effort data for 2009 was agreed to be uploaded by all MS before 1 Sept 2010.	Denmark uploaded the data as agreed.
RCM Baltic (2010)	To ensure the wide implementation of COST, the RCM Baltic recommends that after the trial period lasting until May 2011 the working experience of member states will be reassessed and a training workshop should be organized in the first half of 2012.	Denmark has used a lot of effort during 2010 to learn how to use cost and participated in the workshop.

RCM Baltic (2010)	In order to be able to analyse the current sampling level of sprat in the Baltic and suggest optimal sampling levels for future regional coordinated sampling, the data must be available in an agreed format and checked for errors. Data has to be uploaded in Fishframe All MS should upload 2009 sprat data into Fishframe before the end of October 2010.	Denmark has uploaded the requested data
RCM Baltic (2010)	For institutes collecting small volumes of otoliths for certain species and when new species are to be sampled, task sharing of age reading is necessary in order to optimise the use of age reading expertise. The RCM Baltic recommends that the NC´s starts to discuss, decide and agree on which MS should be responsible for age reading of species rarely caught in BITS survey (brill, plaice, turbot, dab, sole). An agreement of task sharing for aging eel should also be established.	Denmark fully support the idea of task sharing and welcomes the discussion to take place between NC´s.
RCM NS & EA (2010)	RCM recommended that MS start to implement COST	Denmark has put a lot of effort to implement and use cost, but are having severe challenges as the COST do not support size grade sampling
RCM NS & EA (2010)	In order to have correct reference list of species and stocks in Appendix VII 2010/93 and to avoid inconsistencies and errors in the tables filled in by MS in their NP proposals RCM NS &EA made a recommendation to establish a reference list for revision of the guidelines and templates for future NP proposal	Denmark has acted according to this recommendation.
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.

III. Module of the 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 2011 was 2,387, of which 857 had no activity in 2011. The 1,530 vessels which were active during 2011 had landings of fish to a total value of EUR 374 million or 87.5 per cent of the total value of the Danish fishery in 2011. The remaining 12.5 per cent of the value of the Danish fishery in 2011, totalling EUR 54 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 2011.

	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 length groups	---------- Active registered vessels ----------					
<10 m	956	106	77	56	29	1,224
10 - <12 m	90	18	15	11	-	134
12 - <18 m	199	46	36	37	-	318
18 - <24 m	47	16	11	18	-	92
24 - <40 m	25	10	8	6	-	49
40 m and above	10	7	7	4	-	28
All length groups	1,327	203	154	132	29	1,845
Total value of landings in 1000 EUR	317,485	56,758	41,698	11,817	155	427,913
Per cent share of value of landings	74.19%	13.26%	9.74%	2.76%	0.04%	100.0%

During the year 2011 an additional 392 vessels were registered of which 186 vessels became active. So the total number of Danish vessels with landings of fish in 2011 was 1,816. 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 29 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.

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 2011 was 798,765 tonnes to a value of 428 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

The harmonized account for fishery was restructured in 2010 to include a table for calculation of an estimated value of the individual fishing rights (the vessel quota shares). The capital value of the quotas is calculated using the live weight quantities of fish equalling the quota share for the year for each fishing firm multiplied with shadow prices for every quota species. The results are still preliminary as we need further investigating on which model should be used for future estimation of the value of the fishing rights.

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

In Denmark we use a harmonized balanced accounting form to collect the economic data, which gives the most accurate value of the capital costs (depreciation) and the capital value (replacement value of physical capital). The use of the accounting form (se next page) is acknowledged by fishery economists, the fishing industry, and fishery accountants.

The depreciated replacement value of physical capital is calculated as cost price at the beginning of the year minus accumulated depreciation at the beginning of the year and adjusted for up- and down writing, reversed up and down writing and depreciation on up writings.

Investment in fishery assets is calculated as purchase minus sale of material fixed assets for the year measured in cost price.

DANMARKS STATISTIK

Table 4 is divided into two tables: 4.1 Fixed asset and 4.2 Current assets

Table 4.1 Fixed assets	Cost price beginning of year *)	This years purchase increase in cost price	This years sale = decrease in cost price	Cost price end of year before depreciation and adjustment	Accumulated depreciation beginning of year	This years depreciation	Reversed depreciation on sold assets	This years up- and down writing	Value of assets end of year
Immaterial fixed assets	1	2	3	4	5	6	7	8	9
1 Fishing rights (transferable quotas) ITQ				0					0
2 Fishing rights (vessel quota shares) FKA				0					0
3 Fishing rights (mussel and oysters) FTA				0					0
4 Sea days, kW-days				0					0
5 Capacity, tonnage, kW				0					0
6 Assets outside primary enterprise				0					0
Material Fixed assets	Enter Ctrl + b ==> jump to table for calculating the value of individual transferable quotas and quota shares ==>								
7 Vessel, hull				0					0
8 Engines and winches				0					0
9 Electronic equipment				0					0
10 Fishing gear				0					0
11 Property/buildings				0					0
12 Other operating material				0					0
13 Stock/supply				0					0
14 Inactive vessels				0					0
15 Vessels/assets under construction				0					0
Financial fixed assets									
16 Shares in associated companies				0					0
17 Other bonds and capital shares				0					0
18 **Total fixed assets (1 + 2 + ... + 17)**	0	0	0	0	0	0	0	0	0

*) In order to simplify having a full card index for each asset, state the cost price adjusted for up- and down writing, reversed up and down writing, and depreciation on up writings.

Continues in table 4.2 below ...

Table 4.2 Current assets		Value at the beginning of the year	Supply / injection	Reduction	Adjustments / loss on outstanding debt	Value at the end of the year
Stock of goods		1	2	3	8	9
20 Raw material eg. diesel oil (specify)	explain contents here ...					0
21 Other stocks (specify)	explain contents here ...					0
22 **Total stock of goods**		0	0	0	0	0
Outstanding debt						
23 Amount owed from sales and services						0
24 Other outstanding debt	explain contents here ...					0
25 Loan to owners/shareholders						0
26 Bonds and capital shares						0
27 Liquid assets (bank accounts etc.)						
28 **Total outstanding debt**		0	0	0	0	0
29 **Total current assets (22 + 28)**		0	0	0	0	0
30 **Total assets (18 + 29)**		0				0

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

No action is needed.

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

We have improved the basis for segmentation and clustering of the fleets by a thorough investigation of all registered gear use for each vessel for the years 2008-2011. Now we have the correct answer to which vessel should be categorized as pelagic or demersal for each year of the DCF. The same method will be used for the coming years.

The main result from the gear analysis is, that for the years 2008-2011 we do not have any segments for pelagic trawlers (TM), simply because there are too little numbers of trawlers with >50% fishing days with pelagic gear.

The scheme for clustering has not changed in any way during the AR year or over the DCF years. But of cause changes in the fishery pattern for the individual vessel may have the result that the vessel belongs to different segments in different years. That is for instance the case with trawlers that use both pelagic and demersal gear.

Table 2. Clustering of vessel segments 2011.

Number of vessels in each vessel segment and in adjacent (light grey) cells which have been clustered into the white cells.					Vessel_Length classes (LOA)					
					0-10m	10-12m	12-18m	18-24m	24-40m	40m or larger
Fishing Tech	Active vessels	Active gear	TBB	Beam trawlers			11	18		1
			DTS	Demersal trawlers and/or demersal seiners	14	8	147	68	37	19
			TM	Pelagic trawlers (pelagic >= 50% days at sea)		0	9	2	2	7
			PS	Purse seiners						4
			DRB	Dredgers	1	24	26	0	1	
			MGO	Vessel using other active gears						
			MGP	Vessels using polyvalent active gears only						
		Passive gears PG	HOK	Vessels using hooks	1012	56				
			DFN	Drift and/or fixed netters						
			FPO	Vessels using pots and/or traps						
			PGO	Vessels using other passive gears						
			PGP	Vessels using polyvalent passive gears only			48	7		
		Polyvalent gears	PMP	Vessels using active and passive gears		26	47	5	3	
	Inactive vessels				1003	19	24	9	3	2

III.B.4 Actions to avoid shortfalls

We are in the process of reconstructing the system to build the database for the account statistics from the administrative databases in the Directorate.

One important issue for the new system is to ensure homogeneous identification of production units and thereby segmentation of economic data and logbook data (landings and effort specified at FAO level 4). As it is now, the production unit for logbook data is based on the vessel identification number with no control on whether the ownership of the vessel shifts over the year, whereas the production unit for economic data is based on vessel versions, which is a vessel in a period with the same owner.

Another improvement will be, that the production from the fishery accounts, both quantity and value (income from sales of fish), in future reports will be data from the same source (the administrative registers) for all production units. As it is now, both total income and total cost are calculated based on a sample of accounts. In the new system all registered data from catch, landings and sale of fish will be combined on each active production unit (vessel), thus only cost and financial data should be calculated from the sample of fishery accounts.

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 VIId) and Eastern Arctic (ICES areas I and II) and North Atlantic (ICES areas V-XIV and NAFO areas).

DTU Aqua has used the AgriFish Agency 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 2008/93/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 2012 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 2012 were in general improved compared to 2011. A main overall reason for deviations from what was planned is that it sometimes can be difficult to predict fishing pattern by metier for the sampling year at the time of compilation of the National Programme. When sampling is conducted at shore; in harbours or at markets, all information on the metiers is selected. However, the sampling frame is not conducted by metier but by species and sorting groups. Therefore we cannot always assure that all metiers have been samples although the numbers of fish measured and aged are in accordance with the program. Denmark has in 2010 initiated a work to improve the sampling design of the metier based sampling following the outcomes of ICES WKACCU and WKPRECISE. This outcome has led to a change in the sampling frame from 2011 to a more statistically sound sampling program were trips are the primary sampling unit. As the trips are randomly selected in a database, based on the numbers of trips by the vessel the year before, large changes in fishing pattern between years can affect the sampling. As the new system is selecting the vessels randomly, the logistics have become a bigger challenge as we have to travel more to Islands and enter the vessels from rather small ports. The numbers of different vessels selected for the observer program has increased with 30% by this system. However, it has at least in the first year been at the expense of numbers of trips conducted. The main part of the deviations in 2012 from the aim is caused by the logistic more challenging system and is expressed below on a metier basis.

Baltic Sea (ICES areas III b-d)

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

Deviation from sampling on shore and at sea

Bottom otter trawl targeting demersal fish (OTB_DEF >=105 1 120), sub 22-24 and 25-32

In the western Baltic 91 % (32) of the planed observer trips at sea and 49% (27 samples) of the planned harbour sampling were conducted for this area. This métier had a small decreased in effort between 2012 and the reference year. For 25-32 the Eastern Baltic 107% (30) of the planed observer trips at sea and 65% (26) of the planned harbour sampling were conducted for this area. As stated in the IIIC we do not target metiers in the harbour sampling but species and sorting size groups indicating we cannot guaranty that we will achieve the applied number of samples.

Bottom otter trawl targeting demersal fish (OTB_DEF_90-104_0_0), sub 22-24

For this metier OTB_DEF_90-104_0_0 the numbers of commercial trips conducts decreased with 40% from the reference years to 2012 and the numbers of harbour trips conducted were also only 50% of the planned numbers of trips.

Set gillnet fisheries targeting demersal fish (GNS_DEF_110-156_0_0), sub 25-32 and 22-24

In 2012 Denmark sampled a total of 30 (64%) trips in this metier in the Baltic, 10% of the trips for this métier in subdivision 25-32 and 90% of the trips is conducted in 22-24. The main reason of the under sampling is duo to the fact that the sampling has to be conducted on the island of Bornholm making it more logistic challenging.

Bottom pair trawl targeting small pelagic (PTM_SPF_16-31_0_0), sub 25-32 and sub 22-24.

Denmark has in 2012 had a very large decrease (more than 65%) in fishing effort for sprat in the Baltic. This indicates that it was rather challenging to get the applied level of samples in 2012. Furthermore there is a typing mistake in the planned numbers of samples in the Baltic, were we in last updated annual report increased the number of samples from 16 to 136. This is off course a mistake and the correct number should have been 40. In total 36 samples were taking for this metier.

Longline fisheries targeting demersal fish (LLS_DEF_ALL_0_0), Sub 25-32

In 2012, 67% of the planned trips were conducted from this métier. Again the metier is very small compared to the trawlers and when sampled in harbours or at market our sampling frame is species and sorting size groups and not metiers, therefore we can risk not to fulfil the sampling level of the less important metiers. Furthermore there was a decrease in effort on 40% from the reference years to 2012.

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

Denmark has estimated CV's with the method described in Appendix 1.

Denmark in 2011 implemented a new design of the metier at sea sampling programmes on the basis of the outcome of the ICES workshops WKACCU, WKPRECISE and PGCCDBS. The work includes identification of proper sampling frames and probability based ways to select primary sampling units. The new design has also been used in 2012 and has improved the possibilities to evaluate possible bias and thereby also accuracy. Furthermore, refusal rates are now recorded for all sampled metiers.

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

Source	Recommendation	Action
RCM Baltic 2011 recommendation	For the purpose to give the RCM the possibility to evaluate were task sharing in métier sampling could be achieved. Robust analytical methods should be tested to look for differences / similarities in exploration patterns (size and species distribution, spatial pattern) between countries within 1-2 métiers as a case study.	Deadline not met yet. It is still the plan to corporate on this issue.
RCM Baltic 2011 Recommendation	To ensure possibilities for adequate sampling of biological and métier related data including landings in foreign MS, national institutes need to have online access to national logbook data and national VMS data.	Relevant Danish Fisheries Institutes have access to national logbook data and VMS data.
RCM Baltic (2010)	To ensure the wide implementation of for several agreed/recommended tasks, the RCM Baltic recommends that a Fish frame 5.0 workshop should be arranged in early 2011.	RDB-FishFrame has been transferred to ICES by 31st May 2012. Two workshops have been arranged (Feb. and May 2012). One will be arranged Oct 2012.
RCM Baltic (2010)	Development of a report in FishFrame which calculate the top 90% ranking of metiers for each MS as well as on regional level. The data should be based on data from the two previous years.	This report is still only in a SAS version.
RCM Baltic (2011+12)	1. MS should upload all landing data into the Regional Data Base allowing the RCM to analyse the possible needs for bilateral agreements. 2. The RCMs should each year perform an analysis on landings in foreign countries and conclude were bilateral agreements needed to be made. MS should set up agreements, fixing the details of sampling, compilation and submission of data in each case when it is indicated by the RCM that a bilateral agreement is needed. To include the agreed analysis in FishFrame would be very convenient and time saving. 3. MS should set up agreements, fixing the details of sampling, compilation and submission of data in each case it is concluded by the RCM that a bilateral agreement is needed.	All landings abroad in 2011 from Denmark are uploaded to RDB-FishFrame.

III.C.4 Actions to avoid shortfalls

In 2010-2011 a proper statistically sound sampling frame was developed and implemented in the observer program. This has reduced some of the problems mentioned in ICES WKACCU and WKPRECISE and latest WKPICS in 2012 as shortfalls to avoid. However, the new sampling program has in practice been more difficult to implement than expected mainly, due to the increased logistics problems that arise when vessels are randomly selected from a database (vessels with homeports on small islands, skippers that we do not normally have contact with ect.). However, some of the obvious pitfalls are avoided, such as only selecting a well-known part of the fleet, to have a clear procedure on how to follow up on refusal and to collect this information. Furthermore Denmark is now weighing the possibility of selecting a vessel, with the numbers of trips conducted by the vessel, thereby avoiding having an oversample of vessels not conducting the main part of the trips. The larges advances with the system are the increased number of vessels included in the sampling. The numbers of vessels have increased by 30% and as it has been shown in other studies that the main part of the uncertainties is between vessels, it makes good sense to increase the number of ships to be sampled. 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. However, with the new system we try to follow the fishery by calling the selected fisherman and if he is going on a trip, we are obliged to sample according to the DCF, we will conduct the trip although it is conducted in another area and with another metier. The improved Danish sampling program in place since 2011 has incorporated refusal rates from the random selected fishermen giving a much better overview of the bias in the sampling program in connection to the sampling population and the coverage of this.

North Sea (ICES areas IIIa, IV and VIId)

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

Deviation from sampling on shore and at sea

Beam trawl targeting crustaceans (TBB CRU 16-34 0 0), sub IV+VIId

87% (7 trips) of the planned Crangon fishery was covered. In this fishery the landed part of the catch is sampled on board and brought back to the institute for analysis on sex and maturity. For this reason the numbers of trips on shore is identically to the numbers of trips at sea. Effort in the metier has been decreased 10% between the reference year and 2012

Bottom otter trawl targeting demersal fish (OTB_DEF<16 0 0), sub IV+III+VIId

The sandeel fishery has always been covered very detailed in especially the North Sea were the main part of the fishery is conducted but also in IIIa, by Denmark as we are the main nation fishing on this species. Close to half of the samples are normally fishermen “self sampling” and therefore the level of samples can be very variable. A large effort has been put to optimise the sandeels sampling program and a minimum of 30 samples by month and sandell area is collected. Both self-sampling and control samples are used in the program. The self-sampling samples have a higher quality duo to the extra information on position and the samples are frozen right away but to assure the correctness of the samples the results are compared with the control samples. In 2012 80% (194 samples) of the applied level was conducted. The fishing effort decreased by more than 50% for this stock between the reference year and 2012. In IIIa the fishing effort decreased even more (by 60%) and the sampling

level were also only 30% (52 samples) of the applied level. This indicate that the stock is very well covered with the sampling level at the present effort

Bottom pair trawl targeting small pelagic (PTM_SPF_16-31_0_0), sub IV+VIId and IIIa

This metier has been oversampled in 2012 by 170% (103 samples) in IV and 127% (28 samples) in IIIa. The reason for this is a self-sampling program among fishermen started up in 2011 as the quality of the "fishermen samples" were much better (more precise information and the samples are freshly frozen). However, the sampling level is relatively difficult to know in advance. This new sampling system has improved the spatial sampling and is very cost effective. The samples from the control are still used as reference and to make sure that samples are always available.

Bottom pair trawl targeting small pelagic (OTB_SPF_32-69_0_0), sub IV+VIId

The pelagic human consumption fishery for pelagic species (herring (67%) and mackerel fishery (33%)) was in 2012 oversampled with 182% compared to the applied sampling level in the NP. This increased sampling level is partly caused by other MS (mainly Germany and Sweden) landings in Denmark, were Denmark is obliged to sample. However, the fishing effort has also increased by 70% in 2012 compared to the reference year.

Bottom otter trawl targeting crustaceans (OTB_MSD_>=120), sub IV+VIId

The at-sea sampling program oversampled with 125% (10 trips). The miter is also very well covered at the harbour sampling were 57 samples were conducted (4 were applied for in the NP). The reason for the large oversampling in the harbours is due to the sampling strategy where the sampling frame is not metiers based but species and sorting size groups.

Bottom otter trawl targeting crustaceans (OTB_MCD_70-99 0 0), sub IV+VIId

This metier is a limited fishery and has decreased even more with 25% compared to the reference year. Only 25% of the planned at sea monitoring was covered in this metier. The trip level from this metier is presently so low, that the random selection will only very seldom select the metier.

Bottom otter trawl targeting small pelagic (OTB_DEF_16-31_0_0) sub IV+VIId

The Norway-pout fishery in the North Sea was very small in 2012 due to lack of quota and therefore the sampling level was much lower compared to the applied sampling level. Number of trips decreased by more than 40% and the sampling level was 60% of the applied. Indicating that at this effort the sampling level was appropriate.

Bottom otter trawl targeting Crustaceans (OTB_CRU_35-69_0_0), sub IV and IIIa

This shrimp fishery in the North Sea was sampled at 25% compared to the planned level. However, the fishery in the Skagerrak where the main part of this fishery is conducted the fishery is adequate sampled. One reasons for this difference is that the fisherman rather late in his planning is deciding which of the two areas to target.

Bottom pair trawl targeting small pelagic (OTB_SPF_32-69_0_0), sub IIIaN

The fishing effort in Skagerrak has for all pelagic fisheries been at a very low level in 2012. For this metier the fishing effort has decreased by more than 85% between the reference year and 2012. The sampling level has for this reason also decreased by 85% as has the fishing effort (6 of the planned 40 samples were collected).

Bottom otter trawl targeting demersal fish (OTB_DEF<16 0 0), sub IIIa

The Danish sandeel fishery was in 2012 very limited in the reference year and effort has decreased by 55%. The sampling level was decreased by 70%. However, the stock is extremely well sampled with 52 samples in the very short fishing season (April-June).

Bottom otter trawl targeting crustaceans (OTB_MCD_90-119 0 0), sub IIIaN

The at sea sampling program was conducted with an oversampling of 36 trips compared to the applied level of trips 12 trips. At the same time only 36 of the planned 70 harbour trips were fulfilled in 2012. However, the applied level of 70 trips seems extraordinary high and compared to the same metier in Kattegat were the applied and achieved level of harbour samples were 40. This will be corrected in the updated national programme.

Set gillnet fisheries targeting demersal fish (GNS_DEF_120-219_0_0), sub IIIaN

The “at sea monitoring” was over sampled by 200%. This is mainly due to a very well functioning and cost effective self sampling program for gillnetters in IIIaN. The harbour samples were achieved at the applied level.

Set gillnet fisheries targeting demersal fish (GNS_DEF>120), sub IIIaN

The harbour samples from the gillnetters with large mesh since were only achieved at 25% of the applied level. This is due to the way the sampling frame is set up for harbour sampling were species and sorting groups are the PSU.

Bottom pair trawl targeting small pelagic (PTB_SPF_32-69_0_0), sub IIIaS

This métier has not been sampled at all in 2012. The reason for this is a very low effort in the area however, extra effort will be enfaced in 2013 to increase the sampling level in the area.

Anchored seine targeting demersal fish (SDN_DEF_90-119_0_0), sub IIIaS

This metier is very small in Kattegat and the change of a vessel is selected is rather low compared to the trawlers. The effort has in 2012 decreased by 85% compared to the reference year and only 30 trips are now conducted on an annual basis. In 2012 none of the applied trips were conducted at sea however this was partly compensated for by the increased effort in the harbours

Midwater otter trawl targeting small pelagic fish (OTM SPF 32-69 0 0), sub I and II

In last years updated NP the sampling level for this metier were changed from 8 planned samples to 25. This was probably an overestimation of the sampling level and 12 samples were archived. Also the effort has decrased by 25% between the reference years and 2012. This will be corrected in the updated NP. The metier is a herring and partly mackerel fishery.

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

Denmark has estimated CV's with the method described in Appendix 1.

Denmark in 2011 implemented a new design of the metier at sea sampling programmes on the basis of the outcome of the ICES workshops WKACCU, WKPRECISE and PGCCDBS. The work includes identification of proper sampling frames and probability based ways to select primary sampling units. The new design has also been used in 2012 and has improved the possibilities to evaluate possible bias and thereby also accuracy. Furthermore, refusal rates are now recorded for all sampled metiers.III.C.3 Follow-up of regional and international recommendations.

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

Source	Recommendation	Action
RCM NS&EA 2011 Recommendation	MS to fill update metier descriptions already compiled by RCM NS&EA 2010 and using the standard template complete descriptions for any new metiers identified. Updated and new files to be uploaded by Fishing Ground co-ordinators.	If relevant for Denmark, this will be done before the deadline.
RCM NS&EA 2011 Recommendations	The RCM NS&EA recommends that that all MS respond to the data call in 2012 from the chair of RCM NS&EA and load their data to FishFrame or make it available in the FishFrame format. This data call will include Commercial Landings(CL), Commercail Effort (CE) and Commerical Samples (CS) records for 2010 and 2011.	All data are uploaded to RDB-FishFrame.
RCM NS&EA 2011 Recommendations	RCM NS&EA recommends that each MS should send a representative to WKPICS to discuss data collection and the methods used to raise this data for assessment use and that WKPICS adds this to its ToR.	One Danish participant was sent to this WK.
RCM NS&EA (2010)	The RCM NS & EA considers that in a situation where sampling resources are limited, priority should be given to the sampling of discards in those metiers with high discarding. The information required is an estimate of the level of discarding (volume and percentage) and the main species contributing to the discard fraction of the catch. MS to prepare information on level of discarding in national metiers collected in recent years to be presented at a dedicated workshop to be defined.	Denmark participated in the ICES PG for discards (SGPIDS) and will deliver data and information on request.
RCM NS&EA (2010)	The RCM NS & EA recommends that OTB_DEF_>=120_0_0 and TBB_DEF_70-99_0_0 are used as case studies for North Sea region in the ICES WKEID. The RCM NS & EA further	Denmark submitted the requested data to WKEID.

	recommends MS to submit data to ICES WKEID	
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.	Denmark provided the requested information to the 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 has followed the guide lines.
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 conventions of fishing ground and métiers as well as the deadline for submission of the data.	Denmark has followed the guide lines.
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 has produced the requested information and provided this to the RCM.
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	Denmark has done as requested.

III.C.4 Actions to avoid shortfalls

In 2010-2011 a proper statistically sound sampling frame was developed and implemented in the observer program. This has reduced some of the problems mentioned in ICES WKACCU and WKPRECISE and latest WKPICS in 2012 as shortfalls to avoid. However, the new sampling program has in practice been more difficult

to implement than expected mainly, due to the increased logistics problems that arise when vessels are randomly selected from a database (vessels with homeports on small islands, skippers that we do not normally have contact with ect.). However, some of the obvious pitfalls are avoided, such as only selecting a well-known part of the fleet, to have a clear procedure on how to follow up on refusal and to collect this information. Furthermore Denmark is now weighting the possibility of selecting a vessel, with the numbers of trips conducted by the vessel, thereby avoiding having an oversample of vessels not conducting the main part of the trips. The larges advances with the system (besides the unbiased results) are the increased number of vessels included in the sampling. The numbers of vessels have increased by 30% and as it has been shown that the main part of the uncertainties is between vessels it makes good sense to increase the number of ships to be sampled. 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. However, with the new system we try to follow the fishery by calling the selected fisherman and if he is going on a trip, we are obliged to sample according to the DCF, we will conduct the trip although it is conducted in another area and with another metier The improved Danish sampling program since 2011 has incorporated refusal rates from the random selected fishermen giving a much better overview of the bias in the sampling program in connection to the sampling population and the coverage of this.

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

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

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

The metier has earlier been targeting blue whiting fishery and has not been conducted in 2010 and 2011. However, a new Danish fishery on Boarfish started in 2009 and this fishery has since then been sampled for providing data for carrying out stock assessment analyses on this species. Therefore this metier is oversampled by 163% (49 samples instead of the applied 30).

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

See Baltic section

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

Source	Recommendation	Action
RCM NA 2012 Recommendation	RCM NA 2012 recommends that the metier descriptions for fishing grounds under the remit of the RCM be updated by each MS in as much detail as possible. These descriptions to be used as a tool, in conjunction with outputs from the RDB, to identify metiers that could be combined for regionally coordinated sampling plans.	Denmark will provide a description of the Danish fisheries in the NA region before the RCM meeting in 2013.
RCM NA 2012	RCM NA recommends MS put in place bilateral agreements	Denmark has and will

Recommendation	for sampling of landings abroad where applicable.	continue signing agreements with other MS.
RCM NA 2012 Recommendation (RCMNA 5)	RCM NA recommends MS involved and that have obligations in the Boar fish fishery to set up a pilot program for sampling.	Denmark has had a sampling scheme for boarfish for the last three years.
RCM NA 2011 Recommendation	MS should make sure that their landings abroad are included in their FishFrame upload allowing the RCM to analyse the possible needs for bilateral agreements. The RCMs should perform an annual analysis on landings in foreign countries and conclude where bilateral agreements need to be made. MS should set up agreements, fixing the details of sampling, compilation and submission of data in each case when it is indicated by the RCM that a bilateral agreement is needed. Standard output algorithms to enable analysis of compiled data should be included in FishFrame. MS should set up agreements, fixing the details of sampling, compilation and submission of data in each case it is concluded by the RCM that a bilateral agreement is needed.	All landings abroad in 2011 from Denmark are uploaded to RDB-FishFrame.

No other RCM NA or LM recommendations related to this region are relevant to Denmark.

III.C.4 Actions to avoid shortfalls

See under Baltic Sea

III.D Biological - Recreational fisheries

In order to estimate 2012 cod, eel and sea trout harvest (fish caught and kept) in the Danish angling and passive gear fishing, interview survey has since 2009 been conducted by DTU Aqua in cooperation with Statistic Denmark. To estimate 2012 data two interview surveys were conducted in July 2012 and January 2013.

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.

In 2012 two surveys was conducted resulting in a recall period on 6 months. None of the surveys included catches of Baltic salmon, since it was judged to be a fishery not suited for the sampling approach used in present

survey. This is simply because the fraction of anglers practicing this fishery is believed to be very low. The surveys covering the 2012 catches did also include the catches of sea running trout.

The interview survey presented in this report was separated into two different phases with their own questionnaires and group of respondents: 1) The Omnibus and 2) License holders. The omnibus was only conducted once in 2009 and 2010 as the results from this interview are not likely to change much since 2009 the surveys have been conducted. The license list survey was conducted twice covering the period from January to June and July to December.

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 an early license and you are not allowed to fish before the age of 12. The license is personal and non-transferable.

For further information under Baltic Sea and latter this year a report will be published ("Eel and cod catches in Danish recreational fishing, Survey design and 2012 catches"), however due to shortage of man power in this felt it has not been possible to finalise the report presently.

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, trout, eel and cod are to be reported and for the North Sea only cod, trout and eel. The recreational fishery in the North Sea is very limited and can be regarded as almost none existing. Denmark has provided a report with the landings estimated for 2011 that has been delivered to the relevant ICES working groups (WGBFAS, WGNSSK and WGBAST) for them to include in the assessments. However, as the survey has only been conducted for 3 years it has not been possible for the WG to use the data directly in assessment. It has however been suggested to include the cod data in the WGBFAS in the benchmark in 2016, when a longer time series has been compiled.

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.

Salmon in the Baltic

The Danish recreational fishery for salmon is increasing in popularity, as catches have been increasing in 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 carried out

by trolling from small boats and vessels. Some small harbours on the north of the island have specialized 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 traditional fishery carried out by non-professionals setting 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.

Trolling: The official number of salmon caught by the sport fishery (trolling boats) is 1225 in 2011. This information is based on data collected from 2 larger trolling fishing competitions in the spring period. A 3.rd competition covering the rest of the fishing season was not running in 2011. A large part of the total catches taken by the Danish trolling fishermen are registered in these 3 competitions, and our guestimate of the total catches (including non-reported catches made by tourist at Bornholm) is 1500 Salmon.

Long-lining made by non-professionals: From the coast guard, from the trolling boats, and from other sources we know that this fishery takes place, but the catches are quite uncertain as no catches are reported at all. It is known that a few smaller boats are fishing from time to time. Some of these boats are drifting together with the lines, and others leave the lines with buoys for 24 hours. Our guestimate is that the total catches in this fishery are between 1000 and 2000 salmon per year.

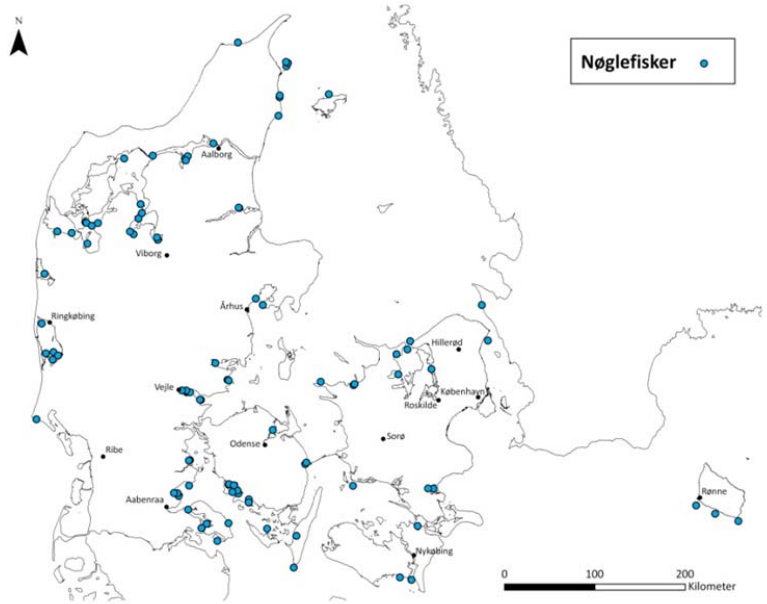


Fig.1. Maps showing distribution of fishermen during 2012. A total of 91 fishermen participated, 76 with gillenet and 68 with trap-net.

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

The result has not been included in this report as the data will be worked up during the next couples of month. However all data have been for 2012 has been collected at present time.

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

Source	Recommendation	Action
RCM Baltic 2012 recommendation	As the catches taken in the recreational fishery compared to the total catches for some stocks are very limited the RCM Baltic recommends that if the level of the recreational fishery by nations is below 10% of the total catch for that stock, a recreational survey on this stock can be conducted every 5 years instead of on an annually basis.	Denmark has continued the collection of data as the current regulations and end-user needs at the time of the 2013 meetings should be taken into account.
RCM Baltic 2011	MS is requested to submit the recreational fishery available data (total removals, any biological data) to the next meeting of WGBFAS, WGBAST and WGEEL in 2012. ICES WGBFAS, WGBAST and WGEEL are asked to consider the usefulness of inclusion the recreational fishery data into the stock assessment. IF it is useful for certain stock WG should provide the list of necessary data needed from recreational fishery in the Baltic.	The Danish report on recreational fisheries including catch figures was made availbale to the WGBFAS and the WGEEL.
RCM Baltic 2010	1. Investigate the potential to coordinate recreational fisheries cod catches in SD 22-24 between Denmark, Germany and Sweden. 2. Discuss the possibility to include recreational fisheries data into FishFrame. 3. Compile 1-page status report of on-going recreational fisheries surveys. 4. Provide guidance how often recreational fisheries surveys need to be conducted. 5. RCM Baltic endorses to use annual weight estimates.	Denmark has participated in a meeting between Denmark, Sweden and Germany where the issues were discussed.

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. Denmark is having a limited sampling programme on eels from inland fisheries.

III.D.4 Actions to avoid shortfalls

Since 2009 Denmark has initiated a survey and sampling on the recreational fishery and it is planned that this survey will continue twice a year in the future. In 2010 the survey was expanded to sea trout. 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 landings and discards is undertaken. For pelagic stocks simple random sampling is undertaken in land. Here a non sorted sample is taken by the control sent to DTU-Aqua and analysed at the institute. This sampling strategy is the case for sprat, sandell, herring, boarfish, and Norway pout. For sand-ell the sampling is supplemented by a self-sampling program sampling haul by haul For all species landed by sorting groups another strategy is applied; a fixed number of individuals are sampled randomly within market size category (if sorted) /unit (unit =area, quarter and gear). All individuals in a sample are analyzed according to length, weight and age. 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 by species and a fixed number per length class was sampled for age and weight. For stocks sampled on surveys and onboard fishing vessels, the length can be given an age by using an Age-Length-Key. Maturity data is only estimated on scientific surveys to achieve a higher expertise

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.

The Baltic Sea (ICES areas IIIb-d)

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

All stocks sampled during 2012 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. In table III.E.3 in the NP most consume species have listed survey and harbour sampling as data sources however for most of the consume species sea sampling should also have been listed as data source. ICES has in 2012

increased the focus on flatfish species in the Baltic and for this reason 2 more species have been sampled although not applied for in the NP (dab and flounders).

Deviation from NP proposal

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

Cod in sub. 22-24 and 25-32

Cod has been slightly oversampled for all parameters but is very close to the applied values (between 100-110%).

Sole in sub. 22-24

In 2012 sole were under sampled at 22% for sex and maturity. This is due to the termination of the sole survey conducted in Kattegat and western Baltic in 2012. As the survey was the main contributor to the maturity information.

Herring in sub. 22-32

Herring was over sampled between 105-190 %. Last year there were an under sampling and therefore there has been put an extra effort into reaching the applied level in 2012.

Sprat in sub. 22-32

Sprat was sampled very close to the applied level with 98% of the weights and age and a little bit lesser for the sex and maturity. Again all sex and maturity data are from surveys.

Dab in sub. 22-24

728 or 121% of the dab samples length and weight applied for were sampled in 2012. 70% of the maturity@age and sex@age were sampled, as these are exclusively sampled at surveys the numbers available cannot in advance bee foreseen.

Flounder in sub. 22-24

2008 flounders have been length, weighted and aged in 2012 and 2000 were applied for – and for sex and maturity 805 and 932 were sampled, a little bit more than the 500 applied for. However, ICES will conduct an benchmark assessment in 2014 for this species and therefore an extra effort has been put into sampling. Samples on sex and maturity are conducted at surveys and the guidelines from WGBIFS are followed.

Plaice in sub 22-32

The sampling level for plaice were between 120-276% for age and maturity respectively. As for the flounders The oversampling is partly due to the benchmark in 2014 for the flatfishes in the Baltic. Samples on sex and maturity are conducted at surveys and the guidelines from WGBIFS are followed.

Turbot and brill 22-32

Turbot and brill have by a mistake not been applied for in the NP in 2012. This will be corrected in the updated national program in 2013. For turbot 330 length, weight and age samples have been conducted and 179 sex and maturity samples. 123 brill were aged, length and weight measured and 38 were sexed and maturity measured.

Salmon in sub. 22-31

Salmon was sampled at 312% of the level applied in the NP. The increased sampling level is caused by an increased effort in sampling the long liner fishery in the Baltic.

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

All precision estimates have to be achieved at a regional, but there is still missing some coordination work between countries, so all the CV's represented in table III.E.3 are estimated at a national level.

Denmark has used the method described in Appendix 1 to calculate the CV's for age and weight for the species in table III.E.3. CV's for maturity and Sex have not been calculated, since the data only are used at a regional level and therefore it makes no sense to calculate the CV's at a national level.

The CV's for age and weight are based solely on data from harbour samplings. The precisions obtained for age and weight are considerable high than in previous years, since previous all data obtained for a species regarding data source and sampling strategy were used to calculate the CV.

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

Source	Recommendation	Action
RCM Baltic 2010	In order to be able to analyse the current sampling level of cod in the Baltic and suggest optimal sampling levels for future regional coordinated sampling, the data must be available in a agreed format and checked for errors. Data has to be uploaded to FishFrame.	Data has been uploaded and the results will be presented at the RCM 2012
RCM Baltic 2011	For institutes collecting small volumes of age samples for certain species and when new species are to be sampled, task sharing of age reading is necessary in order to optimise the use of age reading expertise. The RCM Baltic recommends the following MS to investigate their capability to read relevant age samples of interested MS: (1) Germany: plaice (2) Denmark: plaice, dab and sole (3) Poland: flounder and turbot (4) Sweden: eel and salmon (5) Finland: salmon The suggested coordination should be discussed, agreed and decided by the National Correspondents so the first agreements could be	MS have not yet given any feed back to the chair of the RCM.

	established before December 2011.	

III.E.4 Actions to avoid shortfalls

Compared to last year nearly all under sampled stocks are now sampled at the correct at a higher level. It is still challenging to archive the correct level for sex and maturity. This is partly due to the fact that maturity is only measured at surveys (and often only in the 1st quarter survey) and it can be hard to plan exactly how many fish are caught in the survey.

Denmark has according to the guidelines outlined in the WGPICS1-3, SGPIDS1-3 and PGCCDBS developed and improved our sampling strategy in the national programs to be a random statistical sound sampling. This indicate that all vessels selected for commercial sampling are selected in a random way and that the responses are registered. For our harbour sampling program the statistically random sampling program have first been developed recently. As have been highlighted in the comments, the Danish sole survey (not funded by the DCF) were terminated in 2011. As the landings of this stock is very low (between 740 and 750 t) it can been very difficult to haunt the few species landed. However, to improve the sampling of sole, it has been decided to change the sampling procedure for this stock not to be sampled in the harbour anymore but to buy the sole from the observer trips (every trip) to be able to increase the numbers of sole sampled (and still keep the statistical random sampling scheme). The disadvantages with such a system is off course you do not sample the fleets were no observer trips are conducted. However it was considered to be the only solution when a very low number of fish is landed.

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 2012 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:

Sandeel in sub. IV and IIIa

Sandell weight, age and length have been sampled at 74% and 20% in the North Sea and IIIa, respectively. Although the level is below the applied level, the numbers of aged sand ell is still 7571 individuals. The sand ell fishery is changing a lot between years and in 2012 the fishery where at a lower level indicating that fewer samples were collected. Maturity and sex at age has been oversampled by 243% in the North Sea and 153% in IIA. This data are available from the November sandeel survey in the North Sea.

Herring in sub. IIIa, IV-VIId and I-II

Herring was for all parameters sampled were close to the applied level .

Cod in IIIaN, IIIaS, IV- VIId.

Cod has been sampled slightly above the applied level for weight@age, length@age and sex@age in IV-VIID with 105% to 110%, respectively. In IIIaN and S were slightly under sampled at 88% and 75% respectively of the applied level was achieved, however this is still 3552 and 1879 specimen. However for sex@age and maturity@age there was an under sampling in the IIIaS and IIIaN as the Danish cod survey has been terminated in 2012 and this has resulted in an under sampling for sex and maturity. This area is however covered by the Swedish IBTS.

Anglerfish in sub. IV- VIId.

227% of the applied sample level for weight@age or length@age were collected, it is however still at a relatively low level 227 individuals. Maturity and sex data is only collected in the 1 quarter survey (IBTS) in the North Sea and is therefore very depended on the amount of fish caught in the survey.

Whiting in sub. IV- VIId and IIIa.

Sampling was slightly oversampled for all parameters.

Haddock IV and IIIa

Haddock was sampled in both IV and IIIa and not only in IV as stated in the NP. Length@age and weight@age have been sampled at 94% (or 1416specimen) in IV and 953 specimens were collected in IIIa. Only in IV sex and maturity were conducted as this is the area with the Danish part of the IBTS survey. Maturity and sex have been sampled at the IBTS in IV (542 specimens).

Plaice in IIIa and IV

For both areas the sampling for all parameters (except age in the North sea sampled at 81% - 4071 individuals) has been a oversampling compared to the applied in the NP 2012. The plaice samples have had a high priority in 2012 as a benchmark on the plaice stock SD 21-23 is to be conducted by ICES in 2013 and a detailed level of data was needed.

Turbot in IIIa and IV

Sampling of turbot was only applied for in IV and not in IIIa in the NP – this is incorrect and the species has been sampled for all parameters in both areas.

Brill in IIIa

Sampling of brill was not applied for in IIIa in the NP – this is incorrect and the species has been sampled for all parameters in the area.

Sole in IIIa and IV

Sampling of sole was only applied for in IIIa iand not in IV n the NP – this is incorrect and the species has been sampled for all parameters in both areas. There has been a higher sampling intensity in IIIa than in IV. However the earlier high level of sampling has not been reached as both quota and the survey has been downscaled in 2012.

Saithe in IV, IIIa, VI

Length@age and weight@age data were sampled at 155% of the applied, very little sex or maturity data were obtained as this is only conducted on the IBTS 1 quarter and few saithe (35 individuals) were caught.

Hake in IIIa, IV, VI and VIIab

The achievement of collected maturity data was 96%. Length, age and weight were collected from 86% (856) of the planned samples.

Mackerel in North Sea

In 2012 Denmark managed to sample 183 % (2753 individuals) of the applied sampling level for weight, length and age. For maturity and sex-ratio and extra effort was enforced in 2012 (as the level last year was very low) and this increase sampling level and the mackerel is oversampled compared to the applied level for all parameters in 2012.

Sprat in IV and IIIa

Sprat was sampled at 55% of the applied level in sub IIIa and 178% in sub IV. The lower level in IIIa is due to the decrease in catches in the pelagic fishery in this area in 2012. IV for weght@age and length@age. Maturity and sex@age was slightly oversampled for both areas.

Witch flounder and lemon sole in IV

Both species were sampled some above the applied level in the NP 2012. For both weight@age, length@age and maturity, however the applied level was not very high.

Ling IIIaN and IV

Ling is a new species to be sampled by Demark and is only sampled in very small quantities in 2012, however close to the applied level (94%) . No ling was caught in the survey and therefore no maturity or sex at age data has been sampled.

Deep water shrimp IV, IIIa

Shrimps are caught in Skagerrak and sometimes in the border to the North Sea. The species were sampled for sex, length and weight (however not for maturity or age) and was oversampled for these parameters around 150%. For one of the parameters it was stated the applied sampling level should be 400, the correct value is 4000 this will be corrected in the updated version of the NP.

Nephrops in IIIa and IV

Length, weight, maturity and sex are sampled in very large numbers for this species. Samples are mainly deriving from the Nephrops survey and from discard trips.

Brown shrimp in IV

Cragon was oversampled with 115 and 153%, corresponding to 1151 to 4581 individuals.

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

A coordination scheme has been set up at 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.

All precision estimates have to be achieved at a regional, but there is still missing some coordination work between countries, so all the CV's represented in table III.E.3 are estimated at a national level.

Denmark has used the method described in Appendix 1 to calculate the CV's for age and weight for the species in table III.E.3. CV's for maturity and Sex have not been calculated, since the data only are used at a regional level and therefore it makes no sense to calculate the CV's at a national level.

The CV's for age and weight are based solely on data from harbour samplings. The precisions obtained for age and weight are considerable high than in previous years, since previous all data obtained for a species regarding data source and sampling strategy were used to calculate the CV.

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

Source	Message	Action
RCM NS&EA 2011 Recommendation	The RCM NS&EA recommends that the task sharing species are investigating by MS participating in current age reading programs and decide whether task sharing is desirable or possible for the future.	Denmark supports the idea of task sharing, but until now formal agreement is only made for turbot and brill.
RCM NS&EA 2010 Recommendation	The RCM NS&EA recommends that relevant countries investigate the distribution of their landings from the named stocks in Table 12 in relation to the overall distribution across the stock area. Where they have no sampling plans for catches, they should consider if their component of the stock is adequately sampled, spatially and temporally by other MS.	Denmark has investigated the landings for the stocks and reported back to RCM NS&EA 2011.

III.E.4 Actions to avoid shortfalls

See section III.E.4. Baltic

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

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

Only 109 tonnes of bluewhiting have been landed from fisheries in this area by Denmark. It should also be mentioned very few fishing trip in that area have been made.

Deviation from proposal

Denmark has 15% of the EU quota of bluewhiting in the North Atlantic. As the TAC was very low in 2011 no directed fishery for bluewhiting was rarried out. Landings are made by very few vessels only few fishing trips are made it can be logistic very hard to sample these few trips. However, Denmark will make an effort to collect these few samples.

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

Boar fish; Denmark has initiated a fishery on a new species the Boarfish in the North Atlantic. This species has been sampled very intensely since 2010 although not applied for in the NP. However, as the species is new DTU Aqua estimated that it would be of great value to get increased knowledge.

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

All precision estimates have to be achieved at a regional, but there is still missing some coordination work between countries, so all the CV's represented in table III.E.3 are estimated at a national level.

Denmark has used the method described in Appendix 1 to calculate the CV's for age and weight for the species in table III.E.3. CV's for maturity and Sex have not been calculated, since the data only are used at a regional level and therefore it makes no sense to calculate the CV's at a national level.

The CV's for age and weight are based solely on data from harbour samplings. The precisions obtained for age and weight are considerable high than in previous years, since previous all data obtained for a species regarding data source and sampling strategy were used to calculate the CV.

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

None of the recommendations are relevant to Denmark, as Denmark has only had a fishery for boar fish and blue whiting.

III.E.4 Actions to avoid shortfalls

DTU Aqua has discussed the shortfall of sampling blue whiting with the Danish AgriFish Agency and more focus on sampling blue whiting landings will be made.

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
As the information in the Vessels Register is registered according to Regulation (EC) N^{o} 2930/1986, N^{o} 2090/1998 and N^{o} 26/2004 and is updated daily data on fishing capacity is assumed to be correct

Therefore, no deviations exist in relation to what was stated in the national programme.

III.F.1.3 Actions to avoid shortfalls
No action is needed.

III.F.2 Effort

III.F.2.1 Achievements: results and deviation from NP proposal
If a vessel less than 10 m (or less than 8 m in the Baltic) is having at least one sales note at a calendar day, a fishing day is assumed and counted as one fishing day.

According to the Danish NP the following derogations have been asked:

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

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

As the Danish NP has been approved the above derogation has been granted.

Therefore, no deviations in relation to what was stated in the national programme exist.

III.F.2.2 Data quality: results and deviation from NP proposal
All logbook data is recorded in accordance with the provisions in the Control Regulation (Commission Regulation (EC) N^{o} 404/2011). Even though effort from the national authorities is put into the improvement of

the fishers logbook recordings errors might occur. The obligation to use e-logbook for all vessels above 12 meter in length will most likely improve the quality of the data. Still improvements can be made, but this needs a revision of the Control Regulation (Commission Regulation (EC) N^{o} 404/2011).

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.2.4 Actions to avoid shortfalls
According to the Danish NP no shortfalls have occurred.

III.F.3 Landings

III.F.3.1 Achievements: results and deviation from NP proposal
In Denmark first hand fish buyer has to report to the authorities the amount of fish in kilo and value, the size grade, the quality, the area of origin, from whom the fish is bought from as well as other information. The volume of fish landed in Denmark has always been recorded using sales slips as sales slips information is 100% accurate. Logbook data is only used to determine which métier and statistical rectangle the amount in weight and value according to the individual sales slip should be related to. There have been no deviations in relation to what was stated in the national programme.

III.F.3.2 Data quality: results and deviation from NP proposal
All fish landed in Denmark is recorded, therefore census data. No deviations in relation to what was stated in the national programme exist.

III.F.3.3 Follow-up of regional and international recommendations
No related recommendations have been made about the collection of landings data.

III.F3.4 Actions to avoid shortfalls
As no shortfalls have happened no actions have to be made.

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, transect length with acoustic data integration (Echo NM) etc.

The biological data from surveys are stored in the national biological database “Babelfisk”. The acoustic data are stored in a national acoustic database. MIK data are stored in a national MIK database. CTD and other hydrographic information are stored in a national CTD database for later submission to ICES.

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 dissolved oxygen content

Achievements in 2012:

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 (Number of stations not fished due to bottom oxygen < 1.5 ml/l given in brackets).

Survey	Vessel	Planned days at sea	Achieved days at sea	Planned fish hauls	Achieved fish hauls
BITS 1st quarter	Dana	18	17	55	54
BITS 1st quarter (KASU I)	Havfisken	20	18	49	49
BITS 4th quarter	Dana	18	16	50	32 (18)
BITS 4th quarter (KASU II)	Havfisken	20	19	49	49

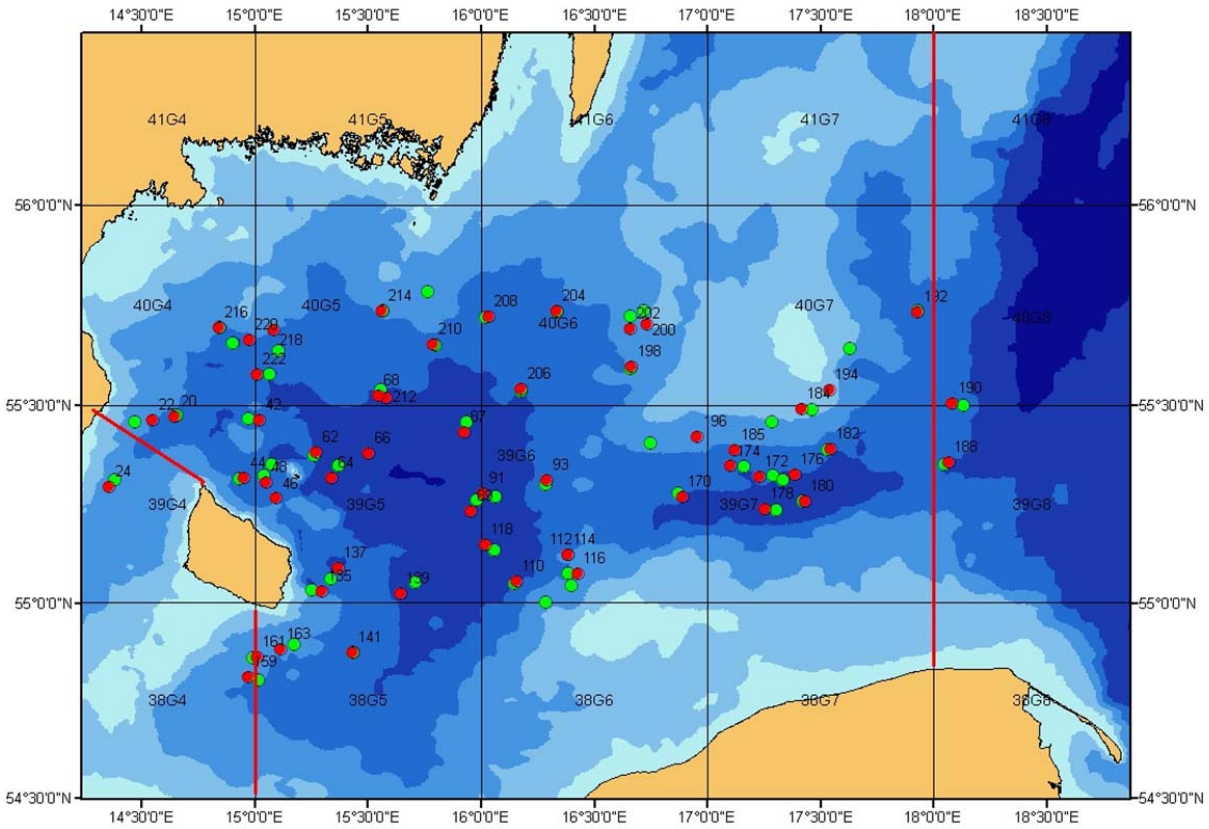


Figure III.G.1 Map showing BITS 1st quarter 2012 RV Dana trawl and CTD positions (red dots: conducted, green dots: planned).

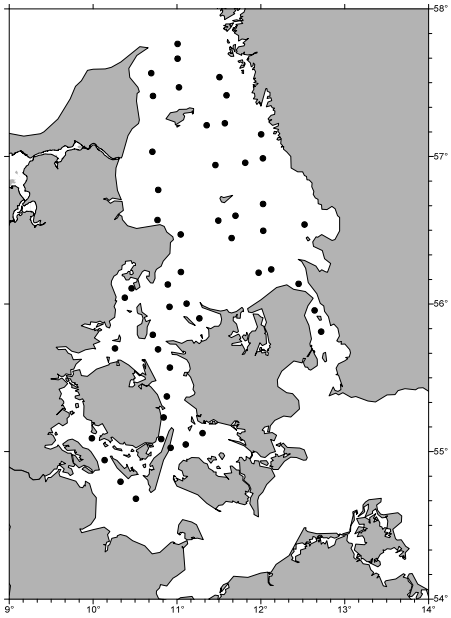


Figure III.G.2 Map showing BITS 1st quarter 2012 RV Havfisken sampling positions (Bottom trawl and CTD).

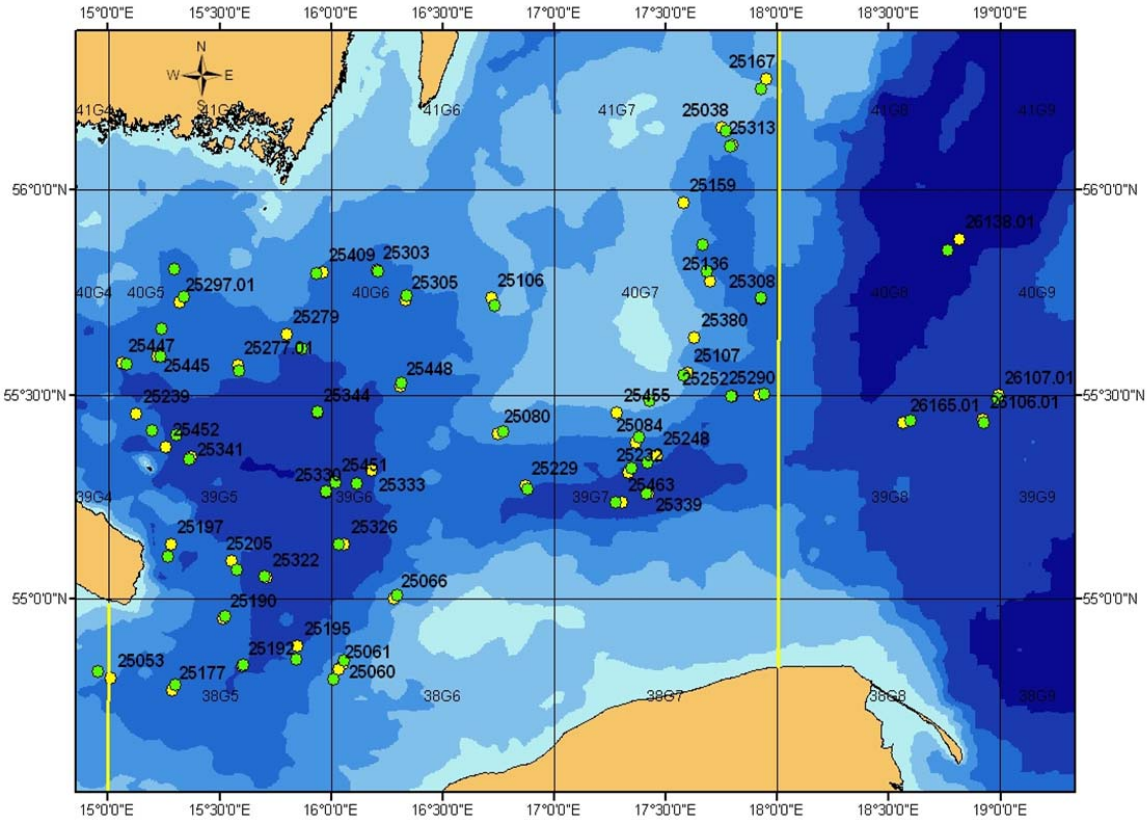


Figure III.G.3 Map showing BITS 4th quarter 2011 RV Dana trawl and CTD positions (green dots: conducted, yellow dots: planned).

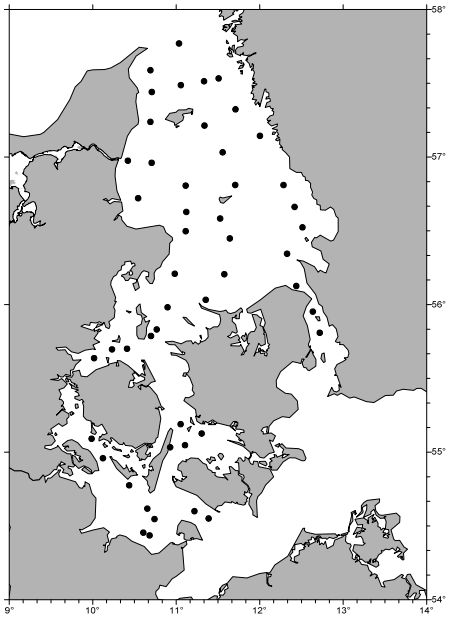


Figure III.G.4 Map showing BITS 4th quarter 2012 RV Havfisken sampling positions (Bottom trawl and CTD).

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 the area allocated to Denmark by the coordinator as planned in the 1st and 3rd quarter 2012 (Figs. III.G.5 and III.G.6).

Achievements in 2012 (number of days at sea and number of valid stations):

Survey	Vessel	Planned days at sea	Achieved days at sea	Planned fish hauls	Achieved fish hauls
IBTS 1st quarter	Dana	18	17	40	39
IBTS 3rd quarter	Dana	18	16	50	49

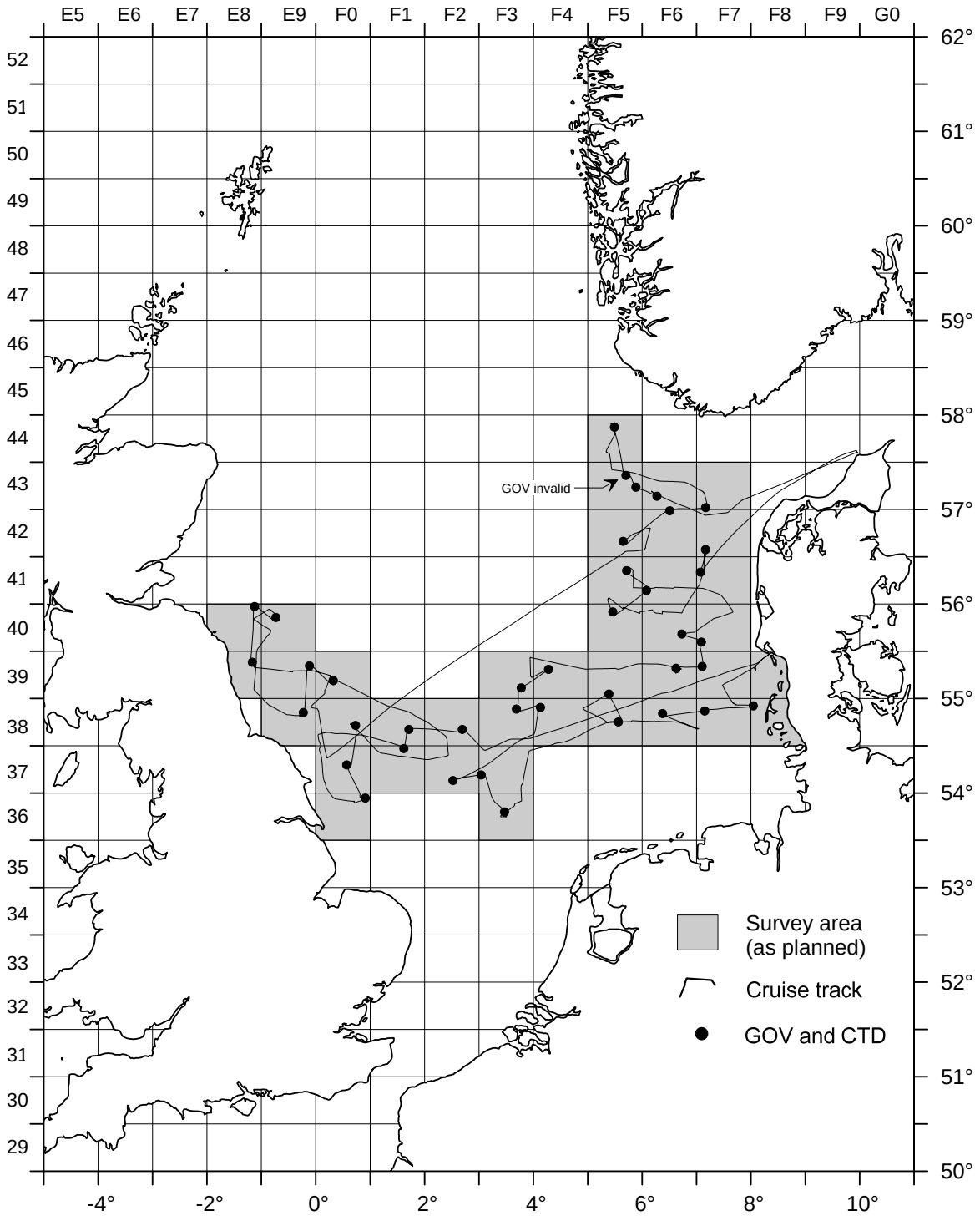


Figure III.G.5 Map showing IBTS 1st quarter 2012 RV Dana survey area, cruise track GOV haul and CTD positions.

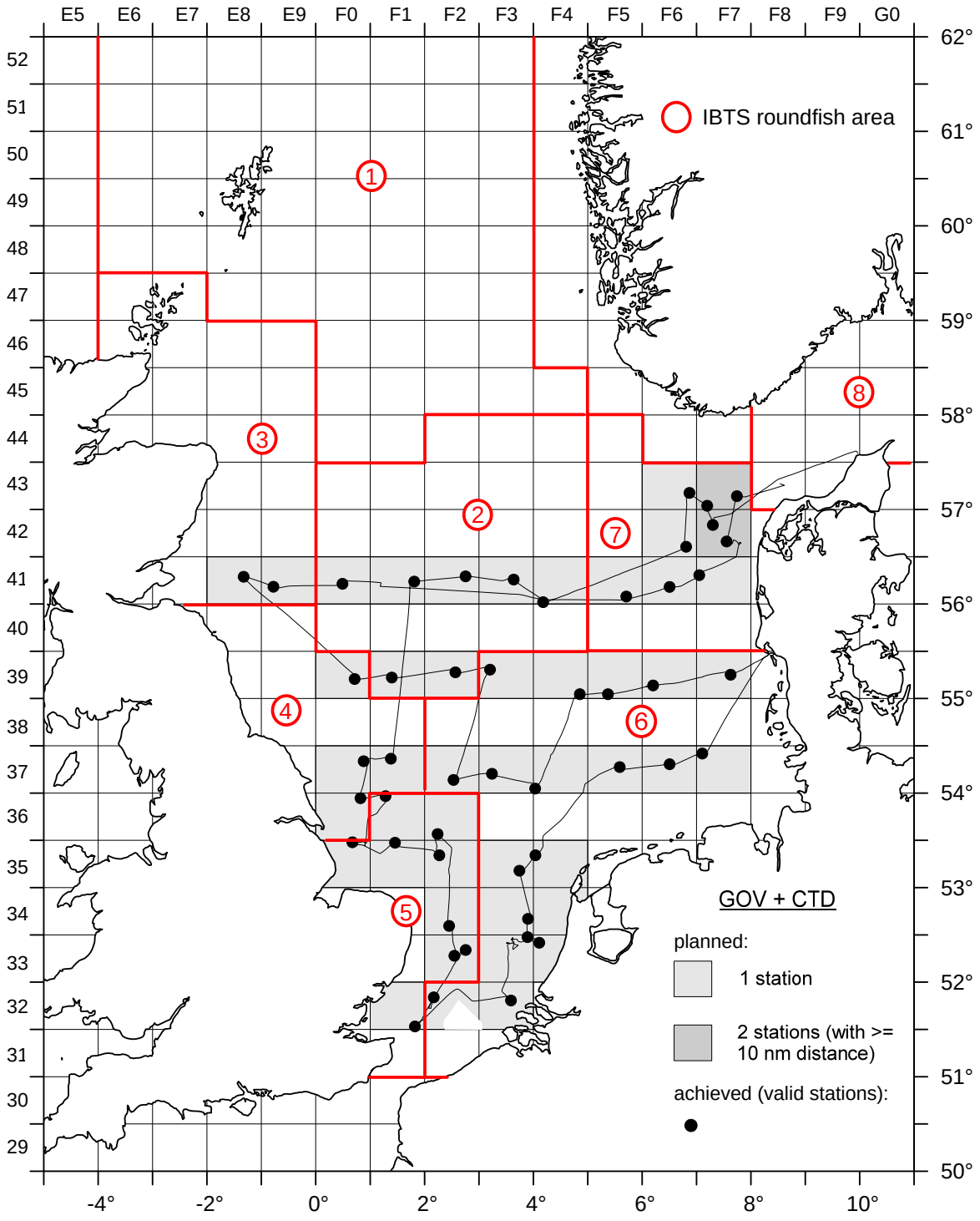


Figure III.G.6 Map showing IBTS 3rd quarter 2012 RV Dana survey area, cruise track, GOV haul and CTD positions.

International Ecosystem Survey in the Nordic Seas (ASH)

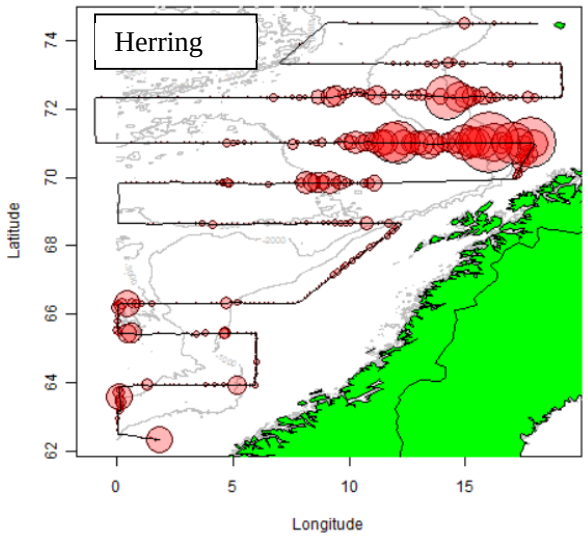
This survey is carried out in order to investigate distribution and migrations of the Atlanto-Scandian herring, blue whiting and other pelagic fish and to produce a biomass index for herring and a recruitment index for blue whiting for the Working Group on Widely Distributed stocks (WGWIDE). Furthermore, hydrographic conditions and plankton abundance in the Norwegian Sea and adjacent waters are monitored in order to investigate distribution and migration of herring and other pelagic fishes are influenced by environmental conditions.
The survey was coordinated with Norway as an international survey with participation of Norway, Iceland, Faroe Islands and EU, where the Danish R/V Dana conducted the EU survey part. The survey is coordinated by the ICES Working Group on North East Atlantic Pelagic Ecosystem Surveys, WGNAPES. The survey is carried out as a joint EU survey with participation of UK, Ireland, Netherlands, Germany, Sweden and Denmark.

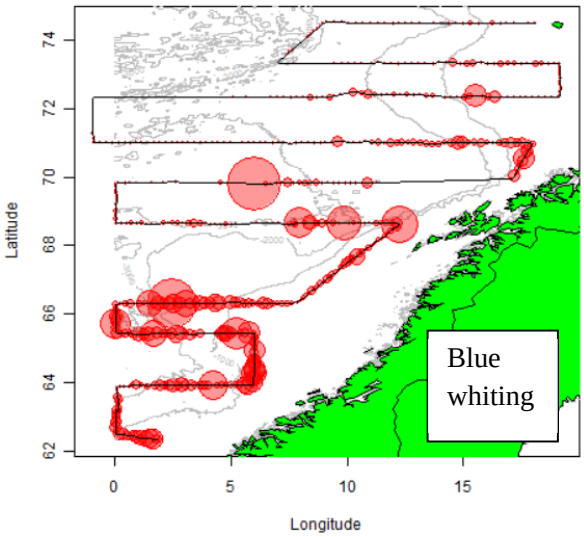
Types of data collected:

- 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 2012:

- 30 days at sea (as planned)
- 10 pelagic trawl hauls (No trawl hauls during 2nd leg due to winch failure)
- 35 CTD stations
- 35 WP2 stations
- 3317 Nm acoustic integration


Herring
Latitude
Longitude


Blue whiting
Latitude
Longitude

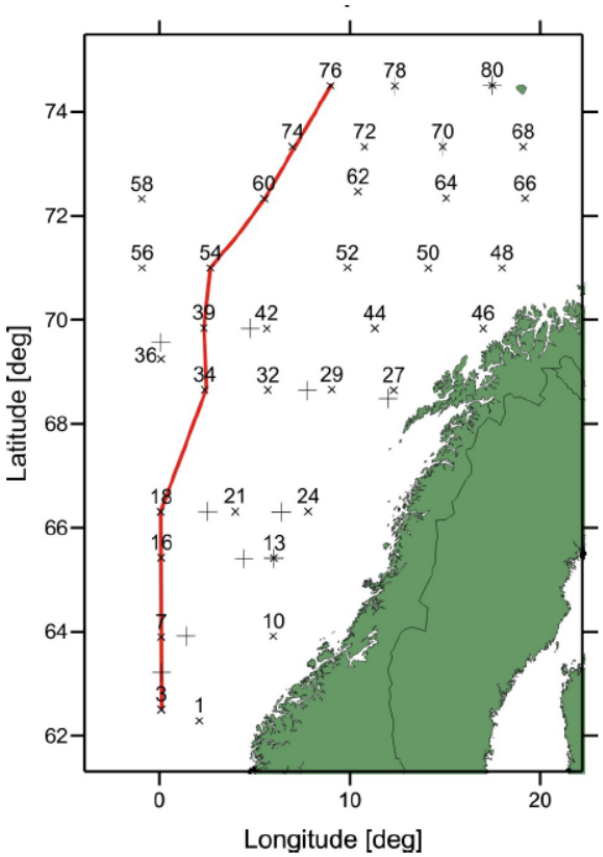

Latitude [deg]
Longitude [deg]

Figure III.G.7 Maps showing the RV Dana ASH 2012 survey track (with herring and blue whiting densities) and sampling locations for trawling, CTD and WP2 (redline: CTD transect for characterization of vertical structure, stars: CTD and WP2, crosses: pelagic trawl).

International herring larvae survey (IHLS)

The sampling for the International herring larvae survey was done during the 1st quarter IBTS and 78 out of 80 planned MIK (2 m ringnet) stations were covered in 2012 (Fig. III.G.8).

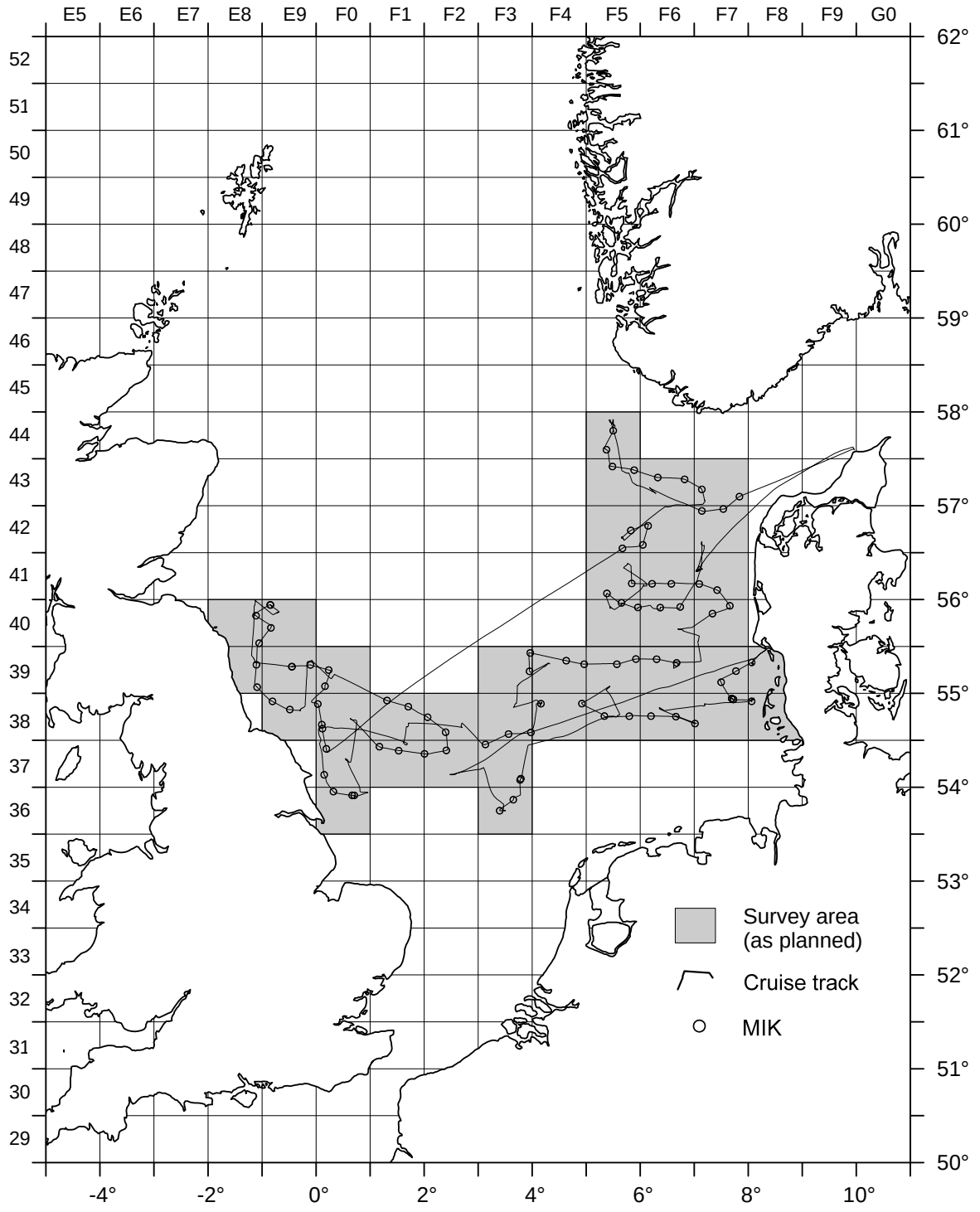


Figure III.G.8 Map showing IBTS first quarter 2012 RV Dana survey area, cruise track and MIK haul positions.

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 Working Group for International Pelagic Surveys, WGIPS.

Types of data collected:

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

Achievements in 2012:

- 14 days at sea (as planned)
- 37 trawl hauls
- 39 CTD stations
- 20 WP2 stations
- 1972 Nm acoustic integration

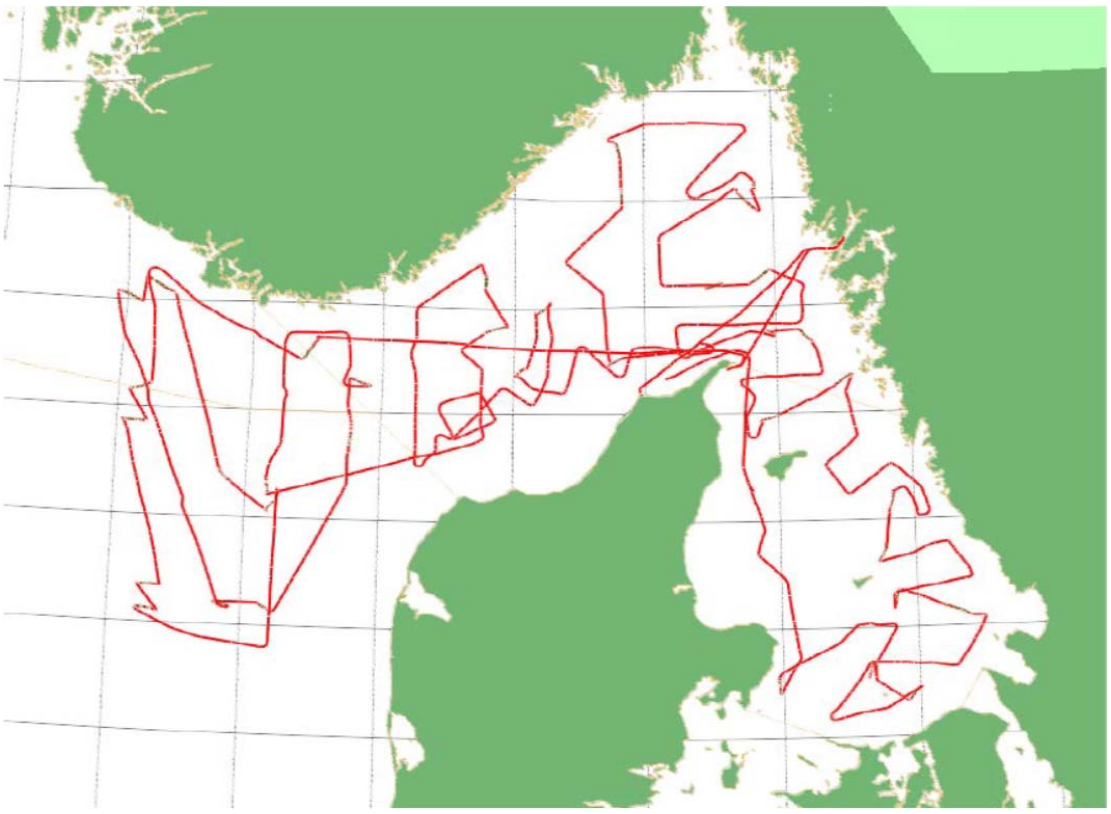


Figure III.G.9 Map showing the RV Dana NHAS 2012 survey track and trawl locations.

Baltic International Acoustic Survey (BIAS)

Denmark has participated with one scientific staff member on the German R/V Solea in 2012.

Blue Whiting Survey in area VI and VII

Denmark has participated with one scientific staff member on the Dutch R/V Tridens and the Irish R/V Celtic Explorer in 2012.

Nephrops UWTV survey in functional unit 3 and 4

The purpose of the survey is to estimate the abundance of *Nephrops* in Skagerrak and Kattegat. An underwater video technique is used and later the video footage is analysed in laboratory to estimate the *Nephrops* abundance in selected survey areas. The 2012 survey was conducted with R/V Havfisken in April/May (12 days) and completed in August (3 days). The survey covers the main *Nephrops* fishing grounds in Skagerrak (Subarea 1) and Kattegat (Subarea 2), respectively, and station allocation follows a random design.

Achievements in 2012:

- 15 days at sea (as planned)
- 112 stations (planned: 120).
-

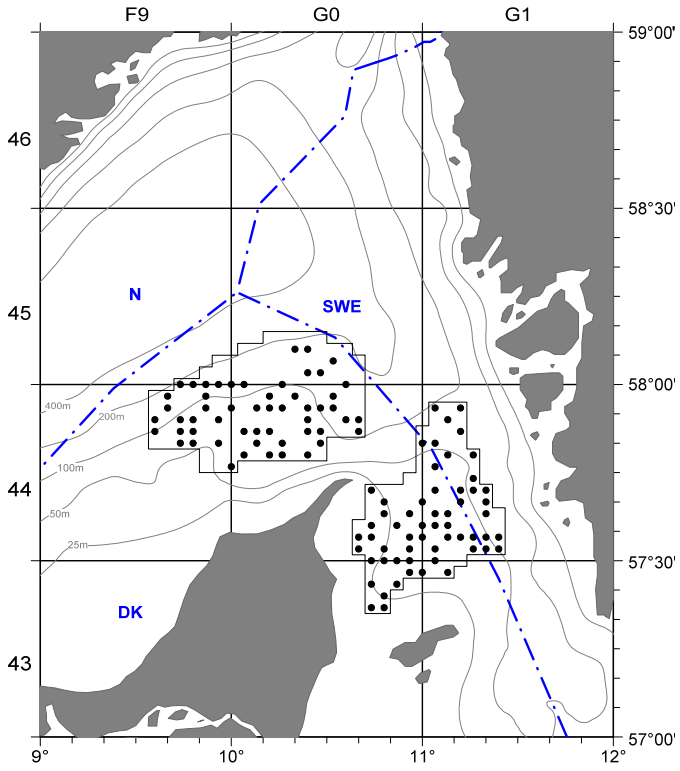


Figure III.G.10 Map showing the achieved and sampling locations in the 2012 Nephrops UWTV survey.

North Sea sandeel survey

The purpose of the sand eel dredge survey is to collect sand eels buried in the seabed and compare catches (number and age composition) with the previous year's collections to assess year class strength of the lesser sand eel (*Ammodytes marinus)* in the different areas adopted by ICES in 2009. Data from the dredge survey is the basis for calculating a 0-group index, which is used in stock assessment. The 2012 survey was conducted with the commercial fishing vessel Reykjanes.

Achievements in 2012:

- 15 days at sea (as planned)
- 166 dredge hauls and 59 sediment grab sample distributed over 52 sample positions (planned 48).
-

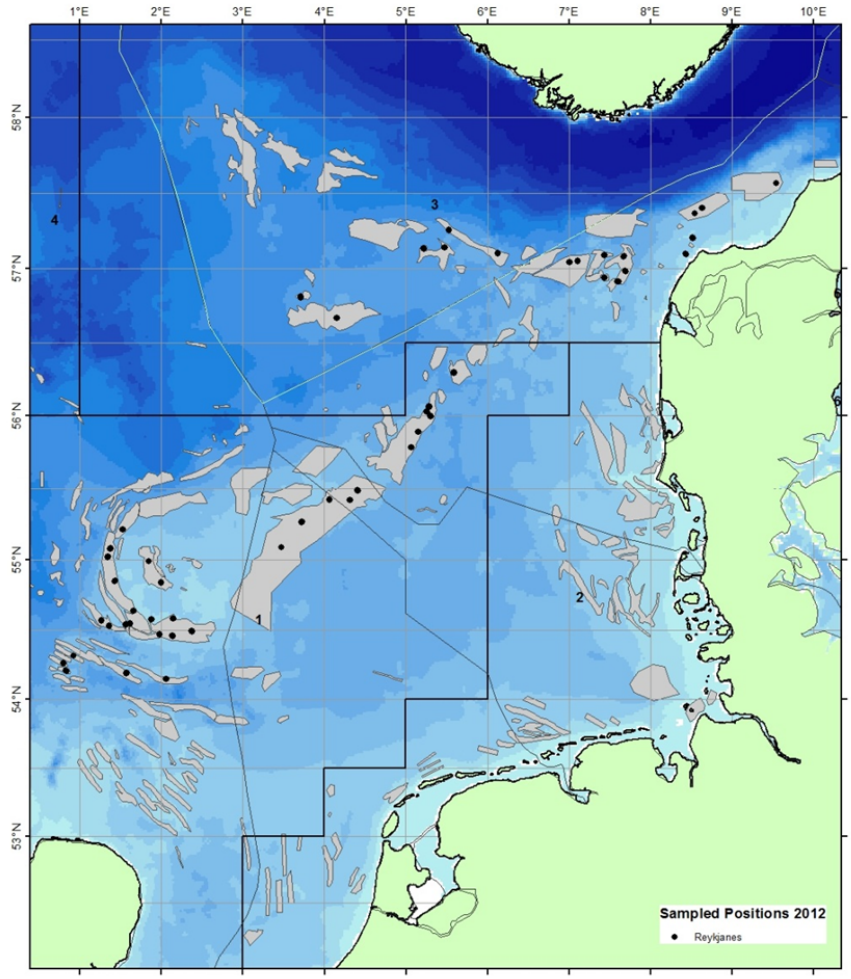


Figure III.G.11 Map showing the sampling locations in the 2012 sandeel survey with the commercial fishing vessel Reykjanes.

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

No serious data quality problems or deviations from the NP occurred in 2012 except for the brake down of the trawl winch on R/V Dana during International Ecosystem Survey in the Nordic Seas (ASH).

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.

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

IV.A Collection of data concerning the aquaculture

IV.A.1 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 2011 there were 162 farms distributed on 93 companies. The production volume was 15,433 tonnes and the value was 53 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 2011 consisted of 30 farms distributed on 17 companies. The production volume was 12,020 tonnes and the value was 32.6 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 systems producing European Eel in 2011 consisted of 8 farms distributed on 8 companies. The production volume was 1,194 tonnes and the value was 12.4 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.

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 2011 there were 17 farms distributed on 6 companies. The production volume was 10,571 tonnes and the value was 51.3 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 12.0 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 2011 there were 11 farms distributed on 9 companies. The production volume was 1,031 tonnes and the value was 0.5 million EUR. The production methods in the segment are very homogeneous.

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

As described in the National Programme Proposal, for some segments only a small number of companies are expected to participate in the account data survey. Hence, for discretional reasons only main sums regarding production and account data may be presented for these segments.

In 2011 only 1 of 11 shellfish companies participated, therefore data from financial accounts from the segment shellfish cannot be submitted due to discretional reasons. Only structural data from the FD register are submitted.

Farms in the Danish segment *Other farms* are producing Turbot, Pike Perch, Pollan/Powan, European Perch, Barramundi and a few other species in very small scale. In 2011 this segment consisted of 6 farms from 5

companies. Both the species produced, and the techniques used are very different in this segment. Hence the segment is not presented.

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

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

DST experts have participated in the following meeting

DCF Workshop: Aquaculture Data Collection, Lisbon, 5 - 8 November 2012.

FOI experts have participated in the following meetings under the Scientific, Technical and Economic Committee for Fisheries (STECF):

EWG 12-13: The Economic Performance of the EU Aquaculture Sector (STECF 12-13), 24 - 28 September 2012.

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.A.4 Action to avoid shortfalls

To avoid the small number of shellfish companies participating in the account data survey, DST has launched a campaign to recruit new companies. DST has participated in a meeting in the national shellfish farming organisation, and letters with recruitment papers has been send out to all of the members of the shellfish organisation.

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 10.20. (European NACE rev. 2), which includes:

NACE 10.20.10 – Fish processing and preservation.

NACE 10.20.20 – Smoking, curing and salting of fish etc.

NACE 10.20.30 – Fish meal factories.

For enterprises that carry out fish processing, but not as a main activity, it is mandatory to collect the following data, in the first year of each period:

a) Number of enterprise and
b) Turnover attributed to fish processing.

The number of enterprises and the turnover attributed to fish processing can be extracted from Statistics Denmark Industrial Commodity Statistics and Account Statistics.

The “purity” of the processing industry is very high. In 2009 about 98 % of the commodities, which contain fish or fish products, were produced in the branches defined by the European NACE code 10.20. There were only 7 non NACE-10-20 enterprises with fish processing in 2009, and the total turnover from fish products for those enterprises was EUR 20,649,000.

The Danish data collection for the processing industry covers the whole population defined by the Business Register NACE 10.20, which corresponds to a 100% response rate. The data collection is based on the Danish Account Statistics collected by Statistics Denmark covering the whole population defined by the Business Register NACE 10.20. Data for the Account Statistics is collected from different sources and combined in such a way that a complete set of accounting items is computed for each business enterprise.

The industrial commodity statistics describe manufacturers' sales of commodities measured in volume and value. This statistics is used for classification of firms into subgroups by species and product form.

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. Due to the limited numbers of enterprises and rules of confidentiality, the 13 sub branches are merged to 6 sub branches.

FOI has examined the composition of commodities from each enterprise in the processing industry for the years 2000 until 2010. 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.

Statistics Denmark has investigated the issue of subsidies in the Danish processing industry. They find that there are no subsidies in the Danish fish 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.

FOI experts have participated in the following meetings under the Scientific, Technical and Economic Committee for Fisheries (STECF):

Annual Economic Report of the EU Fish Processing sector 2011, concerning Denmark, 30th November 2011.

Follow-up of recommendations from the STECF: Report on the Evaluation of Data Collection Related to the Fish Processing Sector (SGECA 09 03).
STECF observes that the working group report presents possible deeper economic analysis based on data collected under the old and new data regulations. The possibilities presented here are ambitious, and are not feasible if economic data are provided on a national level only, as requested by the DCR/DCF. In order to be able to conduct the analyses proposed here, STECF recommends that at the national institutes, data should be disaggregated by either type of commodity or by company size.

Data for the Danish processing industry can be disaggregated by both type of species/commodity or by company size as recommended by the STECF.

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, 3 and 4 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 IIId in the first and fourth quarters 2012.

VMS data has been used for indicators 5-7 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. (AgriFish Agency)
- Logbook database. Data on origin of catches and on effort. (AgriFish Agency)
- Sales notes database. Data on quantities landed and prices. (AgriFish Agency)
- Species composition database. Data on species composition in landings for industrial purposes. (AgriFish Agency)
- 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 "RDB-FishFrame" was in 2012 transferred to ICES and has been running since. During the RCM meeting for the Baltic, the NS&EA and the NA the RDB-FishFrame data was used for the analysis of the status of the data collection and for the planning of the data collection in 2013.

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 the Expert Working group (Evaluation of the 2009, 2010, 2011 Annual report and the evaluation of 2012 National Programme) under consideration while writing the Annual report for 2012.

Source	Recommendation	Action
EWG 11-08 June 2011	EWG 11-08 recommends that information and description of the method/software used for calculation of CV's should be included (or referred to) in the AR if not provided in NP	A description is given in the AR 2012
EWG 11-08 June 2011	EWG 11-08 recommends for the AR tables, Table II.B.1 (list of eligible meetings) that is provided by the Commission should be used and all meetings and not only the meetings attended should be provided.	Denmark has followed the recommendation
EWG 11-08 June 2011	EWG 11-08 recommends that MS set-up a website on their data collection. They are obliged (by DCF regulation) to do so. No MS mentioned or referenced in the AR to such websites.	Denmark expected the web-site will be finalized in 2012. At DTU Aqua the website had to be moved to a new platform and therefore reconstruction of the DCF site has to be made. The new website will be up running within the next two month.
EWG 11-08 June 2011	EWG 11-08 recommends that in cases that a research vessels is not available for carrying out a contribution to a DCF survey, that MS in question should demonstrate that it made all necessary efforts to carry out the survey. MS must make provisions so that such problems do not happen e.g. seek assistance from other MS or charter a vessel).	Denmark has always used this practice.
SGRN 10-01	Some member states plan to sample data on stock-level variables for triennial species annually. Others plan a triennial approach. A common approach in the Baltic would be desirable. In many cases collection of annual data does not cause remarkable extra costs, since métier-level variables are sampled anyway. Task for RCM to decide? SGRN recommend that MS follow the RCM recommendations.	At present various approaches have been used depending of the species concerned. Denmark will work for increased standardization the Baltic Region.
SGRN 10-01	Overall the MSs need to provide more detailed information on the methods used to collect and	Detailed description is given in the NP and AR.

	analyze economic variables which are not clearly defined in the commission decision (capital value and costs, value of quotas and fishing rights, FTE national, imputed value of unpaid labor and fuel efficiency of fish capture).	
SGRN 10-01	Overall most of the MSs need to provide more detailed information and description about the methodologies applied in the estimation process of the economic variables, the methods used to provide measures to assess data quality	Detailed description is given in the NP and AR.
SGRN 10-01	Overall most MSs did not provide information for inactive vessels. SGRN invites the MSs to provide information on inactive vessels in the NPs.	Detailed description is given in the NP and AR.
SGECA-09-02 (2009)	SGECA-09-02 recommends that MS should carefully assess the impact of non-response, especially in the case of census with low response rate.	Statistics Denmark contacts the fishery accountants before drawing the sample to get an acceptance of the delivery of a harmonized account for the fisherman/fishing firm. The acceptance is set up in a contract, where we guarantee the payment of app. DKK 3000 per completed account. We do not have low response rate.
SGRN February 2009 Evaluation of NP 2009-2010	Economic and Transversal Variables: the method for raising the sample results to the total population is not clearly presented. More clear information of the method used for this calculation is needed.	Denmark is using census data.
SGRN February 2009 Evaluation of NP 2009-2010	Metier-related variables; It is not clear if <10 are included.	All Danish vessels are including for the ranking and vessels < 10 meters are included.

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
AgriFish Agency	AgriFish Agency
IFRO	Danish Food and Resource Economics Institute, Denmark
FTE	Full Time Equivalent
ICES	International Council for the Exploration of the Sea
IQ/ITQ	Individual quota / Individual transferable quota
WKBALPEL	Workshop on data for Baltic Pelagics
WKADS	Workshop on Age Determination of Salmon
WKBENCH	Benchmark Workshop on Saithe, Haddock, Herring and Horse Mackerel Stocks
WGBYC	Working Group on Bycatch of Protected Species
WKCOD	North Sea cod benchmark
PGCCDBS	Planning Group on Commercial Catches, Discards and Biological Sampling
ADGSANDEEL	Sandeel Advice Drafting Group
WKARGH	Workshop on Age Reading of Greenland Halibut
WKARAS	Workshop on Age reading of European Atlantic Sardine
WCSANDEEL	ACOM WebEx to finalise sandeel advice
WGMME	Working Group on Marine Mammal Ecology

WKROUNDMP	Joint ICES-STECF Workshop on management plan evaluations for roundfish stocks
WGDEEP	Working Group on the Biology and Assessment of Deep-Sea Fisheries Resources
HAWG	Herring Assessment Working Group for the Area South of 62ºN
WKAREA-2	Workshop on Age Reading of European and American Eel
WGNAS	Working Group on North Atlantic Salmon
WGBAST	Baltic Salmon and Trout Assessment Working Group
WKCPUEFFORT	Workshop on the utility of commercial CPUE and VMS data in assessments
WCDSS	ACOM WebEx to finalize advice on deep sea surveys
WGBFAS	Baltic Fisheries Assessment Working Group
WGECO	Working Group on the Ecosystem Effects of Fishing Activities
NWWG	North-Western Working Group
AFWG	Arctic Fisheries Working Group
PGRFS	Planning Group on Recreational Fisheries Surveys
WGNSSK	Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak
WGHMM	Working Group on Hake, Monk and Megrim
WGCSE	Working Group for the Celtic Seas Ecoregion
WKSHARK	Workshop on splitting of deep water shark historical catch data WKSHARK
WKMSHS	Workshop on Sexual Maturity Staging of Herring and Sprat
WGEF	Working Group on Elasmobranch Fishes
WGANSA	Working Group on Anchovy and Sardine
SGPIDS	Study Group on Practical Implementation of Discard Sampling Plans

WGHARP	Working Group on Harp and Hooded Seals
WGWIDE	Working Group on Widely Distributed Stocks
WGMIXFISH	Working Group on Mixed Fisheries Advice for the North Sea
WKNARC	Workshop of National Age Readings Coordinators
WGEEL	Joint EIFAC/ICES Working Group on Eels
SGRF	Study Group on Recruitment Forecasting
WKPICS1	Workshop on practical implementation of statistical sound catch sampling programmes
WKMSREGH	Workshop on Sexual Maturity Staging of Redfish and Greenland Halibut
WGRS	Working Group on Redfish Surveys
NIPAG	Joint NAFO/ICES Pandalus Assessment Working Group
SGBALANST	Study Group on Data Requirements and Assessments Needs for Baltic Sea Trout
SIMWG	Stock Identification Methods Working Group
WGNEW	The Working Group on Assessment of New MoU Species
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
SCV	Standard Catch Value = landings per species multiplied by 3-year average prices.

IX. Comments, suggestions and reflections

None

X. Appendix

Appendix 1 - Calculating coefficient of variation

Denmark is still in the process of developing methods for calculating the coefficient of variation (CV) suited for the Danish sampling schemes. The main problem with the methods below is the weighting of variation between strata and sampling frames. The lack of proper weighting leads to very highs CV's for all species sampled in a stratified way e.g. size sorting. The methods are still under development and therefore the presented results are preliminary. The methods presented are based on a simple resampling method.

Metier-related variables – CV around the length distribution in the landing

The CV's has been calculated by taking n bootstrap samples from the original population of n sampled hauls in a stratum (species and fishing ground). The bootstrap unit are the entire length distribution of a haul (not bootstrapping the individual length groups) thereby maintaining covariance between the length groups within a haul. The bootstrap sampling was repeated 500 times for each stratum. For each bootstrap sample the mean length has been calculated and afterwards the CV around the mean lengths from the 500 bootstrap samples has been calculated - the latter being the presented precision (CV).

Besides species and fishing ground the Danish sampling schemes are managed by quarter and metier. The current method does not take the variations caused by season and fisheries into account, since it only consider species and fishing ground as strata. Neither does the method account for the different sample intensity put into the strata nor is the result weighted by the actual intensity e.g. catch of the different strata. This of cause bias the estimate of precision and the method will be developed to include the missing parts.

Metier-related variables – CV around the length distribution in the discard

The CV's has been calculated by taking n bootstrap samples from the original population of n sampled hauls in a stratum (species and fishing ground). The bootstrap unit are the entire length distribution of a haul (not bootstrapping the individual length groups) thereby maintaining covariance between the length groups within a haul. The bootstrap sampling was repeated 500 times for each stratum. For each bootstrap sample the mean length has been calculated and afterwards the CV around the mean lengths from the 500 bootstrap samples has been calculated - the latter being the presented precision (CV).

Besides species and fishing ground the Danish sampling schemes are managed by metier. The current method does not take the variations caused by fisheries into account, since it only consider species and fishing ground as strata. Neither does the method account for the different sample intensity put into the strata nor is the result weighted by the actual intensity e.g. catch of the different strata. This of cause bias the estimate of precision and the method will be developed to include the missing parts.

Stock-related variables – CV for length and weight at age

The CV's for length and weight at age has been calculated by taking n bootstrap samples from the original population of n sampled fish per stratum (age, species and fishing ground). The bootstrap sampling was repeated

500 times for each stratum. For each bootstrap sample the mean length and weight has been calculated and afterwards the CV around the mean lengths and weights from the 500 bootstrap samples has been calculated - the latter being the presented precision (CV).

Appendix 2 – Bilateral agreements

Agreements are given in separate files.