Report of the Regional Co-ordination Meeting for the North Sea and Eastern Arctic (RCM NS&EA) 2016

Royal Botanic Gardens
Edinburgh
Scotland
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Contents

Executive Summary

The Regional Coordination meeting NS&EA met in Edinburgh from 5th to 9th September 2016. Thirty four participants from 12 members states, representatives from Commission and ICES were in attendance. The meeting was largely devoted to subgroup work relating to regional sampling, cost sharing models, data needs and the sampling of anadromous and catadromous species. A day was spent considering work plan templates.

RCM NSEA proposed the establishment of a regional sampling group, in the first instance looking at small pelagic fisheries as a possible example of a suitable shared stock. The need for different teams with varying roles was recognised and the skill-sets and time line for the process were outlined.

Data needs were examined in relation to ICES as the main end-user, with an emphasis being on the process by which end-users communicate needs and the extent of the existing dialogue with RCMs. The outcome of the subgroup's deliberations was that the RCM chairs will seek a meeting with ICES in the near to further discuss the issues.

Progress was made on defining generic criteria for cost sharing model for surveys with an agreement for the blue whiting and Atlato-Scandinavian herring survey from being achieved for NESA participants; this agreement would seek to be concluded at the RCM NA.

A sub group to define rules and procedures for RCG operation, based on a proposal to RCM Baltic, was endorsed by NSEA. The group would Include members from FIN DEU DNK, with participants from NLD and BEL to join as representatives from the RCM NSEA.

The particular requirements for anadromous and catadromous species sampling were also considered with a subgroup summarising the main issues.

The National Workplan templates were discussed and examples presented to plenary. An automation process for compiling the data required for table 1A was demonstrated and the RCM was in agreement that this approach was of general benefit. Other tables generated varying degrees of consensus as to how MS were to fill them in. Text to emphasise that different MS are moving at different speeds in the adoption of statistical sampling methodologies and the adaption to the new requirements under DC MAP was drawn up.

Data analysis included a summary table of RDB sampling data. A intersessional data analysis group was proposed to develop R code and work on regional data.

The intercessional subgroup on the landing obligation reported back on efforts to collate MS experiences; DNK presented an analysis of experiences from the Baltic.

The 2016 data call was generally well met with all countries uploading landings and effort data to the RDB, Upload logs were completed by most countries and were in the process of being summarised.

The RCM also received presentations of the follow up of LM 2015 recommendations and of the work of expert groups and end-users from 2015-16: PGDATA, WGCATCH, WGBIOP, SCRDB, WKRDB, WKCOSTBEN, STECF, ICES, COMMISSION, and the RCM BALTIC. The work of the fishPi project (MARE 2014\19) was also presented to the meeting.

The next meeting is planned to be held in France, with co-chair Katja Ringdhal and Maire Storr-Paulson; the date is yet to be determined.

Main Points of the Meeting

The Regional Coordination meeting NS&EA met in Edinburgh from 5th to 9th September 2016. Thirty four participants from 12 members states were in attendance, including representatives from the scientific institutions and National Correspondents. The Commission and ICES were also represented. The meeting was chaired by Alastair Pout (Scotland), and Katja Ringdhal (Sweden). The realised agenda of the meeting and the participants list is reproduced in Annex 1.

Progress since 2015 was reviewed in relation to the recommendations of the 12th Liaison meeting of October 2015 (annex 2). A brief summary of the work of the RCM Baltic which took place 29th Aug – 2nd Sept 2016 (annex 3) was also presented to the plenary of the RCM NSEA. The work from expert groups, in as much as it relates to regional cooperation, were presented to plenary, the executive summaries and or key points from PGDATA, COSTBEN, WGCATCH, WKRDB, WGRFS, SCRDB STECF are reproduced in annex 4.

The 2015 data call for the RCM was largely well met with, for the first time, all countries uploading landings CL and effort data CE to the RDB. The adoption of the new WoRMS codes for species was largely successful, though some countries are finding it problematic to convert national location codes into UNLOCOD lists. A summary of the data call was presented to plenary and is reproduced in Annex 5.

Planned data calls were discussed with participants being made aware of the FDI data call. The pre notice of WKPROXY data call caused some concern for a number of MS (as articulated by Sweden). It was proposed that the RCM chairs meet with ICES to discuss more folly data needs and the role of data calls.

The status of the data regulations, timetable and an overview of the national programme templates were presented to the RCM by the Commission. It was noted that there is a particularly tight timetable for completion, evaluation and possible revision in time for implementation of new national programmes on 1st January 2017. It was recognised that the NP submitted in 2016 would represent a transition year and that the sampling plans of different member states were evolving at different speeds.

The work of the fishPi project was presented to the Commission at the final project meeting on 12th July 2016 and following acceptance of the report, the project findings were made available on the RCM share point and presented to the NSEA. Specific presentations were made for WP 1 which included a review of RCM progress and the results of the consultation of regional member states; the work of WP2 with specific presentations on the case studies relating to small pelagics, flatfish and hake. A presentation on WP3 covered the work undertaken on by-catch sampling schemes, stomach sampling schemes and small scale and recreational fisheries, and WP4 covered the work relating to data quality checks for national and regional data. The executive summary and the project recommendations are reproduced in Annex 6.

The RCM then worked in subgroups to consider in more detail issues relating to cost sharing, data needs, eel and salmon and regional sampling; the main points of these subgroups are presented below, with additional background text in annex 7.
The work from the Baltic RCM on drafting the TOR for a sub group to determine the Rules and Procedures for the operation of RCG was presented to plenary. The RCM NSEA agreed to follow this initiative with the addition of the Inge Janssen NLD and Els Torreele BEL to the existing sub group members (Heikki Lehtinen (chair), Jorgen Dalskov, Christoph Stransky). The TORS for the subgroup as drafted in the RCM BALTIC are also reproduced in Annex 7.

The meeting reviewed National work plan templates during plenary session. The discussion covered specific field entries for various tables, the extent to which the tables will be compiled in different ways by different member states, the role of the table, and the role of the STECF evaluation process. Notes on the discussions are presented in Annex 8.

A resume of the situation with the landing obligation was presented to plenary (Annex 9) with a presentation of the experiences from the Baltic.
Up Load logs for the 2015 data were provided by Ireland, England, Scotland, Denmark, Poland, Portugal, Estonia and Spain. Work commenced on the summarising of these in the RCM NSEA with the intention that it would continue in the RCM NA (Annex 10).

The RCM considered the evaluation of surveys and noted that the list of mandatory surveys is currently based on the old DCF regulation. The RCM NS&EA stresses the need to review the survey list and update the eligibility criteria (Annex 11). This review needs to take place prior to setting the cost shares, as this evaluation can also contribute to the definition of target species. Moreover, this evaluation is expected to result in an updated list of surveys and this list might include new surveys subject to cost-sharing and some surveys may be deleted from this list. A schedule for this process was proposed.

The RCM NS&EA was presented with a summary of the ICES/EFARO initiative for a proposal for pilot study, which was considered in plenary. RCM NS&EA gives a qualified endorsement to the study originally proposed by EFARO/ICES but had concerns over aspects of the evaluation criteria, replication of work already being undertaken by the cost benefit working group, and the budget (Annex 12).

A summary of the RDB 2015 data call was presented to plenary (Annex 13), the welcome feature of the RCM 2016 data call being that all countries uploaded landings and effort data directly to the RDB. This is the first year that this has been achieved and is a particularly welcome achievement.
The WKPROXY data call was discussed in plenary in relation to ICES end user feedback. There was a feeling that the scope of this data call was large, that the data requested was speculative, with potentially considerable implications in workload for member states.

A presentation was made to plenary of the status of the RDB and the progress achieved in the previous year.
ICES data centre has supported the work of the MS in the uploading of data and made considerable progress in the standardisation of codes lists for harbours, (adopting the UNLOCODE standard codes) species, (moving to the WoRMS Aphia IDs) and incorporating categories for the recording of BMS and REGDIS catch fractions to meet the needs of data collection following the introduction of the landing obligation. The development plans including the incorporation of statistical estimation scripts written in R was outlined. The continuing shortfall in EU development funding was also stressed. The presentation is reproduced in Annex 14.
Discussion of data bases issues in plenary was related to the funding of the RCM RCG work, the data base hosted by the JRC, the use the Commission has for these data base and and the status of the existing RDB.

Data analysis carried out prior to the RCM was presented to the meeting (Annex 15), This analysis included a summary function to quantify the achieved sampling which can be used at regional and national level, and for determining the data available for individual species. Length frequency and age length plots and maps of sampling locations were produced as was an update on the landings abroad for 2015. The need for a data analysis subgroup was discussed in plenary and as a first step the formation of an e-mail list of interested individuals working in R on data analysis tasks to support the work of the RCM RCG was proposed.

The recent development of an open-source length measuring and data recording board (OpenLM) in Germany was presented to the RCM. Similar developments are underway in Belgium and Denmark and a workshop in October is planned to coordinate such activity (Annex 16).

The 2017 meeting will be held in the France, with the timing of the meeting still to be determined. The co-chairs will be Katja Ringdahl (Sweden) and Marie Storr-Paulson (Denmark).

Sub Group: Cost sharing models

Cost-sharing of surveys
Introduction
As a basic principle, all current surveys as listed in Table 10 of Commission Implementing Decision 2016/1251 shall be carried out. This principle ensures continuation of current, well-established time series. Unless under the thresholds as defined in Chapter V.7 of the Annex to this Decision, rules on participation of Member States having a share in the target species defined for a survey, either in TAC or landings, '*shall be based upon the share of the relevant Member States in the EU total allowable catches. For stocks that are not subject to catch limits, these rules shall be based upon the relative share of the relevant Member States in the stock*

exploitation' (preliminary wording of revised Council Reg. 199/2008 article 5.5, Council position). This contribution can be either physical (e.g. ship time) or financial.
The above-mentioned cost-sharing is a complex process having a huge potential impact on national budgets and the cost-sharing model to be applied needs thorough consideration prior to setting a certain model. Moreover, whatever model(s) is(are) chosen, all MS need to agree on the model to be used for cost-sharing. This might lead to a basic, generic model that can be tailored for specific surveys based on specific needs for the respective survey.

Intersessional subgroup setup and tasks

The RCM NS&EA discussed various aspects of cost-sharing of surveys. The RCM took note of two exploratory models presented by Sweden (RCM Baltic 2016) and The Netherlands (Annex XX). It was concluded that more work needs to be done intersessionally and it was decided to continue the already established combined RCM NS&EA/RCM NA subgroup[1] dealing with cost-sharing and to connect this group to the similar subgroup proposed by the RCM Baltic. Refining the proposals for cost-sharing models then needs to be done in this supra-regional (pan-European) subgroup.
Based on the discussions at the RCM NS&EA, the following (non-inclusive list of) issues are highlighted for discussion in the cost-sharing subgroup:

- Vessel costs vs. total survey costs: Vessel costs are a major part of the total survey costs. However, the staff costs for scientific staff on board as well as processing samples in the lab etc. can be sizeable and can be considered to be taken into account when sharing the costs of a survey. By including these costs, the total costs of a survey to the operating MS can be shared amongst all participating MS. Different pay rates, number of staff involved during surveys, allocation of tasks related to the survey etc. are identified as potential issues that might make inclusion of all costs complex and could lead to inconsistencies.
- Average costs vs actual costs: Sharing actual costs would settle the total for the operating MS (oMS) for each year, but this will come at the cost of timely administrating costs for a survey (let alone when all the analytical costs have to be included, as analysing samples often takes months after a survey). Based on actual costs, cost shares can only be invoiced once the calendar year is closed, often posing problems to pay huge amounts once the books are closed. By using average costs over a certain time frame (may be a moving time frame from year to year to cover rising costs), budgeting surveys beforehand is less complicated and cost shares can be invoiced throughout the year.
- Target species vs. all species sampled: Table 10 in Decision 2016/1251 lists the target species for each survey. Many surveys, however, are covering many other species (sometimes TAC species as bycatch as well, but often this information is not used by main end-users). Apart from a required evaluation of the surveys listed in table 10, see section XXX, this table needs to be updated to cover all relevant species for a survey and this list of species should form the basis for cost-sharing. The list of relevant species should be defined based on end-user needs and use of the data.
- Shares in weight vs. shares in value: Based on Decision 2016/1251, cost-sharing shall be based on TAC shares or shares in landings when no TAC is available. However, these shares reflect a certain value to a MS. Apart from sharing the cost directly based on the TAC (or landings), the shares can be converted to value based e.g. on average prices in the participating MS over a certain time window. Setting these values, however, requires additional agreements. In terms of vessel costs, the target species for a survey is of minimal influence on the daily vessel costs.

In addition, the RCM NS&EA highlighted a few basic principles for the subgroup to take into account when designing the cost-sharing models:

- Stability in costs: severe fluctuations in vessel costs (and resulting survey costs) should be avoided. One mechanism could be to use an average daily vessel rate over a certain number of years, or to allow only a maximum % increase on a year-by-year basis.
- *Force majeure*: Any model should accommodate a *force majeure* clause laying out the basic approach how to adapt the cost-sharing when severe problems during the execution of the surveys arise, e.g. vessel breakdown.
- Survey coordination: The actual coordination of the surveys remains with the respective survey planning group. The RCMs are responsible for setting the cost-sharing model and its execution. Despite this, survey planning groups should be made aware of the potential (huge) impact resulting

[11] Jørgen Dalskov (DK), Christian Dintheer (FR), Leonie O'Dowd (IE), Ari Leskela (FI) Matt Elliot (UK), Margaret Bell (UK), Sieto Verver (NL), Irek Wójcik (PL), Maria Hansson (SW), Christoph Stransky (DE)

from modifications to the survey design. The current situation where the operating MS is responsible for data transfer after the survey should remain.

- Third countries: At the moment, inclusion of third countries in the cost-sharing equation is considered a bridge too far. The new DCF Regulation forms the basis for cost-sharing amongst EU MS, despite other obligations to liaise with third countries for data collection where possible.
- Simplicity is key to a workable model without creating an enormous amount of overhead and administrative burden. A relatively simple model should form the basic approach while tailor-made solutions for certain specific surveys can be initiated and agreed upon between the MS involved in those surveys. Note that each layer of refinement results in a multiplication of the number of agreements needed.
- Accountability: Concerns were raised at earlier occasions regarding the accountability of certain costs and the risk of inflating vessels costs and thus increasing the costs for participating MS. The current system covering the EMFF auditing procedures are believed to be sufficient to avoid this problem. However, these procedures need to be specifically highlighted and to be in place when cost-sharing models are deployed.

Agreements

RCM NS&EA decided to proceed with the established procedures in 2017 and to finalize the cost-sharing model in 2017, to be implemented in 2018. Continuation of current procedures also implies the continuation of the current well-established cost-sharing agreements for the blue whiting acoustic survey and the Atlanto-Scandian Herring survey.

Subgroup: Data needs

The EU-MAP is intended to have greater end-user input on aspects of data collection. It focuses on what data are required from Member States, rather than on the methods to collect them. Details of data collection are to be agreed at regional level for many data types. The new EUMAP therefore provides greater flexibility for end-users of data to request new data collection requirements, amendments to existing requirements, or removal of specific requirements, all of which would need to be agreed at a regional level in consultation with the RCGs for types of data within the remit of the RCGs.

End-user needs are mentioned repeatedly in the EU MAP Commission Implementing Decision, and almost entirely in relation to biological data collection, ecosystem impacts and related thresholds for data collection. The Decision does not define end users, although the CFP regulation EU 1380/2013, Article 4.1 (32) states that “end-user of scientific data' means a body with a research or management interest in the scientific analysis of data in the fisheries sector”. Major end users of DCF data include ICES, other RFMOs, STECF, the Commission itself, and national administrations and agencies. In some cases, e.g. ICES, the end users are contracted to the Commission to provide specified advice and other services that make extensive use of DCF data.

The RCM North Sea and Eastern Arctic explored how RCGs and end users could develop a well-structured collaborative process for identifying and evaluating regional data needs, and adapting regional sampling schemes to address these. The approaches were examined using ICES as an example, which is a major end=user of regional data falling within the remit of RCGs, as an example. The main conclusions were that:

- ICES must collaborate with RCGs to establish a well-defined annual process for: (i) identifying and documenting data deficiencies and new data needs, (ii) exploring how data collection can be best modified where feasible, and (iii) identifying the actions needed to design, evaluate, implement and monitor the new or modified data collection schemes.

- A comprehensive regional overview of data deficiencies and data needs might best be developed through regional ICES benchmarking process covering multiple species, and avoid ad-hoc submission of requests to RCGs.

- Databases and software tools should be further developed to facilitate the process of identifying, justifying and communicating ICES’ data needs. On the RCG side, approaches and tools already

developed, for example within fishPi and proposed new case studies, should be built upon over time to facilitate the evaluation of data proposals and explore data collection designs.

- A process of dialogue with the ICES secretariat should be established as soon as possible to discuss how best to establish the collaboration process with the RCG. The roles and responibilities of ICES and RCGs must be clearly identified.

- The process, timetable and outcomes of ICES-RCG collaboration must be documented. A DCF web repository has not yet been set up and the Commission should establish such a repository as soon as possible.

- Requests from other end users should be dealt with using the same generic principles and steps proposed for the ICES example.

RCM response / recommendation:

- Set up initial meeting with ICES to establish the process of collaboration and the roles and responsibilities.
- Commission to set up EU MAP web repository to document the process of collaboration with end users, decisions made and actions arising

Sub Group: Regional Sampling

A subgroup of the RCM looked at the regional sampling programs and developed i) a roadmap and generic requirements for implementing a regional sampling plan, ii) generic ToRs and profiles for the teams of experts developing the regional sampling plan. The RCM also selected a suitable candidate for a first regional sampling plan.

Generic roadmap for Regional Sampling Plans

A schematic and table detailing a roadmap from proposal to implementation of Regional Sampling plans are presented in annex 7. Under such a proposal, most of the work would be carried out by three teams of experts following generic terms of reference approved by RCM/RCG in plenary. Throughout the process RCM/RCG chairs would be expected to aid the different teams in contacts and consultations with MS and end-users and to actualise data sharing between teams and MS. An additional Pan-regional team of experts as proposed by RCM Baltic involving persons with statistical and programming skills and experience in estimation of national and regional data would also be set up to propose and validate all statistical aspects in relation to the Regional sampling plans, including particularly the best forms of regionally coordinated estimates to meet end user needs. RCM decided to take forward this proposal, and RCM recommended the formation of the pan RCM statistician expert team..

The timeline covers a 3 year period to implementation and successive years for monitoring and maintaining the programme. The consideration and implementation of other regional plans does not depend on the completion of one cycle, the teams will not work in isolation and members may contribute to teams working on more than one regional sampling plan.

Teams of experts

Three teams of experts are expected to be involved in the development and support of regional sampling plans. For sake of simplicity they are termed Team 1, Team 2 and Team 3.

- Team 1 will be responsible for initiating the process towards regional plan (or its review) and should be composed of a 5-7 member, including i) at least 1 person experienced in R-coding, ii) at least 1 person with good knowledge of statistics, iii) at least 3 persons from different MS that collectively ensure good knowledge of sampling, regional fisheries and end-user needs. To ensure pan-regional consistency and articulation in sampling plans identified this team should cover several RCMs, potentially RCM NSEA and RCM NA.

- Team 2 will be responsible for the development of the designated sampling plan(s) and should be composed by at least 3 persons with collective experience in r-coding, statistics and design of regional sampling plans.
- Team 3 will be responsible for supporting MS during the implementation of individual regional sampling plans, estimating data at regional level, checking and reporting back to RCM/RCGs on the need to update or review the regional plans. Team 3 should be composed of 5-7 people including i) at least 1 person experienced in R-coding, ii) at least 1 person with good knowledge of statistics, iii) representatives of the main MS, iv) end-users representatives.

Data sharing and funding concerns

Extensive data sharing will be required for the development, annual updates and periodical reviews of regional sampling plans. Underlying the data exchange are data needs and formats, a data agreement, and regular updates of the datasets that support the plan (e.g., through annual datacalls). The design of the sampling plan will need data from designated fleets and associated landings/catches on an aggregation type which will need to be defined, and individual sampling data, namely length, age, sex and maturity. Considerable experience in data sharing/hosting and datacalls has been built under fishPi that can be used to guide necessary agreements. RCM highlights that sampling data is already made available in the RDB for RCM work for most of the MS and is annually updated. The RDB, when completed by all MS, has therefore the potential to ease burden of datacalls at least in what concerns sampling data.

Funding may be an issue if the work falls disproportionately across institutes. Within the remit of the new EU-MAP regulation the work would be eligible for EMFF funding, however the scale of proposed setup of intersessional expert teams, in addition to those three for regional sampling plan will stretch the limits of existing funding availability. The investigative work of Team 2 is estimated to require around 100 days of staff time. Further development of the RDB would help with the management of the data used in investigating and developing these plans.

In implementing the new regional plan, the allocation of sampling effort may differ significantly from the current effort employed across member states and vary annually with the randomness of the draw. A process would be required which allowed the reallocation of funds within or between MS, cost sharing or bilateral agreements. Although an important consideration it was outside the scope of this exercise.

Sampling plan for landings of commercial vessels that are design to target small pelagics >40 m

RCM NS&EA initiated the process towards a first regional sampling plan for commercial catches during its meeting, based on the outcomes of fishPi. Anticipating the future task of Team 1, the RCM suggested to set as a first plan the regional coordination of sampling of landings of commercial vessels that are designed to target small pelagics with vessels >40 m. Under such objective MS would regionally coordinate their sampling of this fleet segment from 2018 onwards, following Team 2 design proposal and MS would be expected to continue to provide adequate coverage to the remaining fleets segments. Because >40m vessels may operate in different regions, some degree of pan-regional coordination, namely with RCM NA and RCM Baltic, will be required by this sampling plan.

Shifting from national to regional sampling plan and organisation is a very innovative way of doing, aiming at improving the robustness of the estimates and optimising the statistical skills and workload to deliver fit for purpose data to end-users. The proposal by RCM NSEA of a full organisational procedure is aimed at detailing all the necessary steps and actions, and thus may need to be adjusted until implementation of regional sampling plan becomes the norm.

Sub Group: Anadromous and Catadromous species

The subgroup on Anadromous and Catadromous species reached the following conclusions:

1. The eel has a single stock that spans the Baltic, North Sea, Atlantic and Mediterranean regions and beyond. The Atlantic salmon has many 100's of stocks distributed from Portugal to the Arctic and throughout the Baltic, therefore covering the Baltic, North Sea and North Atlantic RCM regions.

We note of the lack of coordination on data, on assessments, and the failing reporting, and that this problem is not specific to the NS-EA RCM-region, and therefore could best be addressed at a higher geopolitical level. Considerations for regional coordination (decision making) for eel and/or salmon in the North Sea Region should be driven by the end-user(s). ICES and DG MARE are the end-users for European eel assessments. NASCO is the end-user for the Atlantic salmon, although ICES practically uses the assessments to answer questions from NASCO. Therefore, Regional Coordination for eel and for salmon should be achieved at these wider geographic scales. The Baltic RCM suggested a sub-group for ANACAT species. The North Sea RCM supports this suggestion, but notes that separate sub-groups for eel and salmon may be an alternative approach. Whatever the focus, the requirement for regional coordination based on end-user needs demands that these sub-groups include members from the RCMs (4 for eel, 3 for salmon), the end-users (ICES and Commission, maybe NASCO too), and the assessment working groups.

2. ICES described data needs for eel and salmon in the WKESWDCF (2012) report. Most of these requirements are reflected in the Annex to the Commission Implementing Decision, e.g. fisheries catch data, recruitment & standingstock & silver eel per management unit, juvenile & adult information in a selection of salmon stocks. WKESDCF did not specify the data collection locations – the rivers, basins, survey sites, etc. WKESDCF proposed that these decisions should be made by Member States, but ratified by end-users as 'fit for purpose'.

3. Given the short time before Member States have to submit their Work Plans for 2017, the advice of any sub-group will not be available before this deadline. Therefore, we suggest that for the 2017 NWP at least, Member States propose their own selections of rivers/river basins for data collection and that these are ratified by STECF in consultation with the end-users. This is the mechanism that was proposed by ICES WKESDCF in 2012.

4. Recreational fisheries for salmon make a large part of the total exploitation, but while catch reporting is obligatory in some Member States (e.g. GBR-Eng), this is not the case in all (e.g. SWE). The Atlantic salmon therefore offers a good case study for pilot projects on recreational fishing because parts of the region are data-rich whereas other parts are data-poor. The situation for European eel may be similar but we are not so sure.

RCM NSEA agreed that:
Regional coordination should be at **species relevant** regions. So including Baltic, NS, NA, and Med for eel.
Regional coordination should be based on end-user requirements. RCM does not have this information so **must engage with end-users**.
Standardisation of data reporting is obvious. A regional database might help this. The marine fisheries RDB is not ideal for freshwater salmon and eel data at present. It should be decided whether to adapt the marine RDB or create new eel and salmon RDB (or anacat). End-users must be involved in this decision.
For 2017 NWP, STECF reviews Member States proposals. Regional coordination may happen in 2018 NWP.
Next steps
Create appropriate regional coordination groups for eel and salmon. Sub-group (s) of RCMs plus end-users.
Recreational fisheries pilot studies consider salmon (and eel) for regional pilots as data rich and data poor.

Recommendations

Collaboration with ICES on data needs	
RCM NS&EA 2016 Recommendation	RCM recommends an initial meeting with ICES to establish the process of collaboration and the roles and responsibilities for addressing ICES data needs as an end user of data collected through regional data collection schemes within remit of the RCM/RCG.
Justification	The EU-MAP is intended to have greater end-user input on aspects of data collection. ICES is a major end user of data collected through regional data collection schemes within the remit of the RCMs. There is currently no clear process for ICES and other end users to communicate and justify proposals for new data collections or amendment of existing data to meet their needs. There is an urgent need for ICES to collaborate with RCGs to establish a well-defined annual process for: (i) identifying and documenting data deficiencies and new data needs, (ii) exploring how data collection can be best modified where feasible, and (iii) identifying the actions needed to design, evaluate, implement and monitor the new or modified data collection schemes. An initial meeting is needed to scope out options for this.
Follow-up actions needed	RCM NS&EA to contact ICES secretariat to arrange initial meeting by webex / skype.
Responsible persons for follow-up actions	RCM NS&EA and ICES secretariat
Time frame (Deadline)	October 2016 to establish initial webex between RCG subgroup and ICES

Establishing an EU-MAP web repository for RCGs

RCM NS&EA 2016 Recommendation	RCM recommends that the Commission sets up a web-based repository for use by each RCG.
Justification	There is an urgent need for an EU-MAP web-based repository for RCGs to archive files documenting the process of collaboration with end users, decisions made and actions arising, in addition to documenting the wide range of other activities foreseen and other materials and resources needed for the RCGs to function. This is needed to ensure transparency as well as facilitating RCG work programmes. A JRC repository exists at https://datacollection.jrc.ec.europa.eu/docs-links but the RCM would prefer separate sites for individual RCGs to use.
Follow-up actions needed	RCM NS&EA to contact Commission.
Responsible persons for follow-up actions	RCM NS&EA and Commission
Time frame (Deadline)	Set up web links and access protocols in advance of establishment of RCGs in January 2017.

- ***Agreement***	
- **Cost-sharing agreement for the conducting of the International Ecosystem Survey in the Nordic Seas (ASH) and the Blue Whiting Survey in 2016 and 2017**	
RCM NS & EA 2016 Agreement	RCM NS&EA 2016 agreed on continuation of the cost sharing model for 2 surveys: i) the International Ecosystem Survey in the Nordic (Atlanto-Scandian herring), ii) the Blue Whiting Survey (blue whiting). This model applies to those MS having a EU-TAC share >= 5% for the species subject to this surveys. This model will be used for the International Ecosystem Survey in the Nordic Seas (IESNS) carried out by the Danish R/V Dana and the Blue Whiting Survey carried out by the Irish R/V Celtic Explorer and the Dutch R/V Tridens for years 2016 and 2017.
Justification	There is an end-user need for fishery independent survey data for carrying out stock assessment of the Atlanto-Scandian herring stock and of the blue whiting stock. In addition, there is an agreement between EU and Norway that the EU Member States participate in surveying the Atlanto-Scandian herring stock.
Follow-up actions needed	Approval by National Correspondents from Denmark, Germany, the Netherlands, Sweden and the UK. *Denmark, Germany, the Netherlands, Sweden and the UK agreed at the 2016 RCM NS&EA.* The NC's from Ireland, France and Spain should be consulted at the RCM NA 2016 regarding the Blue Whiting survey. Ireland should also be consulted regarding the International Ecosystem Survey in the Nordic.
Responsible persons for follow-up actions	The RCM NS&EA and the RCM NA.

Time frame (Deadline)	Invoices should be sent to the MS concerned before November 1.
Follow up in 2016	The NC's concerned from the RCM NA to be consulted.

Annexes

Annex 1 Participants and Realised Agenda

Participants

Name	Country	email
Alastair Pout (co-chair)	UK Scotland	a.pout@marlab.ac.uk
Alan Walker	UK England	alan.walker@cefas.co.uk
Anna Hasslow* NC	Sweden	anna.hasslow@havochvatten.se
Bas Drukker	EU Commission	Bas.Drukker@ec.europa.eu
Christoph Stransky NC	Germany	christoph.stransky@thuenen.de
Cornilius Chikwarma	UK Scotland	cornilius.chikwarma@gov.scot.uk
Els Torreele NC	Belgium	Els.torreele@ilvo.vlaanderen.be
Joel Vigneau	France	Joel.Vigneau@ifremer.fr
Heikki Lehtinen* NC	Finland	Heikki.Lehtinen@mmm.fi
Henrik Kjems-Nielsen*	ICES	henrikkn@ices.dk
Gary Daines*	UK MMO	gary.daines@marinemanagement.org.uk
Inge Janssen	The Netherlands	i.h.janssen@minez.nl
Ireneusz Wójcik	Poland	iwojcik@mir.gdynia.pl
Johan Östergren*	Sweden	johan.ostergren@slu.se
Jon Elson	UK England	jon.elson@cefas.co.uk
Jose Lorenzo	Spain	jose.lorenzo@vi.ieo.es
Jörgen Dalskov NC	Denmark	jd@aqua.dtu.dk
Katja Ringdahl (co-chair)	Sweden	katja.ringdahl@slu.se
Laura Stanionyte	Lithuania	Laura.Stanionyte@zuv.lt
Lisa Richardson*	UK MMO	lisa.richardson@marinemanagement.org.uk
Lies Vansteenbrugge	Belgium	Lies.Vansteenbrugge@ilvo.vlaanderen.be
Margaret Bell	UK Scotland	m.bell@marlab.ac.uk
Maria Sanchez Haro* NC	Spain	MASANCHEZh@magrama.es
Marie Storr-Paulsen	Denmark	msp@aqua.dtu.dk
Matthew Elliott NC	UK MMO	matt.elliott@marinemanagement.org.uk
Mike Armstrong	UK England	mike.armstrong @cefas.co.uk
Nuno Prista	Sweden	nuno.prista@slu.se
Phil Kunzlik	UK Scotland	Phil.Kunzlik@scotland.gsi.gov.uk
Ricardo Alpoim**	Portugal	ralpoim@ipmar.pt
Romas Statkus	Lithuania	romas.statkus@zuv.lt
Ruben Verkempynck	The Netherlands	Ruben.verkempynck@wur.nl
Scott Large*	ICES	scott.large@ices.dk
Sieto Verver	The Netherlands	sieto.verver@wur.nl
Vilda Griniene* NC	Lithuania	Vilda.Griniene@zum.lt

* partial attendance ** by correspondence

Realised Agenda

Agenda
RCM NS&EA 2016 Edinburgh

5th to 9th September 2016
Caledonian Hall, the Royal Botanic Gardens,
20A Inverleith Row, Edinburgh. http://www.rbge.org.uk/

Monday	**14:00 – 18:00**
Tuesday, Wednesday, Thursday	**09:00 – 18:00**
Fri	**09:00 – 13:00**

Lunch	**12:30-14:00**
Coffee	**10:30-11:00, 15:30-1600**

Monday 5th September

1. Welcome, Adoption of Agenda, Report format, Procedural issues (Alastair)

Welcome and a few words Linda Rosborough (Director of Marine Scotland)
TOR's and Agenda
Format of the report; *a more reader-friendly summary report with related Annexes, no requirement for each RCM to cover all TORs.*
Procedure for the selection of RCM chairs
Notification of AOB issues

2. Brief Review progress since 2015 RCM's and 2015 Liaison meeting (11th report). (Christoph)

AOB. Report from the Baltic common points were agreement was reached, so that there is continuity and progress in the same direction. (Katja)

Coffee

3. Brief Review of pertinent points related to regional cooperation from expert groups,
any important issues related to RCM RCG work by

PGDATA (Rie),
WGCATCH (Nuno)
RDB-SC & Workshop on transversal variables (Jörgen)
WKRDB (Nuno),
STECF (Christoph)
WKBIOP (Christoph)

Tuesday 6th September

COSTBEN (Mike)
WGRFS (Mike)

10. Up load logs and RCM Data transmission

Summary of RDB data transmission of 2015 data (Henrik)
Upload logs (Alastair – Ricardo)

14. Data Bases

Recent changes, (Henrik)
Discussion future plans, workshops ? Incorporating project work

13. Data calls

Revised FDI data call see STECF 2016 -07 pages 104-108 (Bas)
General discussion on data calls (incl ICES data calls)
WKPROXY data call (Katja)

Coffee

4. View from the Commission

Review of progress of DC MAP and related regulations. (Bas)
Commission to present state of play, to inform RCM participants of the present state, and progress of the regulations. Also thinking of the Commission on data collection issues, workplans, databases etc.

Lunch

5. Review findings of regional grants MARE/2014/19 (fishPi and Med and Black Sea reports)

Introduction	Alastair
Review, Work plan, Consultation	Katja
Sampling Design simulations (commercial)	Alastair
Small Pelagics (Rie)	
NS Demersal (Alastair)	
Flatfish (Sieto)	
Hake (Nuno)	
Small scale, recreational, Pets designs	Mike
Quality indicators	Joel
Recommendations	Alastair

Coffee

Setting up of Sub Groups 17:00 Tuesday to 10:30 Wednesday
Reporting between 11:00 – 12:20

Data Needs	Mike
Eel and Salmon	Alan
Cost sharing	Sieto
Regional sampling	Nuno

Objectives for all

to see where we have agreement for 2018
Practical next steps
Intercessional work needed
Suggested way forward

Wednesday 7th September

Sub group work to 10:30

Coffee

11:00 Plenary
Feedback from the sub-groups:

Regional sampling
Eel Salmon
Rules and Procedures (Heikki)

Group set up in RCM BALTIC consisting of Christoph, Jörgen and Heikki to set out rules and procedures. Outline of role, TORS and timetable
Discussion on this as a suitable pan RCM group and should this include NS members

Lunch

Plenary

14:00 Cost sharing models Gary Dains
Outline of the shared management arrangements under EMFF developed in the UK

Cost sharing modes for joint surveys (Sieto)
Update on subgroup work on regional cost sharing models and agreements

12. Research Surveys at sea (Jörgen)
Proposal from EFARO proposal for review of survey needs fo NS Iberia, Baltic? Priority of this.

15. Data analysis and case study analysis. (Alastair)
Presentation of summary script for RDB data
Standard data analysis, regional data quality evaluations, RDB upload audit.

Electronic measuring boards (Christoph)
Presentation of measuring boards being developed, and details of
workshop in October. Also BEL and DNK initiatives in this area

Data needs subgroup (Mike)
Presentation of the work of the subgroup
The role of ICES as an end user, in the process, general discussion about relative roles of Commission, RCGs and ICES as a main end users.

Feedback from ICES (Scott)
Benchmarks
Data calls WKPROXY - initiatives to appraise the data available in the RDB in response to the pre announcement. Discussion of need for RCM chairs to meet with the ICES chairs with a view to flesh out the way the end user interaction works

Wednesday Evening Social Dinner
The Doric Tavern "Edinburgh's oldest gastro-pub, built in the 17th century"
http://www.the-doric.com/

Thursday 8th September

Sub group work 09:00 – 10:30

Coffee

11:00 – 11:30
Revisiting Rules and Procedures
NS members to join Heikki, Christoph and Jörgen

Co-chairing arrangements for RCM NSEA for 2017 and onwards
Procedure
Roles & Responsibilities
Order of the RCM meetings ~ flow of ideas and influence
Venue for 2017 – France

11:30-12:30
6. National Work Plans for 2016
Incorporation of new requirements, new template formats, evaluation process, timetable.

STECF summer plenary report on data quality and evaluation of WP

Completion of WP
What are we trying to achieve here?
Degree to which we can agree on how to fill – similarities and differences in interpretation
Feedback on the tables to the commission
Suggestions on the criteria to be used to evaluate the merits of a Work Plan

Speed of change we are committing to. Note to the COM

Background Docs:
Commission Implementing Decision laying down the rule for the format and submission of work plans pp 8
Annex to the implementing decision pp51
STECF 2016-07 "Process for evaluation of DCF work plans", pages 101-102
STECF 2016-07 "Quality assurance procedures for biological and economic variables" pages 97-100

Plenary discussion of on the format and role of the National Workplan tables.

Required stocks	table 1A	Joel
Planning of sampling for biological variables	table 1B	
Sampling intensity	Table 1C	
Recreational fisheries	table 1D	Mike
By-Catch	table 1F	
Advice on Anadromous and Catadromous species	table 1E	Alan
List of Research Surveys at-sea	1G &1H	Sieto
Advice on commercial & small scale sampling	4A 4B 4C 4D	Alastair
Advice on data quality	table 5a	Katja

8. Landing obligation (Jon)
Brief resume of experiences to date and future plans

Experiences of the LO in the Baltic (Rie)

Baltic agreement concerning NP for 2017 (Jörgen)
General discussion of relative speeds of implementation in relation to new EU MAP

Friday 9th September

Subgroup work

Review of text and recommendations

Next venue and chairs

End of meeting 12:30

Annex 2 Review progress since 2015 RCM's and 2015 Liaison meeting (11th report).

LM 11. Upload in the RDB	
RCM NS&EA 2015 Recommendation 1	RCM NS&EA urges all countries to upload their data in time for the RCM. RCM NS&EA also recommends EU to allow the appointment of some experts

	to prepare tables and figures for some days in advance of the RCM meeting.
Justification	Data fiddling within the RCM, has led to such delays in the analysis that no time was left for coordination. Only upload of the full datasets in time and preparation of summary tables by a group of experts in advance of RCM meeting can promote an effective coordinating meeting.
Follow-up actions needed	All MS to upload their datasets in time A small group of experts (2-3 persons) to be named to prepare tables and figures summarising the information contained in the RDB in advance of the RCM meeting.
Responsible persons for follow-up actions	All MS EU and RCM NS&EA
Time frame (Deadline)	Mid-2016 to be used by RCM NS&EA in 2016.
LM comment	LM endorses this recommendation.
RCM NS&EA 2016 comments	Respective RDB reports have been prepared for the RCM NS&EA 2016

LM 12. Use of the RDB	
RCM NS&EA 2015 Recommendation 2	RCM NS&EA recommends that once the code list is finalized, all countries should repopulate the whole time series of landings, effort and samples to the RDB.
Justification	A multitude of codes for e.g. harbours, métiers, have been used and accepted to the RDB, leading to heterogeneities between countries and/or between years. Agreed code list for all fields of the RDB (see recommendation in ToR g), will enable the development of regional procedures for validation, statistical inferences and reporting.
Follow-up actions needed	RCM NS&EA to agree on code lists for all fields of the RDB All MS to implement the agreed code lists in their national data center for exporting purposes and upload their data in the RDB.
Responsible persons for follow-up actions	RCM NS&EA All MS
Time frame (Deadline)	Mid-2016 to be used by RCM NS&EA in 2016.
LM comment	LM endorses this recommendation.
RCM NS&EA 2016 comments	Harbour using the UNLOCODE lists have been updated intersessionally and have been used for the latest RDB uploads. Metier codes are as adopted in 2015. Species codes have been converted to the WoRMS list.

LM 13. Landings abroad and the RDB	
RCM NS&EA 2015 Recommendation 3 & **RCM NA 2015 Recommendation 11**	RCM NS&EA and RCM NA recommend that the present situation in the sampling and estimation of landings abroad is reviewed and that the ICES data centre ensures that the RDB can hold accurate data that on the landings abroad fraction of the catch.
Justification	Landings abroad constitute a substantial fraction of the landed catch, a fraction which needs to be sampled adequately and for which estimates are required. The number of records within the RDB would suggest either that foreign landings cannot be uploaded and stored adequately, or that there is very little sampling of foreign vessels occurring.
Follow-up actions needed	ICES data centre to ensure that sampling data derived from landings abroad can be uploaded, and that this data can be stored correctly within the RDB. WGCATCH to review the present situation in the sampling of foreign vessels, and the methodology employed to estimate landings abroad. SC-RDB to analyse data policy implications.
Responsible persons for follow-up actions	ICES Data Centre, WGCATCH, SC-RDB
Time frame (Deadline)	To report back to the RCMs in 2016.
LM comment	LM endorses this recommendation.
RCM NS&EA 2016 comments	ICES Data Centre has investigated the ability of member states to upload foreign landings and found there is no problem. WGCATCH: the recommendation was not picked up and no work was undertaken. SC-RDB: The issue was not considered by the SC-RDB

LM 14. Upload logs	
RCM NS&EA 2015 Recommendation 4 **RCM NA 2015 Recommendation 3**	RCM NS&EA recommends that the upload logs messages from the 2015 upload exercise be taken into account when agreeing on regional reference lists for the RDB. The RCM NA strongly recommends that: 1. those upload logs not depending on RCM decisions are to be taken into account by the SC-RDB and RDB support; 2. each MS appoints a person to work on intersessionally sub-group to deal with those upload logs pending from RCM decisions; 2. 3. If relevant, MS to consider reload all their data and update the upload log on next RCM data call
Justification	There are a variety of errors reported by the upload logs that need to be sorted, like the different length codes used, the need to define codes of procedure for e.g. KW days and how to deal with missing or incomplete information. Though the database support has improved substantially, its development is a continuous process which has to be enhanced based on user's feedback. There are still inconsistencies and errors in the data on the RDB that have been caused by the IT system design itself, by non-restrictive reference lists or due to insufficient data checks by MS. Data gaps limit the potential for data analysis and delays RDB use on the regional coordination process. The data call for the RCM 2015 was forwarded together with an upload log from de RCM NA report to be completed so that users can assess the limitations of the data and therefore what interpretations or analysis can be done with it. The RDB will be developed to record the status of the data within it, but until this feature is available a standard log submitted at the time of each data call can provide RCGs and data users with a reference to what data is not on the system as well as what is. Given the amount of issues listed pending from RCM decisions and the workload behind its scrutiny, intersessional work is required. Once analyzed and an action is set, the upload issues are to be addressed to the SC-RDB. If there are actions not pending from The RCM decision, the upload issues must straight assigned to the relevant responsible.
Follow-up actions needed	• Taking into account upload logs for reference lists. • Upload log to be addressed to SC-RDB; • Upload log issues pending from RCM decision to be analyzed intersessionally by persons appointed by MS; • RCM chairs to include an updated upload log in data call 2016 and, when relevant ask MS to consider reload their data.
Responsible persons for follow-up actions	RDB-SC, RCM chairs and intersessional group for the upload log
Time frame (Deadline)	Upload log 2015: before SC-RDB 2015 Upload log 2016: to include in data call 2016 (mid-2016) Reloading of data and submitting of upload log to RCM chairs: by deadline specified in data call 2016

LM comment	LM endorses this recommendation.
RCM NS&EA 2016 comments	Upload logs have been used in the 2016 RCM data call.

LM 15. Implications of the landing obligation - Scientific data storage, IT systems and estimation	
RCM NS&EA 2015 Recommendation 5 **&** **RCM NA 2015 Recommendation 9**	RCM NS&EA repeats the recommendation from last year that scientific institutions and ICES need to ensure that data recording systems, IT systems and estimation routines are able to appropriately deal with the new BMS (fish landed below MCRS) fraction of the catch that origins from the landing obligation. National and international databases (including InterCatch and FishFrame) need to accommodate this new fraction in order to make catch estimates transparent. RCM NA recommends that scientific institutions and ICES ensure that data recording systems, IT systems and estimation routines are able to appropriately deal with the retained discard fraction (Landings BMS) and official discards. RCMs to review, monitor and advise on the impact of the implementation. Also, authorities should adjust logbooks and IT systems to accommodate the accurate recordings of all catch components, including the part that can be released under the de minimis exemptions. Authorities should adjust logbooks and IT systems to accommodate the accurate recordings of all catch components, including BMS and fish that are discarded, for example under the *de minimis* exemptions.
Justification	The landing obligation will introduce a new category of landed fish below minimum conservation reference size (BMS) and this fraction of the catch will require to be estimated. This necessitates that within national institutions and ICES all stages of the recording, storage and estimation processes are able to accommodate this fraction. Many national IT systems may have data models based on a distinction between landed and discarded data that will require modification to accommodate the BMS fraction. Routines to estimate national catch compositions for length and age for assessed stocks will need to be adjusted. The ICES InterCatch system and the regional data base may be similarly affected.
Follow-up actions needed	Scientific institutions and ICES data centre to consider if present systems are appropriate and if not make the required modifications. RCMs to review the impact of the implementation on data collection and consider the use of the draft template or similar on an annual basis (see RCM NA 2015 report). MS and EU authorities to, where feasible, improve control data capture methods to assure the quality of the data used for scientific advice. Authorities should consider: 1. BMS fraction in the logbooks not just on the landing declaration. Assure and maintain accurate species composition data. 2. Sales notes or equivalent to need to account for the non-sold BMS fraction. 3. Validation of the control data for the BMS fraction. 4. Assured solutions for the under 10 meter vessels presently only reporting catch on sale notes. 5. Haul by haul information recorded in the logbook 6. Gear selectivity measures to be recorded in the logbook
Responsible persons for follow-	Scientific institutions within MS & ICES

up actions	National and EU authorities
Time frame (Deadline)	As soon as possible as the landing obligation already is in place in some areas and for some species. For InterCatch/RDB prior to data calls for 2015 data.
LM comment	LM endorses this recommendation.
RCM NS&EA 2016 comments	BMS fractions have been included in the RDB and national databases.

LM 16. Age determination in stocks where age is not used in assessments	
RCM NS&EA 2015 Recommendation 6 **RCM NA 2015 Recommendation 12**	RCM NS&EA recommends that the Liaison Meeting (LM) discusses and suggest a decision making process on how to deal with requirements on age determination for stocks were age is not used in the assessment due to poor agreement between age readers. RCM NA recommends a full evaluation of the state-of-the-art regarding relations between age reading of species and assessment. This evaluation could be done by WGBIOP in contact with stock coordinators. This recommendation should be valid until an agreed standardized age reading method is developed.
Justification	Many Member States undertake the task of determining the age of fish stocks e.g anglerfish (*Lophius* sp) for which the age determinations is not used in the assessment due to poor agreement between readers. In the present situation all MS make, in lack of guidance, their own judgement if age determination should be kept or not. There need to be some kind of guidance to MS on how to act in those situations and the responsible body to give this guidance need to be identified. The collection of material (e.g otoliths) should of course continue as long as it is a requirement in DCF. RCM NA received a petition to consider the case of *Lophius* spp. Strong discrepancies between ilicia and otolith reading are found. This made not possible to use the age estimates of both calcified structures together, ilicia and otoliths, for stock assessment purposes. There is a need for an agreement between WGBIOP and *Lophius* stock coordinators to agree in the usefulness of following collecting and reading these structures for assessment purposes.
Follow-up actions needed	LM members to discuss and reach an agreement. Agreement between WGBIOP and *Lophius* stock coordinators.
Responsible persons for follow-up actions	Liaison Meeting 2015 WGBIOP and *Lophius* stock coordinators
Time frame (Deadline)	2015 Next WGBIOP meeting (2016).
LM comment	LM considers that guidance in improving age determination is a task of WGBIOP. WGBIOP 2015 strongly encourages that the data end-users (i.e. assessment WGs and Benchmark WKs) stay in dialogue with WGBIOP and the RCMs in order to provide feedback on the usability and feasibility of (deriving) age reading data for these difficult species.
RCM NS&EA 2016 comments	It was not known if there has been a dialogue between WGBIOP and *Lophius* stock coordinators. In general, WGBIOP can assist in defining data quality of age reading for stock assessment, but the usability of existing age data has to be evaluated by stock

	coordinators, stock assessment WGs and Benchmark Workshops. With regard to the wider dimensions of a 'decision-making process on how to deal with requirements on age determination for stocks were age is not used in the assessment due to poor agreement between age readers' (RCM NS&EA 2015), WGBIOP should set (if not already existing) criteria for 'poor agreement' in age reading.

Annex 3. Key points form the Baltic RCM meeting

The key points form the Baltic RCM were presented to plenary, and are reproduced below:

RCMs to RCGs intersessional work

- Subgroup on rules and procedures
- Subgroup on cost sharing of surveys
- Subgroup on eel and salmon?
- Subgroup on data and analysis
    - Developing format and code for transversal variables
    - Testing RDB format (WKRDB and fishPi)
    - Developing estimation procedures
    - Baltic hands on workshop on statistical sound sampling

Timing of RCG next year ? May / June

Lack of funding for regional work stressed!

Discussed national workplans and templates

- input wanted from RCM NS&EA

EFARO/ICES initiative on ecosystem surveys

- Study proposal

Annex 4. Review of pertinent points from expert groups related to regional coordination

The main points relating to regional cooperation from expert groups were presented to plenary, the executive summaries and or key points are reproduced below:

PGDATA

Executive summery

The Planning Group on Data Needs for Assessments and Advice (PGDATA), meeting was hosted in San Sebastian Spain from the 29th of February to the 4th of March 2016 and had 14 participants from 10 countries and was chaired by Mike Armstrong, UK, and Marie Storr-Paulsen, Denmark

The main output of the meeting was to start a process establishing a cost-benefit framework operating alongside a quality assurance framework (with which it is closely linked). A cost-benefit framework should be implemented as a component of all data collection programmes to ensure that data collection programmes are closely aligned with end-user needs, deliver data of sufficient quality to meet these needs, and make most efficient use of available human resources and funding. A framework is needed to ensure that the decision processes are fully transparent and objective, and follow clearly established procedures and guidelines and not

taken as ad – hoc decisions for example in response to budget cuts. This is especially important in a time where institutes are facing budget cutbacks, new end-users demands and therfore prioritisation between different data collection programs may be needed. It is therefore important to consider how to identify the contribution of different data sets to the uncertainty in assessments, and hence identify areas of data collection that could best be targeted for improvements in cost-efficiency. For example, there may be many different data sets used in an assessment. An important question is if the quality of the assessments and advice could be improved and carried out more cost efficiently by (for example) improving the quality of catch at age data, or the quality of survey data, or addition of new surveys. It should also be evaluated if the same quality could be maintained at lower cost by optimising the design. The costs of scientific monitoring and the fishery regulatory system also have to be considered in relation to the value of the fishery and the short and long-term risks to the stocks. There will be pressures to make these activities as cost efficient as possible. PGDATA in 2015 established a Workshop on Cost Benefit of Data Collection in Support of Stock Assessment and Fishery Management (WKCOSTBEN) to be held in July 2016. PGDATA 2016 spent time planning this workshop and developing supporting information to help define and implement a cost-benefit framework and proposing case studies to demonstrate the process. PGDATA also carried out planning for the related 2016 ICES Annual Science Conference theme session O entitled "When is enough, enough: Methods for optimising, evaluating, and prioritising of marine data collection "

PGDATA discussed at this year's meeting its future role within the ICES Steering Group on Integrated Ecosystem Observation and Monitoring (SSGIEOM). In recent years, SSGIEOM has included 21 working groups comprising many that are responsible for coordination and design of fishery-independent surveys, and smaller numbers of groups dealing with fishery-dependent data, biological parameters and fishing technology. The SSGIEOM has made some important advances in relation to surveys, particularly the documentation of survey protocols and data products, but it has become clear that the scope of the SSGIEOM expert groups has increased to a point where a different, strategic approach is needed to ensure ICES has high-quality data to support delivery of its science and advisory plans and its commitments to clients. It is proposed that PGDATA is reformed as a team of experts drawn from the SSGIEOM data groups to achieve the most appropriate balance of statistical and other key skills across the different areas of data collection that in combination support ICES' science and advisory work. The revised PGDATA would interact closely with the ICES Data Expert Groups (WGCATCH, WGRFS, WGBIOP ect.), the other Steering Groups and ICES expert groups which are end users of data for stock assessments, multispecies or mixed fishery modelling, and regional ecosystem assessments, to develop and implement strategies for improving the data needed for these purposes. In this proposed new structure, chairs of the existing Working Group on Improving Use of Survey data in Assessments and Advice (WGISDAA), and the chairs from Working Group on Integrating Surveys for the Ecosystem Approach (WGISUR) would be represented in PGDATA and would also coordinate the activities of the many fishery independent survey EGs taking over this role from the present SSGIEOM chair.

WGCATCH

Executive Summary

The Working Group on Commercial Catches (WGCATCH), chaired by Hans Gerritsen (Ireland) and Nuno Prista (Sweden), met in Lisbon, Portugal, 9–13 November 2015. WGCATCH is responsible for documenting national fishery sampling schemes, establishing best practice and guidelines on sampling and estimation procedures, and providing advice on other uses of fishery data. The meeting was attended by 30 participants from 15 countries.

The group addressed a large number of terms of reference and the meeting was conducted through presentations, discussions and analysis of questionnaires. The main terms of reference were addressed in subgroups. The report is structured directly along the terms of reference and the main outcomes are listed below.

Data collection schemes for small-scale fisheries

WGCATCH provided descriptions of national small-scale fisheries through questionnaires. An overview was obtained on the current data collection methods. Two major approaches were identified - census (e.g., sales, logbooks) and sampling methods (e.g., catch surveys) - and their main pros and cons were discussed. In most cases, specific sampling approaches are needed for these fisheries. The group developed a work plan to establish good-practice guidelines.

Analysis of case studies of commercial fishery sampling designs and estimation

Case studies of sampling designs and estimation involving megrim in divisions 7-8 were presented. A common theme is that issues with practical implementation of probability-based sampling remain. WGCATCH

summarised the main issues and provided a set of possible solutions. The group also provided guidance on dealing with previous data collected under métier-based sampling designs.

Simulation models to investigate survey designs

Several simulation studies were presented, most of them outlining the work of fishPi project (funded under MARE/2014/19) in evaluating regional sampling designs. A critical review was carried out and WGCATCH produced general considerations and guidelines. WGCATCH recommends that these are taken into account when analyzing the results of simulations of regional sampling design at RCM level.

The impact of the landing obligation on catch sampling opportunities

The impacts on sampling and data quality of the current implementation of the landing obligation in the Baltic were reviewed. The group found that refusal rates for observer trips have increased to nearly 100% in at least one country, while in many other countries on-board observer programmes did not suffer noticeable changes. WGCATCH established that the catches below the minimum size cannot be accurately estimated by sampling the landings below the minimum size because an unknown proportion of the catches may be discarded. The group also reiterated that it is important that the logbooks distinguish landings below and above the minimum size.

Links with PGDATA

The remit of WGCATCH is closely linked to that of PGDATA. One of the relevant outcomes from PGDATA is the proposed workshop on cost benefit analysis of data collection in support of stock assessment and fishery management (WKCOSTBEN). WGCATCH endorses the need for such a workshop. WGCATCH also supports the PGDATA recommendation that funding be made available for further development of the RDB including estimation and diagnostic routines.

Publication on statistically sound sampling schemes

WGCATCH drafted detailed plans to produce a peer-reviewed paper in 2016. The paper will provide a synthesis of the evolution of sampling design towards best practice, illustrated with a number of concise case studies.

Estimation procedures in the Regional DataBase (RDB)

The work of WKRDB 2015 presented alongside existing and planned estimation procedures in the RDB. Current work by Norway on a software package that will allow design-based estimation and optimization for stock assessment purposes was also presented. The advantages of ensuring compatibility of this new software with the developments currently planned for RDB-FishFrame are underscored.

Repository of resources relevant to catch sampling

WGCATCH initiated a repository with key resources; putting them into context with brief descriptions or review of each report, paper, book, website, software package etc. The intention is for this repository to be made available online by ICES.

Sampling of incidental bycatches

WGCATCH agreed to start routine documentation of sampling practices for bycatches of protected, endangered and threatened species (PETS) and rare fish species as well as routine evaluation of the limitations of current methods for collection and analysis.

Training course on Design and Analysis of Statistical Sound catch sampling programmes

WGCATCH considered continuous training and expertise on sampling design, estimation and simulation to be the basis for successful implementation of statistical sound catch sampling programs. A new ICES Training Course in Design and Analysis of Statistical Sound will take place at ICES HQ in Copenhagen, from 12 to 16 September 2016. WGCATCH recommends that RCMs promote the attendance of these meetings among all MS involved.

COSTBEN

The Workshop on cost benefit analysis of data collection in support of stock assessment and fishery management (WKCOSTBEN), chaired by Mike Armstrong, UK and Jon Helge Vølstad, Norway, met at ICES Headquarters, Copenhagen from 28 June – 1 July 2016 2016 to:

a) Propose options and analytical methods for an objective framework to evaluate the benefits vs costs of data sets used to support stock assessment and fishery management advice, where the benefits are in terms of accuracy (bias and precision) of assessment results and derived management variables, and risks to stocks associated with management under uncertainty. This framework should be able to evaluate existing data sets, new data requests from end users, and options for focusing elements of funding, survey design, spatial and temporal coverage, and sampling effort towards components of data collection that have greatest influence on quality of assessments and management decisions for particular stocks or groups of stocks.

b) Identify a range of stocks for detailed case studies, including those with full analytical age-based assessments and data-limited assessments, and contrasting stock status and biology. Describe the data used in the assessments, the design of fishery-dependent and fishery-independent sampling surveys providing the data, including hierarchical cluster sampling designs and analytical methods for quantifying precision reliably. Evaluate sampling rates and allocation for given survey designs that are required to derive estimates with adequate precision. Specify how simulations of the sampling schemes could be used to relate precision to sampling intensity and costs.
c) Develop a proposal for a longer-term (3-year) project to develop a general methodological framework and open-source software to carry out cost-benefit analysis and provide proof of concept using the case study stocks. Identify potential sources of funding.
d) Identify the need for follow-up workshops in 2017 onwards in the event of no funding for a dedicated project.
ToR (c) was considered by PGDATA (ICES, 2016) to be not an appropriate approach at this stage, and they recommended a 3-year WKCOSTBEN workshop series to develop the cost benefit framework and supporting case studies.
The work plan was based on the following tasks:

- Establish what is meant by "cost-benefit framework for data collection", and who it is designed for
- Identify scope of decisions about data collection and how they could be supported by objective and transparent methods appropriate to the scale of the issue
- Develop some illustrative case studies around examples of regional data collection programmes (fisheries; surveys)
- Map out a longer term programme for development and implementation of the framework

The workshop evaluated several completed and ongoing studies to assess the impact of age-sampling strategies (e.g., nos. otoliths collected per length-bin) on uncertainties in estimates of catch-at-age and abundance indices at age (inputs to stock assessments). The planned study to optimize the sampling for age in fisheries-dependent surveys of Norwegian Spring Spawning Herring was presented. The workshop identified approaches for simulation modelling to examine the effects of sampling strategies for length-age sampling in surveys on stock assessments that can be implemented for a wide range of stocks. Several case studies were initiated.

The workshop considered that optimising sampling for length and age in surveys, and in fishery sampling, was a good "low hanging fruit" for promoting the power of cost-efficiency analysis in the ICES community. Some case studies were proposed for developing within the WKCOSTBEN framework. These included simulation of sampling for length & age of Kattegat cod and the impact on stock assessment; making best use of data through combination of length compositions from separate at-sea and shore based sampling for hake; sampling for length / age in the Belgian beam trawl fishery; use of fishermen's research survey data (Sweden & Denmark). For analysis of survey data to look at optimising age collections in surveys, simple analysis in R was developed using the DATRAS format, making the code applicable for many other surveys (also in GitHub https://github.com/ICES-dk).
The WKCOSTBEN report is currently under development, and awaiting results and text for case studies.
The continuation of WKCOSTBEN as a series of three meetings is yet to be agreed by ICES, and input from data end users and RCGs on specific topics that should be explored in future would be welcome.

WKRDB

Draft Executive Summary

Workshop to develop the RDB data format for design based sampling and estimation with particular emphasis on population data (WKRDB2015-1)
A Workshop to develop the RDB data format for design based sampling and estima-tion with particular emphasis on population data [WKRDB 2015–01] took place in Sète, France, 26–30 October 2015 (Chairs: Kirsten Birch Håkansson, Denmark, and Liz Clarke, Scotland).

The main outcomes of the workshop were the following:
• The changes to the CL and CE data formats suggested by WKRDB III and previous RCMs were reviewed, and it was proposed to incorporate those which did not require trip-level data into the current RDB CL and CE formats. Changes which required trip-level data were considered separately as described below.

• A trip-level data (CT) format for use in the statistical environment R code-sharing and work within countries was proposed. This format is based on a data-sharing format used in the EU-funded project fishPi (MARE/2014/19). Scripts can easily be written to streamline several tasks for logbook and sales slip data at a National level, for example: to convert data in this format into the CL and CE formats required for submission to the RDB; to aid popula-tion of the proposed design-based CS format (which is still in development); to aid quality checking of sampling data; to standardize the calculation of effort. The workshop reviewed the current requirements for CL and CE data and confirmed that all fields to provide these data were available in the pro-posed trip-level data. The workshop also reviewed trip-level data changes suggested by WKRDB III and confirmed these were incorporated in the pro-posed CT data format.
• The design-based CS format proposed by WKRDB 2014–01 (and slightly modified intersessional) was reviewed in detail, in particular the new SE table and revisions to the HH table, and the format was accepted in princi-ple. The current proposed format was considered suitable for concurrent sampling and species-focused sampling, but some modifications might be required for non-concurrent multispecies sampling. Some minor modifica-tions were proposed for consideration by the current CS format develop-ment team in the fishPi project. A preliminary draft of a design table, to
incorporate information about the sampling design, and which reduces rep-etition in the CS format, was proposed.
• A preliminary version of proposed CT data format has been populated by 15 institutes as part of the fishPi project mentioned above, and the CS data format has been populated by Scotland Originally it had been intended that participants at this workshop would populate the CS format with real data so that estimation scripts could be tested. However, the length of time re-quired for the above tasks precluded this, and it was concluded that a trial implementation workshop focusing almost exclusively on populating the CT and CS data formats and running test scripts for data checking, visuali-zation exploration and checking should be held in 2016.

WGRFS

Five key outcomes from WGRFS 2016.

- Each year, the WGRFS compiles the latest catch and economic data collected for the DCF from recreational fishing surveys across Europe and will be available as within the appendices of the report.

- The WGRFS Quality Assessment tool is used to assess the quality of a few of the national surveys each year. This year the quality of the UK and Polish surveys of recreational sea fishing were assessed. The UK survey design was deemed to be acceptable and data quality would be assessed once analyses were complete. The Polish survey was only of charter boats, so may have significant bias due to the non-random nature of the selection of boats and is likely represent an underestimate of the total catch. A regional assessment of Western Baltic cod surveys was also done, as it is an important recreational species with significant issues for management. The survey leads form Germany, Denmark, and Sweden worked together to assess how to develop a programme that was compatible across the countries for Western Baltic cod. Assessments of other national surveys can be found in earlier WGRFS reports.

- The text on recreational fishing proposed for the EU-MAP was reviewed and comments provided on the text and species lists. This was provided to Evangelia Georgitsi from the EC who attended the WGRFS and included in the process of developing the EU-MAP requirements for recreational sea fishing. The lists of species were fine for the all regions apart from the Mediterranean and Black seas. For the Mediterranean, the following species to be included: Groupers, Seabass, *Diplodus sargus*, *Dentex dentex* and *Sparus aurata,* and albacore should also be included if it is not covered by highly migratory. The WGRFS did not have the experts to judge the species list for the Black Sea.

- The concept of a threshold for recreational species below which no data should be collected was not thought to be reasonable as there was no precedent for catches of other metiers, only for the biological sampling. Many countries already collect recreational fishing data for all species caught, but only provide the species identified by the DCF to Europe. It was felt that an exercise to compile all recreational data across all species to assess both impacts and data gaps was needed before any

meaningful threshold could be set. This could be done as an EU lot funded project or a separate ICES workshop.

- The concept of collecting data where an existing end user driven by need and decided by the RCG was positively received. However, there needs to be input into the RCG from expert groups like the WGRFS to ensure robustness and transparency, so the WGRFS would be very happy to provide support to the RCG. The WGRFS also highlighted that there are issues with focussing on particular species due to the need for time series of recreational catches for assessments and the fact that new species may need to be assessed. It was felt that there was little additional effort in conducting multispecies surveys, so this should be done where possible to negate these issues.

- Post-release mortality is an important component of recreational catches and may lead to significant underestimates in recreational fishing mortality if not accounted for in the stock assessments. More data are required especially for seabass, where no studies exist, and read across from other species is difficult due to the importance of fishing methods in the likelihood of survival. Proposals have been put in for EU lot funding through ICES, but have not been successful due to the need to complete WKMEDS first. However, the WGRFS believe that this issue needs to be addressed for recreational fishing very soon due to the large release rates for some species.

Provided by Kieran Hyder (WGRFS co chair)

WGBIOP

Executive summary

This was the first interim year for the multi-annual Terms of References (ToRs) for the Working Group on Biological Parameters (WGBIOP). ToR a was the consolidation of the WGBIOP itself, ToRs b, c and e were dealing with the development of a quality assured assessment of new and existing biological parameters for both single-and integrated stock assessment. ToRs d, f and g were the generic ToRs for the group handling the reviewing of calibration exercises on biological parameters, their outcomes and recommendations for such actions, including a continuous development of tools for facilitating such calibrations.

WGBIOP addressed ToR a) both as a general plan for the group but also by agreeing on specific plans for each ToR. In terms of the remits of the WGBIOP, it was concluded that the group will not only focus on existing biological parameters but also on accuracy in derived life-history parameters estimation which may support stock assessment; both single-stock and integrated ecosystem assessments. Given this rather ambitious remit, the group decided to focus the first 3-year period on defining new (for assessments) and existing biological parameters (ToR b), their quality in terms of sampling and estimation (ToR c) and how these may be integrated in the general bench-mark process in ICES (ToR e). Concerning the generic ToRs (d, f and g), it was decided to follow the outlined procedure in the ToRs (i.e. continue the work on quality assurance of biological parameters through workshops and calibrations as previously done in PGCCDBS), and in addition have a developmental side to them. WGBIOP decided to expand the workshop/exchange review to include under the WGBIOP remits also the work performed on ichthyology, fish egg production and ichthyoplankton related issues.

Discussions related to ToR b led to a specification of the broad groups of new and existing biological parameters that are emerging as critical components of state-of-the-art assessment. A descriptive database was initiated including details of the necessary data providing information on the particular parameter, the types of species/ecosystems for which they are most useful, the type of stock/ecosystem models that they are typically used in, and examples of where they have been used before. The discussions on this ToR led to a draft of a “roadmap” that can guide end-users on the data collection, potential usefulness, and typical approaches employed when incorporating this new biological information into assessment.

WGBIOP addressed ToRs c and e in combination and ended up merging these into one single ToR: “Evaluation of quality of biological parameters: issues, quality indicators and guidelines”. The discussions under this new ToR were very fruitful and led to a thorough review of the issues regarding biological parameters. Issues put forward by the assessment WGs for benchmark stocks were evaluated (‘top–down’ approach) and, as an example, the WGNSSK 2015 report was screened for issues (‘bottom–up’ approach). This evaluation focused on existing biological parameters already included in assessments (e.g. age, maturity, natural mortality). New biological parameters from this review were discussed under ToR b. The development of Quality Indicators was initiated for existing biological parameters.

SCRDB & STECF

The main points from the RDB SC and the STECF meetings were covered by means of presentations. The pertinent content of the presentation is reproduced below:

SCRDB meeting Dec 2015

a) Respond to recommendations put forward to the SC-RDB by the Liaison Meeting and ICES expert groups.

b) Summarize how the RDB has been used in the regional coordination meetings;

c) Conclude on the data policy document, dealing with access rights, data confidentiality and data ownership issues, following the consultation process, amend if necessary and adopt the final document.

d) Summarize input from WKRDB 2014-01, WKRDB 2015-01 and Liaison Meeting on a new exchange format and suggest a route forward.

e) Continue to develop a strategy under the revised DCF and new EMFF regulation, on development of RDB-FishFrame, taking requirements from a design based approach to sampling and raising and the landing obligation into account. Report on progress for the short, medium and long term plans developed so far.

fishPi and the RDB

- Based on the preliminary work on the FishPi project the level of details of sampling and catch data stored in the RDB were not sufficient.
- The level of details of the sampling data can most likely be provided.
- The level of details of catch data might be an issue due to confidentiality reasons. TRANSVERSAL DATA

Challenge – the use of transversal data

- For stock assement of fish and shell fish (InterCatch)
- Regional Data Base – RDB FishFRame
- Effort data call (which includes a lot more than effort)
- Fleet economics data call
- VMS data call
- And a lot more ……

Proposal

- Development of a common format for primary tranversal data to be used nationally.
- Development of common methods for calculating variables like; days at sea, fishing days, days absent from port.
- Derived data – development of standard methods and scripts.
- Only one data call for tranversal data to be used by both economist and biologist.

STECF plenary comments

Nationally held transversal data files

The second transversal data workshop proposed nationally held data bases of primary transversal data designed to a common format that would enable the use of the R-scripts (mentioned above), and thus implement the same calculation methods for all countries when answering data calls. STECF agrees that this is a good idea in principle since having raw data in a common format could be a help for Member States and serve to reduce workload. STECF notes, however, that further work is needed to propose common standards and methods that could be used by Member States.

STECF considers that a workshop would be required to progress on the development of the proposed harmonized national transversal data files. Since an agreed approach across member states is required, STECF considers that an ad hoc contract is not a suitable approach to address this proposal. STECF notes that the use of the proposed national transversal data files based on a common primary data format by Member States will be voluntary.

Annex 5. Review progress of DC MAP and related regulations.

The progress with the DC MAP and the implementing decision for national programmes was covered by mean of presentation to plenary

Annex 6. Review findings of fishPi (regional grant MARE/2014/19)

The work of the fishPi project was presented to the Commission at the final project meeting on 12th July 2016. Following acceptance of the report, the project findings were made available on the RCM share point and presented to the NSEA. Specific presentations were made for WP 1 concerning a review of RCM progress and the results of the consultation of regional member states; the work of WP2 with specific presentations on the case studies relating to Small pelagics, flatfish and Hake. A presentation on WP3 covered the work undertaken on by-catch sampling schemes, stomach sampling schemes and small scale and recreational fisheries, and WP4 relating to and specific case studies in plenary. Reproduced here is the executive summary and the project recommendations.

fishPi Executive Summary

fishPi was a research project with the aim of "Strengthening regional cooperation in the area of fisheries data collection". The project brought together over 40 experts from 13 scientific institutes in 12 countries (10 member states (MS)) and two internationally recognised survey design experts. It was funded by EU MARE grant MARE/2014/19, with a 14 month timeline commencing in April 2015.

This project has trialled the way sampling designs would be developed in a regional setting and showed that collaboration and consultation is required at face to face meetings through regional groups that focus on a particular group of fisheries. The project was the first step in this process and one of the main outcomes is the framework to take the process forward; developing data formats, data sharing agreements and easily accessible software for data sharing, checking and analysis, and for the simulation testing of sampling designs. These designs are predicated on common data collection protocols and the use of the appropriate statistical estimators; the implementation of such designs would thus require the adoption of the standard survey sampling techniques and the use of common sampling and estimation routines by the sampling institutions.

The main findings of four commercial fishery case studies were that considerable improvements can be made by adopting regional designs, by which we mean the adoption of a common metric used for stratification (such as port size or fleet segments etc), though with the nation being retained as a level of stratification within the overall design. Such designs would potentially provide unbiased and more precise estimates than the coordinated national data collection schemes operating at present. The main issues found in the operation of national sampling designs at present is the incomplete sampling coverage of the regional population, and that

the allocation of sampling effort unilaterally at national level does not represent the best use of the available resource.

Further work needs to be carried out in identifying appropriate fisheries for regional sampling, testing the assumptions of biological data collection, species selection protocols and sampling effort in relation to the data needs of end users.

Small scale and recreational fisheries, by-catch and stomach content sampling programmes do not have established regional sampling schemes, and data collection is not routinely carried out by MS to the same extent as the existing commercial fisheries sampling. Through end-user consultations and case studies, this project has shown that these data have particular requirements. There are other end-users usually distinct from those of the main end users of commercial fisheries data to be considered. As a consequence, data needs and the potential for regional cooperation should be carefully explored with end-users as a prerequisite to the design stage of any regional scheme. There could be considerable resource implications, both technical and economic, for implementation.

A major remit of the project was to develop guidelines to evaluate the quality of data at national and regional levels using shared tools. To that end an R library has been developed and made available on a public access website (https://github.com/ldbk/fishPifct). The data structure upon which the work was developed was an upgrade of the data exchange format for the current regional database. The suite of quality checks functions have been designed to provide considerable flexibility in their use as it is recognized that the formats and reference lists will evolve over time, under the RCG umbrella. The ideal time frame for these checks would be quarterly checks at a national level for submission to a regional data base at the end of February. Regional quality checks can then be carried out in March. This time frame might need discussion and adaptation before being adopted at a regional level. The functions developed during the project are to be seen as a first version aimed at continuous improvement for the benefits of all the Member States. Details of a short term development plan and resources needed are proposed for a gradual implementation.
A review of the historical operation of RCM has highlighted improvements in regional coordination between MS. The establishment of the fishery activity matrix and the regional data base are considered to be the main elements that has led to a common understanding of regional fisheries and resulted in harmonised codes for métiers, species, harbours and areas. It has emphasised the building of links, trust, skills and understanding of experts across MS and the important contribution specific projects (COST and WebGR) have made to that process. However in order to gain the full potential benefits from regional cooperation there is a clear need to develop regional work over longer time frames than hitherto, and with appropriate funding mechanisms and organisational infrastructures.

The major findings of fishPi formed the basis of a written consultation addressed to all National Correspondents, the Heads of Institutes from Member States attending the RCM NS&EA, RCM NA and RCM Baltic, and ICES and EU, who are considered the main end-users of the data. Responses were received from 15 out of 17 Member States. The conclusions from the consultation included strong support for the overall concept of regional sampling designs using probability-based selection methods and associated regional estimation methods, and strong support for the use of the regional database and the operation of data quality indicators. Respondents also commented that national sampling requirements need to be taken into consideration and that additional resources may be required.

The added value brought by the fishPi project has been substantial. Most noticeably this can be seen in the establishment of co-operative working relationships between experts in the scientific institutes involved and the extent to which all participants have broadened their skills base and understanding of the statistical principles of design based sampling and probability based selection.

Regional sampling designs have the potential to improve the statistical validity, data quality and cost-effectiveness of data collection and are directly related to the end-user needs. This applies equally to large scale commercial, small scale, and recreational fisheries, bycatch sampling and ecosystem based data collection. Therefore steps should be taken to develop and implement regional sampling designs, taking into account that the primary need is to identify the fisheries most suitable for such regional designs. It is the opinion of the fishPi participants that all the case study fisheries have the potential to be viable regional data collection schemes.

Specific regional sampling groups should be established for these key fisheries to oversee the development of regional sampling schemes. These groups should be inclusive; with data collectors, lead scientists in the countries involved, and experts in sampling, all in attendance. They should work in consultation with the main end-users. These groups should operate along the lines of ICES expert groups under the umbrella of the Regional Coordination Groups (RCGs).

A mechanism needs to be found to respect the autonomy of action of Member States and scientific institutions, in the collecting of data for national use, and reconcile this with requirements to collect data for regional data needs, in accordance with sampling protocols and data quality criteria set at the regional level.

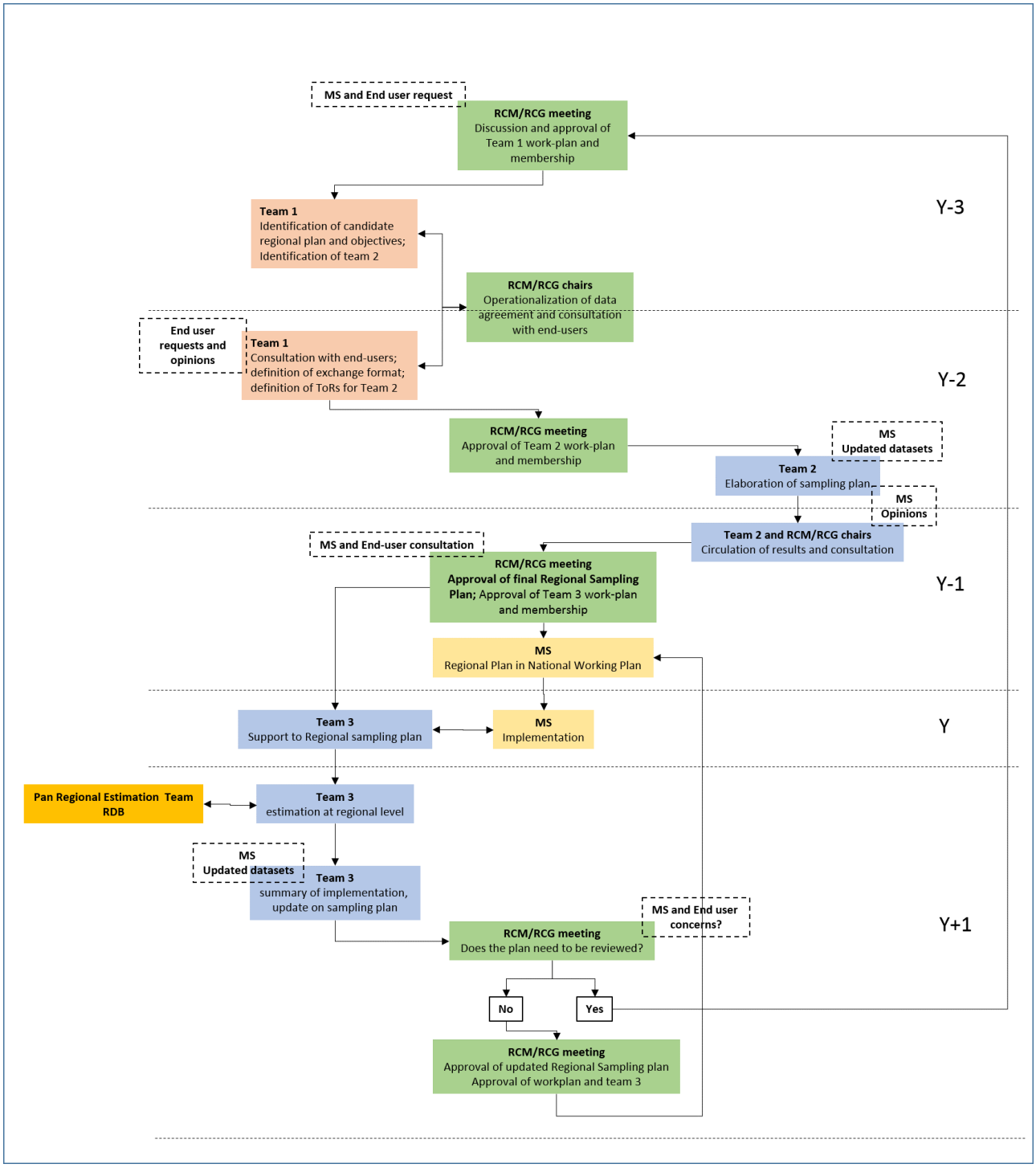
Data flows, data exchange formats, data quality checking and a regional data base linked to national data sources are an integral part of regional sampling coordination and the production of regional estimates and reporting. Standardized data quality checks should be implemented on national and regional data, following an agreed timetable. A regional data database, WebGR and the development of software tools in R, need to have secure long term funding to meet developing needs for improvement.

The RCG needs to be empowered with suitable autonomy of action and funding mechanisms to be able to facilitate the appropriate use of expertise, and staff time, needed for the development and implementation of regional sampling plans.

Annex 7. Evolution of RCMs toward RCGs including new groups and needs.

The transition from a single annual RCM meeting to an RCG structure which encompasses the intercessional work of more specialised groups was considered in relation to the work of various subgroups. These are reported here.

Regional Sampling Sub Group



Timeline	What	Who	When	Estimated duration of task	Funding
Y-3	MS or End-user Request	MS and/or End-users	Prior to RCM/RCG meeting	---	
Y-3	Discussion and approval of Team 1 work-plan and experts	RCM/RCG plenary	RCM/RCG meeting	<1 day	MS
Y-3 to Y-2	Identification of candidate regional plan and	Team 1 and	Intersessional	~25 person*days	MS

	objectives; Identification of Team 2 experts	RCM/RCG chairs			
Y-3 to Y-2	Consultation with end-users; definition of exchange format and data agreements; definition of ToRs for Team 2;	Team 1 and RCM/RCG chairs	Intersessional	~10 person*days	MS
Y-2	Approval of work-plan and Team 2 membership	RCM/RCG plenary	RCM/RCG meeting	<1 day	MS
Y-2 to Y-1	Elaboration of sampling plan	Team 2	Intersessional	~100 person*days	?
Y-1	Circulation of results and consultation with MS and end-users	Team 2 and RCM/RCG chairs	2-months ahead of RCM/RCG plenary	<1 day	MS
Y-1	Approval of final Regional Sampling plan; Approval of Team 3 work-plan and membership	RCM/RCG plenary and LM	RCM/RCG meeting	<1 day	MS
Y-1	Regional Plan in National Working Plan	MS	National Working Plan deadline	<1 day	MS
Y	Implementation	MS	Year-round	---	MS
Y+1	Regional estimation	Team 3; Pan-Regional estimation team / RDB	Start of Year	~10 person*days	?
Annual	Implementation summary update on sampling plan; Circulation of results and consultation with MS and end-users	Team 3 and RCM/RCG chairs	2-months ahead of RCM/RCG plenary	~10 person*days	?
Annual	Decision on update or review	RCM/RCG plenary	RCM/RCG meeting	<1 day	MS
Periodical	Review process (new process)	Several	2 years	~135 person*days	MS/?

Generic terms of Reference for Team 1

Team 1 shall identify fleet/fishing activities which could be eligible for a regional sampling plan and prepare the ground for its implementation. The following ToRs should be met:

a. Identify the candidate fleets and/or fisheries that should be considered to meet the objectives for regionalization set by RCM plenary

b. Identify end-users and collaborate with RCM chairs in consulting them on their expectations from the regional sampling plan

c. Identify the data required for regional sampling plan development and collaborate with RCM chairs in operationalizing an agreement for data-sharing

d. Suggest a team of experts (team 2) to develop the regional sampling plan. Define a work plan for that team.

f. Present the outcomes of its work for discussion and approval at RCM/RCG plenary

Generic terms of Reference for Team 2

Team 2 shall investigate and suggest a regional sampling plan(s) targeting the population of vessels that are designed to target small pelagics with vessels >40 m. The following ToRs should be met:

a. Produce a fishery description, including definition of total population, study population, access points, and sampling possibilities.
b. Consult with MS and describe the sampling design, sampling targets, implementation levels, gaps and failures, and constraints linked to the current national sampling plans.
c. Identify a range of competing statistical sound sampling plans that fit end-users needs. Run simulations of the different scenarios, considering variables beyond those used in the fishPI project (e.g., length and age). Select the best candidate sampling plans that meet end-user needs. Compute an estimation procedure that can be routinely applied at regional level.
d. Elaborate a script for routine update of sample allocation and selection for selected scenarios
e. Collaborate with RCM/RCG chairs to make the conclusions and supporting scripts and analysis publicly available 2 months ahead of the next RCM.

Generic terms of Reference for Team 3
Team 3 shall support the implementation of each regional sampling plans. Note that team 3 is to be set up once any regional sampling plan is agreed for implementation the following year. The following ToRs should be met:
a. Support the implementation of the regional sampling plan advising MS on adaptations required to meet end-user needs.
b. Produce an annual summary on the monitoring of the regional plan and advise on the adequacy of the existing sampling plan for next year.
c. Update the sampling plan for the following year, if necessary
d. Estimate and provide all data required from formal data calls (ICES, STECF) to end-users, directly from the RDB, and inform each MS concerned with the procedure followed.
d. Evaluate challenges ahead and if needed, suggest the review of the sampling plan in RCM plenary. If not, recommend update

Some pending issues and thoughts left

- In red are some issues that may need more careful review
- More emphasis on feasibilty/consultation with MS may be required in Team 2 ToRs
- pan-regional collaboration in identification of plans (team 1): who, how?
- Pan-regional collaboration in regional estimation: who, how? [see later?]
- Degree of data sharing and procedure to get people onboard
- Approvals by RCM/RCGs: how?

Anadromous and Catadromous species Sub Group

Salmon in the North Sea and Eastern Arctic
In the ICES assessment the North Sea is currently divided in two different assessment units (AUs) – northern area (Finland, Norway, Iceland, Sweden, Denmark), southern area (UK, France) (see WGNAS reports).
In the total North Sea region, there are a large number of known and potential salmon rivers (several with ongoing reintroduction programs or occasional reproduction). Presently ICES assesses the stock status analytically for 17 wild salmon rivers. In addition the stock status of 25 rivers (part mixed) is assessed by expert evaluation.
Fishery
Commercial fisheries targeting salmon take place in coastal and river areas (estuaries only perhaps). Commercial fisheries are obligated to report catch and effort.
Recreational fishing targeting salmon takes place in offshore, coastal and river areas. Some countries have obligations to report catches, but not all. Catches are therefore estimated annually in part of the countries by country through different surveys. The major part of the estimated recreational catches is taken from the rivers.
As requirements for data to exceed available resources the WGBAST gives guidelines regarding what kind of data collection should be given priority. However, the RCM doesn't evaluate the data needs that should be satisfied or the priority for them to be covered in the NPs. The RCM expects the ICES to make the evaluation of data needs and also prioritise them over the need existing in all assessment working groups.

European eel in the North Sea and Eastern Artic

European eel is considered to form one (panmictic) population spread over Europe, the Mediterranean and partly North Africa. The whole-stock assessment conducted annually by ICES to inform the official ICES Stock Advice on the European eel is based on about 30+ time series of eel recruitment indices, distributed throughout the continental range of the European eel but mostly in western Europe and Scandinavia.

Given the large variation in vital population characteristics across its distribution, uniform stock-wide management is impractical. The development and implementation of protection measures has therefore been delegated to regional levels and management & assessment is defined in the (National) Eel Management Plans, in which the particular Management Units are defined by each member state, which all have to meet the 40 % silver eel escapement target referring to Regulation No 1100/2007.

The North Sea area for eel consists of independent management units defined by Member States, no interactions other than via the shared spawning at the Sargasso Sea. Member States have decided on their own data collection and analytical methods, but all in response to the obligations set by the EC Eel Regulation (EC 1100/2007) for 'high level' stock indicators of escapement biomass and levels of anthropogenic mortalities.

Monitoring programs for eel thus had to be adapted locally and in many cases this has resulted in different methodologies being developed to meet both, national and international, obligations. Member states at the moment use different model approaches for their management plans with different input data / data origins. Given this, a comprehensive international standardization for European eel species is difficult to accomplish and needs to be more flexible than for other commercially relevant marine fisheries. Although there might be scope for a general move to more standardized approaches, which might aid quality control in future (WKESDCF 2012), there is no official drive for this at present.

The data provision was already recommended by the Workshop on Eel and Salmon DFC (*WKESDCF)* that stated "that future EU-MAP should make delivery of EMP assessment results for eel (biomass, mortality rates, restocking amounts) to ICES an obligation for Member States."

The data needs for European eel, as stated in the new EU-Map, thus require information on fisheries and on vital stock parameters, such as local recruitment, standing stock of yellow eels and biomass on escaping silver eels. With a total of >100 River Basin Districts across the European continent, a large part of the above named parameters will be the result of modeled calculations, often with notable uncertainties. Therefore, any efforts to improve escapement models, increase the quality of model input data (e.g. mortality rates) or validate model results should be supported.

There are challenges to regional coordination of data collection methods and locations because these are decided by Member States. However, regional coordination would help to ensure standardisation of data reporting and provision to end-users. As a future perspective, RCMs / RCGs could ensure information flow between member states and WGEEL or other relevant working groups / Workshops. Many countries so far have failed to report the required stock indicators to the Commission. It is not so much the data collection, but the whole process from data collection, through assessment, to reporting and evaluation, that needs coordination.

References:

European Union. 2007. Council Regulation (EC) No 1100/2007 of 18 September 2007 establishing measures for the recovery of the stock of European eel. Official Journal of the European Union, L248/17: 1–7.

ICES 2016 Report of the Joint EIFAAC/ICES/GFCM Working Group on Eel (WGEEL) 24 November- 2 December 2015, Antalya, Turkey, ICES CM 2015 / Acom:18. 130 pp.

European Commission Regulation No 1100/2007.

Data needs Sub Group

End user needs in new EU MAP

The EU-MAP is intended to have greater end-user input on aspects of data collection. It focuses on what data are required from Member States, rather than on the methods to collect them. Details of data collection are to be agreed at regional level for many data types. The new EUMAP therefore provides greater flexibility for end-users of data to request new data collection requirements, amendments to existing requirements, or removal of specific requirements, all of which would need to be agreed at a regional level in consultation with the RCGs for types of data within the remit of the RCGs.

The Annex to the new Commission Implementing Decision (Chapter 3 (1.3)) states that:

"Data shall be collected to enable valid estimates to be derived for the type of fisheries, temporal periods and areas based on end-user needs agreed at marine region level. The frequency of data collection is to be coordinated at marine region level, unless stated otherwise in this Annex and corresponding tables". The Annex refers ten times to defining data collection according to end-user needs, all of which relate to biological data collection, ecosystem impacts and thresholds for data collection (Chapter 3: articles 2 and 3, and Chapter 5: Article 2). These are areas of data collection where the RCGs have a particular mandate to ensure coordination of data collection at a regional level.

This focus on designing data collection to meet end-user needs is fully in accordance with established procedures for designing, implementing and monitoring data collection programmes, as illustrated in Fig. 1 derived from ICES (2012) and STECF (2013). The instigation of a new data collection scheme (or radical amendment to an existing scheme) must start from the estimates that the end users want, and the desired quality of those estimates. Data collection experts and statisticians then work with the end users to design a data collection programme to deliver the required estimates as cost-efficiently as possible, and to monitor the performance of the scheme. The scheme may be improved at intervals following evaluation of its performance.

The collaborative process illustrated in Fig. 1, should be followed for any new data collections or major alterations to existing data collection schemes. Whilst it may be possible to adjust national and regional data collection schemes at short notice to accommodate relatively small additional data requirements, this is impossible for large changes where substantial collaboration with end users and lengthy design stages with peer review are required. The additional collaborations and analyses associated with coordinating and optimising national schemes to meet regional needs places additional demands on resources and time. A potentially lengthy design phase is therefore needed before new data can be collected, and for EU MAP programmes this must be specified in detail and agreed between end users, Member States and the European Commission. The RCGs should coordinate this process where appropriate. If MS try independently to establish new schemes or make large changes to existing schemes at short notice to address a new EU MAP requirement, there is an extremely high risk of delivering poorly designed and coordinated data that may prove unfit for purpose and a represent a large waste of public funds. At worst it could result in inappropriate fishery management decisions using biased data.

Defining the end users.

The Commission Implementing Decision of 12/7/2016 for the EU MAP does not define end users or any categorisation of them. The CFP regulation EU 1380/2013, Article 4.1 (32) states that "end-user of scientific data' means a body with a research or management interest in the scientific analysis of data in the fisheries sector". Major end users of DCF data include ICES, other RFMOs, STECF, the Commission itself, and national administrations and agencies. In some cases, e.g. ICES, the end users are contracted to the Commission to provide specified advice and other services that make extensive use of DCF data.

The goal of the Commission to make DCF data more easily available to a wide range of end users (for example through a data hub), and the increasing flexibility in the EU-MAP to define the details of data collections at a regional level in consultation with end users, would open the possibility for more bodies to try and get regional data collection schemes adapted to meet their own specific needs. With many existing or potential end users of the data, managing this process would be extremely difficult without a well-structured and documented procedure, and clear criteria for evaluating data requests. This is needed to avoid the demands of end users

increasing in an uncontrolled way, beyond the capacity and funding of national and regional data collection programmes.

This section of the North Sea and EA RCM explores the possible processes by which a major end user could collaborate with the RCG to identify data needs and how these could be accommodated within existing sampling programmes or how new data collection schemes could be designed. To facilitate this exploration, ICES is taken as an example of a major end user which is contracted by the European Commission to provide advice and other services.

Evaluation and use of data within ICES in support of fishery management

ICES benchmark assessments and annual update assessments for individual stocks require access to extensive data sets on fishery catches, catch compositions, survey indices of abundance and biological data which are analysed using a wide range of stock assessment models to monitor stock status against biological reference points such as Fmsy. The range of data, complexity of models and methods of deriving advice varies widely between stocks, as expressed by the assessment category. ICES also requires data to evaluate impacts of fishing on bycatch species and habitats, and data requests include data from the same sampling schemes used for stock assessment, such as observer programmes.

In principle, the ICES benchmarking process should provide information on the following aspects of data quality:

i) national data transmission failures (timeliness; formats; quality assurance)
ii) quality of supplied data (e.g. related to sampling design; implementation errors such as insufficient samples or ageing errors; data raising errors; quality assurance such as mistakes in data sets).
iii) Data gaps – for example absence of relative abundance data – leading to recommendations for new data collections.

Data quality issues should be documented by ICES at the data compilation and evaluation stage of the benchmark process, independent of the use of the data in any model, and may also be detected at the stock assessment stage when scrutinising model fit diagnostics. Simple diagnostics such as ability to track cohorts in catch at age data are also informative though would need reference back to the sampling and quality assurance schemes to identify potential causes of problems detected. A summary of data quality problems is usually provided in the ICES advice sheets, but only in a general sense. More detailed commentary on data issues may be included in the annual stock assessment report or the report af a benchmark process. However there are currently no clear overviews of data issues across stocks and fisheries within a region, that could routinely help ICES and RCGs to identify and prioritise areas of regional data collection that need to be improved, or new data sets that might be needed. Without such an overview, it would prove extremely difficult for RCGs to determine how data collection programmes within a region should be improved or better coordinated to provide data that better meet ICES' needs.

The various processes related to compilation, evaluation and use of data in support of ICES advice on fishing opportunities are shown schematically in Fig. 1. This shows where any ICES requests for new or ammended data from EU MAP would be derived, communicated, evaluated and agreed, and then accomodated in the regional data collection schemes with monitoring of effectiveness. Many of the ICES data EGs such as WGCATCH, WGRFS etc. include people who also participate in RCGs and STECF expert working groups, which should facilitate communication between these groups on issues of regional data collection.

Developing the most effective system for ICES to communicate data issues to RCMs

RCGs will have a broad remit and their subgroups will have relatively little time and resources to carry out RCG work on top of their other responsibilities. All RCG work will have to be carefully planned and executed to deliver the RCG responsibilities as cost-efficiently as possible. An ad-hoc, drip-feed of requests from ICES concerning data deficiencis or needs for individual fish stocks, fisheries or surveys in the region will be almost impossible to manage, particularly if inadequately documented and justified. ICES must collaborate with RCGs

to establish a well-defined annual process for: (i) identifying and documenting data deficiencies and new data needs, (ii) exploring how data collection can be best modified where feasible, and (iii) identifying the actions needed to design, evaluate, implement and monitor the new or modified data collection schemes.

A periodic regional, multiple-species benchmark process where regional data sets are fully evaluated, would provide an ideal focus for RCGs and ICES to collaborate to evaluate the extent to which existing regional data collection schemes are providing the data needed by ICES, to identify the sources of data problems, and to discuss and prioritise new data collections proposed by ICES. The ICES secretariat should provide RCGs with full details of benchmarks that are planned, to help in establishing an annual consultation timetable for reviewing data needs and deficiencies. RCG members could potentially have input to the benchmarks. The entire benchmark process takes place over a 2-year period commencing with the production of the issues list identifying the main problems to be addressed. After Benchmark Steering Group approval, RCGs should see the issue lists

As proposed in the PGDATA (ICES 2015) guidelines for benchmarks, the data compilation and evaluation process of benchmarks should make use of ICES data EGs such as WGCATCH, WGBIOP, WGRFS, WGISDAA etc. to provide expert advice on data issues. These groups should have a strengthened role in the ICES process of identifying its data needs and how these can best be met within regional data collection schemes. This should be considered when defining the EGs' 3-year objectives and work programmes. The skills-base of the EG membership should be monitored and steps taken to broaden and improve this where necessary.

To streamline the collaboration between ICES and RCGs in identifying and evaluating data needs, extensive use should be made by ICES of data bases such as the RDB, InterCatch and Datras, and associated software tools, to visualise data and highlight deficiencies. ICES currently has new staff working on r scripts to support a range of analysis being done by the ICES Secretariat (archived on https://github.com). On the RCG side, approaches and tools already developed, for example within fishPi and proposed new case studies, should be built upon over time to facilitate the evaluation of data proposals and explore data collection designs.

A useful development could be a database documenting all data used in each assessment, with quality flags, populated using a combination of information from data bases plus expert input from ICES assessment EGs. Data EGs such as WGCATCH and WGISDAA could provide guidance on this. Derived summaries of regional data issues can be used in discussion with RCGs. This implies a need for assessment EGs and benchmarks to be supplied with data quality indicators by people running the sampling schemes when data are supplied through the data calls. Poor fits of individual data sets in the assessment model could also be flagged (e.g. very large residuals; large trends in residuals) although this may not in itself be related to the inherent quality of the annual data.

The North Sea & EA RCM concluded that a process of dialogue with the ICES secretariat should be established as soon as possible to discuss how best to establish a collaboration with the RCG to comprehensively identify and prioritise ICES' data needs and to explore designs of new data collection schemes or changes to existing schemes within the RCG region. The discussion should clearly identify and document the roles and responsibilities of ICES and the RCGs, and establish goals and a timetable for collaboration. RCGs should have representation from ICES to make decisions. The NS&EA RCM notes that responsibilities of the RCG are to represent the Member States, and therefore the ICES national delegates would need to be aware of the ICES-RCG collaboration and work programmes affecting national agencies and their data collection schemes.

Providing full justification for new data requirements or changes to existing ones

Any requests for new, amended or terminated data collection would need to be supported by justifications under the seven criteria given by STECF 13-02 (2013) shown in Table 1, depending on magnitude of change needed. The RCG could provide some advice for criteria related to design and implementation of regional data schemes but the onus is on ICES to provide a sufficient, evidence-based justification of why the data are needed, how they will be used, and the expected benefits.

Documentation of end user input in the regional work plans

It is important that the process and timetable of consultation between RCGs and end users on data needs and new data requests, and the outcomes with any supporting justifications, are fully documented and transparent. Any changes in data collection would be documented in the regional workplan. RCM NSea&EA noted that a DCF web repository has not yet been set up and recommends that the Commission establishes such a repository as soon as possible.

Developing the expertise and composition of RCGs to meet the new and increasing demands

Discussion is needed on the skills and time needed within RCGs to address end user needs, the scope of the work that is realistically possible, and how the work would be funded, managed and delivered. The composition of RCMs has evolved over time in relation to the types of tasks carried out during the evolution of the DCR/DCF, though is constrained by the relatively small size of the international community of data collection experts. The recent series of ICES expert groups on data collection, and the fishPi project, have demonstrated the urgent needs to develop statistical skills, analytical skills and database and software tools needed within each region to carry out the work needed to develop and optimise data collection schemes. An important aspect of the collaboration between ICES and RCGs is to develop strategies to build these skills and capacities over time.

Extending to other end users

The general principles of collaboration between end users and RCGs to identify and evaluate new data needs, and how they could be addressed within existing regional sampling schemes, should apply to all end users. In all cases, a structured and fully documented approach needs to be followed. Where the data needs are relevant to regional data collection schemes within the RCG remit, the end users should approach the RCGs in the first instance with an overview of their request, and arrange a meeting (direct or electronic) to discuss how to proceed. The end users might make initial contact with another body such as ICES, the Commission, STECF, who should redirect them to the RCG when appropriate, or the Commission itself may advise the RCG of the new data need and ask the RCG to consider how it could be implemented within EU MAP.

During the initial contacts, the subsequent process and timetable for actions would be agreed. This would include the end user completing the justification criteria shown in Table 1. The detail needed will depend on the magnitude of the data collection proposed, and the end user should consult with the RCG subgroup to establish what is needed. The RCG subgroup would review the submitted criteria, obtain clarification where needed, and bring the justified request to the RCG as a whole for agreement to pursue further and identify what actions the RCG would need to take to evaluate the impact on regional data collection schemes or how the schemes could be adapted to provide the data. Depending on the magnitude of the request for new or amended data, a range of analyses may be needed, which could include simulation studies to examine cost-benefit.

If it is decided that a new data collection should take place, a well-structured and documented process of collaboration between the RCG and the end user would be established to define the estimates needed, the design of data collection needed to provide those estimates, how it will be implemented and monitored, how the data will be archived and quality-controlled, and how the performance of the scheme will be monitored, following the schema shown in Fig. 1.

References

ICES 2012. Report of the second Workshop on Practical Implementation of Statistical Sound Catch Sampling Programmes. ICES CM 2012/ACOM:54

ICES 2015. Report of the Planning Group on Data Needs for Assessments and Advice (PGDATA). ICES SSGIEOM/xx

STECF 2013. Review of DC MAP – Part 1 (STECF-13-02).

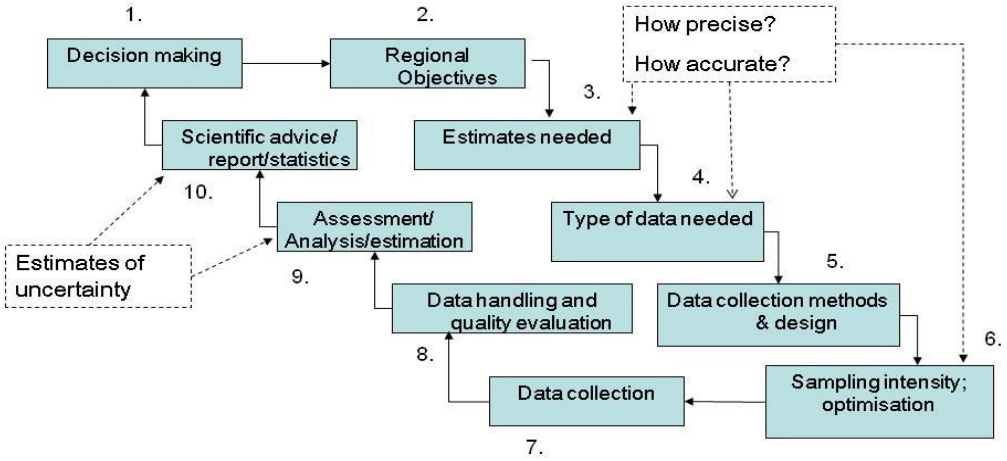


Fig. 1. Illustration of the stages in designing, implementing and monitoring a new data collection scheme providing data supporting assessments and management advice, as adapted by ICES WKPICS2 (ICES 2012; STECF 13-02, 2013) from schema provided by Mika Kukilahti. This should be carried out collaboratively between the data end users and the experts involved in designing and implementing the schemes and analysing the data to provide the estimates needed.

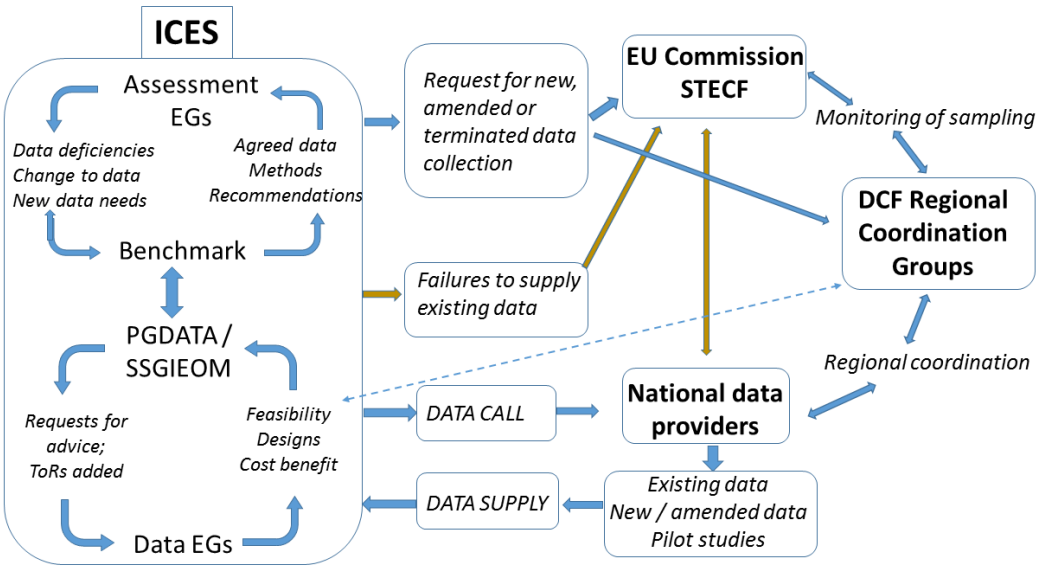


Fig. 2. Schematic showing the various processes related to compilation, evaluation and use of data in support of ICES advice on fishing opportunities, showing where any ICES requests for new or ammended data from EU

MAP would be derived, communicated, evaluated and agreed, and then accomodated in the regional data collection schemes with monitoring of effectiveness. The "request for new, amended or terminated data collection" would be supported by justifications under the seven criteria given by STECF 13-02 (2013) shown in Table 1, depending on magnitude of change needed.

Table 1. Proposed criteria for evaluation of proposed changes to data series in DCF adapted from STECF 2013: EWG 13-02 to apply to ICES as data proposer.

Topic	Responsibility	Addition of new data series	Amendments to existing data series	Cessation of existing data series
Need and Relevance	ICES – assessment EG / benchmark	Reasons and legal basis for the need or relevance	Reasons for change to need or relevance	Reasons for change to need or relevance
Impacts	ICES – assessment EG / benchmark / data EGs	Expected improvements for end user purposes. Precision needed to deliver expected improvements. Impacts on ability to maintain existing data series	Impacts on data quality and end use Impacts on ability to maintain existing data series	Impacts on ability to respond to end user needs
Feasibility	ICES data EG / RCG	Feasibility of collecting the data, especially to required precision and accuracy	Feasibility of collecting the data, especially to required precision and accuracy	
Methods	ICES data EG / RCG	Sampling designs and data collection methods needed; Who will implement the schemes; Anticipated sampling rates in relation to desired precision.	Changes to sampling designs, methods, sampling rates and costs.	
Costs	ICES data EG / RCG / expert analysts	Cost – benefit analysis	Cost – benefit analysis	Cost – benefit analysis
Data quality	ICES data EG / RCG	Data archiving and quality assurance; Quality indicators for the data	Data archiving and quality assurance; Quality indicators for the data	
Data use	ICES data EG / assessment EG	Process and methods for analysis of the data (models etc.) and application of the results	Process and methods for analysis of the altered data (models etc.) and application of the results	

Rules and Procedures Sub Group.

The work from the Baltic RCM on drafting the TOR for a sub group to determine the Rules and Procedures for the operation of RCG was presented to plenary. The RCM NSEA agreed to follow this initiative with the addition of the Inge Janssen NLD and Els Torreele BEL to the existing sub group members (Heikki Lehtinen (chair), Jorgen Dalskov, Christoph Stransky). The TORS for the subgroup as drafted in the RCM BALTIC are reproduced below.

Subgroup : Rules of Procedure for Baltic Sea Regional Co-ordination Group (RCG)

Document: TERMS of REFERENCE
Aim for the subgroup: To draw up Rules of Procedure for the Baltic Sea RCG
Chair: Heikki Lehtinen
Guidelines for drawing up the Rules of Procedures

1. The subgroup should agree to give to the RCG a draft recommendation for a Rules of Procedures for the RCG e.g.

2. The general aims of the Rules of Procedures is e.g. to standardize the decision making procedure, increase transparency, safeguard the possibilities to participate in to e.g. planning work and decision making.
3. The Rules of Procedures should be simple, easy and understandable language, and cover the main foreseeable needs of the RCG to work e.g. efficiently, fit for purpose and in a productive manner.
4. The Rules of Procedure shall contain the necessary decision making procedures, including the option to make decisions by correspondence
5. The Rules of Procedure will contain the necessary structures, including subgroups or other groups, for the RCG to be operative.
6. The Rules of Procedures shall contain the necessary timelines
7. The Rules of Procedure shall contain the necessary communication practices
8. The subgroup consists of 3-4 persons including the chair
9. The subgroup reports (RCM/RCG) on the progress of its work, as appropriate, with the view to produce first version of Rules of Procedure before the end of 2016.
10. The subgroup can choose its own working methods.
11. In case the subgroup, after serious attempts, can't give recommendation for a Rules of Procedure by consensus, departing views, with proper and comprehensive justifications from the majority view, shall be attached to the draft recommendation given to the RCM/RCG
12. Any other necessary element deemed relevant by the subgroup, also outside this term of reference, can be added to the Recommendation for a Rules of Procedures to be delivered by the subgroup.

    Members of the subgroup: Jorgen Dalskov, Christoph Stransky

Annnex 8. National Work Plans for 2016

National Workplan tables; their formats, content and evaluation, were considered in plenary, comments on specific tables are presented below:

Table 1A

RCM NSEA supports the initiative by France to develop an automatic filling of table 1A for all MS using EUROSTAT database for deriving the share of the landings (using year 2015 if complete, otherwise 2014), and the MARE FIDES file (https://webgate.ec.europa.eu/fides/index.cfm) for deriving the TAC share at the EU level. The benefits of this approach, beyond the relaxing of burden for all MS to fill-in this table, is to populate this information for all MS based on the same supporting data and following the same approach.

The principal difficulty of the task is to link the stocks as identified in Comm. Dec 1251/2016 table 1A to EUROSTAT and MARE FIDES stock identification keys. This link-table has to be completed and validated by all the RCMs, or at least by some representatives of each RCMs to enable the filling of table 1A for all. It was agreed at RCM NSEA that volunteer experts will help in the task of completion and verification of the link-table, further volunteers will be sought from the other RCMs and propose a filling of table 1A for all countries by the end of September.

Table 1C It was noted that the column requiring the specification of "minimum numbers of individuals sampled at the national level" was incompatible with probability based sampling, and as an alternative recording the planned collection rates was appropriate.

Table 1D: Recreational fisheries. The RCM considered this table to be straightforward to complete. However it was noted that the only design information is free text under 'type of survey' which is not very informative for evaluating the coverage and intended sampling intensity. The requirement to document the design and intended sampling intensity for fishery biological sampling is a requirement only for commercial fisheries (Tables 4A-D), as the guidelines state that Tables 4A-D refer to data specified in Decision Chapter III, article

2(a)(i) which excludes recreational fishery surveys. In principle, the information contained in Tables 4A & B could be provided for any recreational fishing surveys, if the guidelines extended the use of the table to recreational fishery surveys. Surveys being used in Europe typically have clearly defined sampling frames (e.g. nationwide residential phone list for population survey; list of recreational fishers or boats to sample to record catches; list of sites for on-site surveys), primary sampling units (PSUs: e.g. individual fishers or sites), stratification schemes and intended numbers of PSUs to sample, which could be captured in Tables 4A & B. Tables 4C & D are not relevant to recreational fisheries.

Table 1E (Anadromous and Catadromous) is for reporting the biological data collected from salmon and eel, with the exception of recreational fisheries that are reported in Table 1D, and commercial fisheries in the marine that are to be reported in Tables 1A-C. All sampling plans (fishery dependent and independent) should be reported in Tables 4A-D, quality assurance should be reported in Tables 5A-B, and data availability should be reported in Table 6A. There are about 100 eel management units (EMU) and over 2000 salmon stocks around the EU. Although the principle may be to list each in a separate row in Table 1E and declare whether or not they are sampled, we propose that Member States in their 2017 NWP list those EMU and salmon stocks that will be sampled along with a summary of the remainder that are not sampled. Otherwise, the table would be very large.

Table 1F: Incidental by-catch of birds, mammals, reptiles and fish. The RCM had no specific comments on this table but noted, based on a UK example, that the guidance on "expected occurrence of recordings" was unclear:

Member State shall indicate the expected occurence of recordings for individuals caught as incidental by-catch, including releases, in accordance with Table 1(D) of the multi-annual Union programme. Fill in with (+/-) number or 'X'.

It is very unclear in the guidelines what is meant by (+/-), number, or 'X' for recording the expected occurrence. A wide range of interpretations by MS would make it very difficult to evaluate the national programmes. For example if "number" is used, it could be an absolute number of individuals, an average catch rate, or a frequency of occurrence (e.g. proportion of trips where a catch is expected). An 'X' could be interpreted as meaning the species or species group is (or could be) present, or that it is absent. Better guidance is needed on what to put in this column, and types of comments that would be useful for interpreting the programme.

Tables 1 G-H – Research survey. The question was raised if Table 1G shall contain also information on the total planned number of days at sea and hauls (in addition to those numbers planned at national level). The group could not come to clear opinion on that and decided to wait with any proposal on that until the cost sharing model regarding research survey. Other issue which needs further consideration and clarification is whether MS shall provide a list of all surveys it conducts, including those not co-financed through DCF.

Tables No 4A 4B 4C 4D

Tables 4A and 4B are designed to record, by schemes and strata, the planned sampling of member states. It was noted that there are some discrepancies between the statistical formulation of sampling plans and some aspects of the guidelines for filling the WP tables (Commission Implementing Decision laying down rules on the format for the submission of work plans for data collection in the fisheries and aquaculture sectors), hence there were some discussion on whether there is a room for interpretation. These tables serve as a basis for the WP submitted by MS and, if there is a genuine desire to improve the statistical validity of MS programmes, the evaluation of these tables should reflect that.

There were also some more detailed discussion on the information to be included in Tables 4, which indicated that there is an obvious need for clarifications. For example, whether the column "J" in Table 4A ("*Species/ Stocks covered for estimation of volume and length of catch fractions*") should rather to target species/stocks or to all species. This table requires also detailed information on stratification of sampling activity, including temporal stratification, the wording of this is not in line with the approach applicable to probability based sampling designs.

Table 4D (Landing location) contains a summary of the ports and total volumes of fish landed in those ports. It was noted that while this cannot be linked directly to other tables, it provides an indication of the total population of the ports by landing country. Table 4C serves a similar purpose for the national flag fleets.

Table 5A – Quality assurance frame - the set of information required in this table regarding full documentation of the sampling design and implementation, having in mind that not all MS have such documentation available yet, is seen by the group as the ultimate goal the MS shall aim at. Analysis of those Table over the years will enable to monitor and assess progress MS are making in achieving the above goal.

The group took note that in October this year, prior to WGCATCH meeting, a questionnaire will be sent to MS on the time consumed and problems encountered when filling the tables required for the WP. Based e.g. on such input from MS, the set of information to be provided in WP's tables shall go through the review process by STECF and, subsequently, the Guidelines shall be amended in 2017 accordingly.

Speed of change

RCM NS&EA acknowledges that full implementation of new DCF/EU-MAP requirements takes time. Sampling protocols and procedures need to be adapted, tested and implemented to account for these new requirements. Moreover, in some cases the end-user requirements are not yet known, while these should be taken into account when redesigning national sampling protocols. This situation however should not hamper individual MS to progress towards new sampling methodologies and to (partially) implement new sampling procedures. Not all MS progress at the same speed and 2017 is to be considered as an intermediate year. As stated at various STECF groups, this situation might lead to the situation where parts of the MS' workplans are not in full compliance with the DCF requirements, while other parts are in line already.
In addition RCM NS&EA has acknowledged that where new data requirements go beyond the current legislative framework, they should be optional. It is stated in the EU-MAP that once a new legal framework amending Regulation (EC) No 199/2008 will enter into force, the Commission may amend the EU-MAP, if necessary, to reflect any new data collection requirements. As the national work plans have to be submitted before adoption of the new DCF there might be a mismatch with these plan and the new data collection requirements.
Regarding pilot studies as mentioned in the proposed regulation, these pilot studies can be initiated at various levels ranging from relative small national studies to supra-regional multi-annual studies. The 2017 RCMs need to take initiative to cater for the evaluation of proposed pilot studies as well as start to initiate (supra) regional studies as required under the revised DCF.

In order to ensure the functioning of the expert groups, the RCM NSEA recommends all MS in the NSEA region to copy/paste the table below in their respective NWP for 2017, and fill the last column with the time allocation and the field of expertise offered to support the expert groups. It is not demanded to each MS to participate in each expert groups, since all MS are participating to RCG and expert teams outcomes will be further discussed in the RCG and circulated to all MS in advance. MS is also free to express comments on its participation or non-participation to an expert group.

Expert Groups identified by RCM	Qualification needed	Timing of the expert group work	Total number of days	MS Expression on participation (max. nb

NSEA			required for the expert group	days and field of expertise available)
Defining Rules and Procedures for RCG	Experience in dealing with DG-MARE and national administrations	Jan – Aug 2017		
Preparing the ground on cost sharing of surveys	Experience in managing surveys at sea	Jan – Aug 2017		
Preparing the ground for future regional sampling plan	Statisticians R coding Data collection experience in the field of on-shore and at-sea commercial fisheries sampling	Jan – Aug 2017	25	
Preparation of the regional sampling plan of the commercial fisheries targeting small pelagics using vessels >=40m	Statisticians R coding	Jan – May 2017	100	
Quality analysis of the stock related data in the RCM database	Statisticians R coding	Jan – Aug 2017		

Annex 9. Landing obligation

It is clear that discards will continue under various forms of exemptions (high survivability, de minimis, prohibited species etc). This obliges continued observer programs under the DCF and adds to the complexity of interpreting official catch records and observer data collected onshore and offshore. The RCMNA proposed an intersessional task group to continue monitoring the impact of the landing obligation on data collection and catch estimates.

RCM Chairs met intersessionally and circulated the opportunity for MS to contribute to an intersessional subgroup but beyond some preparatory work before this years RCMs there was no intersessional work required.

Apart from the pelagic and industrial fisheries, 2016 was the first year that demersal fisheries in the North Sea were affected by the landing obligation. Apart from the practical issues related to sampling the BMS fraction from these fisheries, concerns are mainly supposed because as yet there is limited data to review the scale of any issues.

To capture the practical issues and perceived concerns a simple draft template used by RCMNA to capture MS experiences relating to current and pending discard plans was amended to cover the species/fisheries/fleets under the obligation in the North Sea and Eastern Arctic. This was circulated to all MS at the RCMNSEA with instructions to complete them for review at WGCATCH (7-11/11/16). MS were also asked to provide a paragraph documenting their experiences of sampling, or not sampling, the new landed fraction ashore which will provide the focus for discussions at WGCATCH.

The RCM template keeps a running record of the issues encountered by MS and perceived issues relating to the anticipated discard action plans for the coming years. Any issues relating to the Pelagic fisheries under the obligation will need reviewing as well as 2016 control and sample data once its available.

RCMNSEA notes other initiatives being adopted across Europe to monitor the implementation of the landing obligation which included ICES and WGCATCH, control agencies (e.g. 'last haul sampling' by EFCA) and the commission through STECF. EWG-16-04 *Methodology and data requirements for reporting on the Landing*

Obligation looked at how to evaluate the impact and implementation of the landing obligation – it listed a number of metrics that could be used. Most are already being recorded at no additional cost for example through the control regulation logbooks and VMS or scientific observer schemes and industry refusal rates. But the report also looked at industry and socio-economic metrics as well.
The Baltic has experienced a full year of the implementation of a ban on cod and Denmark were able to present some comparisons of BMS estimates from official logbook data, EFCA sample data and their observer data. The results appeared to show that the discard plan, despite an uplift in quota for cod to account for this new fraction, had not significantly altered fishermen's sorting behaviour in the first year.
The RCMs need to continue to monitor the impact of the annual update of complex discard action plans on fisher behaviour and national sampling schemes. In 2017 an intersessional group will need to review MS template returns and the RDB data once BMS data is available and compare the different metrics which could highlight the scale of any uncertainties and potential gaps in sampling schemes.

RECCOMENDATION –

1. All MS to complete monitoring template
2. All MS to complete paragraph on sampling experiences onshore.
3. RCM Chairs to appoint contributors for intersessional work
4. RCM Chairs to submit an early data call in 2017 to allow intersessional work on RDB data.
5. Pan regional intersessional group to review 2016 BMS CS and CL data on the RDB and source and review other available metrics before RCM 2017.

Annex 10. Up load logs

Up Load logs for the 2015 data were provided by Ireland, England, Scotland, Denmark, Poland, Portugal, Estonia and Spain. Work commenced on the summarising of these in the RCM NSEA with the intention that it would continue in the RCM NA.

Annex 11. Evaluation of surveys

Currently, the list of mandatory survey included in Table 10 of Implementing Decision 2016/1251 is based on the old DCF regulation. As stated in various reports, this list should be subject to a thorough independent review. STECF 16-07 (EWG 16-01 report) states:" *In line with proposals of e.g. STECF EWGs 13-05 and 15-15, as well as RCMs in 2015, and not to disrupt current well-established surveys, the EWG 16-01 agrees that the EU MAP shall contain a basic list of mandatory internationally coordinated surveys, however, this list shall be evaluated against updated eligibility criteria. Once this evaluation is completed, the list of mandatory surveys shall be updated. Also, this updated list shall form the basis for cost sharing between MS. The evaluation of the surveys requires an independent review process based on predefined criteria in line with the criteria for the establishment of multi-annual Union programmes as defined in the proposed DCF recast."* The RCM NS&EA still agrees with this approach and again stresses the need to review the survey list. This review needs to take place prior to setting the cost shares, as this evaluation can also contribute to the definition of target species. Moreover, this evaluation is expected to result in an updated list of surveys and this list might include new surveys subject to cost-sharing and some surveys may be deleted from this list.

Schedule
The following schedule is proposed for the evaluation of surveys (updated from STECF 16-07):

- December 2016: End-users provide survey requirements based on data needs (ICES, GFCM, ICCAT). MS to highlight additional surveys potentially to be included in the list and to be subject of the evaluation. These surveys should at least meet the basic criteria of international coordination and cooperation.
- January 2017: Dedicated STECF EWG evaluating all surveys according to the predefined and updated[2] (prior to this EWG, e.g. through ad-hoc contract) evaluation criteria. This EWG will then propose the list of mandatory surveys to be included in EU MAP. This group is preferably chaired by an external

[2] Updated criteria based on STECF-SGRN 10-03, also taking into account the relevant criteria for the establishment of multi-annual Union programmes as specified in the new DCF.

non-EU expert and the report is reviewed by external experts prior to presentation to STECF. The composition of the group shall be based on survey expertise, end-user input and statistical expertise (survey optimisation).

- April 2017: STECF to approve this list and initiate the process to update EU MAP
- 2017: Commission to update EU MAP
- 2017: RCGs to set up and finalize cost-sharing procedures
- 2018: MS to adhere to the updated list and to share costs based on procedures agreed by RCGs

The intersessional RCM subgroup on cost sharing will work intersessionally and will report back to the RCMs in 2017. The following schedule is proposed:

- September 2016: Set up of intersessional group
- December 2016: meeting to discuss outcomes and suggestions by 2016 RCMs, define Workplan and way forward, agree on basic principles for models, finalize generic model
- Jan-Mar 2017: testing outcomes of proposed models based on scenarios and 'model-surveys'
- RCM 2017: subgroup reports back to RCM
- NC meeting 2017: final agreement by all NC's on the models
- 2018 implementation of cost-sharing models.

Annex 12. Research Surveys at sea

The RCM NS&EA was presented with a summary of the ICES/EFARO initiative for a proposal for pilot study, (reproduced below) which was considered in plenary. RCM NS&EA gives a qualified endorsement to the study originally proposed by EFARO/ICES and considers that the following provisions should be addressed:

- There is a need for clear a priori criteria to be established by which the outcomes of the study can be evaluated. For example, in the North Sea case study the outcome of a simulated 50% reduction in survey effort on fisheries assessments is proposed; however, this should be accompanied by a clear statement of what will be considered an acceptable outcome. Is it seeking to maintain or enhance the current precision of the assessments or, if it anticipates a loss of precision, what would an acceptable loss be? Pre-defined, objective and measurable criteria permit an honest benchmark for evaluating the outcome of the work. Arbitrary, post hoc definitions permit a degree of subjectivity to be incorporated that allow poorly justified conclusions to be drawn;
- The proposed study runs parallel to other existing initiatives within ICES; namely work being carried out on the cost-benefit of data collection programmes in support of the advisory process (WKCOSTBEN) and on the development of fisheries surveys into more broadly-based ecosystem surveys (WGISUR, WKPIMP). An overview of how the proposed study fits with the existing work that is being carried out by these groups would ensure that it complements rather than competes with current activities;
- The funding sought under the original proposal appears to be disproportionate (excessive) compared to the funding that enabled a similarly complex pan-European project (FishPI) to be completed successfully;

ICES/EFARO initiative: Proposal for pilot study

The current research vessel surveys are mainly addressing the data needs of ICES advisory work. Until now focus has been on carrying out single stock assessment. With the upcoming focus on integrated ecosystem assessment and the implementation of the ecosystem approach to fisheries management the ICES and EFARO (European Association of Fisheries and Aquaculture Research Organisations) setup a joint EFARO – ICES meeting in January 2916 for developing joint data collection plans using vessel surveys. The scope of pilots was broadened to cover the data needs for integrated ecosystem assessments

It was concluded at the meeting that:

- Most of the scientific fisheries-independent surveys were designed decades ago.
- Over time many of these surveys have been modified with additional sampling for purposes other than those the surveys were originally designed for.
- The efficiency of the data surveys is not currently addressed.
- Concerns associated with changing/stopping historical time series are main arguments to continue with existing surveys.
- To ensure a complete decision basis for streamlining surveys, there is a need to clearly define what data is needed, with what quality and the most efficient way of collecting this data.

The proposed way forward to help and focus the discussion for efficient surveys was to decide and execute a few selected pilot studies (desk-studies) trading off the available resources and priority needs with results and deliverables ready for use within one year after starting these pilots. The aim of the proposed pilot studies is not to open another line of coordination of national survey plans, but to examine from a broader perspective how much and what type of sampling is needed at minimum to achieve quality standards and how these data could most efficiently be collected. Once this is achieved the next step will be to implement these results under coordination of ICES and the national responsible persons/agencies for allocating ship time.

It was suggested to run three pilot studies:

North Sea: Objective for the study is to develop a survey program assuming that the money available for surveys in the North Sea is reduced by 50%. The idea is to explore the possibilities to obtain the data needed to support the advisory work of ICES and national institutes. The pilot should address all relevant kinds of surveys and platforms (trawl, acoustic, plankton etc.)

Celtic Sea: The objective suggested is to explore how best to optimise the use of the existing budget for monitoring from governments to collect all advisory data requirements related to fisheries and environmental management. The study should build on existing work carried out by the UK, France and Ireland.

Bay of Biscay: The group suggested the optimisation of current surveys in collecting the data needed for ICES and national advisory work as the main objective.

CEFAS agreed to lead the preparation of the proposal for a Celtic Sea study, IMARES to lead on the North Sea and IEO on the Bay of Biscay.

The suggested Terms of References for developing proposals for pilot studies is:

The leading institutes (CEFAS for the Celtic Sea, IMARES for the North Sea and IEO for the Bay of Biscay) shall for each of the areas prepare proposals for pilot studies on the collection of fisheries independent data needed in support of scientific advice on fisheries and environment management with the of drawing conclusions with recommendations on:

- the possibility for efficiency improvement of current Scientific-Fishery-Independent Surveys (SFIS)
- quantitative
- in terms of money and survey efforts, in particular shipping time and necessary man-hours
- as percentages relative to current efforts

The studies shall include:

- a definition of data needed for the advisory work,
- novel survey designs “from scratch” based on a virtual 50% and 75% level of funding relative to current funding of SFIS,

- a comparison of the data in terms of quantity and quality expected to be collected with the new design and the current surveys,

The study proposals should include as a minimum 2 alternative sets of pre-set goals and priorities for these "new designs" and a test of the designs relative to the goals.

Study duration: 6-8 months starting early 2017.

Deliverables:

- Three reports outlining the results, with recommendations on implementation and further work.
- One report prepared by ICES drawing overall-conclusions from the three pilots, with general recommendations on implementation, further actions towards improvement.
- Presentation of these 4 reports and conclusions to the commission by EFARO/ICES and pilot coordinators.

Total cost for the three pilot studies is estimated to:

- € 650,000
    - € 200,000 per pilot;
    - € 50 ,000 for coordination activities

Annex 13. Data calls

A summary of the RDB 2015 data call was presented to plenary, pertinent points are reproduced below:

Upload Status

- **All countries have uploaded landings and effort data for 2015** – This is the first year ever where all countries have uploaded CL and CE
- All countries have uploaded sample data for 2015, except France and Portugal. (Estonia and Wales did not upload two species).
- From the number of species uploaded for the years it looks like all data have been uploaded for all countries. But for England, Scotland and Wales there was a drop in then number of species and records for the landing data.
- A few countries have updated previous years data

The WKPROXY data call was discussed in plenary in relation to ICES end user feedback. There was a feeling that the scope of this data call was large, that the data requested was speculative, with potentially considerable implications in workload for member states.

Annex 14. Data Bases

A presentation was made to plenary of the status of the RDB and the progress achieved in the previous year. Discussion of data bases issues in plenary was related to the funding of the RCM RCG work, the data base hosted by the JRC, the use the Commission has for these data base and and the status of the existing RDB. Here we reproduce a summary of pertinent points of the presentation.

Status of the Regional DataBase, RDB

Species codes

ICES has changed the species codes to use the WoRMS AphiaIDs (6 digits) instead the scientific Latin name. The problem with using the scientific name was that, for some species the scientific name was spell/misspelled in two or more variations, which meant the species was treated as two separate species. This meant that the catches etc. would not add up to the correct catches. The following list of processes was accomplish to complete the task:

- Changes in the database and the user interfaces
- Web services to identify correct AphiaIDs
- Mapping of less obvious species using fuzzy function web service
- Analyse which countries used which species when and for which data types – to help the countries identify the problematic species
- Contact and dialog with individual countries for problematic species
- Convert species scientific name to AphiaID
- Added AphiaID validation web service to check new inserted AphiaIDs

Harbour codes

Last year ICES changed the harbour codes to use LOCODE from the EC's Master Data Register from the reference list Code-location-v1.7.xls. However, several hundreds of codes was not converted, because it was not obvious which LOCODE to used. Therefore ICES created lists for each country where the last problematic harbour codes was listed with code type and year of use to ease the process of finding the relevant LOCODE for the countries. The lists was send out to the countries and during dialogs the correct LOCODEs was found for several hundreds of harbours, which ICES updated. Now there is only 25 harbour codes which is not LOCODES. EC updated the LOCODE list first in January 2016 to Code-location-v1.9.xls, the LOCODEs in the RDB was also updated to this version.

Landing obligation

From the 1st January 2015 new landing obligations was introduced first for the Baltic Sea, which meant, that landings below minimum size, BMS, should be brought to the harbour, and discard should be registered in the logbook, REGDIS. To accommodate these changes two new Catch Categories codes was added to the commercial sample data (CS) exchange format:

- Below Minimum Size landing, BMS
- Logbook Registered Discard, REGDIS

For the commercial landing data (CL) data, there is no Catch Category field, the data is as it says landing, therefore it was decided to add the following code to the Landing Category in the exchange format for the commercial Landing data (CL):

- Below Minimum Size landing, BMS

Data Policy Document

The only country, which have not given any feedback regarding the RDB Data Policy document is France. But since France is willing to submit data under the framework of the new DCF legislation and France also has uploaded data into the RDB, it seems, as France no longer have problems with RDB Data Policy or upload of data to the RDB.

Strategy for the RDB

It is very cost efficient to collect and combine countries commercial fisheries data in the Regional DataBase, RDB, which is hosted by ICES. One of the benefits is the harmonisation of all the data going into the RDB. All codes are standardised and all uploads of national data are logged and automatically combined in the relational database.

WGCATCH, WKRDB and the fishPi project recommend to update the data exchange input format with the necessary information that would enable statistically sound raising. The raising should be based on statistical sound methods instead of the existing methods combining age-length-keys, etc. Statistical methods are available in R , so currently the existing RDB is implementing the raising methods 'behind the scenes', the new approach should be to call on the statistical methods written in R, which have been encapsulated into the RDB using version control. The encapsulation of the methods into the RDB is important, because this will ensure the methods are approved and it is not possible to modify the encapsulated methods written in R inside the RDB. Having the raising methods defined in R would make the raising more transparent and easier for the experts to update, if needed. It should be possible to download both the data and the methods from the RDB, so the experts easily can mimic the raising in the RDB and further develop the methods.

When a group of experts have developed a new statistical raising method or updated and existing method, the group should approach the WGCATCH or a group of statistical raising experts, which have the task to test and approve raising methods. When the method have been approved, the method will be encapsulated into the RDB, using the RDB's version control of methods. The method can now be used to raise uploaded data, but the method cannot be manipulated/edited, and the raised data will be transparent and fully documented, regarding data and what method and version that was used.

It is important that all the people working towards a statistical raising of sampled data continue the good work and take an active part in the transition process to ensure the RDB fulfils the needs for uploading their design based sampling information and raising data using statistical methods.

To be able to document both the uploaded and the raised data, the RDB logs all processes regarding the data. According to the RDB Data Policy the data are restricted, that is taken care of by the security in the RDB, where all users have to be known and given access to data and methods.

Figure 1. below gives an overview of the flow of data in the new RDB from data uploads and the interaction with the national experts to the two main end users RCM/RCG and ICES, but data could also be downloaded for other relevant end users e.g. STECF.

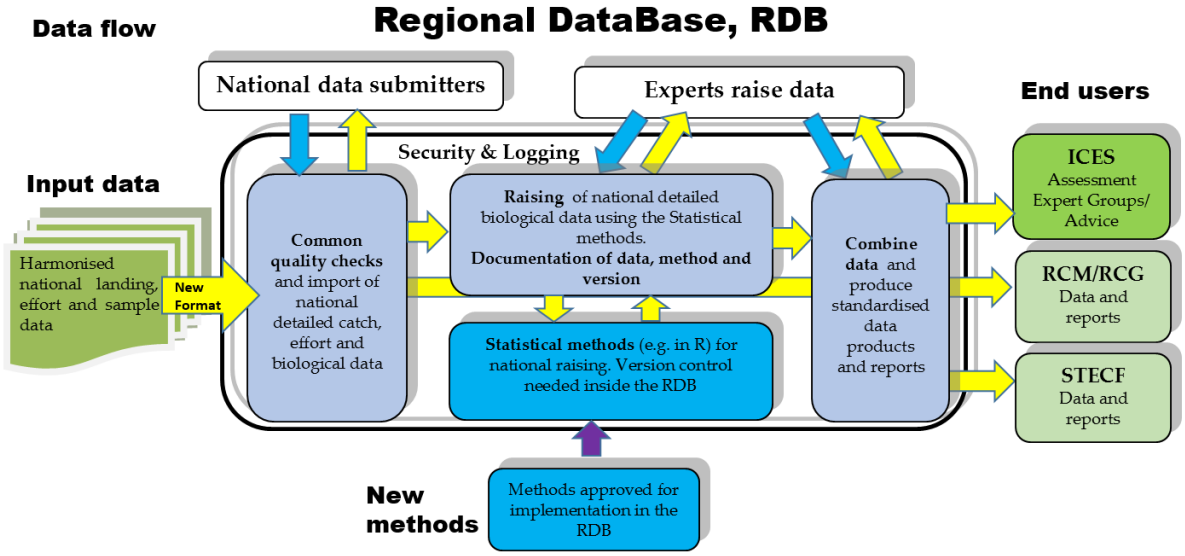


Figure 1. The new RDB system structure

New landing obligations was introduced in 2015, therefore two new catch category (Below Minimum Size, BMS, and Logbook Registered Discard, REGDIS) have be added to the existing catch categories, which is used for the sampling data. The commercial landing table does not have information on catch categories, so to be able to include BMS landings, the BMS have been added to the landing category. The catch category field are central in the existing raising methods and it is a large task to go through all parts of the existing raising procedures and include the new catch categories. Furthermore, since it has been decided by the RCMs and the SCRDB to use statistical sound methods, it was decided at the SCRDB 2015 that a new version of the RDB should be developed with the new exchange format supporting statistical sound sampling and new statistical

raising methods. However, the SCRDB also decided to make sure the existing version of the RDB would be operational and able to support the RCMs to the extent possible. The new RDB should be developed according to the overall description and figure above.

The current RDB web interface is built on outdated software architecture, in moving to a statistically sound RDB it would be logical to redevelop the interface at the same time using up to date technology.

Annex 15. Data analysis.

Data analysis carried out prior to the RCM was presented to the meeting, this related to a summary of achieved sampling and an update on the landings abroad for 2015. The need for a data analysis subgroup was discussed in plenary and as a first step the formation of an e-mail list of the relevant individuals was proposed.

Summaries of achieved sampling from the RDB data.

These summaries serve three main aims

1. They provides the institute uploading the data an overview of what has been successfully uploaded.

2. They provides the potential end user with a summary of what data has been collected, and therefore what is potentially available The caveat being that this is raw sampling data, not estimates of population parameters, and therefore of limited use.

3. It provides a concise summary which can form the basis of the proposed annual reports (as discussed in the 2016-04 STECF meeting in March 2016) and link with the revised sampling tables 4A and 4B (and 4C and 4D). As such these summaries give the appropriate scrutiny group a clear quantitate table of the achieved sampling in relation to the proposed national programmes. In this way the assessment of the statistical basis of the assessment of the sampling schemes would be dramatically improved. That these tables can be extracted from RDB as standard reports would also represent a huge efficiency saving for national labs.

Sampling on-shore

This table records the on-shore sampling undertaken (using on samp type =”M”, “D” and “V” in the CS data tables). The table records the number of harbours, the number of unique site days (by combining data with harbour), the number of unique vessels, voyages and species sampled and the number of lengths recorded (from the HL table). The biological data gathered (as recorded in the CA table) is likewise quantified as number of unique species and the number of ages weight sex measures obtained from individual fish.

	Number of unique harbours visited	Site Days	Number of unique vessels	Number of unique voyages	Number of unique species	Number of lengths recorded	Number of species with biological information	Number of ages (with lengths)	Number of individual fish weights	Number of determined sex	Number of maturity records
BEL	10	NA	20	32	NA	NA	7	7791	7969	0	4319
DEU	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DNK	32	387	284	848	38	81978	36	23315	54550	1999	0
ENG	72	1059	576	1876	56	253814	16	22466	3558	18355	2505
ESP	31	1038	495	1835	169	439773	18	17571	19982	20446	15998
EST	22	124	23	136	3	24495	3	17194	17094	15348	0
FIN	1	96	1	123	27	43235	5	3395	3965	3649	3455
GBR	2	45	1	163	21	16225	NA	NA	NA	NA	NA
IRL	1	204	135	505	38	157119	14	24919	27504	9065	0
LTU	1	22	1	29	4	5014	4	3663	3663	2369	2415
LVA	1	NA	1	164	NA	NA	5	1258	1283	359	0
NLD	12	515	120	750	44	148014	18	13072	14147	0	0
POL	13	136	42	140	27	18874	12	6931	6931	6825	6781
PRT	14	697	1	1928	140	3490	22	3764	15821	19514	358
SCT	17	426	287	878	37	258987	11	24103	0	3776	2078
SWE	50	406	136	464	14	48788	5	27050	27815	19890	20101

At-sea sampling table

The same code generates a similar summary for the at-sea sampling (sampType="S"). Here the number of harbours is perhaps less relevant and the number of unique vessels sampled more so. The vessels days are calculated as the number of unique vessel and days combinations.

	Number of unique harbours visited	Number of unique vessels	Number of unique voyages	Vessel days	Number of unique species	Number of lengths recorded	Number of species with biological information	Number of ages (with lengths)	Number of individual fish weights	Number of fish of determined sex	Number of maturity records
BEL	10	20	33	233	48	535005	7	6090	0	0	0
DEU	38	70	166	381	137	211920	16	23583	22775	18138	20765
DNK	23	143	418	976	106	264212	51	27065	57928	8781	0
ENG	38	123	194	342	127	272978	10	2102	0	2174	0
ESP	20	47	171	646	159	208140	8	0	13652	13518	0
EST	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FIN	1	1	179	107	32	12532	5	1624	5462	5017	4293
GBR	4	1	164	162	57	181922	NA	NA	NA	NA	NA
IRL	13	25	72	378	119	128918	6	3024	3024	1373	0
LTU	4	2	21	120	15	15286	3	1063	4111	3011	1063
LVA	2	1	133	147	33	62404	5	13704	13704	11100	9514
NLD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
POL	12	23	91	229	69	72752	16	8867	8867	8747	8357
PRT	12	1	95	85	204	23334	3	0	883	591	0
SCT	21	116	219	785	129	500646	4	8500	0	0	0
SWE	36	65	119	144	139	72602	7	3794	7348	22623	328

Combining summary functions with the sub set functions.

There are a range of subset functions that can define the data set to be used, for example to extract on the data relating to particular species, areas, catch categories etc. These provide a powerful tool to explore ….

Looking at cod in the North Sea and Eastern Arctic

At-sea samples NS cod

	harbour	vessel	voyage	vesselDays	species	lengths	sppBio	ages	wght	sex	matStages
BEL	7	14	18	136	1	9256	1	1213	0	0	0
DEU	5	11	15	53	1	2678	1	1009	170	0	0
DNK	11	66	158	300	1	13199	1	2670	2740	0	0
ENG	18	39	64	78	1	12683	1	163	0	155	0
NLD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SCT	12	74	120	568	1	31937	1	2354	0	0	0
SWE	23	36	64	85	1	5965	1	1263	1264	0	0

On-shore samples NS cod

	harbour	siteDay	vessel	voyage	species	lengths	sppBio	ages	wght	sex	matStages
BEL	7	NA	14	17	NA	NA	1	425	434	0	0
DEU	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DNK	6	42	73	99	1	2076	1	2063	2076	0	0
ENG	20	103	65	118	1	6636	1	1572	0	0	0
NLD	8	70	39	80	1	1261	1	760	765	0	0
SCT	6	135	88	163	1	10552	1	4270	0	0	0
SWE	26	156	61	163	1	3321	1	3399	3401	0	0

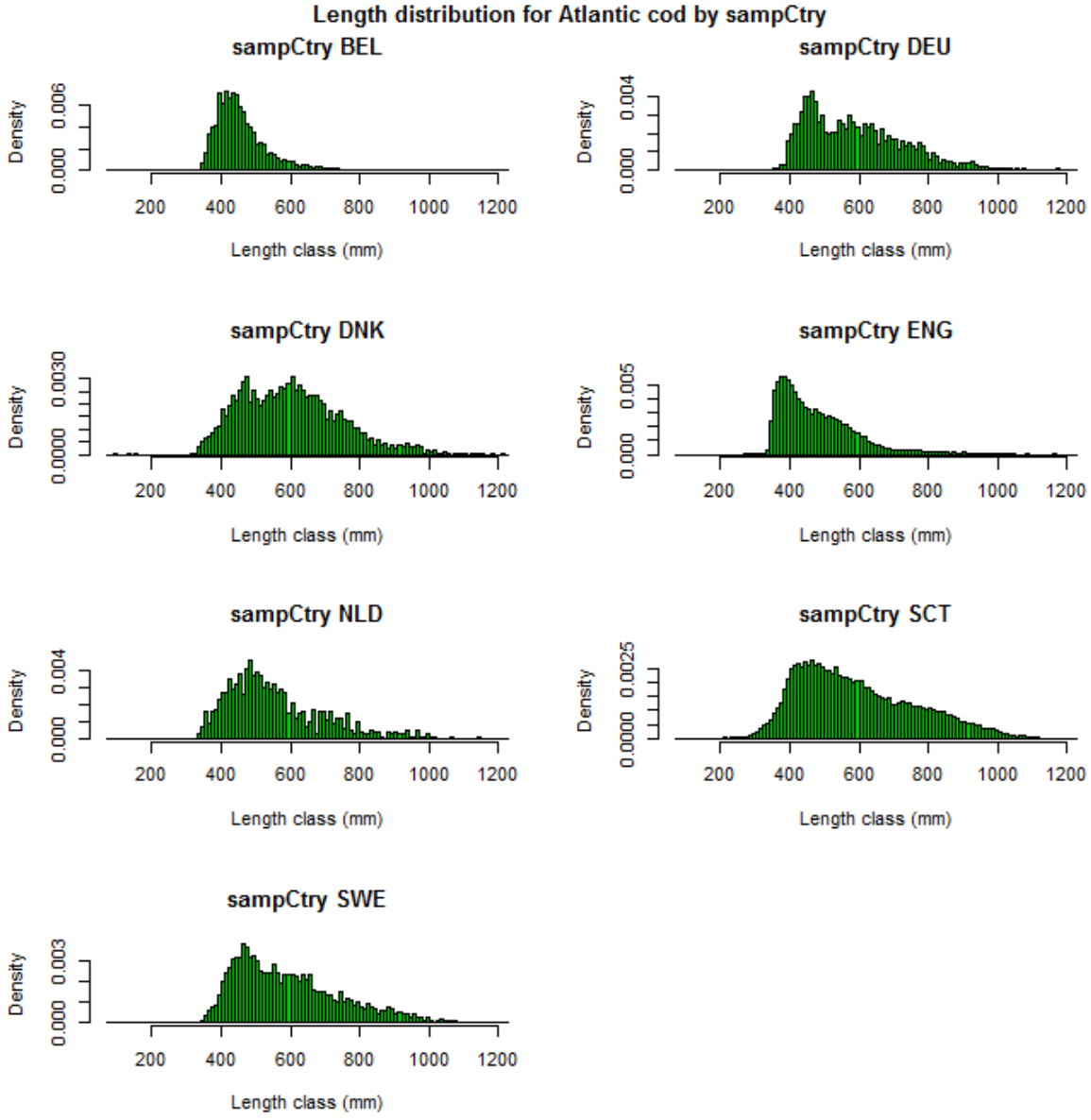
For the Eastern Arctic cod, Germany Spain and Poland have at-sea samples,

	harbour	vessel	voyage	vesselDays	species	lengths	sppBio	ages	wght	sex	matStages
DEU	1	1	1	51	1	34122	1	873	8	0	0
ESP	1	4	6	198	1	15885	1	0	3452	3452	0
POL	1	1	1	38	1	5285	1	360	360	360	360
SCT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

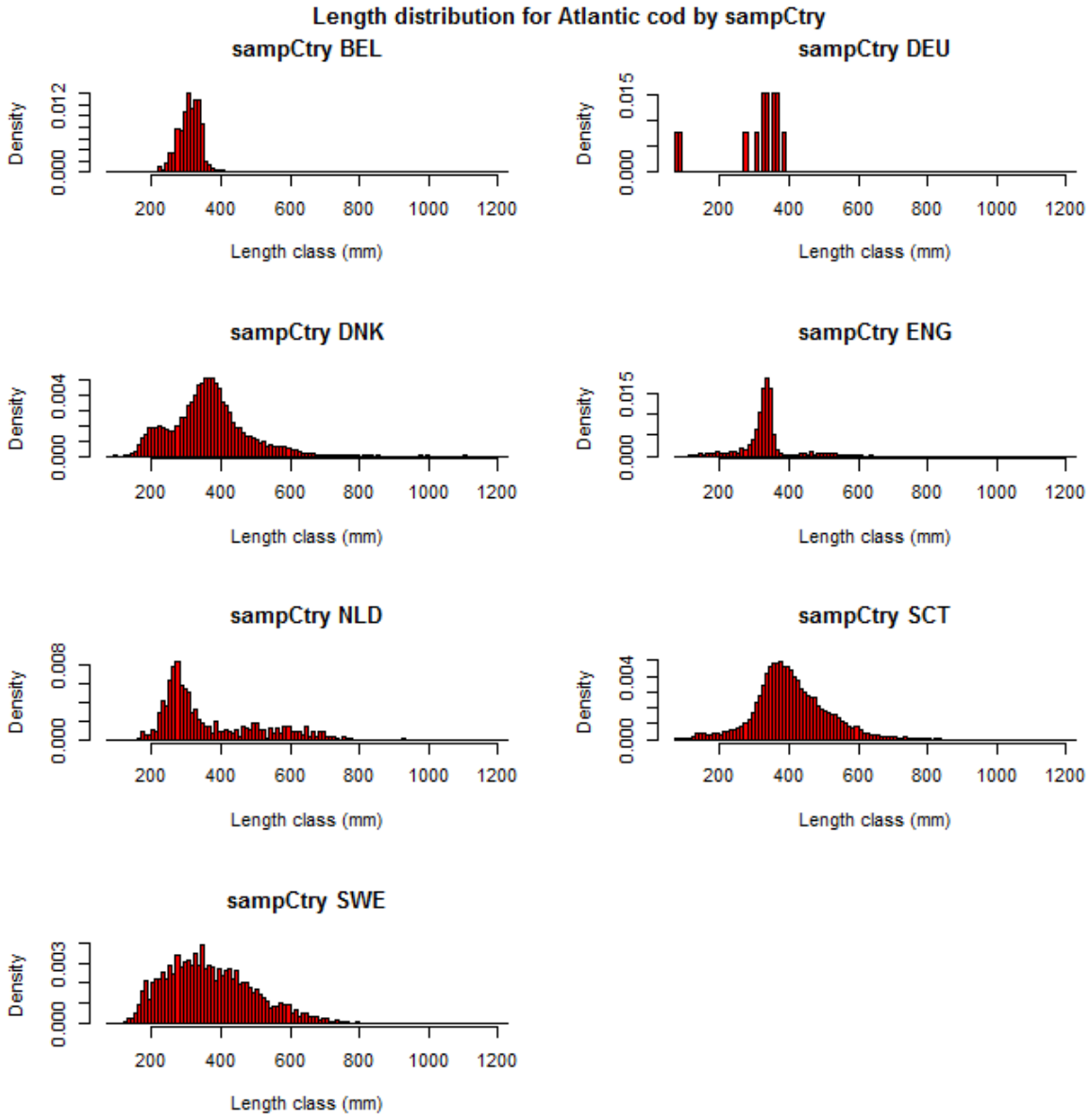
and Scotland has some landings.

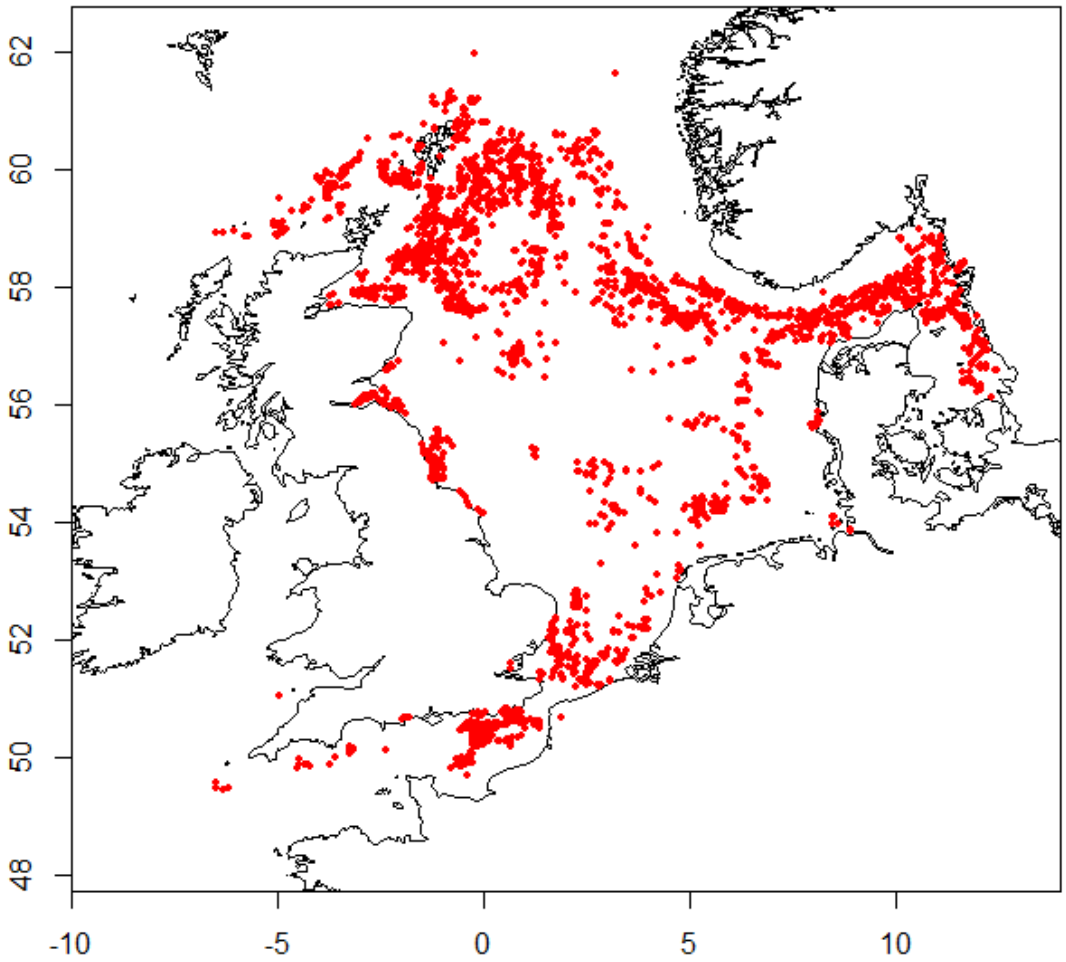
	harbour	siteDay	vessel	voyage	species	lengths	sppBio	ages	wght	sex	matStages
DEU	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ESP	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
POL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SCT	2	3	2	3	1	251	1	122	0	0	0

Plots of the measured length distributions, landed fraction

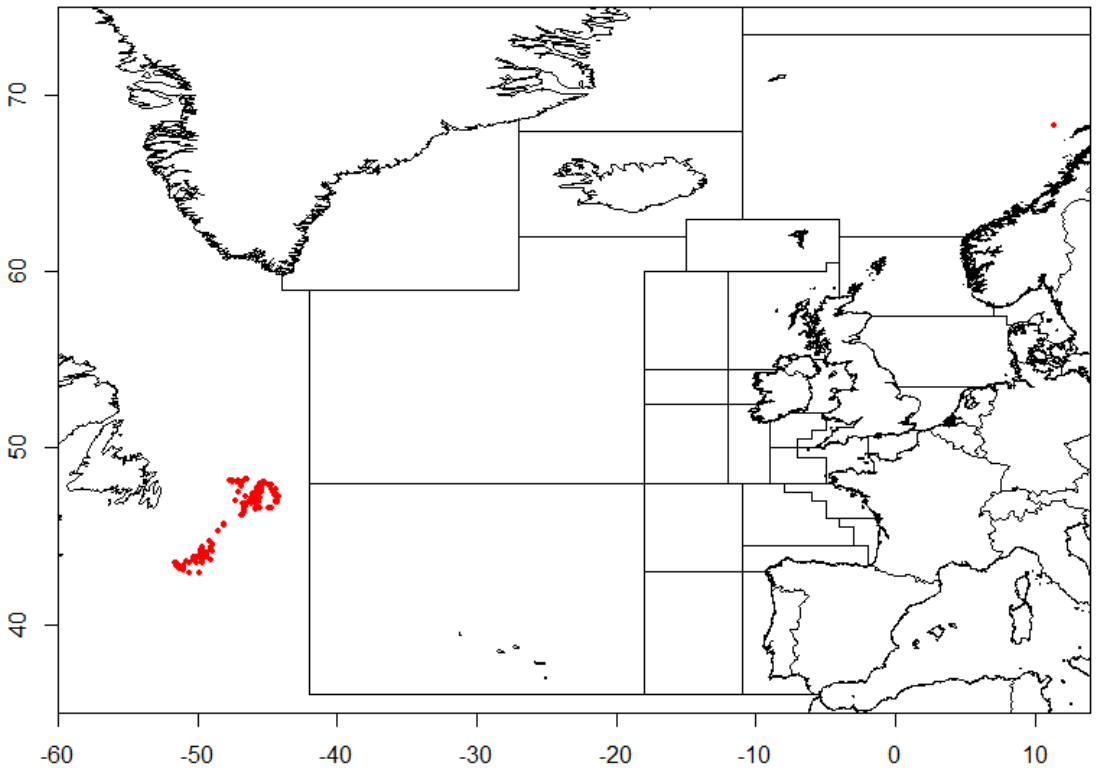


Plots of the measured length distributions, discarded fraction

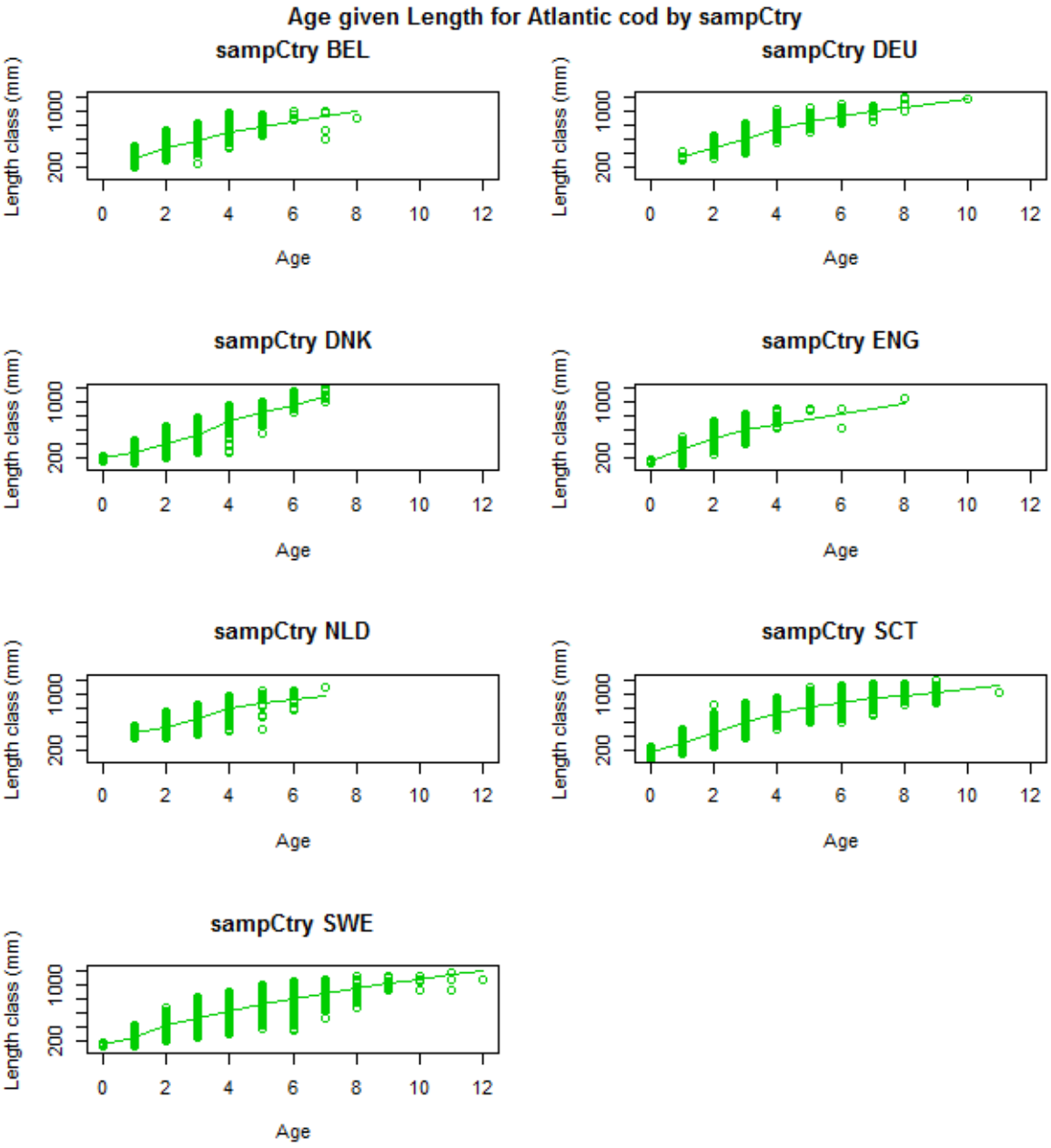

Length distribution for Atlantic cod by sampCtry
sampCtry BEL
sampCtry DEU
sampCtry DNK
sampCtry ENG
sampCtry NLD
sampCtry SCT
sampCtry SWE
Density
Length class (mm)
0.000
0.012
0.015
0.004
0.008
0.003
200
400
600
800
1000
1200

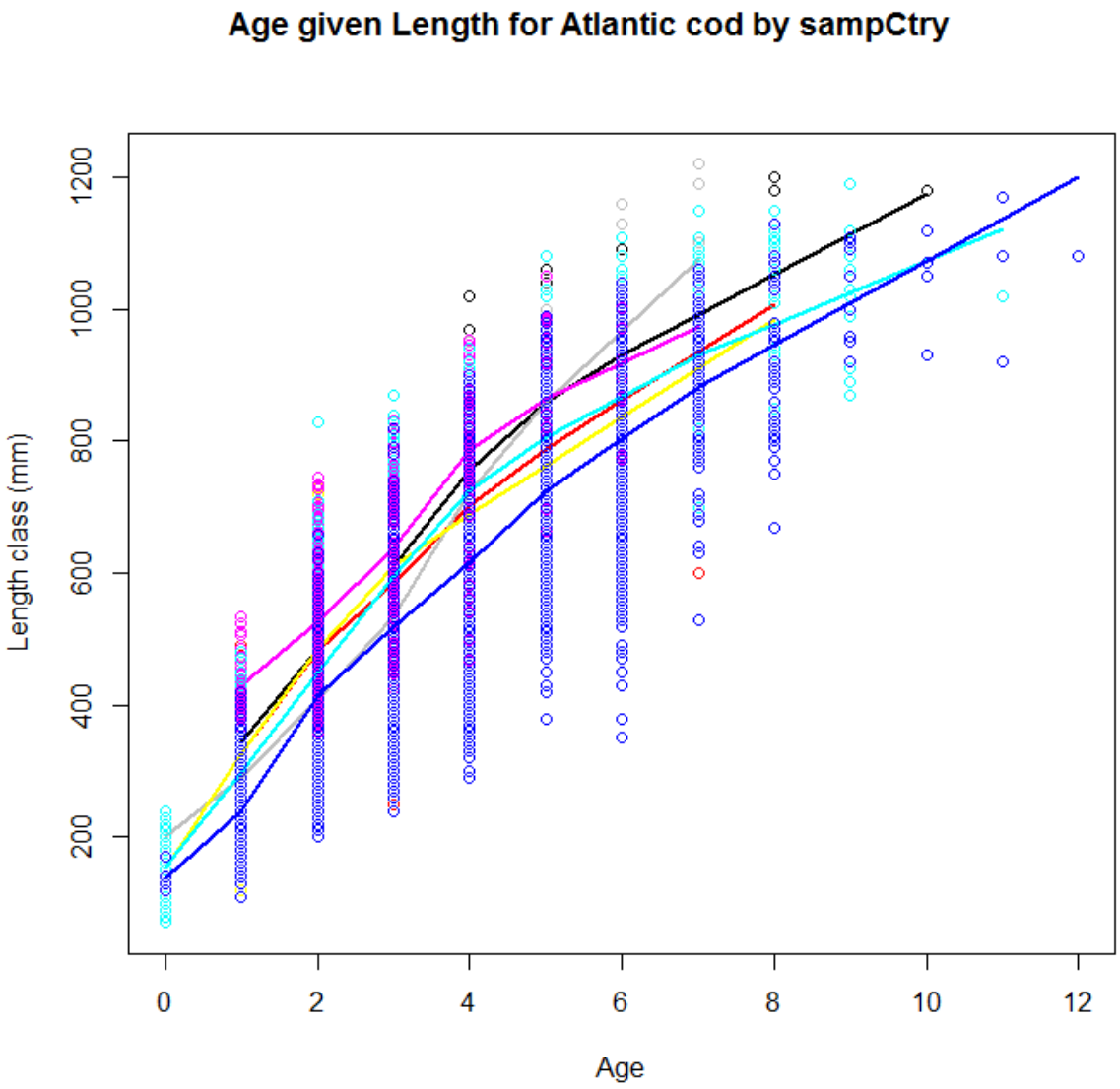


At-sea sampling haul positions where cod was recorded NS.



At-sea sampling haul positions where cod was recorded EA.


Age given Length for Atlantic cod by sampCtry
sampCtry BEL
sampCtry DEU
sampCtry DNK
sampCtry ENG
sampCtry NLD
sampCtry SCT
sampCtry SWE
Length class (mm)
200
1000
0
2
4
6
8
10
12
Age



Plots of age given length

Destination of landings

The destination of landings from flag fleets can be seen from a tabulation of the vessel flag country against (vertical axis) against the landing country (horizontal axis). It can be seen the some countries draw in substantial landings from the flag fleets of many other countries, for example Denmark and the Netherlands. Also the extent to which the flag fleets operating in the region are landing abroad. Non EU recipient countries are as Norway, Faroes and Iceland, HS are the landings at sea.

Total landings from the region (according the RDB cl data) are 1628571 tonnes. The landings by own flag vessels into ports other than their own country are 443213, this represents 27.2% of the total landings.

	*HS	BEL	DEU	DNK	ENG	ESP	FRA	FRO	GBR	IRL	ISL	NIR	NLD	NOR	SCT	SWE	WLS
BEL	NA	14610	NA	13	NA	NA	77	NA	154	NA	NA	NA	3865	NA	NA	NA	NA
DEU	NA	8	32786	24607	NA	135	NA	NA	377	26	246	NA	54091	868	NA	NA	NA
DNK	NA	NA	40917	609878	NA	NA	730	1586	2032	4128	NA	NA	346	33517	NA	1847	NA
ENG	NA	9	892	3918	42478	NA	2067	NA	NA	NA	50	1	44731	2057	13099	NA	7
ESP	NA	NA	NA	NA	NA	17945	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EST	NA	NA	NA	NA	NA	2986	NA	NA	NA	NA	944	NA	NA	5816	NA	NA	NA
FRA	NA	NA	NA	NA	NA	NA	106775	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
IRL	NA	NA	NA	186	NA	NA	1234	NA	3575	26218	NA	NA	937	4394	NA	NA	NA
LTU	94	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2377	NA	NA	NA
NIR	NA	NA	NA	5978	185	NA	NA	NA	NA	4871	NA	342	NA	NA	3570	NA	NA
NLD	NA	449	1043	3387	NA	NA	3658	NA	202	NA	NA	NA	162837	NA	NA	0	NA
POL	NA	NA	302	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	365	NA	NA	NA
PRT	NA	NA	552	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SCT	NA	NA	NA	15984	4990	230	NA	NA	NA	2600	NA	NA	2938	74628	148002	NA	NA
SWE	NA	NA	NA	55168	NA	NA	NA	NA	1517	NA	NA	NA	NA	1346	NA	23485	NA
WLS	NA	NA	NA	NA	306	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2

Annex 16. Open-source measuring and data recording board (OpenLM) & workshop

The recent development of an open-source length measuring and data recording board (OpenLM) in Germany was presented to the RCM. After intensive market research and the finding that the available products are not fully satisfying the requirements, the Thünen Institute decided to invest in the development of a measuring board that is fully flexible in terms of data recording, interfaces and future developments. It uses a magnetostrictive sensor for precise length measurements and is fully embedded in a flexible IT/database environment. Further details can be obtained from the development team, Dr. Daniel Stepputtis <daniel.stepputtis@thuenen.de> and Marcellus Rödiger <marcellus.roediger@thuenen.de>.
In order to exchange experiences and ideas, interested people are invited to come to a workshop in Hamburg or Rostock in October 2016 (exact dates to be determined by Doodle call), bringing their equipment (if possible) and expertise. In order to plan the workshop, RCM participants are asked to forward this announcement to the relevant people in their labs (or affiliated company developers) who should then provide their names and e-mail addresses to the development team mentioned above.

Next meeting

The 2017 meeting will be held in the France, with the timing of the meeting still to be determined. The cochairs will be Katja Ringdahl and Marie Storr-Paulson (Denmark). In order to facilitate the common memory of the group, the following table provides an overview of the venues and chairmanship of this RCM.

Year	Venue	Chair
2016	Edinburgh, Scotland	Alastair Pout, UK- Scotland and Katja Ringdahl, Sweden
2015	The Hague, The Netherlands	Alastair Pout, UK- Scotland and Katja Ringdahl, Sweden
2014	Lysekil, Sweden	Frans van Beek, The Netherlands
2013	Vigo, Spain	Frans van Beek, The Netherlands
2012	Ostend, Belgium	Els Torreele, Belgium
2011	Hamburg, Germany	Els Torreele, Belgium
2010	Charlottenlund, Denmark	Sieto Verver, The Netherlands
2009	Boulogne-sur-Mer, France	Sieto Verver, The Netherlands
2008	Aberdeen, UK-Scotland	Christoph Stransky, Germany
2007	Uddevalla, Sweden	Christoph Stransky, Germany
2006	The Hague, The Netherlands	Jørgen Dalskov, Denmark
2005	Bergen, Norway	Guus Eltink, The Netherlands
2004	Oostend, Belgium	Richard Millner, UK-England