

## **The Data Collection Framework**

**EU Council Regulation 199/2008 - Establishing a Community framework for the collection, management and use of data in the fisheries sector for scientific advice regarding the CFP**

## **Report of the 11th Liaison Meeting**

**Meeting between the Chairs of the RCMs, the ICES PGCCDBS, PGMED and PGECON, the STECF EWGs on the DCF, the Regional Database Steering Committees, the ICES and GFCM representatives and the European Commission**

## **FINAL REPORT**

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## 1. Introduction

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### 1.1 General

The 11th Liaison Meeting between the Chairs of the RCMs, the ICES PGCCDBS, PGMED and PGECON, the STECF EWGs on the DCF, the Regional Database Steering Committees, the ICES and GFCM representatives and the European Commission was held at the DG Maritime Affairs and Fisheries, Brussels from 8<sup>th</sup> to 9<sup>th</sup> October 2014. Isabelle Garzon, DG MARE, opened the meeting by welcoming participants and in particular the fact that so many DG MARE colleagues were present this year, reflecting the importance DG MARE place on the DCF. She also welcomed the attendance of GFCM, for the first time in recent years, and noted the importance of having them take part given their role as one of the DCF key end-users. She reminded participants of the importance of the Liaison Meeting in bringing together key stakeholders for the DCF to discuss strategic issues and ensure developments take place throughout the different regions and in a coordinated manner. She noted that DG MARE hopes to have a proposal for the revision of the DCF adopted within 6 months, but that in parallel, DG MARE is already working on improving several aspects of the data collection process below the legislation. This includes:

- further work to improve the process of data transmission to end-users, and evaluation of Member States' compliance with their obligations in this respect,
- simplification of the Annual Reporting exercise,
- developing a format for future National Work Plans that should be simpler than the current National Programmes,
- preparing tools to assist Member States (compilations of recommendations, of derogations, lists of important DCF meetings etc).

Ms Garzon also noted that DG MARE has recently published the DCF Database Feasibility Study<sup>1</sup> which forms the first step of a process aimed at simplifying, rationalizing and improving the processes of DCF data storage, management and availability of data for end-users. All relevant stakeholders will be consulted in the coming months on the outcomes of this study.

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<sup>1</sup> Scientific data storage and transmission under the future Data Collection Framework Feasibility Study FINAL REPORT. Contract MARE/2012/22 – Lot 2 (SI2.656640), Sep. 2014.

## 1.2 Background & legal requirements

According to Article 5(1) of Council Regulation (EC) No 199/2008 (Data Collection Framework, DCF), Member States shall coordinate their National Programmes with other Member States in the same marine region. For this purpose, the Commission may organise Regional Coordination Meetings (RCMs) in order to assist Member States in coordinating their National Programmes and the implementation of the collection, management and use of the data in the same region.

Five RCMs are operational in the framework of the DCF: Baltic, North Sea & Eastern Arctic, North Atlantic and Mediterranean/Black Sea/Large Pelagics and Long Distance Fisheries. Most fleets subject to DCF activities are covered by these RCMs.

According to the Commission Regulation (EC) No 665/2008, laying down detailed rules for the application of Council Regulation (EC) 199/2008, and to Commission Decision 2010/93/EU specifying practical aspects for data collection, actions planned by MS in their National Programme shall be presented according to the predefined regions. The scope of these regions was slightly modified by the RCMs 2008 and the 5<sup>th</sup> Liaison Meeting as follows:

1. the Baltic Sea (ICES areas III b-d);
2. the North Sea (ICES areas IIIa, IV and VIIId), the Eastern Arctic (ICES areas I and II), the ICES divisions Va, XII & XIV and the NAFO areas;
3. the North Atlantic (ICES areas V-X, excluding Va and VIIId);
4. the Mediterranean Sea and the Black Sea (complemented since 2013 with fisheries on Large Pelagics managed by Regional Fisheries Management Organisations on tuna fisheries – ICCAT, IOTC, WCPFC, IATTC);
5. regions where fisheries are operated by Community vessels and managed by Regional Fisheries Management Organisations (RFMO) other than tuna RFMOs to which the Community is contracting party or observer (Long-Distance Fisheries).

Regional co-ordination greatly increases the efficiency, effectiveness and integration of the various DCF National Programmes (NPs). Regional Coordinating Meetings (RCMs) are held annually and involve National Correspondents and mainly biologists and, to limited extent, economists from each MS involved in the DCF programme (see last paragraph of this sub-section on the role of economists in DCF). The key objectives of the RCMs are to identify areas for standardisation, collaboration and co-operation between MS.

A Liaison Meeting (LM) between the chairs of STECF DCF EWGs (formerly chairs SGRN and SGECA), the chairs of the different RCMs, the chair(s) of the PGCCDBS, the chair of PGMED, DCF data end-users (ICES and GFCM), the chairs of the steering groups of Regional Databases and the Commission is held annually to analyse the RCM reports in order to ensure overall coordination between the RCMs. On the basis of the reports, the LM makes recommendations to the Commission.

The 2nd Liaison Meeting (2006) identified the following areas where it can contribute to the effectiveness of data collection and co-ordination within the framework of the Data Collection Regulation (DCR):

- Make sure that the Regional Co-ordination Meetings (RCMs) move in the same direction.
- Address recommendations made by the RCMs and comment on these / modify them when considered appropriate / necessary.
- Identify issues, developments etc. that are of a pan-European interest and propose actions to be undertaken at the appropriate level (Member States, bilateral, regional or international level)

The 8<sup>th</sup> LM (2011) discussed the role and added value of the LM in relation to the DCF framework and concluded that the role of the LM is to co-ordinate the work being carried out in the development of the DCF. The LM provides a coherent overview of the RCM issues at both a local and generic level. The LM prevents duplication of tasks and guides the evolution of the DCF. The LM prioritises RCM recommendations and reviews the follow up actions required.

Following the recommendation of the 8<sup>th</sup> LM, an economic planning group (PGECON) was established in 2012 to discuss methodological and coordination issues related to the economic modules of the DCF at European level (fleet economic data, aquaculture, processing sector).

### 1.3 Terms of Reference

The 11<sup>th</sup> Liaison meeting was held in Brussels on 8<sup>th</sup> and 9<sup>th</sup> October 2014 to address the following terms of reference:

#### TOR 1. Discussion on possible follow-up to the main outputs/recommendations of:

- The 2014 RCMs and to the specific recommendations addressed to the Liaison Meeting
- PGECON, PGCCDBS, PGMed – outcomes and recommendations from their 2014 meeting
- STECF EWG and STECF Plenary - outcomes and recommendations from their 2014 meeting
- Data end-users (ICES, GFCM, RCMs)

#### TOR 2. Compilation of recommendations on the DCF

A compilation of DCF recommendations will be established by the COM by end 2014. LM needs to agree on which recommendations should be included (i.e. from which bodies) & covering which years.

#### TOR 3. Regional cooperation

- Grants for strengthened regional cooperation
- Regional databases
  - Overview of use of the Regional Databases for RCMs in 2014, and problems identified
  - Other developments (RDB trainings in 2014, RDB Med&BS development)
  - Changes for the future – any recommendations from the LM?
- RCM data calls – overview of how MS responded.

#### TOR 4. Recommended meetings/workshops

- Prepare a list of recommended meetings for 2015 as guidance for MS

#### TOR 5. Studies

- Overview of process
- LM comments and prioritization of studies proposed by RCMs, PGECON, ICES, GFCM

#### TOR 6. AOB

1. The **DCF website** has been revamped by the JRC. Any comments on this?
2. Access to the **RCM SharePoint**
3. Derogations – **List of derogations** by Member State has been prepared by DG MARE. Have any RCMs updated this?
4. ICES will provide an update on their plans to **re-evaluate surveys**. Should this be followed by STECF work on surveys to be included in future EU MAP?
5. **Annual reports** – simplification: presentation of process.

## 6. Data transmission:

- a. new platform for information exchanges between COM, MS and end-users
- b. new tool for reporting on how MS complied with the DG MARE/JRC data calls

In addition to the above Terms of Reference, an item was added at the start of the meeting, regarding the implication of the **Landing Obligation** on data collection and the Discard Plans.

## 1.4 Participants

The 11<sup>th</sup> Liaison Meeting met with the following participants:

Name	Role
Jørgen Dalskov	Chair of RCM Baltic
Frans van Beek	Chair of RCM North Sea & Eastern Arctic (RCM NS&EA)
José Rodriguez	Co-Chair of RCM North Atlantic (RCM NA)
Ireneusz Wójcik	Chair of RCM Long-Distance Fisheries (LDF)
Pierre Chavance	Chair of RCM (Med&BS) sub-group on Large Pelagics (LP)
Tristan Rouyer	Chair of PGMED
Jörg Berkenhagen	Chair of PGECON
Mike Armstrong	Co-Chair of ICES PGCCDBS
Christoph Stransky (Chair)	Chair of STECF EWGs on DCF issues
Cristina Morgado	ICES secretariat
Federico DeRossi*	GFCM secretariat
Katja Ringdahl	Chair of Regional Database (RDB) Steering Committee
Paolo Carpentieri*	Chair of RDB Med
Isabelle Garzon*	European Commission
Bas Drukker	European Commission
Amelie Knapp	European Commission
Antonio Cervantes*	European Commission
Stamatis Varsamos*	European Commission
Antonio Gutierrez*	European Commission
Nikolaos Mitrakis*	European Commission
Zsuzsanna Koenig*	European Commission
Angel Calvo*	European Commission
Amanda Perera Perez*	European Commission
Alexander Stein*	European Commission
Laurent Markovic*	European Commission
Rodrigo Ataide*	European Commission
Stanislovas Jonusas*	European Commission
Dominic Rihan*	European Commission

\*part-time



## **2 TOR 1 - Main outcomes and recommendations from RCMs**

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### **2.1 Main outcomes**

#### **2.1.1 RCM Long Distance Fisheries**

The RCM LDF was held during the week 2-5/06/2014 at the Wageningen UR Institute for Marine Resources and Ecosystem Studies (IMARES) in IJmuiden, The Netherlands.

The group reviewed the progress in regional coordination since 2013 and addressed 2013 recommendations from the RCM LDF and the Liaison Meeting, as well as feedback from the end-users.

The RCM LDF reviewed the Long Distance Fisheries activity by MS in CECAF and SPRMFO areas with the use of updated 2013 data provided by MS. There were no EU fishing activity in the SPRMFO area in 2012 and very limited activity in 2013 (one vessel only). Regarding the CECAF area, after the break from July 2012 due to the expiration of Sustainable Fishing Partnership Agreement (SFPA) with Mauritania, some fishing activities restarted in 2013 under the framework of the new protocol of December 2012. A new protocol between the EU and Morocco setting out the fishing opportunities for the EU fleets was published in December 2013 but is still pending the approval by Morocco. A new SFPA with Senegal was signed last April and includes fishing opportunities for hake trawlers.

In order to check if there were any substantial changes in the fishing pattern in the CECAF area in 2013 which would require amendments to the National Programmes in 2015, the group performed the comparison of rankings of métier done in previous years with ranking done on the most recent data. Based on that comparison, the group concluded that there is no need to amend the NP 2015.

A joint programme for sampling pelagic trawlers fisheries on small pelagic species conducted by pelagic trawlers in CECAF area was implemented in 2012 for two years period. In 2013 the RCM LDF made a recommendation to extend this programme for another two years period. This recommendation was fulfilled and all MS concerned signed an amendment extending the joint sampling program for small pelagics fishery in the CECAF area for another two years period, until 31 December 2015.

With regard to planned move from the RCM to the concept of Regional Coordination Groups, in the context of regionally based sampling programmes, with the implemented joint sampling programme in the CECAF area and plans to implement similar programme in the SPRMFO area, a regional work plan is already in place for fisheries on small pelagics. Therefore, an important step towards envisaged data collection scheme under the future EU MAP was already made for the new RCM/RCG dealing with the long distance fisheries. Harmonizing national sampling programmes on regional level shall be no issue.

When considering an impact of the implementation of the landing obligation for the data collection, the group noted that there still will be a need to have a scientific

observers onboard because there still will be an obligation to discard *e.g.* incidentally caught protected species. However, it is of key importance that data collected by scientific observers are used for scientific purpose only and not used for surveillance in order to not undermine the trust between the fishing industry and scientific community. Besides, as the long distance fisheries operate under the governance of the RFMO-managed international waters or waters of third countries with which the EU has a SFPA, the landing obligation or discard plans will depend on the specific management measures adopted by the relevant RFMO or SFPA and will be fishing area-specific.

The recommendations on data quality issues and sampling design made by the 10<sup>th</sup> Liaison Meeting were addressed on the basis of the outcomes of the Workshops on the Practical Implementation of Statistical Sound Catch Sampling Programmes (WKPICS). In this context, the inefficiencies identified in the process of validation of sampling design and implementation of sampling the fisheries in the CECAF area performed during the 2013 meeting were also taken into account.

In relation to studies and pilot projects eligible for funding through the EMFF (EMFF Article 86.2.a), the group noted that in November 2013, the framework contract MARE/2012/21 “Scientific advice for fisheries beyond the EU waters” was signed between the DG-MARE and a Consortium of European research institutions. The aim of this framework contract is to constitute a provision of scientific advice and other services for the implementation of the CFP beyond EU waters. Within this framework contract, two specific contracts dealing with issues relevant for the CECAF fisheries were planned: “For the provision of scientific advice on the estimation of surplus for Sustainable Fisheries Partnership Agreements” and “For the provision of advice on the management of discards in EU fisheries beyond EU waters”.

The RCM LDF made no recommendations at its 2014 meeting.

### **2.1.2 RCM Baltic**

The RCM Baltic met in Uppsala (Sweden) between 25-29 August 2014. The main purpose of the RCM is coordinate the data collection carried out by EU Members States (MS) in the region concerned. For the RCM Baltic 2014 the coordination was limited as the MS’s National Programmes for 2011-2013 have been rolled over for the period 2014-2016. Therefore, the main focus at this year RCM meeting was to improve data quality, to take the first steps toward establishing regional programmes instead of National Programmes and to be prepared for the introduction of the landing obligation that will be implemented from 2015 for the Baltic region.

A data call was launched by the chairs of the RCM Baltic, RCM NS&EA and the RCM NA where MS were requested to upload data for 2009-2013 in the regional database (RDB FishFrame) hosted by ICES. All Baltic MS complied with this request and MS have put a lot of effort into quality assurance of the data.

Based on the uploaded data a number of analyses were carried out prior to the RCM Baltic meeting. Having the analysis carried out on advance of the meeting made it possible to discuss the outcome of the analysis during the meeting. Further, based on that analysis, the data quality issue could be discussed and agreements on actions to be taken to improve the data quality could be made.

The RCM Baltic has initiated procedures to work on data quality issues on a national, regional and stock coordinator level. It was realized that it is not possible to come up with rigorous recommendations on all types of quality checks for all MS during one meeting. To reach real progress this work has to continue intersessionally. It may also be wise to test new ideas, for instance, whether a limited number of stocks should be selected as test cases prior to full implementation. Intersessional work is further in line with the evolvement of regional work between MS from meetings to groups working all year around.

Therefore, the RCM Baltic suggests the establishment of an intersessional sub-group dealing with data quality checks and procedures. The subgroup should continue the work done at RCM Baltic 2014 and report back to the RCM Baltic 2015. The subgroup should suggest quality checks on the national and regional level and also, based on limited pilot cases, identify checks that can be relevant for stock coordinators. The subgroup should further suggest an appropriate yearly timeline for quality checks and data uploads to detect early warning signals and potential problems with the data. A third task would be to suggest reports and routines from the RDB-FishFrame needed to support the quality checks.

It was discussed in what ways data quality can be assessed and improved. While moving towards statistical sound sampling schemes it is believed that there will be improvements in how the data is collected which will also improve the data quality. If the sampling design is described in future NPs, there is also a possibility to pre-evaluate and assess the quality of the data collection.

It was also agreed that to be able to evaluate data quality in an efficient way there is a need for a RDB, and that all MS upload their data into it. The RCM Baltic stressed that it is extremely important that the RDB is funded, so it can be developed in line with the needs expressed by the RCMs.

To increase the data quality the group suggested that the data should be checked at three different levels; certain checks should be done at a national level before submitting data to the RDB (for example consistency and range checks, weight-length, length –age relationship). Comparison of data between MS should be done on a regional level using the RDB following the suggested checks using standard outputs. The third level of quality checks would be the end-user stock coordinator level, who should be responsible for checking the input data to the assessment according to suggested guidelines.

The present Data Collection Framework (DCF) is under revision to enable the support the Common Fishery Policy (CFP). The present DCF do not support the

implementation of the landing obligation. The RCM Baltic was informed about the discard plan agreed by the BALTFISH group. The discard plan for the Baltic do not specify how the monitoring for compliance purposes will be carried out. The DCF at sea monitoring will most likely be affected by the landing obligation (discard ban). The conditions or rules of how exempt discards at-sea may take place are unclear. Based on the discard plan for the Baltic the RCM Baltic concluded that the landing obligation will affect the biological sampling and it is likely that already in 2015 changes in the scientific sampling need to be introduced. This change in sampling schemes may be implementation gradually during 2015 in order to meet the implementation of the landing obligation.

The representative of the Commission indicated that, in this case, changes in the scientific sampling can be made during 2015 without adjusting the NP. Instead, these changes should be explained in the AR for 2015. It is likely that the changes sampling require some international coordination which will be carried out intersession ally by the RCM.

During the discussions at RCM Baltic meeting on the role of the RCM/RCG's in the future. It was mentioned that the RCM/RCG's might include more stakeholders – data providers and data end-users. In some more relevant data are available but not provided which may have a negative impact on the stock assessment and which again is having a negative impact on the management of the stocks and fisheries.

Another challenge for the future discussed at the RCM Baltic 2014 was the issue on how to take decisions regionally. Who is having the mandate to take decisions and how should the any financial impact be dealt with?

The RCM Baltic also discussed the issue on when a MS can or may carry out some data collection work or when it is an obligation. Member States probably need to know for example whether a recommendation from the Liaison Meeting or STECF are legal obligations. Without clarity on this, the whole question of “what comprises an obligation?” needs to be solved.

The RCM Baltic did not come to any final solution on how the RCM/RCG's should work in the future.

A general cost sharing model was proposed for new surveys carried out by MS jointly on the vessels of one or two MS. The National Correspondents (NC) present in the RCM Baltic generally agreed that the proposed cost sharing model could be a way forward but no final decision was made.

The ICES observer presented feedback from expert groups on data needs, projected benchmark meetings in 2015, and changes in the structure of relevant ICES WG.

A number of recommendations and agreements were decided dealing with the landing obligation, quality assurance and RDB.

### **2.1.3 RCM Mediterranean & Black Sea and subgroup for Large Pelagics**

The 11<sup>th</sup> Regional Coordination Meeting for Mediterranean and Black Sea and subgroup for Large Pelagics (RCM MED&BS-LP) was hosted by Croatia in Zagreb, 1–5 September 2014, according to the decision of the 10<sup>th</sup> RCM MED&BS-LP endorsed by Liaison Meeting in 2013. The same decision stipulates that the Planning Group for Mediterranean, including Black Sea (PGMed), will be organized in the same time period in the first two days.

For the first time, the meeting was attended by the experts of the EU countries covering the Mediterranean Sea, Black Sea and areas of competence of RCM LDF, NA, MED&BS dealing with all large pelagic species and fisheries. The new RCM MED&BS-LP is therefore a joint RCM with two co chairs, one for MED&BS and one for LP, as well as for PGMed.

According to the Commission Implementing Decision C(2013) 5568 final of 30.08.2013, the programmes for the collection of primary biological, technical, environmental and socio-economic data in the fisheries sector for the period 2011-2013 were extended to the period 2014-2016. The representative of the EU commission presented the revision of the DCF that has been prepared by the Commission in consultation with stakeholders.

The Group reviewed the progress in regional coordination since 2013 and addressed 2013 recommendations from the RCM MED&BS, the RCM LDF (LP), PGMed, PGECON and the Liaison Meeting, as well as feedback from the end-users, including GFCM and ICCAT. The works of the experts have been held separately, one for RCM MED&BS (starting with the outputs of the experts works in PGMed) and the second for LP, for the specific issues, and in plenary sessions for the common ones. The actual Report comprises two parts, one for each group focusing on the specific works, and including the common issues reflected in both parties of the Report.

Results of the data call launched in 2013 were examined. It should be mentioned that for RCM MED&BS, no specific data call was launched, and the group benefited from the data call launched by PGMed, getting advantages from their outputs, avoiding duplication on data call for the same purposes. The content and format for the next call to be launched by RCMs co-chairs in March 2015 was defined. The list of Large Pelagics Fisheries was actualized and a description of a majority of them has been gathered in Annex 4 following a common template.

Both groups discussed various aspects relative to regional coordination and particularly to data exchange. The content from the study “Scientific data storage and transmission under the future DCF” has been presented by the EC representative and the different scenarios have been commented. During this meeting the LP subgroup dedicated a full day on the perspectives of a common data exchange format between MS and the use of common tools in order to address expected questions like ranking, data quality control, optimizing sampling programs at basin levels etc. The situation in

the different countries regarding data production and management, R and Cost tools skills was discussed and a presentation based on French large pelagics dataset (2009-2013) was made indicating: i) means to export national data stored in a national database to SDEF and ii) the use of R scripts to explore, describe or calculate precision indicators (Delta, CVs...) on data imported. The Group drew some recommendations in the short and medium term regarding terminology, data exchange format, tools and RDB-LP. The Group discussed various studies and meetings that could potentially be candidates for funding under EMFF and submitted one study.

The issues of data quality and the importance of quality control and validation procedures were raised in connection to several other ToRs during RCM MED&BS-LP 2014, particularly in relation to end-user feed-back (such as reports of missing or incomplete data submitted to ICCAT or the GFCM in ToR 2) and the suitability of CVs, as currently implemented, during the review of PGMed 2014. Some recommendations and ToRs were added to PGMed in that respect.

#### **2.1.4 RCM North Sea & Eastern Arctic**

The RCM NS&EA met in Lysekil (Sweden) between 8-12 September 2014. The main purpose of the RCM is coordinate the National Programmes (NP) of the Member States (MS) in the North Sea region for 2015. In practice, there was no need for such coordination as the NP for 2015 are the same as for 2013 and 2014.

The Data Collection Framework (DCF) is under revision to enable to support the current Common Fishery Policy (CFP). That is presently not the case. In 2015, a landing obligation will be introduced to pelagic fisheries in EU waters. In the following years, this landing obligation will be extended to all fisheries. The landing obligation will affect the biological sampling and it is likely that already in 2015 changes in the scientific sampling need to be introduced.

At present there is little clarity about the conditions or rules of how exempt discards at-sea may take place. Further, it is unclear how storage of unwanted catch on-board should be handled. All these factors have the potential to effect the condition of the landing with ramifications for the quality of the biological data that can be obtained from this fraction. Specific concerns include the species composition and identification, the ability to estimate the demographic structure of the sampled trips catches, the estimates of sample numbers, the ability to measure fish and collect otoliths and even the ability to access samples at all (e.g. under health and safety regulations). The landing location and fate of this unwanted catch on shore is also as yet unclear and will remain so until the landing obligation actually comes into force. The unwanted catch fraction will almost certainly not be available at the fish auctions were much of the present sampling of the landed catch occurs. This has implications for on-shore sampling designs and data collection protocols. The representative of the Commission indicated that, in this case, changes in the scientific sampling can be made during 2015 without adjusting the NP. Instead, these changes should be explained in the AR for

2015. It is likely that the changes sampling require some international coordination which will be carried out intersession ally by the RCM.

Also concern was expressed on the quality of monitoring catch data. The landing obligation will lead to different destinies of the catch and procedures and facilities to record and document the catches need to be adjusted to the new situation. It was recognised that in order to obtain qualitative acceptable data that both catch data should be reliable and scientific sampling programmes of these data should follow sound statistical procedures.

Further consideration was given to the introduction of the revised DCF. RCM NS&EA considers there to be three over-arching drivers that will lead the development of regional coordination within the future EU-MAP: (i) the legislative framework governing obligations, (ii) adherence to the principle of statistical best practice and (iii) the availability of an appropriate tool-set, specifically, adequate IT provision. Specific comments relating to these drivers are discussed elsewhere in this report.

In order to achieve an efficient way to implement the new upcoming data collection legislation and to support the new CFP in an optimal way, RCM NSEA 2013 initiated a road map. The initial road map was taken further by the RCM NA 2013. The RCM NS&EA 2014 reviewed the text of both RCM NSEA 2013 and RCM NA 2013 and notices that the speed and the actual implementation of the road map is hampered by the absence of the new legislation, the lack of development of the RDB and the lack of establishment of the RCG process yet. The road-map will need to be adjusted as experience is building up and this could be done within the remits of future RCGs. Future STECF EWGs can also suggest actions and adaptations to the road-map. RCM NS&EA 2014 notices that due to the lack of implementation of the new legislation, the lack of implementation of the RCG process, the lack of funds for the progressive RDB development and relevant study proposals, the entire timeline has now slipped and has become uncertain.

Previous meetings of the RCM NS&EA have explored the RDB as tool to demonstrate its utility in analysing quality and consistency of data on a regional level. This year the RCM NS&EA focused on the processes which need to be established for obtaining and demonstrating high quality data. Several stages can be defined in the quality assurance process which are discussed in the 2014 report of the RCM NS&EA. The most relevant are: identifying the most appropriate (statistical) design of data collection schemes, implementation of the scheme, monitoring of performance, data archiving and validation of data, data analyses to investigate quality of the data, documentation, feedback from the end-users and adaption of the sampling schemes as required. This report discusses the responsibilities in this process (MS, RCG, end-users). It is recognized that within ICES considerable progress has been made in developing a framework and tools for the evaluation of the quality of data which are relevant for the DCF. Also it is noted that some MS already have established procedures and protocols which ensure the quality of data. The report of RCM

NS&EA 2014 provides extensive guidelines to the MS how to implement quality assurance procedures.

MS were requested, through a data call, to upload data for 2009-2011 in the regional data base (RDB). Most MS complied with this request. Spanish data were not uploaded but available to the meeting. French data for 2014 were available by not uploaded due to a misinterpretation of the data call. Some Portuguese data could not be uploaded because of technical problems. The fact that all MS have committed themselves to provide the requested data to the RCM must be considered as great progress.

Evaluation of the data call for submission data to the RDB revealed large differences between the MS in the number of species subject to scientific sampling, indicating that data uploads by several countries is still incomplete. This needs to improve in future years. The main conclusion is that by exploring the content of the DB we identified the urgent need to develop software to be able to run queries that give us an answer to the questions we address. Also reference lists have to be implemented for species, harbours and metiers which prevent to upload invalid data.

A general cost sharing model was proposed for surveys carried out by MS jointly on the vessels of one or two MS. The National Correspondents (NC) present in the RCM NS&EA 2014 agreed that the proposed cost sharing model 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 2014 and 2015 or until a new data regulation is in place. The agreement has been forwarded to the RCM NA 2014 for agreement between the NC's, not present at the RCM NS&EA.

Recurring items on the agenda were the consideration of the follow up of relevant recommendations made last year by Liaison Committee. Further, through a number of presentations, the members of the group were informed on relevant developments. The ICES observer presented feedback from expert groups on data needs, projected benchmark meetings in 2015, and changes in the structure of relevant ICES WG.

A number of recommendations and agreements were decided dealing with the landing obligation, quality assurance, RCB and cost sharing of surveys.



### 2.1.5 RCM North Atlantic

The 11<sup>th</sup> RCM North Atlantic was held in Horta (Portugal) 22-26 September 2014. Due to the delayed introduction of the revised DCF the European Commission decided a roll-over in 2013 meaning Member States National Programmes 2011-2013 remains unchanged for the period 2014-2017. The limitations this decision brings for coordination of current MS National Programmes have allowed RCM NA to focus in three major different aspects of the data collection where a better integration –as stated by article 4 Commission Regulation 665/2008– is currently needed.

#### 1. Concurrent sampling

One of the major changes in the DCF that came into force in 2009 was a shift towards concurrent sampling: a sampling strategy covering the sampling of all species during sampling operations. Via this strategy the DCF is able to facilitate the data demands of the existing stock-based assessments as well as serving the revised needs for the ecosystem approach to fishery management. The requirements for concurrent length sampling were developed in PGCCDBS 2007. Implementation studies were done through the following years at national level and an ICES Workshop (2008) discussed about the common problems and the way for best implementation. However it seems concurrent sampling has been under discussion in some countries since then. STECF report (STECF, 12-07) noted “that concurrent sampling of different fish stocks in the same catch is carried out differently in different Member States leading to inconsistent estimates of catch compositions from sampling schemes. There is a need to explain and define concurrent sampling in order to ensure consistent sampling by MS.” RCM NA analysed the current situation. Data collected used a concurrent sampling scheme is increasingly being used by groups to provide additional information, not available in the past under historic data collection methods. RCM NA detailed the ICES Working Groups that have benefited from the introduction of concurrent sampling allowing them to have more data available that was not available before and provide more robust advice. Moreover, there are a large number of stocks lacking quantitative assessments and reliable estimates of stock status. RCM NA specified recent studies indicating that simple harvest control rules using information on the catch length composition and length reference points can be used to deliver catch-based advice that is risk adverse (e.g. Geromont and Butterworth 2014, Jardim et al., 2014, ICES WKLIFE). Concurrent sampling may constitute an important source of biological data for many of the data-limited stocks and the application of these simple HCRs. Historical series are in fact very recent so more results from on-going work is expected. The benefits of concurrent sampling were also highlighted regarding species specific data in species that are often grouped together, with quality that can be verified given the experience and expertise of the data collectors. In the RCM NA it was evident that not all MS were carrying out sampling in this manner. The question as to whether this variability in sampling affects the quality and utility of the data collected needs to be investigated.

## 2. Regional coordination

Optimizing and harmonizing fisheries management across MS is dependent on improving regional coordination. This coordination is expected to improve through the use of tools as the regional data bases where on-going work is being developed. RCM NA analysed that there is a need for harmonization of métiers at level 6. This work was being accomplished since the 2008 RCM NA and was somehow abandoned last year so the problem persists. Reviewing and collating fleet descriptions, metier definitions, standardising metier coding and merging national métiers into regional metiers are fundamental steps that has to be taken by MS. RDB is currently containing big amounts of data not useful for regional coordination. The 2014 RCM NA decided to produce a reference list containing all the possible combinations for métier naming. The reference list was compared with both, data uploaded into the RDB and list of métiers as provided in the MS National Programme (NP 2011-2013). The results of this comparison show the need to restrict the RDB uploads and métier lists provided in the NP accordingly to the reference list and following the métier naming standards. The current list of métiers uploaded to the RDB is incomplete and definitely contains incorrect métier codes.

## 3. Quality checks

There has been considerable discussion, guidance and recommendations about improving and reporting quality in relation to the DCF at STECF, RCMs and at ICES expert groups. This is an ongoing and collective task where specific inputs are needed. The report of RCM NA provides extensive guidelines to the MS how to implement quality assurance procedures. RCM NA focused on the quality issues and recommended QC and QA procedures at the national data capture and data processing level - those stages where the responsibility for checking the data remains firmly in the hands of the MS. This forms a simple standard QA document which can also inform data users and evaluators of the minimum checks carried out by each MS prior to any data upload to the RDB. There was not sufficient time to review the results and these will need to be done at the next RCM. The document itself will need to be reviewed as to its efficacy, whether it may form part of a Regional QA document and how it may be kept up to date if it does.

Between the other issues addressed by the RCM NA it is necessary to stress the landing obligation. This represents a fundamental shift in the management approach to EU fisheries. The RCM NA considered different topics related to this new situation and discussed how it might have an impact on data. The direction of some of these implications is also unclear until the implementation of the obligation has been defined and the practical implications on the ground can be addressed. First issue considered was the access to vessels for biological sampling and potential changes in behaviour of fishing vessels. Opinion of the RCM is that scientific observers should have no mandate for the control of fishing regulations. Previous observer programmes have indicated that changes in operational behaviour already occur when an observer is on board. It is suspected that this will increase with the introduction of the landing

obligation. Secondly, changes in IT systems and protocols were addressed. The landing obligation will generate changes for the collection of sampling data. One of the major changes is that the catch will be split into three catch components. As already stated in the other RCMs on-board sampling protocols will have to be adjusted to account for the new defined components of the catch. National fisheries institutes must update and adapt their existing IT systems in order to include the new catch components. Furthermore, the regional databases and consecutively FishFrame and InterCatch need to be prepared and the uploading processes and raising and estimation procedures adapted. The third issue was the quality of data compliance of the logbooks. The quality of the data depends both on the quality of the catch information and the quality of the biological sampling. Both elements will be affected by the landing obligation. Concern is expressed by the RCM on the future quality of the catch statistics. The RCM is of the opinion that the discard plans, to be implemented in the different regions, should contain clear proposals on how different components of the catch should be monitored and that logbooks and IT systems should be adapted in a timely manner to record the different catch components.

Analysis of the data call for submission data to the RDB revealed huge work must be done in order to ensure correct data are available for regional coordination and/or expert groups. Most part of countries uploaded data (only Spain –not uploaded but available to the meeting- and France –similar situation- didn't do it) but superficial analysis showed the data uploaded was inconsistent: large differences between MS, low number of species uploaded indicating that uploads from several countries are still incomplete, incorrect name of the fishing activities making impossible check again the metier descriptions compiled in the past, etc. It is not the task of the RCM NA to check every data upload, so it was clear a new data call should be established to ensure MS upload correct data. Nevertheless RCM NA see big improvements in the work MS are doing regarding these data calls coming from a situation where some countries didn't provide the data to a new scenario where everyone is providing data and worries concern the quality, which is a large step forward.

Other items on the agenda were the consideration of the follow up of relevant recommendations made last year by Liaison Meeting; consideration of the survey cost-sharing proposal received from RCM NS&EA; evaluation of the ICES data quality transmission sheets and presentations on relevant developments from ICES, EC and SC-RDB.

On the survey cost-sharing model, the RCM NA concluded that the National Correspondents (NCs) of the MS involved in the ASH survey have achieved agreement on the sharing of the cost of this survey. With regard to the blue whiting survey, the agreement still needs to be discussed by the NCs involved. During the LM, the Commission highlighted it's up to MS to agree of this type of proposals. The RCM NA recommends that NC establish an intersessional discussion to agree on a final solution. Once again, the presence of NCs in RCMs is highly recommended.

## 2.2 RCM Recommendations and LM comments

Given the short time lag between the most of 2014 RCMs and the LM, no final reports were available to the LM for most RCMs (except RCM Long-Distance Fisheries). Hence, the recommendations from these RCMs are based on the draft reports and, therefore, the exact wording might differ from the final RCMs reports.

<b>LM 1. Regional Database – Consultation of RCMs</b>	
<b>RCM Baltic and RCM NS&amp;EA 2014 Recommendation 1</b>	RCM NS&EA recommends that the RCMs are consulted before the Commission takes decision on future database structure for DCF data and that the future RCG needs are properly considered
<b>Justification</b>	The RDB is the backbone in present regional coordination of data collection between MS and the RCM Baltic foresee that the importance of a well-functioning database adapted to the needs of the regional coordination group will be even more crucial in the future when moving towards regional programs, design based approach as well as stronger focus on quality assurance and end-user interactions. It is thereby of urgent importance that the RCM needs are carefully considered when the Commission choose system for storage and management of DCF data.
<b>Follow-up actions needed</b>	COM to properly consult RCMs before decisions are taken on future database structures and to properly consider RCM/RCG needs
<b>Responsible persons for follow-up actions</b>	European Commission
<b>Time frame (Deadline)</b>	2014
<b>LM comment</b>	The Commission has committed to consult the RCMs

<b>LM 2. Implications of the landing obligation - Scientific data collection and at-sea sampling</b>	
<b>RCM NS&amp;EA 2014 Recommendation 2</b>	RCM NS&EA recommends that MS maintain scientific observer programmes and continue at-sea sampling schemes for the collection of scientific data for stock assessment and advice. Additionally that the role of scientific observer is not conflated with any monitoring role. Appropriate modifications to at-sea sampling protocols and recording should be devised for sampling the retained discard fraction.
<b>Justification</b>	<p>Discarding will become illegal for the most part, and this has the potential to disrupt the historical time series of catches used in assessment models.</p> <p>Nevertheless, at-sea sampling needs to be maintained because discards at-sea will continue for various non TAC species and exemptions allowed under the landing obligation. Additionally the landing obligation will introduce a new category of retained discards and this fraction has to be sampled to obtain scientific data for the complete catch composition. Until such time as the feasibility of sampling this catch component on-shore can be determined there is a need to maintain at-sea sampling.</p> <p>The RCM NS&amp;EA underlines the importance of maintaining statistically sound sampling designs for the on-board observations, and the integrity of scientific observers.</p>
<b>Follow-up actions needed</b>	<p>Scientific institutions to prepare sampling protocols appropriate for at-sea sampling of the retained fraction and the extra fraction (landing part for industrial purpose of fish under the minimum reference size) due to the landings obligations and modify their sampling protocol .</p> <p>MS &amp; ICES to consider if modifications are needed for recording, storage and estimation processes (data exchange format, IT systems, ...)</p>
<b>Responsible persons for follow-up actions</b>	Scientific institutions within MS
<b>Time frame (Deadline)</b>	Prior to the implementation of the landing obligation

<b>LM comments</b>	The LM fully support this recommendation and in addition that the ICES WGCATCH (November 2014) explore sampling strategies which can be applied under the landing obligation management regime including sampling of the landing fraction of the catch which previously was discarded. LM recommends to MS to follow the guidelines provided by WGCATCH.
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<b>LM 3. Implications of the landing obligation - Scientific data storage, IT systems and estimation</b>	
<b>RCM NS&amp;EA and RCM NA 2014 Recommendation 3</b>	RCM NS&EA 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. 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.
<b>Justification</b>	<p>The landing obligation will introduce a new category of retained discards 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.</p> <p>Many national IT systems may have data models based on a distinction between landed and discarded data that will require modification to accommodate retained discards 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.</p>
<b>Follow-up actions needed</b>	Scientific institutions and ICES data centre to consider if present systems are appropriate and if not make the required modifications.
<b>Responsible persons for follow-up actions</b>	Scientific institutions within MS & ICES National and EU authorities
<b>Time frame (Deadline)</b>	Prior to the introduction of the landing obligation, January 2015 for pelagic stocks and January 2016 for demersal stocks.
<b>LM comments</b>	LM agrees in principle but recognises that no action can be taken until the implementation of the landing obligation is specified. The LM though suggests that MS consider how the new data sets can be accommodated in their scientific data bases.

<b>LM 4. Implications of the landing obligation - Monitoring catch data collection</b>	
<b>RCM NS&amp;EA 2014 Recommendation 4</b>	RCM NS&EA recommends that monitoring catch data collected by control agencies should be maintained and enhanced to account for the additional need to assess the impact of the landing obligation. Specifically the logbook system should be able to record continuing discards and the retained discard fraction as well as the landed fraction. Selective gear measures adopted by vessels should be recorded in logbooks.
<b>Justification</b>	<p>The landing obligation will herald significant changes in the behaviours of fishers, fishing practices, and will most likely result in a proliferation of the use of more selective gears. There will also be requirements to record continuing discards, retained discards and the landed fraction of the catch.</p> <p>If these changes are not adequately recorded in the official catch monitoring data then the ability to make inference from scientific samples to fishing fleets will be limited. The better the accuracy and integrity of the monitored catch data the better are the estimates of the total catch.</p>
<b>Follow-up actions needed</b>	Commission, European and national control agencies to consider the adequacy of catch monitoring procedures.
<b>Responsible persons for follow-up actions</b>	Commission, European and national control agencies
<b>Time frame (Deadline)</b>	Prior to the introduction of the landing obligation
<b>LM comments</b>	LM support this recommendation and suggests that the Commission address this to the MS and that the issue is taken into account when evaluating and approval process of the discard plans.



<b>LM 5. Quality assurance – Agreed metiers and updated list</b>	
<b>RCM NS&amp;EA 2014 Recommendation 6</b>	<b>RCM NS&amp;EA</b> recommends to update the list of metiers
<b>Justification</b>	After analysis of data uploaded to the RDB by MS in 2014, there were nearly 118 new metiers identified, which do not correspond with the reference list of metiers agreed during the RCM NS&EA in 2013. In the purpose of coordination of sampling activities in relation to key metiers at regional level, it is fundamental that the code list in the regional data base is unambiguous and corresponds with the reference list.
<b>Follow-up actions needed</b>	RCM NS&EA to update the list of metiers including detailed description of each. These lists should be implemented in the RDB. It should not be possible to upload data for metiers outside the list without permission from the RCM chair. The updated table of metiers should take all metiers standardized and accepted by RCMs over the last years into account.
<b>Responsible persons for follow-up actions</b>	RCM NS&EA
<b>Time frame (Deadline)</b>	intersessionally by correspondence
<b>LM comments</b>	LM endorses this recommendation.

<b>LM 6. Quality assurance – Tools to analyse the data uploaded to the RDB</b>	
<b>RCM NS&amp;EA 2014 Recommendation 7</b>	<b>RCM NS&amp;EA</b> recommends to develop tools to analyse the quality and the status of completeness of the data in the RDB
<b>Justification</b>	It is presently difficult to access the completeness of data uploaded to the RDB. Knowledge of the status of data is essential to RCM work. Reports and tools allowing the RCMs to examine completeness thereby need to be developed. In order to ensure information on the status of the data uploaded to the RDB is available for the data user, it is further suggested that facilities to mark the status of the various data type uploaded the RDB.
<b>Follow-up actions needed</b>	RCM NS&EA to list the needs for evaluating the quality and the status of completeness of the data in the RDB
<b>Responsible persons for follow-up actions</b>	RCM NS&EA
<b>Time frame (Deadline)</b>	As soon as possible
<b>LM comments</b>	The LM endorses this recommendation and stress the importance of the further development of such tools. The development of the requested tools is part of the roadmaps towards the implementation of the revised DCF and are included a study proposal. Therefore, the LM recommends that the study proposal will be funded as soon as possible.

<b>LM 7. Quality assurance - Calibration of age readings</b>	
<b>RCM Baltic 2014 Recommendation</b>	RCM recommends that WGBIOP develop a procedure for an annually intermediate calibration
<b>Justification</b>	<p>To make sure on a regular basis that age reading is done in a consistent way and that a reference set is available for age readers before the start reading a new season of otoliths.</p> <p>WebGR could be used as a tool for uploading pictures on otoliths. All experts involved in the age reading for the specific stock should participate in the exercise which should be performed annually for all stocks</p>
<b>Follow-up actions needed</b>	WGBIOP to look into a standard procedure
<b>Responsible persons for follow-up actions</b>	ICES WGBIOP
<b>Time frame (Deadline)</b>	Next WGBIOP meeting to be held in August - September 2015.
<b>LM comments</b>	LM endorses this recommendation

<b>LM 8. Quality assurance – More detailed logbook registration</b>	
<b>RCM Baltic 2014 Recommendation</b>	RCM Baltic recommends that all fishermen fishing in the Baltic region document their catches on haul by haul basis in the logbook.
<b>Justification</b>	<p>The introduction of the new CFP (article 15) will probably change the approaches to monitoring the fishery with the current scientific observer sampling programmes and the control of the fisheries.</p> <p>To ensure quality in catch data a more detailed registration of catches is necessary and this can be implemented by document the catches on a haul-by-haul basis in the official logbooks.</p>
<b>Follow-up actions needed</b>	
<b>Responsible persons for follow-up actions</b>	Commission / BALTFISH
<b>Time frame (Deadline)</b>	Before the 1st of January 2015
<b>LM comments</b>	LM endorses this recommendation

<b>LM 9. Concurrent sampling</b>	
<b>RCM NA 2014 Recommendation 1.</b>	The RCM NA recommends that a comprehensive evaluation of the utility of the data being collected with the concurrent sampling should be performed.
<b>Justification</b>	It is unclear whether the significant resource needed to carry out concurrent sampling provides benefits that outweigh the costs. Some ICES Working groups have benefited from concurrent sampling data collected however there is no empirical evidence to support this. In order to decide if concurrent sampling should continue, more feedback from end-users is required.
<b>Follow-up actions needed</b>	<ol style="list-style-type: none"> <li>1. MS should carry out the evaluation on their own data collection schemes and report back to the RCM NA.</li> <li>2. ICES to setup a workshop proposal to see the implication to the stopping the concurrent sampling for those stocks and benefits concurrent sampling are providing or can provide considering the new and broader scopes of the revised DCF, such as the evaluation of impacts of fisheries on marine biological resources and on the ecosystem.</li> </ol>
<b>Responsible persons for follow-up actions</b>	<ol style="list-style-type: none"> <li>1. MS, RCM NA</li> <li>2. ICES</li> </ol>
<b>Time frame (Deadline)</b>	<ol style="list-style-type: none"> <li>1. MS: Intersession work with results reported to RCM NA 2015</li> <li>2. ICES: Workshop to take place in 2015.</li> </ol>
<b>LM comments</b>	The LM endorses this recommendation.

<b>LM 10. Quality assurance – RDB data corrections</b>	
<p><b>RCM NA 2014</b> <b>Recommendation 2</b></p>	<p>The RCM NA recommends that</p> <ol style="list-style-type: none"> <li>1. the reference lists for metiers, harbours and species in the RDB are restricted to the agreed lists (metiers: RCM metier lists, harbours: EU Master Data Register, species: AphiaID (WoRMS));</li> <li>2. any data that cannot be uploaded should be recorded on a standard upload log distributed with the data call;</li> <li>3. MS reload all their data in reference to the restricted lists.</li> </ol>
<p><b>Justification</b></p>	<p>There are inconsistencies and errors in the data on the RDB that have been caused by non-restrictive reference lists for metiers, harbours and species, and insufficient data checks by MS. The annual data checking procedures that are currently carried out at RCMs reveal these errors and data gaps, limiting the potential for data analysis.</p> <p>A log of data completeness is needed so that users can assess the limitations of the data and therefore what interpretations or analysis can be done with it. Currently it is unclear how the data can be used.</p> <p>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 <u>is not</u> on the system as well as what is.</p>

<b>Follow-up actions needed</b>	<ol style="list-style-type: none"> <li>1. RCMs to provide ICES, as the RDB administrators, with the restricted reference lists. ICES needs to incorporate these lists in the RDB;</li> <li>2. RCM chairs to include upload log in data call 2015;</li> <li>3. MS need to reload their data (ICES needs to delete all the data first) and complete the log and submit it to RCM chairs. These logs should be made available for analysis at the next RCMs.</li> </ol>
<b>Responsible persons for follow-up actions</b>	<ol style="list-style-type: none"> <li>1. RCMs, ICES (Data Centre)</li> <li>2. RCM chairs</li> <li>3. MS, ICES (Data Centre)</li> </ol>
<b>Time frame (Deadline)</b>	<ol style="list-style-type: none"> <li>1. Reference lists: before RCM data call 2015</li> <li>2. Upload log: to include in data call 2015</li> <li>3. Reloading of data and submitting of upload log to RCM chairs: by deadline specified in data call 2015</li> </ol>
<b>LM comments</b>	<p>The LM endorses this recommendation. Based on the progress done in the RDB –considering no funding is expected immediately- RCM chairs will considerate in the moment of launching the Data Call if a complete reload –all year series- or current year is needed.</p>

<b>LM 11. Enlarge PGMed scope to Large Pelagics</b>	
<b>RCM MED&amp;BS-LP 2014 Recommendation LP sub-group</b>	Considering the new configuration taken in place in 2014 with LP subgroup associated to RCM MED&BS within a RCM MED&BS-LP, the LP subgroup recommend to enlarge PGMed ToRs to take into account LP subgroup. The list of ToRs are annexed in this report (annex 3)
<b>Justification</b>	The LP subgroup meets in the same time as the RCM MED & BS and also has specific technical issues to investigate, which can be of interest to the PGMed. This will also foster the participation of large pelagics specialists and the exchange of expertise on sampling-related subject.
<b>Follow-up actions needed</b>	LM
<b>Responsible persons for follow-up actions</b>	PGMed-LP, RCM MED&BS-LP
<b>Time frame (Deadline)</b>	Before the next PGMed-LP meeting
<b>LM comments</b>	The LM endorses this recommendation.



<b>LM 12. Coordinated PGMed and LP data call</b>	
<b>RCM MED &amp; BS-LP 2014 Recommendation LP sub-group</b>	<p>The data required each year by the PGMed should be collected within the framework of a data-call defined by the following elements:</p> <p><b>Content:</b> The content is defined according to the ToRs, which can now include issues specifically dedicated to the Large Pelagics subgroup or relevant to both groups.</p> <p><b>Format:</b> For generic ToRs the format of the data will be similar to the format contained within the templates, spreadsheets and text files, used until now. <u>For the CV computations and investigation of sampling consistency</u>, the data will be collected to be consistent to the Standard Data Exchange Format (SDEF) proposed by the Large Pelagics subgroup, allowing to use the same tools and methodology for a more thorough investigation of sampling stratification and precision.</p> <p><b>Dates:</b> The start and end dates of the data-call are set-up so that Member States have time and flexibility for answering it, while complying with the 6 months period after the end of data collection during which data cannot be required. <b>It has been agreed to launch the data-call the 1<sup>st</sup> of March and to set the deadline to the 15<sup>th</sup> of July.</b></p> <p><b>Person in charge:</b> The chairs of the RCM MED&amp;BS-LP will be responsible for launching the data-call.</p>
<b>Justification</b>	<p>Since 2014, the PGMed meeting is contained within two days. In order to ensure that ToRs are adequately addressed in such a time-frame, it is important that data would be made available early enough and as complete as possible.</p>
<b>Follow-up actions needed</b>	RCM MED&BS-LP
<b>Responsible persons for follow-up actions</b>	RCM MED&BS-LP co-chairs
<b>Time frame (Deadline)</b>	Next year (2015) for the next PGMed meeting
<b>LM comments</b>	The LM endorses this recommendation.

<b>LM A1.</b>	
<i>AGREEMENT</i>	
<b>Quality assurance – Upload of historical data to RDB FishFrame</b>	
<b>RCM Baltic 2014 Agreement</b>	The RCM agrees on a data call demanding all MS to ensure that all historical data (including data in salmon and eel) for the period 2009-2013 are uploaded to RDB FishFrame.
<b>Justification</b>	A complete and easily accessible regional data set is crucial for the progress of a statistical sound sampling design in the data collection at a regional level.
<b>Follow-up actions needed</b>	Data call to all MS via NC Uploading of missing data by all MS
<b>Responsible persons for follow-up actions</b>	RCM Baltic chair to send out data call, NC data call followed
<b>Time frame (Deadline)</b>	1 <sup>st</sup> December 2014
<b>LM comments</b>	LM endorses this agreement

<b>LM A2.</b>	
<i><b>AGREEMENT</b></i>	
<b>Quality control documentation</b>	
<b>RCM NS&amp;EA 2014 Agreement 1</b>	It is agreed that all MS attending the <b>RCM NS&amp;EA</b> will document their data checks and quality control procedures in reference to the data capture and data processing stages of their national sampling programmes.
<b>Justification</b>	In order to develop a comprehensive set of data checks in the RDB and in addition also can be implemented in MS national data bases it is suggested to assemble information of all present data quality checks used by MS.
<b>Follow-up actions needed</b>	ICES to develop an easier procedure for comparing the data.
<b>Responsible persons for follow-up actions</b>	MS within RCM NSEA
<b>Time frame (Deadline)</b>	RCMs 2015
<b>LM comments</b>	The LM fully support this agreement and suggest that this work is done in all regions and by all RCMs.

<b>LM A3.</b>	
<b><i>AGREEMENT</i></b>	
<b>Regional Coordination - Cost sharing of International Ecosystem Survey in Nordic Waters and Blue Whiting joint research surveys</b>	
<b>RCM NS&amp;EA 2014 Agreement 2</b>	RCM NS&EA 2014 agreed that the cost sharing model where those MS having a EU-TAC share $\geq 5\%$ is sharing the survey cost according to their EU-TAC shares for the main species concerned: i) the International Ecosystem Survey in the Nordic (Atlanto-Scandian herring), ii) the Blue Whiting Survey (blue whiting). 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 2014 and 2015 or until a new data regulation is in place.
<b>Justification</b>	There is a need to update current agreements to reflect the new financial structure under the EMFF, while the surveys themselves are automatically rolled-over to 2014 and 2015 under the current DCF regime. Furthermore, the cost sharing models for both surveys should be aligned.
<b>Follow-up actions needed</b>	Approved by National Correspondents from Belgium, Denmark, Germany, the Netherland, Sweden and UK. The NC's from Ireland, France, Portugal and Spain should at the RCM NA be consulted.
<b>Responsible persons for follow-up actions</b>	The RCM NS&EA and the RCM NA
<b>Time frame (Deadline)</b>	Invoices should be sent to the MS concerned before 1 November 2014.
<b>Follow up in 2014</b>	The NC's concerned from the RCM NA to be consulted.
<b>LM comments</b>	LM endorses this agreement

### 3 Outcomes and recommendations from PGECON

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#### 3.1 Main outcomes

The second Planning Group on Economic Issues (PGECON) met in Berlin, from March 31 to April 4, 2014. 21 representatives from 15 Member States and one expert, from each of the bodies: JRC, Eurostat and DG Mare, attended the meeting.

PGECON is an operative meeting with a general aim to compare different approaches and to share different experiences. Participation is open to national experts involved in the implementation of the economic modules of the Data Collection Framework (DCF). PGECON aims to provide useful inputs to improve MS sampling schemes.

Recent developments in the discussion on the DCMAP legislation were presented by a DG MARE representative. A greater focus on small scale fisheries was suggested. Moreover, end users' needs are intended to be better taken into account.

The outcome of three workshops with relation to DCF economic data was presented and discussed. At the Nantes workshop transversal data for small scale fisheries were evaluated. PGECON supported the conclusions of the workshop, amongst others the need for a more precise definition of end users' needs and a reduction of variables to be collected. In the case that very detailed information is required a specific regional data collection might be considered using automatic IT geo-positioning tools.

At the Gothenburg workshop the determination of the value of vessels and of fishing rights was analysed. Input from a ship broker showed that market prices for vessels grossly depend on aspects which are different from the physical properties of the vessel. Often the major part of the value comes from the quota which is attached to the vessel. These conditions may vary by region and by fishery. PGECON supported the view that the Perpetual Inventory Method (PIM) might not always address the estimation of vessel values properly. Thus other approaches should be allowed to be pursued. For the valuation of fishing rights two approaches were presented at the workshop, both mainly addressing the value of future catches. PGECON supports the approach and suggests a study on the estimation of intangible assets.

At the Helsinki workshop on statistical issues and thresholds, the distinction between active and less active vessels was discussed. It turned out that in all MS, a considerable number of vessels land significantly less fish than that necessary to constitute a livelihood. The fishing activities of those vessels cannot be regarded as professional and as they have a different cost structure, they can cause a gross bias to economic figures when merged with figures from vessels of professional fishermen. Thus a distinction between those two groups of vessels was suggested. PGECON supports that approach and suggests a workshop on that topic.

Reporting of data quality was a major issue in Helsinki. Sampling design and data evaluation were the topic of a lecture. It was regarded as extremely helpful to have the issue presented in the form of a handbook. This view is strongly supported by PGECON.

The issue of harmonisation between DCF and Eurostat has been discussed for the data collection on aquaculture. The presentation by Eurostat highlighted the differences and the difficulties. PGECON concluded that the space for further harmonisation appears rather limited as both types of data collection serve different purposes.

The issue of end-user needs with respect to the resolution of fleet economic data was discussed. PGECON reiterated the urgent need of launching a study on methodologies and standards for disaggregation using additional data.

Along with the studies mentioned before, PGECON repeats the need for several studies which have been strongly recommended, some of them for several years:

1. Origin and Sources of Raw Material in the European Seafood Industry
2. Study to disaggregate economic variables by activity and area
3. Handbook on sampling design and estimation methods for fleet economic data collection
4. Harmonise quality reporting and propose methodology in the case of non-probability sample survey
5. Pilot study on social indicators
6. Study to propose methodologies for estimation of intangible assets in EU fisheries

PGECON 2014 suggested three workshops for 2014:

1. Aquaculture data collection
2. Thresholds for activity levels
3. Linking economic and biological effort data /call design

### 3.2 PGECON recommendations and LM comments

<b>LM 13. Adjustment of data collection requirements on small scale fisheries</b>	
<b>PGECON 2014 Recommendation</b>	PGECON supports the implementation of recommendations as detailed by the 2013 workshop on transversal data in small-scale fisheries.
<b>Justification</b>	The current requirements on transversal data collection have turned out to be far too extensive, and, moreover the data have never been used. In the future, data collection should be more adjusted to end-user requirements
<b>Follow-up actions needed</b>	
<b>Responsible persons for follow-up actions</b>	STECF
<b>Time frame (Deadline)</b>	Before DCMAP implementation
<b>LM comments</b>	LM endorses this recommendation

<b>LM 14. Workshop on Aquaculture data collection</b>	
<b>PGECON 2014 Recommendation</b>	PGECON recommends a workshop on unclear issues in aquaculture data collection in 2014.
<b>Justification</b>	It has been experienced that some further clarification is required on aquaculture data collection, e.g. quality checks, definition of primary activity, allocation of enterprises to particular segments, harmonisation of conversion indexes.
<b>Follow-up actions needed</b>	
<b>Responsible persons for follow-up actions</b>	B. Pienkowska (MIR, Gdynia, PL)
<b>Time frame (Deadline)</b>	Scheduled for late 2014.
<b>LM comments</b>	LM endorses this recommendation



<b>LM 15. Workshop on thresholds for activity levels</b>	
<b>PGECON 2014 Recommendation</b>	PGECON recommends a workshop on introducing a threshold for distinction between commercially and non-commercially used registered vessels.
<b>Justification</b>	Low-level activity fishing vessels will bias fleet economic data when merged with regular activity level.
<b>Follow-up actions needed</b>	
<b>Responsible persons for follow-up actions</b>	H. v. Oostenbrugge (LEI, The Hague, NL)
<b>Time frame (Deadline)</b>	Scheduled for October 2014.
<b>LM comments</b>	LM endorses this recommendation

<b>LM 16. Workshop on linking economic and biological effort data</b>	
<b>PGECON 2014 Recommendation</b>	PGECON recommends a workshop on linking economic and biological effort data.
<b>Justification</b>	Transversal data have been intended to link biological and fleet economic data. Thus far this idea could hardly ever been pursued. This is mainly due to the fact that data are not collected at corresponding resolution. The WS is supposed to shed light into that issue in comparing previous data calls, further analysing (effort) data and their use (e.g. days at sea, fishing days). The WS is also to indicate opportunities for harmonisation of data requests (both biological and economic).
<b>Follow-up actions needed</b>	
<b>Responsible persons for follow-up actions</b>	Cristina Castro Ribeiro (JRC)
<b>Time frame (Deadline)</b>	Scheduled for January 2015.
<b>LM comments</b>	LM endorses this recommendation

<b>LM 17. Handbook on sampling design and estimation methods for fleet economic data collection</b>	
<b>PGECON 2014 Recommendation</b>	PGECON recommends commissioning a handbook on sampling design and estimation methods for fleet economic data collection.
<b>Justification</b>	<p>It has turned out that MS need more specific methodological advice, taking into account the particular circumstances for fleet data. This applies in particular to sampling efficiency and quality reporting.</p> <p>The documents on the issues (e.g. Eurostat) have not been sufficient to help MS providing reliable quality information throughout. Quality information is crucial and a specific manual will help harmonising reporting.</p>
<b>Follow-up actions needed</b>	
<b>Responsible persons for follow-up actions</b>	DG MARE
<b>Time frame (Deadline)</b>	Prior to 2015 fleet economic data call.
<b>LM comments</b>	LM endorses this recommendation

<b>LM 18. Studies requested in previous years</b>	
<b>PGECON 2014 Recommendation</b>	<p>PGECON must realize that a considerable number of studies that have been recommended through the years have piled up without having been addressed in any way – e.g.</p> <ul style="list-style-type: none"> <li>• Origin and Sources of Raw Material in the European Seafood Industry</li> <li>• Study to disaggregate economic variables by activity and area</li> <li>• Harmonise quality reporting and propose methodology in the case of non-probability sample survey</li> <li>• Pilot study on social indicators</li> <li>• Study to propose methodologies for estimation of intangible assets in EU fisheries.</li> </ul>
<b>Justification</b>	Studies have been justified and endorsed numerous times. See detailed description in PGECON 14 report
<b>Follow-up actions needed</b>	
<b>Responsible persons for follow-up actions</b>	DG MARE
<b>Time frame (Deadline)</b>	End 2015
<b>LM comments</b>	LM endorses this recommendation

## 4 PGCCDBS and PGMEd

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### 4.1 Main outcomes of the PGCCDBS 2014

The ICES Planning Group on Commercial Catches, Discards and Biological Sampling [PGCCDBS] (Co-Chairs: Mike Armstrong, UK, and Gráinne Ní Chonchúir, Ireland) met in Horta, the Azores, 17th February – 21st February 2014.

The 2014 meeting of PGCCDBS focused on work completed since last year, and planned work for 2014 and 2015, in the following topics which formed the basis of the Terms of Reference:

1. Stock-based biological parameters from sampling of fishery and survey catches (age, growth, maturity, fecundity, sex ratio)
2. Fleet/métier related variables (discards estimates and length/age compositions of landings and discards) and statistical design of sampling schemes
3. Data collection technology and databases (hardware, and software such as WebGR and the Regional Data bases).
4. Implementation of the ICES Quality Assurance Framework
5. Addressing recommendations and requests for advice from ICES expert groups (including through PGCCDBS data contact persons), and RCMs.

PGCCDBS met in plenary to review the outcomes of a wide range of workshops and age exchanges conducted since PGCCDBS 2013 and the work plan for 2014. On the basis of this and the PGCCDBS long term planning process, further workshops and exchanges were proposed for 2015 and beyond. These include:

Age reading workshops:

- Workshop on Age reading of Seabass (*Dicentrarchus labrax*) [WKARDL], chaired by Kélig Mahé, France, and Mark Etherton, England, UK, in Lowestoft, UK England, 15 – 19 June 2015.
- Workshop on Age Reading of Saithe (*Pollachius virens*) [WKARPV], chaired by Kélig Mahé, France, and Jane Godiksen, Norway, in Boulogne-sur-Mer, France, 25-29 May 2015.
- Workshop on Age reading of horse mackerel, Mediterranean horse mackerel and blue jack mackerel (*Trachurus trachurus*, *T. mediterraneus* and *T. pictatus*) [WKARHOM2], chaired by Pierluigi Carbonara, Italy, and Kélig Mahé, France, in Sta. Cruz de Tenerife, Canary Islands, Spain, 26-30 October 2015.
- Workshop on Age reading of Chub Mackerel (*Scomber colias*) [WKARCM], chaired by Andreia Silva, Portugal, and Maria Rosario Navarro, Spain, in Lisbon, Portugal, 2-6, November, 2015.

- Workshop on Age reading of Dab (*Limanda limanda*) [WKARDAB2], chaired by Holger Haslob, Germany, and Loes Bolle, the Netherlands (to be confirmed), in Hamburg, 23-27 November 2015.

Maturity workshops:

- A workshop on the maturity staging of mackerel and horse mackerel [WKMSMAC2] will take place in Lisbon, Portugal, 28 September – 2 October 2015, and co-chaired by Cindy van Damme, The Netherlands and Pierluigi Carbonara, Italy.

PGCCDBS 2014 also updated the list of national age readers and co-ordinators, and this updated list was uploaded onto the European Age Readers Forum (EARF).

## 4.2 Future of PGCCDBS

From November 2014 onwards, the previous work programme of PGCCDBS will be taken over by three new ICES Expert groups:

1. Working Group on Commercial Catches [WGCATCH], chaired by Mike Armstrong, UK and Hans Gerritsen, Ireland, will meet for the first time in Copenhagen, 10 – 14 November 2014.
2. Working Group on Biological Parameters [WGBIOP], chaired by Francesca Vitale, Sweden, and Lotte Worsøe Clausen, Denmark, will meet for the first time in Malaga, Spain, August 2015.
3. Planning Group on Data Needs for Assessment and Advice [PGDATA], chaired by Mike Armstrong, UK and Marie Storr-Paulsen, Denmark, will meet for the first time in Lysekil, Sweden, 30 June – 3 July 2015.

WGBIOP and WGCATCH will further develop the types of work done on quality assurance of biological and fleet-based data carried out by PGCCDBS and the workshops developed by it. PGDATA will complement these expert groups by extending the Quality Assurance Framework to include the use of data at the point of end use, including stock assessment. The responsibilities of PGDATA, as given by PGCCDBS 2014 and forming the basis for its generic ToRs will be to:

1. Design a Quality Assurance Framework for assessment EGs to evaluate data quality and its impact on assessments, particularly within the benchmarking process, and test this in regional case studies. The QAF will also cover other end-uses of the data.

2. Develop and test analytical methods for identifying improvements in data quality, or collections of new data, that have the greatest impacts on the quality of advice;
3. Engage with end-users (ICES EGs & SSGs, RCMs/RCGs; stakeholder Advisory Committees, STECF, European Commission and other RFMOs) to raise awareness of what types and resolution of management decisions (e.g. by fleet or area) can realistically be supported by present or proposed data collections;
4. Advise on objective methods to apply criteria (e.g. as proposed by STECF EWG 13-02 on Review of DC-MAP) for evaluating requests by end-users for new or amended data collections within the new DCF/DC-MAP.
5. Plan workshops and studies focused on specific methodological development needs.

An important change in focus of PGDATA is that it will cover all types of fishery dependent and fishery independent data, and biological parameters, used in assessments. In this respect it will liaise closely with other Expert Groups falling under the ICES Steering Group on Integrated Ecosystem Observation and Monitoring (SSGIEOM), in particular the Working Group on Improving use of Survey Data for Assessment and Advice (WGISDAA) to ensure synergy and avoid duplication. The PGDATA will have an annual work programme involving intersessional work as well as plenary meetings, and will plan workshops and propose studies to deal with specific topics requiring specialist skills.

### 4.3 Main outcomes of the PGMed 2014

The 8th Meeting of the Mediterranean Planning Group for Methodological Development (PGMed) was arranged to be held just before the RCM MED & BS, in Zagreb, Croatia, the 1<sup>st</sup>-2<sup>nd</sup> of September 2014. This was the first time that the meeting was organised this way, in two days time. The meeting was attended by 7 Mediterranean Member States (Greece, Cyprus, France, Spain, Malta, Slovenia and Croatia), but none of the Black Sea Member States.

The Terms of Reference defined by the RCM MED & BS were:

- ToR 1) Ranking system for the whole Mediterranean and for the Black Sea
- ToR 2) Reviewing and update of the landing template for the Mediterranean and for the Black Sea
- ToR 3) For the metiers which are exploiting a shared stock and selected by the ranking system, the number of sampling trips by metier at the GSA level can be determined.
- ToR 4) Assess the CV for shared stocks both for the Mediterranean (GSA 7, GSA 15-16, GSA 17) and Black Sea.
- ToR 5) Analyse the extension of the problem concerning the fishing performed in a different GSA than their original one.
- ToR 6) Update the work conducted in the PGMed 2013 for large pelagic species on sampling of length and stock related variables by using 2012 (or 2013) data.
- ToR 7) Assess the CV of large pelagic for length.
- ToR 8) Review WK on data quality carried out until now: state of guidelines of statistical sound sampling methodologies.
- ToR 9) Proposal of workshops and studies.
- ToR 10) Any other business.

To address those ToRs, a data call was launched by the RCM MED&BS. This first data-call caused some confusion as its format was new and not agreed upon and as it required that the data would be uploaded in a RDB. It prevented some countries, such as France, to communicate the required data in due time. Therefore, an informal call was issued to ensure that ToRs of the PGMed would be addressed, following the format and spreadsheet templates used the previous years. The participation to this call (Table below) allowed for adequately addressing most of the ToRs.



Table : Data transmission by member state and ToR. Note that all ToRs were not relevant to all Member States.

Member State	ToR 1	ToR 2	ToR 3	ToR 4	ToR 5	ToR 6	ToR 7
<b>Bulgaria</b>							
<b>Croatia</b>	x	x	x	x	x	x	x
<b>Cyprus</b>	x	x		x	x	x	x
<b>France</b>		x		x			
<b>Greece</b>							
<b>Italy</b>	x	x	x	x		x	x
<b>Malta</b>	x	x	x	x		x	x
<b>Romania</b>							
<b>Slovenia</b>	x	x	x	x	x	x	x
<b>Spain</b>	x	x	x	x	x	x	x

Because this year only two days were dedicated to the PGMed, the report was pre-drafted and the analyses ready through automatic reporting tools available for the software R. This allowed to fork out valuable time for discussion on key issues, by automatically computing the analyses required by the generic ToRs. During these two days the work had consisted in updating the data, integrating comments and section drafted by the participants and analyses that couldn't be finalized beforehand. When available, the 2014 PGMed also made use of past data to complement the work provided for each ToR.

The ranking system (ToR 1) performed on historical data (2008-2013) was found to produce very stable results across years for each of the 3 variables (landings, effort and value) considered. The landing template (ToR 2) was computed for 2012 but also for the data averaged over the 2008-2013 period, which allowed to provide for a global overview of the share of the different countries to the total landing of each species landed. The number of sampling trips by métier for the shared stocks was only estimated in GSA 17 as data was lacking for GSA 7, GSAs 15&16 and GSA 29.

The coefficient of variation was then estimated for shared demersal stocks (ToR 4). Data allowed for CV estimates for hake, monkfish and red mullet in GSA 7 as well as for red mullet in GSA 17. The analysis was limited to these stocks as data were lacking or were provided in the wrong format, which prevented them from being used. It has also to be noted that the group has been questioning the use of aggregated CVs instead of stratified CVs. The group expressed that CVs should be investigated through the stratification of the sampling data (time, gear, space), as well as the number of samples needed to reach the required thresholds.

The fishing operations occurring in a different GSA than the GSA of origin of boats (ToR 5) was generally documented, but the group underlined a general lack of data on that matter, particularly for the Italian fleet. The number of samples for the large

pelagics could be estimated (ToR 6), but unfortunately for bluefin tuna the share of catches sent for caging in different countries was generally undocumented, which prevented from properly adjusting the number of samples per country.

As for the demersal species (ToR 4), enough data was gathered to compute the CVs for the large pelagics (ToR 7), in collaboration with the RCM – LP subgroup. However, the group expressed the same reserves as for ToR 4 on the computation of the CV.

To address ToR 8, the group referred to the work performed in the PGCCDBS 2014 report, which reported outcomes from WKPICS and SGPIDS. However, the group expressed its interest in investing further data-quality issues through case studies in future PGMed meetings. One workshop and one study were presented under ToR 9, which are explained in further details in the present report.

Overall the group expressed that two full days are needed to be able to perform the work required to address the PGMed ToRs. The group also agreed that the PGMed could be enlarged to include specific tasks for the LP subgroup, which will also be beneficial to everyone as it would allow to share the expertise on specific aspects regarding large pelagics. The group also expressed its interest in following advances from the PGDATA and WGCATCH so that it could benefit from their advances and share information.

The PGMed also echoed concerns raised about the maturity scale requirements onboard MEDITS surveys, as the protocols are currently very detailed compared to DCF needs. The group was keen on clarifications regarding DCF minimum requirements regarding this aspect. The PGMed also echoed concerns about how the MSFD would be implemented on these surveys. A review on how MSFD actions will be implemented on the different MEDITS survey was realised during the meeting.

Finally, the group reiterated its interest in an update in the way the CVs are computed (see ToR 4 and ToR 7). It was agreed to follow the proposition from the RCM – LP subgroup to formulate the next data-call so that COST tools can be used to investigate this issue. The group also stressed that the data-call should be made more formal so that data could be transmitted early enough to allow for adequately addressing the ToRs within the 2 days dedicated to the PGMed.

In order to improve stock assessments and management advice, the PGMed developed a proposal for a workshop on fish condition:

## **Proposal for a workshop on fish body condition studies at the Mediterranean and Black Sea scales**

Body condition is a key variable widely used in ecological studies particularly on fish, mammals and birds to define the nutritional or physiological status of an individual (Bolger and Connolly, 1989; Stevenson and Woods, 2006). Commonly, body condition is defined as the quantity of nutrient reserves, which represent the quantity of metabolizable tissues exceeding those required for daily nutritional demands (Schamber et al., 2009; Schulte-Hostedde et al., 2001). Condition indices thus inform on the quantity of energy extracted from the environment and can give important insights on foraging behaviour or prey distribution for instance (Lloret et al., 2013).

Body condition indices are also used as indicators of an individual's well-being which can affect its future performances (Stevenson and Woods, 2006; Wilson and Nussey, 2010). For example, individuals with larger nutritional reserves may have a greater survival rate, a larger reproductive success and a higher growth (Millar and Hickling, 1990), ultimately resulting in a link between body condition and fitness for several species (Jakob et al., 1996). Measuring body condition is thus of outmost importance for physiologists and ecologists to understand population dynamics affected by mortality and reproduction (Schulte-Hostedde et al., 2005). A large number of condition indices are available from the literature. In particular, morphometric indices are based on the assumption that for a given size, heavier individuals are in a better condition (Green, 2001). They are extensively used because of their simplicity; and have been selected a lot to monitor fish health (Lambert and Dutil, 1997), investigate marine pollution (Bervoets and Blust, 2003) or manage fisheries (Cone, 1989).

Because MEDIAS and MEDITS surveys allow to collect size and weight measurements of a wide diversity of fish species, it offers a unique opportunity to compare body condition between areas of the Mediterranean and Black Sea and to better understand how it fluctuates with the environment. It could also help understanding the relative population trends observed in the different areas. In this project, we propose as a first step to build morphometric body condition indices over the whole Mediterranean and Black Sea, to compare between areas and relate it to environmental conditions and a measure of habitat quality. This index may also be of great importance to measure the health of a stock and the production of time series of such indicator to incorporate in stock assessments may help refining stock status and management advices proposed in the regional organisations such as GFCM. Further studies on the link of body condition with reproduction or feeding behaviour or even age structure of the population may also be considered.

*References:*

- Bervoets, L., Blust, R., 2003. Metal concentrations in water, sediment and gudgeon (*Gobio gobio*) from a pollution gradient: relationship with fish condition factor. *Environmental Pollution* 126, 9–19.
- Bolger, T., and Connolly, P. L. 1989. The selection of suitable indices for the measurement and analysis of fish condition. *Journal of Fish Biology*, 34: 171–182.
- Cone, R.S., 1989. The Need to Reconsider the Use of Condition Indices in Fishery Science. *Transactions of the American Fisheries Society* 118, 510–514.
- Green, A.J., 2001. Mass/length residuals: measures of body condition or generators of spurious results. *Ecology* 82, 1473–1483.
- Jakob, E. M., Marshall, S. D., and Uetz, G. W. 1996. Estimating Fitness: A Comparison of Body Condition Indices. *Oikos*, 77: 61–67.
- Lambert, Y., and Dutil, J.-D. 1997. Condition and energy reserves of Atlantic cod (*Gadus morhua*) during the collapse of the northern Gulf of St. Lawrence stock. *Canadian Journal of Fisheries and Aquatic Sciences*, 54: 2388–2400.
- Lloret, J., Shulman, G., and Love, R. M. 2013. *Condition and Health Indicators of Exploited Marine Fishes*. John Wiley & Sons. 263 pp.
- Millar, J. S., and Hickling, G. J. 1990. Fasting Endurance and the Evolution of Mammalian Body Size. *Functional Ecology*, 4: 5–12.
- Schamber, J. L., Esler, D., and Flint, P. L. 2009. Evaluating the validity of using unverified indices of body condition. *Journal of Avian Biology*, 40: 49–56.
- Schulte-Hostedde, A. I., Millar, J. S., and Hickling, G. J. 2001. Evaluating body condition in small mammals. *Canadian Journal of Zoology*, 79: 1021–1029.
- Schulte-Hostedde, A. I., Zinner, B., Millar, J. S., and Hickling, G. J. 2005. Restitution of mass-size residuals: validating body condition indices. *Ecology*, 86: 155–163.
- Stevenson, R. D., and Woods, W. A. 2006. Condition indices for conservation: new uses for evolving tools. *Integrative and Comparative Biology*, 46: 1169–1190.
- Wilson, A. J., and Nussey, D. H. 2010. What is individual quality? An evolutionary perspective. *Trends in Ecology & Evolution*, 25: 207–214.

*Contacts*

- Josep Lloret (josep.lloret@udg.edu)
- Claire Saraux (claire.saraux@ifremer.fr)

*Duration:* 1 week

*Estimated cost:* 50.000 €

*Geographic area covered:* Mediterranean and Black Sea

**LM comment: LM endorses this workshop proposal and considers that there would be potential interest to widen the geographic scope to the ICES area.**

## **5 Compilation of recommendations on the DCF (ToR 2)**

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The ICES representative explained that recommendations within the ICES system are being compiled in an internal database. As a follow up of a request from the RCM chairs in 2012, ICES prepared a similar recommendations database for the RCMs.

The LM considers that recommendations on DCF issues from STECF and other relevant groups (e.g. PGMed, PGECON) should also be included in the ICES database. The LM agreed, however, that only those recommendations that have been approved by the LM should enter the database. The Commission informed LM members that it will contract a person to compile all recommendations approved by the LM by early 2015 so that MS can use this compilation when preparing their Annual Reports for 2014.

The recommendation database is available under the ICES SharePoint system: [https://community.ices.dk/admin/Recomendations/\\_layouts/15/start.aspx#/](https://community.ices.dk/admin/Recomendations/_layouts/15/start.aspx#/)

To access the database (reader rights), it is only necessary to have a SharePoint password.

## **6 Regional cooperation (ToR 3)**

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### **6.1 Grants for strengthened regional cooperation**

The Commission presented the direct management programme under the EMFF that could be of relevance to data collection, namely Article 86 on scientific advice and knowledge and in particular the provisions on studies and pilot projects (Article 86.2a) and regional cooperation in the field of data collection (Article 86.2f). The Commission announced that they would be launching before the end of 2014 two grants (up to 400 000 Euro each, co-financed at a rate of 90% by the EU) to strengthen regional cooperation. The grants would cover actions including the development of a regional sampling plan, development of regional quality assessment procedures, plans to collect new variables not covered by the current EU MAP, and identification of best practice and guidance. The Commission hopes to launch additional grants in 2015 to build on these two pilot projects on regional cooperation.

### **6.2 Regional databases**

The regional database (RBD) was initiated by the RCMs as they realised the need for a common data source to execute their work. Following a recommendation from the Liaison Meeting in 2009 the Commission organised the workshop “Regional scenarios and Roadmap on Regional Database” in 2010. A strong need for a regional was expressed by participants from the Baltic and North Sea regions. In 2010, the RCM Baltic and the RCM NS&EA recommended an interim steering group to be set up with

clear terms of references and mandates in order to start the implementation of a RDB including a Steering Committee (SC). The RCM NA proposed items to be discussed in such a SC. The 7<sup>th</sup> Liaison meeting endorsed this recommendation. As a consequence an interim steering group, consisting of representatives from the three RCMs, ICES and the Commission, was put together. This steering group had a meeting in February 2011 in order to elaborate on a governance model for the RDB but also to suggest road maps on how to proceed towards implementation of a RDB. The outcome of the interim steering group was adopted by the RCMs which also appointed participants to the RDB steering committee (RDB-SC) during their 2011 meetings. The first RDB-SC meeting was held in December 2011. ICES took over as a host of the data base in 2012. During 2012 were three training workshops (WKRDB1-3) organized to support MS to upload and work with data in the regional database. The database was populated through a data call from the RCM chairs. The RDB-SC has, following recommendations from the LM, primarily been working with a data policy document and different future development needs. Most of the development needs are summarised in a study proposal that were endorsed by the 9<sup>th</sup> LM. The study proposal cover an array of development needs, from standard outputs to the RCMs to quality checking tools and envisaged changes in the data structure to support a design based approach to data collection. The study was unfortunately not included in the Commission's work programme for 2013. This implies that presently there are no possibilities to develop the RDB further apart from the ICES developments.

### **6.3 RCMs 2014 – Response of MS to data calls, RDB use**

MS participating in the RCM Baltic, RCM NS&EA and RCM NA uploaded data in the RDB-FishFrame as a response of a data call launched by the RCM chairs in April 2014. The data call covered landing, effort and sampling data for 2009-2012. Two MS did not upload data but provided data to the RCMs in the required format. Requests by the MS to the ICES secretariat during the uploading process were answered very fast, suggestions were helpful and MS appreciate the support they received.

The accessibility to data resulted in that the RCM meeting time could be used more effectively. Nevertheless, important problems were detected in the data uploaded by several countries showing more work and quality aspects are needed to allow RCMs to do their tasks based on RDB data. Standard outputs from the RDB were produced by the various RCM's to explore the contents of the RDB. However, there is a need for developing software which produce these standard reports. The RCMs could instead focus on examining the quality of the regional data as well as ideas for future regional sampling designs. Access to data initiated creativity in the groups and there are several ideas in the reports on what future regional data collection programmes could look like. It also became evident how important the regional database could be for the RCM work to be effective. Several recommendations from the RCMs were directed to the RCM-SC in order to improve the data and data analysis within the RCMs. These

recommendations covered: completeness of data, harmonisation of input data and suggestions for revisions of exchange format.

#### **6.4 Mediterranean & Black Sea Regional database (Med&BS-RDB)**

The Steering Committee (SC) for the Mediterranean & Black Sea Regional database (Med&BS-RDB), at its 1<sup>st</sup> Meeting (held in Rome, 29-30 November 2012), has identified the General Fisheries Commission for the Mediterranean and Black Sea (GFCM) as the best option to host and maintain a regional database for the Mediterranean and Black Sea region.

The GFCM is widely recognised as the body covering regional needs and with large experience in maintaining international data bases. GFCM was approached during the SC meeting and it was asked about the possibility to host the Med&BS-RDB. It has been recognised that hosting the Med&BS-RDB by an international organisation such as GFCM should be preferred considering that it is the body covering Regional needs and it has wide experience in maintaining international databases. GFCM answered positively upon clarification of costs related issues and definition of practical matters both internally and with European Commission. Several types of costs related to maintenance (hardware, upgrades etc.), support to users, management and further development of the database should be investigated. It will be necessary to elaborate the cost estimate in more detail and the EC need to approve this cost.

The Steering Committee has reported this position to the 2013 Regional Coordination Meeting for the Mediterranean and Black Sea (RCM MED&BS Constanta, 2013). The RCM MED&BS 2013 final report includes the following official recommendation *“RCM Med&BS 2013, agreed that the MED&BS-RDB could be hosted by GFCM. On the basis of the clearance of the RCM Med&BS, a formal procedure will be activated in order to contact GFCM officially and consequently evaluate the related feasibility and necessary funding. Upon availability of the required funds, GFCM would dispose human resources, technical expertise and IT infrastructure that can be up-scaled in order to provide database development, administration and security.”*

So a formal procedure should be activated in order to contact GFCM officially and consequently evaluate the related feasibility and necessary funding.

However, the European Commission stated that it is currently still too early to take further steps because of the uncertain outcome of the database feasibility study on Scientific data storage and transmission under the 2014-2020 Data Collection Multiannual Programme (MARE/2012/22 – Lot 2 (SI2.656640)). Currently no decisions have been taken about the way forward on the precise set up of any supra national IT-systems concerning data collection and therefore it is too early for approaching GFCM formally.

Below are reported the main outcomes of the Med&BS-RDB steering group adopted by the RCM MED&BS.

The 1<sup>st</sup> Steering Committee Meeting for the Med&BS-RDB was held in Rome, kindly hosted in the GFCM headquarters, from 29 to 30 November 2012. The Steering Committee (SC) met in response of a recommendation by the 2012 Regional Coordination Meeting for the Mediterranean and Black Sea (RCM MED&BS - Madrid July 2012), in order to set up some principles for a Regional Database hosting the data collected under the Data Collection Framework (DCF). The meeting was attended by 18 scientists from 6 MS (Bulgaria, France, Greece, Italy, Romania and Spain), by the chairs of MEDITS and MEDIAS surveys at sea, by the representatives of the GFCM, plus two external observers.

During the SC meeting has was proposed that all MS, uploading their data, should follow the document on confidentiality and data ownership policy for the Med&BS-RDB. This document was discussed, revised and approved during the RCM MED&BS 2013.

The table below shows the governance model that has been suggested by the SC and thereafter discussed and agreed during the RCM MED&BS 2013:

<i>RCM MED&amp;BS</i>	<i>Steering Committee</i>
Content governance	Technical governance
Prioritise and develop road map for data upload	Strategic planning
Monitoring general problems (i.e. data upload, data processing)	Operational issues
Suggest area for development	
Appoint member to SC	
Estimate of cost and any financial issues	Estimate of cost and any financial issues
Type of data	
Data access and sharing	
Terms of reference for the SC	Terms of reference for the SC

The RCM MED&BS 2013, decided that for the time being the MED&BS-RDB will include biological and transversal data. Next SC meeting should better investigate the format and which data should be incorporated.

For the economic data, RCM MED&BS 2013 agreed that they should be included in the Med&BS-RDB. Next SC meeting should evaluate which economic data should be incorporated.

Regarding the surveys:

- MEDITS (Mediterranean Demersal Survey) is developing a regional database. So, for the future will be evaluated the possibility to include a link of this database under the Med&BS-RDB;



- MEDIAS (Mediterranean Pelagic Survey) also is developing a database. The MEDIAS Steering Committee decided to maintain the MEDIAS database separate from the MEDITS one and to include a simple link into the Med&BS-RDB.

Any proposal regarding surveys data should be further discussed during the future surveys working and the next SC.

## 6.5 Large Pelagics Regional database (LP-RDB)

The LP subgroup established the necessity of using a common data exchange data format between countries producing data on large pelagics in order to facilitate the balance of biological sampling by fisheries and stocks across countries and coordinate/optimize sampling at the regional levels. LP subgroup agrees that the format should be compatible with other RCM data format or, at the minimum, develop bridges with other RCMs in order to guaranty coherence within DCF.

The SDEF format used in COST project (Jansen et al, 2009<sup>2</sup>) that have been adopted for the RDB implemented in RCMs Baltic, North Atlantic and North Sea and Eastern Arctic is considered as an excellent basis that is retained as exchange format by LP subgroup.

The LP subgroup then decided a two step roadmap:

- *In the short term*, the general objective is that MS are able to export their national data to SDEF. The different tasks identified to get there are:
  1. Define the Reference System for LP. Establish and agree on codelists for all SDEF strategic variables (species, gears, areas, port...),
  2. Identify specific questions (units, size and weight range, trip duration, type of measurement ...) that have to be established
  3. Construct converters from national databases to SDEF that are maintained by national experts.
- *In the medium term*, the general objective is to define scientific data storage and transmission under the future DCF. LP subgroup considered that, from a technical point of view and regarding RCM ToRs, the first phase allowing countries to exchange data and use common tools is the phase that is the most important and will bring most gains in efficiency. The subgroup underlines that, by nature, options regarding scientific data storage and transmission have to be conceived and decided at the political and European levels and to take into consideration ongoing reflexion following recently issued Devstat study.

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<sup>2</sup>Jansen T. et al. Definition of standard data-exchange format for sampling, landings, and effort data from commercial fisheries. Technical report, ICES Cooperative Research, Report No. 296. 43pp, 2009.

## 7 End-user feedback

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### 7.1 ICES

According to the [EU-ICES MoU](#), “ICES will communicate to EU problems regarding access to data, data quality, and completeness of data. This shall in particular apply to data collected through the data Collection Framework (DCF) established by the Commission Regulation No. 199/2008 of 25 February 2008).

*ICES will provide information on coverage and quality of collected data which are of relevant use for the advisory deliverables.*

*The information on the coverage and quality of data available for the advisory process will consist of an account of the types of data available internationally for each stock and comments regarding their quality and coverage where specific shortcomings will be highlighted per Member State. Ices will indicate how these shortcomings need to be complemented to obtain a dataset sufficient for scientific use.”*

In December 2012, ACOM concluded that the previous approach to inform the European Commission on data transmission (a.k.a. Data tables) was not effective and a wrong use of the human resources in the ICES community. The workload involved in the production of the “data tables” was substantial. Also, the information of data collected (i.e. potentially available and transmissible) is not easily available. Stock coordinators were not aware of bilateral agreements and derogations of data collection. Considering all these aspects, ACOM decided to not use a new approach in 2013.

The new approach is based on the advice sheets of each stock. The information is essentially available under the “Quality Consideration” and “Data Requirement” sections of the ICES advice sheets.

The new approach aims to i) be a more transparent approach since the basis is the text in the ICES advice sheets which are publically available and when through all the advisory process (expert group, advice drafting group and ACOM approval); ii) reduce the workload of ICES experts, since there is no need to fill-in another table and only the main issues are highlighted in the advice sheets.

In this compilation the issues highlighted for each stock were categorized as: i) data transmission; ii) data quality; iii) recommendations.

In some cases the Members States are not identified in the original text of the advice sheets. In order to provide that information, ICES checked what the relevant countries were based on the respective assessment working group reports and on communication with the EG chairs or the stock assessor.

Also when in the ICES advice is a remark on data transmission, but the data was NOT request by a data call that is noted in a comments field.

When the data issue is a generic matter of all the countries, instead of identify the individual countries, the ICES feedback is “All countries exploring the stocks”.

The Commission informed the Liaison Meeting that in the future it would be useful for ICES to provide feedback on the severity of the lack of transmission. This is to be considered in the future, but for the time-being the Commission is satisfied with the current format (i.e. based on the “Quality considerations” of the advice sheets). ICES representative explained that if an issue is highlighted in the advice sheets is because the severity of the problem is medium – high.

## 7.2 GFCM

In order to enhance the exchange of information between EU and GFCM in the field of fisheries data collection in general and on aspects related to data reporting of common Members in particular, participants were informed by the GFCM representative about the ongoing process of strengthening the framework for the collection and processing of data on fisheries in the GFCM area of competence (Mediterranean and Black Sea).

As result of a series of actions on fisheries data collection carried out in 2013 and 2014, the GFCM Data Collection Reference Framework (DCRF) was elaborated with the aim of being instrumental to achieve a more efficient data collection programme at the subregional level and to better integrate data collection and subregional multiannual management plans. The mentioned fisheries data collection actions involved the GFCM Secretariat, the 24 GFCM Members (22 Mediterranean and Black Sea States, Japan and the European Union), national experts and scientific bodies of the GFCM. The GFCM-DCRF encompasses all the necessary indications for the collection of fisheries data by GFCM Members in a standardized way in order to provide the GFCM with an exhaustive set of data supporting fisheries management decision-making processes both at the regional and subregional level.

At its 38<sup>th</sup> Session (May 2014), the GFCM Commission endorsed the DCRF and gave mandate to the GFCM Secretariat to develop the pertinent technical documentation that should complement the structural part.

The current DCRF consists of two main sections: structure of the data collection and common practices in data collection. The first consists in six different data components: global figures of national fisheries, catch, by-catch of vulnerable species, fleet, effort, socioeconomics, biological information. The second tackles the following issues: sampling overview, landing and effort data acquisition, socio-economic data acquisition, biological data acquisition, data quality, data confidentiality and access policy, online data submissions, shared stocks.

Attention of participants was drawn down to several important aspects of the GFCM-DCRF such as:

- Detailed description of the data components requested;

- Specification of countries addressed by each data components;
- Clear distinction between mandatory and optional data;
- Geographical sub-areas approach (in all data components);
- Revised fleet segmentation (group of vessels and length classes);
- Identification of three groups of target species by subregions on the basis of a) frequency of assessments done (species regularly assessed), b) fishery importance (landing and/or economic value), c) conservation criteria or impact of their presence in the ecosystem;
- Clear definition of data confidentiality and access policy;
- Introduction of a comprehensive data submission calendar (frequency and deadline of transmission);
- Formalization of National focal points figures for the sake of the transmission of official data to GFCM.

Participants of the meeting were finally informed about further steps. The current version of the DCRF document will be discussed at *“Workshop on the implementation of the DCRF in the Mediterranean and the Black Sea”* (Madrid, Spain, 15-17 December 2014). The conclusions of this workshop will be the basis to consolidate the DCRF document in order to be presented to the 17<sup>th</sup> session of the Scientific Advisory Committee (March 2015) for its consideration before it is submitted for possible endorsement by the Commission at its 39<sup>th</sup> session (May 2015).

## 8 Study proposals 2014 (ToR 5)

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Participants expressed their frustration at the fact that no studies recommended by the LM have been funded in recent years, and on the absence of feedback from the Commission on why studies were not selected. The Commission noted that the studies are now funded under the EMFF, as of 2014, and that they are managed by a different unit within DG MARE. Internal reflection is necessary within DG MARE on how end-user input regarding studies and pilot projects should take place and what the role of the LM should be in this regard.

The LM then reviewed the study proposals and pilot project proposals from 2014 meetings, including those that have been carried over from previous years as they have not yet been financed and carried out. These are presented below.

### 8.1 Studies and pilot projects proposed by DCF Regional Coordination Meetings (RCMs)

#### 8.1.1 RCM MED&BS&LP

##### Bluefin tuna aerial surveys in the Western and Central Mediterranean Sea

Max. Budget : 400.000 euros

Objectives and expected results : Atlantic bluefin tuna (ABFT) is a commercial fish of high value and great importance for the European fisheries, especially France, Italy, Croatia and Spain. European countries have a key responsibility in the conservation of this species that became over the last decade an emblematic species of overexploitation. Since the implementation of the rebuilding plan in the late 2000s, the stock status of ABFT greatly improved, but the speed and amplitude of the recovery still remain uncertain and difficult to estimate. Indeed, stock assessments of large pelagics fish, such as ABFT, mostly rest on fisheries statistics (i.e. catch, catch-at-age and CPUE) because of the lack of adequate fisheries-independent information. Such a situation is challenging, especially to estimate the performances of the ABFT rebuilding. Information from fisheries-independent surveys may be particularly useful in such context because scientific surveys are unaffected by management regulations and are therefore more reliable to detect management-driven changes in abundance. Aerial surveys have been used by France for several years and have proved to be an efficient way to provide fisheries-independent data and build an index of abundance. Objectives: For ABFT, aerial surveys have been carried out in the Gulf of Lions, a well-known feeding ground where ABFT juveniles used to concentrate, especially in summer and autumn. The survey started in 2000 and has been operated until 2003 and then since 2009. The protocol has remained the same since 2000. This survey is carried out over a key area, which is nonetheless rather restricted. To get a more

representative index of abundance of the population, it would be necessary to extend the spatial coverage of the survey. Therefore, this study proposes to carry out aerial surveys on 3 other key feeding and spawning grounds of ABFT juveniles in the Mediterranean Sea, i.e. the Catalan Sea, the Ligurian Sea and the Adriatic Sea.

Type of activity and types of bodies/organizations that could carry it out (pilot project, study, collaboration between X MS):

This pilot project will be carried out in collaboration between France (Jean-Marc Fromentin, [jean.marc.fromentin@ifremer.fr](mailto:jean.marc.fromentin@ifremer.fr), Sylvain Bonhommeau, [sylvain.bonhommeau@ifremer.fr](mailto:sylvain.bonhommeau@ifremer.fr)), Italy (Fulvio Garibaldi), Croatia (Vjeko Ticina) and Spain (Josetchu Ortiz de Urbina).

Duration:

50 hours of flight for each of the four areas spread across 6 to 7 flights between August and October

Policy relevance/need this activity addresses/end-users of outputs:

This activity will be relevant to all countries involved in Bluefin tuna fisheries as its main aim is to derive an abundance index for this species, and of particular importance to bluefin tuna stock assessments and therefore to ICCAT.

Is output needed by a certain time? No

Activity recommended by whom? RCM MED&BS-LP, PGMed

**LM comments: LM endorses this study proposal.**

### **8.1.2 RCM NS&EA**

#### **Study on European anglerfish (*Lophius piscatorius* and *Lophius budegassa*) in all ICES areas and megrim (*Lepidorhombus whiffiagonis*) in VII and VIIIa,b&d**

##### **Objective**

Improvement of the assessment and management of three important demersal stocks in western waters: Megrim (*L. whiffiagonis*) in VII and VIIIa,b,d and White and Black anglerfish (*L. piscatorius* and *L. budegassa*) in all ICES areas IIa to IXa, including Va,b for accomplishing sound scientific advice. Based on reviewing data collected under DCF and industry related variables and parameters to be included in the assessment.

##### **Base line**

ICES deployed a Benchmark in March 2012 to solve data and methodological problems detected in megrim and angler assessment. The result of an intensive work previous and during the ICES Benchmark did not accomplish the objectives of obtaining analytical assessment for these stocks and thus provide sound scientific advice.

##### **Main drawbacks detected in Megrim VIIb, c, e-k and VIIIa, b, d data and assessment during ICES Benchmark:**

1. Incorporate annual estimates of discards (France) to explain some possible recruitment, also to obtain consistent data along the series.
2. A complete revision and in depth analysis for checking changes detected in the data homogeneity of three time period identified: 1984-1989; 1990-1998 and 1999-2010.
3. The distribution of megrim stock does not include ICES Division VIIa and VIId. Further work is needed to assess the stock identity of megrims in this area.

##### **Main drawbacks detected in Anglerfish data and assessment during ICES Benchmark**

1. No clear evidence of the current stock or population definition. There is a lack of information concerning their biology, movements and possible migratory patterns. This information is fundamental to reduce uncertainties regarding stock boundary,
2. No accepted ages are used in the assessment since more growth studies are necessary for validation of growth estimates.
3. The incorporation of good discard estimates in order to have information about individuals less than 0.5 kg in weight.
4. Better maturity estimates are needed in order to have a good S/R relationship, it is clear that with the sampling level from DCF and using the data from surveys the information for larger females is not available.

## Objectives and action required based on data drawbacks.

### Objective 1. Improvement of catch data (Megrin and Anglerfish)

It is necessary to develop catch data series (landings, discards) for evaluating historical fishery impacts. There are major uncertainties in accuracy of reported landings, and estimated discards in many areas. This aspect of the project will extract and review existing data, and consult with stakeholders to agree data series or alternative possible catch histories for use in assessments, with suitable quality indicators. Some specific tasks will include:

1. Historical discards data (2000-2011): a. Data recovery; b. Review and analyse data.
2. Quality of historical landings data including splitting catches for combined-species categories.
3. Onwards: a. Workshops with Advisory Councils to review data quality issues and explain the importance of obtaining discard data.

### Objective 2. Development of commercial tuning fleets (Megrin and Anglerfish):

For both actions: data availability and results of the analysis will be reviewed in consultation with the industry. This is linked with objective 1 in terms of historical data quality. A specific example is revision of the French trawling data series in Subarea VII and of the Basque “Baka” Otter trawl fleet to check for suitability in being included as new commercial abundance indices.

### Objective 3. Improved biological parameters of anglerfish.

There are large uncertainties in important biological parameters particularly ageing, growth, and maturity, which have considerable impact on estimates of stock productivity and biological reference points, and ability to fit models to data. Large discrepancies in the interpretation of age from otoliths and illicia remain a concern, and validation studies are needed. Natural mortality rates are poorly understood. Impacts of sexual dimorphism on assessments also need consideration.

1. **Reproductive parameters: a. Scientific work:** will focus on revision of the maturity ogives. **b. Industry involvement from all countries collecting data.** Support in the collection of biological data. Development of a simple “on board sampling method” which is required due to landing of fish gutted.
2. **Growth parameters (Anglerfish): scientific work** will focus on methods to validate ages derived from otoliths and illicia, developing agreement on approaches for ageing fish from each stock, and agreeing growth parameters and age composition data for use in assessments. Validation methods may include: **a. Indirect growth validation** e.g. cohort tracking; **b. Direct growth validation** studies, for example from tagging–recapture studies. Some detailed information on previous studies on ageing anglerfish and validation methods is given below.



3. **Natural mortality.** A better understanding of potential rates of natural mortality will be obtained from better knowledge of life history parameters. Tag-recapture data may also provide some insights.

The age estimation of anglerfish in the ICES area for stock assessment has been traditionally based on two different calcified structures (CS), the illicium (used by the majority of the European countries) and the sagitta otolith (used only by two countries). Growth studies alternative to the age estimates on CS of white anglerfish, such as tagging-recapture (Laurenson et al., 2005; Landa et al., 2008a), daily growth (Wright et al., 2002) and length frequency distributions of catches (Dupouy et al., 1986; Thangstad et al., 2002; Jónsson, 2007), showed that the growth pattern estimated using the traditional standardized age estimation criterion based on illicia (Duarte et al., 2002) was underestimated and that criterion was not accurate, although it was standardized and used in several age estimation anglerfish workshops (Anon 1991, 1997, 1999; Landa et al., 2002; Duarte et al., 2005). The age estimation using illicia of a decadal time-series was performed for the southern stock assessment of white anglerfish using the traditional standardized age estimation criterion (Duarte et al., 2002). A catch-at-age by year matrix was built, but inconsistencies in cohort tracking were found (Azevedo et al., 2008).

Modifications in the methodology of illicia preparation and in the traditional standardized age estimation criterion have allowed obtaining a new age estimation criterion on illicia (Landa, pers. com.). Using it, the catches-at-age have been able to be more successfully tracked. Therefore this new criterion was judged to be more accurate and it was used for the age estimation in the “Anglerfish (*Lophius piscatorius*) illicia and otoliths exchange 2011” (a working document presented to the 2012 PGCCDBS Meeting). The results of this exchange have showed similar results to those from the 2004 workshop (Duarte et al., 2005):

- i. Illicia and otoliths age readings comparison. Strong discrepancies between illicia and otoliths readings were found. It is not possible to use the age estimates of both CS together, illicia and otoliths, for stock assessment purposes.
- ii. Illicia. Although the relative bias values among the assessment readers can be considered good, the agreement values and precision suggest that they are not still sufficiently acceptable for building a valid ALK. The search for a reliable criterion for age estimation of anglerfish based on CS is more advanced in illicia than for otoliths. There is an illicia age estimation criterion that allows cohort tracking (indirect age validation) but only in the Porcupine Bank of the Atlantic.
- iii. Otoliths. The age estimation of anglerfish, based on otoliths, is difficult mainly due to the occurrence of confusing false annuli and to the increase of opacity with age. The location of the first annulus is also a problem, even among expert readers, in the last and present exchanges. There have also been advances in daily growth studies (Wright et al., 2002; Woodroffe et al., 2003) that can help

locate the first annulus more precisely. Analysis of age composition data from the Scottish industry-science partnership trawl survey in Area VI and IVc show tracking of cohorts in data derived from otolith readings (ICES WKROUND meeting 2013).

Further research should enhance our knowledge of the true growth of anglerfish by developing and using methodologies that allow validation, before the attempt to standardize reading criteria. It is unproductive to go further in estimating anglerfish growth patterns and age without progress being made in age validation (Duarte et al., 2005). Improving the precision in the absence of accuracy cannot, under any account, guarantee data quality (de Pontual et al., 2006).

The proposed collaborative study among several European countries could be based on the following tasks:

- i. Indirect growth validation based on the ability to clearly track cohorts in time series of catch-at-age data or progression of length modes in survey data.
- ii. Direct growth validation studies. Tagging is a direct method of validating the growth of a fish during its time at liberty, including for large specimens, where validated information is very scarce. Two tagging programs have been undertaken for white anglerfish, one on the Atlantic northern shelf stock (Laurenson et al., 2005) and another on the two stocks of the Atlantic southern shelf (Landa et al., 2008b). Recovery rates the two studies were 3.8–4.5%. Given the difficulty of tagging a large number of specimens of this species, it was not possible to obtain information from specimens which had spent much time at liberty. Most of the available information from those tagging-recapture programs corresponded to information from small and medium specimens, but not from large specimens. Despite this, invaluable information was obtained to advance on the validation of the growth pattern of white anglerfish, and to obtain more information on the movements and interaction between stocks (Laurenson et al., 2005; Landa et al., 2008b).

#### **Objective 4. Compilation of high-resolution catch and effort data**

Scientist and Advisory Councils will require from national administrations high resolution spatial data (VMS/AIS). The importance of this objective is based on the actual situation of all data being transmitted electronically and the rapid disappearance of the hand-written logbooks. However, some administrations appear to be reluctant to provide of these data to scientist for assessment and management purposes.

#### **Objective 5. Exchange of knowledge with scientist assessing other Megrin and Anglerfish stocks.**

This objective will involve collaboration with scientists involved in biological studies and assessment of other megrim and anglerfish stocks to identify common problems, data deficiencies, methodological possibilities and proposal of solutions.

**Objective 6. Exploring alternative methodologies not fully dependent on resolving the biological issues (ageing and reproduction). Choosing the most suitable assessment models.**

Based on the results of work addressing Objectives 1 – 5, the project will evaluate how the stocks may be assessed using a range of approaches suitable for stocks characterised by types and quality of data (as defined by ICES). The relative performance of the resulting assessment for different stocks and methodologies, and the likely impact on the form and quality of advice, will be evaluated. The impact on future data requirements in the DC-MAP will be evaluated.

**Justification of why a dedicated research project is needed**

No progress can be expected if there is no international commitment from countries exploiting these stocks to carry out the necessary work on data and methods to assess these stocks. However it appears unlikely that time between possible future Benchmarks and Working Groups would be enough for: i) solving data availability, ii) reviewing their quality, iii) new model trials and even iv) exchange of experiences between researches working in same species but different stocks. That is why it would be recommended that resources could be made available for a real improvement in the assessment of these stocks. The present study is proposed for in a depth treatment of data quality, improvement in data collection and interpretation, and model selection.

**Proposal of research team**

AZTI-tecnalia (Basque Country Spain); IEO (Spain); IPMA (Portugal), IFREMER (France); Marine Institute (Ireland); CEFAS (United Kingdom); Marine Scotland; Advisory Councils.

This study should include the anglerfish stocks in all ICES areas, and megrim in VII and VIIa,b,d, and therefore other institutes might also be involved.

**Indicative budget**

€500 000, 3 years duration.

**LM comments:** This study was already endorsed by the 9<sup>th</sup> Liaison Meeting. **The revised proposal should be evaluated and improved at the ICES Data Compilation Workshop on Anglerfish (Nov. 2014).**

## 8.2 Studies proposed by ICES Expert Groups

The ICES Planning Group of Commercial Catch, Discards and Biological Sampling (PGCCDBS) in 2014 elaborated four proposals for funding:

- Study of improvement of WebGR
- Study proposal on “Exploration and Development of new facilities in RDB-FishFrame 5.0”
- Study proposal to “Support design based regional data collection programmes”
- Study on Improving accuracy in fish age estimation through understanding of the link between environmental conditions and physiological responses recorded in the otolith macrostructure

PGCCDBS also reiterates the need for a study proposal on anglerfish that were already submitted last years and endorsed by the Liaison Meeting. However, PGCCDBS recommends that the existing proposal is improved at the incoming meeting of Data Compilation of Anglerfish.

The ICES Working Group of Recreational Fisheries Survey (WGRFS) in 2014 prepared a study proposal for funding:

- Discards in European hook-and-line fisheries: mortalities, consequences for stock assessments, and mitigation potential

The ICES Working Group on Nephrops surveys (WGNEPS) in 2013 recommended a study on developments of methodologies of UWTV surveys. The following proposal was elaborate intersessionally and WGNEPS plan to discuss and improve at their annual meeting later this year:

- Further developing UWTV Nephrops survey methodologies (DevNepS)

The Workshop on Scoping for Integrated Baltic Cod Assessment (WKSIBCA), that took place the week before the Liaison Meeting strongly recommend a study proposal on cod tagging in the Baltic Sea. This study is a revised version of the study proposed last year by the RCM-Baltic and endorsed by the Liaison Meeting 2013.

- Tagging program for estimation of Baltic Sea cod growth and movement patterns

### **8.2.1 WebGR 2 - Improvements on the Web application interface and technical infrastructure for supporting Growth and Reproduction Studies**

#### *Objectives*

The objective of this study is to substantially improve the first version of WebGR developed within an EU tender project in 2008 [FISH/2007/07]. WebGR is a web application interface linked to a GUI and a database developed to support fisheries scientists in the organization of calibration studies for biological structures classification providing means to analyse the results of such exercises. Those studies could be the standard age and maturity calibration exercises conducted among EU Member States (MS) under the Data Collection Framework umbrella and also the routine work of age and Maturity quality assurance within a MS.

The project aims to improve the Open Source software previously developed to support studies of fish growth and reproduction. This will facilitate the improvement of the quality of growth and reproduction studies, by guaranteeing a consistent application of age reading protocols and maturity scales, ultimately influencing fisheries management advice. However the use of this tool is not necessarily limited to age and maturity studies.

Presently, one WebGR consortium member provides the Internet service in <http://webgr.azti.es>. The service is provided without cost to users, but without any warranties that the tool will be available or maintained for a long term. Further, the tool has not been developed since 2010. Nevertheless, since 2010 42 age and maturity workshops and exchanges have used WebGR with variable success. Unanimously, the members of these expert groups saw a great potential in using this software and its tools. However they experienced different problems while using it and at the same time had several requests on how to improve this tool and obtaining more complex outputs.

This feedback highlighted the strong need for further improvement of WebGR and is the basis for this study proposal.

The desirable improvement of WebGR is 2-fold. On the one hand it is necessary to upgrade the user interface, improve picture uploading and enhance exploring tools, in terms of new measuring tools. Moreover, developing an extended statistical output will give a more complete evaluation of potential differences among readers/stagers. At the moment the most basic features are implemented and the easy export procedure allows users to use the data on a standard statistical package or spreadsheet. The intention is to develop an R package and implement a set of statistical methods.

It would be beneficial both for ICES and the WebGR users, if ICES could host and maintain the WebGR application service. This would guarantee a wider availability of the tool and ensure a robust platform management. Having WebGR under the supervision of an international organization, such as ICES, is an important step in the

future maintenance of this key tool to assess the quality of biological parameters collected under the Data Collection Framework.

WebGR is used as a pan-European tool. The objective of moving the WebGR platform, and its maintenance, to ICES is to ensure the longevity of this tool. Access to WebGR will be granted to all European countries. It is undoubtedly a key tool on the regional and cross-European cooperation, and essential for data quality assurance. Using the same tool across all EU MS will facilitate alignment of the methods used to estimate biological parameters across stocks and national institutes.

The study should consist of 7 Work packages:

WP 0: Coordination

WP 1: Improving WebGR for age calibration workshops

WP 2: Develop WebGR for maturity staging calibration workshops

WP 3: Implementation of statistical methods

WP 4: Software development and testing of the WebGR 2.0

WP 5: Site establishment and maintenance

WP 6: Training and dissemination

WP 1, WP2, and WP3 will feed into WP4 through an iterative process, in which the software is developed concurrently with the emerging results from the first WPs to match the new demands of the web application interface.

### *Work packages and sub-tasks*

#### **Work Package 0. Coordination**

This WP has the objective to keep track of the study development between all partners and to prepare interim and final reports.

#### **Work Package 1. Improving WebGR for age calibration workshops**

This WP has the objectives to develop and improve the user interface of WebGR for age calibration workshops. Furthermore, the WP will correct and improve the currently detected flaws and bugs of the system. Facilitating this work, the original software developers of WebGR will be subcontracted. Three main objectives of this work package are:

WP 1.1. Implementation of new features.

Otoliths come in many different sizes and ages and different life stages of one individual fish may need to be handled differently, however, WebGR is currently

unable to deal with such variability. In several cases it has been very difficult for the reader to annotate correctly due to i.e. too large magnification, size of the symbol marks, too low resolution of images and lack of double ageing fields for diadrome fish. The possibility to group several images would also be an advantage for some species. Implementation of new features to make WebGR more diverse and user friendly for the reader and fix all the problems identified above is therefore much needed.

#### WP 1.2. Improvement of current features of WebGR and correction of bugs

There are several identified features in the current version of WebGR in relation to e.g. uploading images, handling workshops, etc. which need major improvements. Further a list of bugs has been compiled during the past years and these need to be corrected in order for WebGR to be operational.

#### WP 1.3. Developing new measuring procedures

It is recommended to perform an analysis of distances between annotated growth structures in age calibration workshops. Currently it is not possible to quantify the distance between marked growth increments in WebGR given the non-guided marking procedure among readers. To facilitate this, a tool enabling the insertion of a line going from the centre of the otolith to the edge will allow annotation on a common axis.

### **Work Package 2. Develop WebGR for maturity staging workshops**

Objective: expand the tool to cope with maturity calibration exercises. The data from maturity calibration exercise are different (i.e. not a consecutive number of a given identified class) and the main relevant output for fish stock assessment is the differentiation of immature and mature individuals. It is therefore, needed to translate the results into binomial classification, and developed the follow up analysis.

### **Work Package 3. Implementation of Statistical methods**

This WP has the objective to extend and improve the present statistical analysis implemented in WebGR and it is divided into the following subtasks:

- WP3.1 Define suitable statistical outputs from WebGR as inferred from the state-of-the-art recommend by the Workshop on Statistical Analysis of Biological Calibration Studies [WKSABCAL]
- WP3.2 Test methods with *R* and develop a *R* package or alternatively link existing *R*-packages with the set-up of input data in WebGR and define a

suitable output format

- WP3.3 Implement statistical analysis in WebGR
- WP3.4 Test statistical analysis on categorized maturity data

#### **Work Package 4. Software development and testing of the WebGR 2.0**

This is a continuous WP as developing and testing will be needed during the whole duration of the project. Moreover, when a beta version is available, a workshop for reproduction and another for ageing will be organised where all partners and users of WebGR 2.0 will participate in order to test the new application and provide feedback. Subsequently a fine-tuning of the new software will be performed by the subcontracted IT company.

#### **Work Package 5. Site establishment and maintenance**

This work package has the objective to transfer the site from Azti server to ICES and outline the maintenance demands of the site.

The increasing amount of pictures uploaded and stored on the server during each exercise intensifies the demands for the site hosting capabilities and maintenance. An agreed content and technical governance model needs to be developed, for which all partners have a stake in. This will outline practical issues of who does what and when, i.e. updating of WIKI as well. This will also outline the future management plan of the ongoing upkeep of the application, its services and content.

#### **Work Package 6. Training and dissemination.**

The objective for WP6 is to disseminate WebGR, train users and channel feedback.

It will be divided into the following two subtasks:

- WP 6.1. Training by the means of a widely used web conferencing tool (i.e. Webex). This will include at least three online meetings, one for coordinators and two open trainings.
- WP 6.2. Dissemination through flyers to be distributed to different fora and through the Age Readers Forum (ARF).

**Indicative Budget: €350,000**

**Duration: 24 months.**

**LM comments: This proposal has been endorsed by the 10th Liaison Meeting. It has been revised in 2014 to take into account recent developments.**



## 8.2.2 Exploration and Development of tools for regional cooperation

Background:

From the European Commission there is focus on regional coordination and cooperation. Using the Regional DataBase (RDB) have huge cost-benefit advantages for the regions, using the RDB. However, the full potential of the RDB should be used, and this can be done by developing the needed functionalities. With focus on coordinating the sampling of all relevant species in the regions, which are using the RDB, is it essential to draw conclusions based on the comprehensive data in the RDB. Therefore it is important that the RDB fully support the needs of the RCMs. This include data overview reports and data quality reports. Furthermore the RDB can support countries in raising/estimating national biologic data, landings and effort for further international raising in InterCatch for ICES stock assessment and advice to EC. But ensuring the right raising/estimation of the existing methods and development a new statistical method are needed to support the countries in reducing the resources spend in raising/estimating data for data calls.

*Indicative budget: € 450,000*

### *Development*

The main fields for development in 2015-16 are identified by the RDB-Steering Committee and presented in no specific order of priority:

#### **1. Development of additional tools for analysis and data tabulating to support regional coordination. (10 % of total budget)**

Outputs: Technical report, programming development

Development of output reports which provide:

- More advanced standard reports used by the RCMs
- Reports Overview of data status by region; data coverage;
- Overview of completeness of data uploads
- Support the planning of future regional based sampling schemes;
- Overview of potential areas for task sharing between member states.

#### **2. Testing of trial species (12 % of total budget)**

Testing of trial species from different stock assessment working groups for national raising/estimations, by borrowing age-length keys from own and/or other countries and correction of eventual issues. This should be done in two phases: Phase A: Where

one or two stocks should make a comprehensive test of the system and corrections should be made. Phase B: Several representative stocks should be tested throughout the system for raising/estimation and eventually corrections should be made.

Outputs: Test plan, tests, coordination, reports, comparisons, issues, solutions, corrections

- All data submitters for the selected stocks raise data in the RDB in two phases
- Output compared and corrections made where needed in two phases

### **3. Quality assurance what have been uploaded when** (12 % of total budget)

Implement a functionality, which makes it possible to see down to details what have been imported when, full data auditing

Outputs: Specification of functionalities, development, implementation, test

- Develop functionalities that allows countries and end-users to see what have been uploaded when. As it is now it is not clear exactly what have been uploaded when.

### **4. Implement quality control functionality** (12 % of total budget)

The functionality will allow the users to identify differences within a country and across the countries.

Outputs: Technical report, Technical meetings/workshops covering all regions, development and implementation of methods

- All relevant checks on country level and across countries should be documented
- All relevant checks should be developed and implemented

### **5. Explore options and cost implications of implementing of external tools (i.e. COST) in the RDB-FishFrame.** (12% of total budget)

Outputs: Technical report, Technical Workshop(s), conceptual development

Such analysis should include the following elements:

- An inventory to collate and examine the tools present but also tools missing
- Specification of relevant issues regarding data and format
- Conceptual development of an interface to RDB-FishFrame

### **6. Requirements and automation of Data calls procedures.** (12% of total Budget)

Build on conclusions from the ICES founded study of replying data calls using data from the RDB.

Outputs: Technical report, programming development

- Ensure and expand potential data calls we can respond to at present/future? (The present functionalities and documentations in the regional database need to be compared with possible data calls)
- Develop functionalities which automatically created possible reports

**7. Development of design based raising.** (20% of total budget)

Outputs: Technical report, Technical meetings/workshops covering all regions, development and implementation of methods

- Specifications of how changes in the Exchange Formats can be implemented into the RDB.
- Which additional processing functionality need to be developed in order to comply with design based sampling schemes? Regional differences?
- Development of relevant methods

**8. Simplification of the existing roles and access module.** (12 % of total budget)

Outputs: Technical report, programming development

- Specification, test, development and implementation of new simplified internal structures final test

**LM comments: This study has been supported by the ICES PGCCDBS, the RCM Baltic, the RCM NS&EA and the RCM NA and has been endorsed by the 9th Liaison Meeting.**

### 8.2.3 Support design based regional data collection programmes

This Study Proposal was developed and proposed by PGCCDBS (2012) but was not funded by the Commission. PGCCDBS considers that there remains an important need for a Study that will facilitate the countries in each region to design and implement statistically-sound sampling and help RCMs/RCGs to propose optimisation of regional sampling schemes.

#### *Objective of proposed study*

The Study will develop an operational framework for establishing and coordinating design-based sampling programmes at a regional scale for the most cost-effective delivery of fishery and biological data required by the revised DCF and any specific additional needs to support assessment and fishery management.

#### *Duration of project*

It is anticipated that the project would run for two years, and cover two periods of RCM and Liaison meetings to allow consultation and discussion of proposals.

*Indicative budget: € 450,000*

#### *The need for the proposed study*

A design based sampling strategy is a prerequisite for transparency in the data collection-assessment-advice process since it allows for straightforward estimation processes, assessment of bias as well as variance associated with different estimates. In particular, it supports estimators that do not depend on complex models and assumptions about the underlying stochastic process of the catching operations of the fleet. It also enables the use of DCF data in the wider scientific/management community since data are collected in a transparent way following sound statistical procedures including documentation of sampling protocols and sampling designs.

Due to severe logistical constraints in sampling of fisheries, many national sampling programmes may in reality be more or less ad hoc based. Recent ICES workshops including WKMERGE, WKPICS and SGPIDS have started to examine how sampling schemes can be adapted to deal with different types of logistical constraints without compromising the basic requirements of statistical design. Within these workshops it has become evident that countries need support to design and implement such statistically-sound sampling schemes.

Currently, the DCF Regional Coordination Meetings (RCMs) focus heavily on “task sharing” for metier and stock based sampling. It is foreseeable that in the new DCF, the role of RCMs may evolve more towards establishing and coordinating statistically-

sound programmes of data collection to deliver the estimates for stocks and fleets required at the regional scale. This could include agreement of sampling frames, allocation of sampling effort amongst Member States, documentation of sampling schemes, and review of achievements and data quality. To adopt this role, RCMs would require guidance and a system of support because the sampling problems already encountered by individual countries will remain at the regional scale. If true progress should be made towards regional data collection programmes, it is crucial that sufficient resources and expertise are available for Member States and RCMs to carry out the necessary tasks.

### *Study specifications*

The study will require setting up a core project team to work out principles for regional sampling designs, and to work closely with RCMs, ICES EGs, European Commission and Liaison Meeting to review how the structure and operation of RCMs should be adapted to best serve the needs of the revised DCF. The project team will focus particularly on:

Understanding the fleet-based and stock-based estimates that are required to support assessments and advice at a regional scale.

Defining an operational framework for RCMs to coordinate annual or multi-annual regional sampling programmes to deliver the estimates.

Identifying logistical constraints to national sampling schemes within a region, and proposing solutions for how these could be handled in regional sampling plans and within the component national strata (ref: WKMERGE; WKPICS1–3).

Establishing procedures for optimising sampling schemes and allocation of sampling amongst Member States in relation to regional objectives and available resources.

Identifying the procedures for estimation and sample raising at the regional scale.

Developing Quality Indicators for regional datasets.

Identifying developments needed in the Regional Databases to support regional sampling programmes.

Propose future support systems to help RCMs implement and evaluate regional sampling programmes.

### *RCM areas to be covered*

The project will initially scope out the problem across all DCF regions in consultation with RCMs, European Commission and PGs, but depending on resources may then focus on one or two regions as case studies.

*Project tasks*

Subject to discussion with the European Commission, it is anticipated that a two-year Study would involve the following tasks:

Initial workshops and WebEx meetings with key RCM, ICES Planning Group and European Commission representatives, and invited external experts, to agree the basic principles of implementing and optimising a regional programme of sampling to deliver the required estimates.

Identification of the structure of a regional sampling programme allowing a fully coordinated international approach to delivering the required data and estimates, including documenting the characteristics of the fisheries and stocks to be sampled in each country, development of sampling frames, stratification schemes, sample selection procedures, optimal allocation of sampling effort amongst countries, estimation procedures and production of quality indicators.

Presentation of proposals to RCMs, ICES EGs, European Commission and Liaison Meeting, for discussion and further development.

Development of final proposals and report.

**LM comments: This study has been supported by the ICES PGCCDBS, the RCM Baltic and the RCM NS&EA and has been endorsed by the 9th Liaison Meeting.**

### **8.2.4 Improving accuracy in fish age estimation through understanding of the link between environmental conditions and physiological responses recorded in the otolith macrostructure**

The study aims at identifying the biological meaning of otoliths features such as annually recurring patterns, checks associated with spawning or other life stage events as well as periods of environmentally induced physiological stress. The timing of these features and the causal relationship between otolith feature and the fish's environment and behaviour can be validated by combining different validation techniques (micro and macrostructure analysis, microchemistry). Identification of the underlying processes affecting otolith macrostructure should be based on species and stocks with an easily interpretable otolith structure. Results from these analyses will provide the necessary input data to calibrate generic simulation tools that can link bioenergetic processes and environmental conditions with otolith visual appearance. The applicability of such an approach should subsequently be tested on stocks of the same species with highly complex otolith patterns and known otolith growth rates. This study will provide an evaluation of the applicability of this approach and should therefore focus on a limited number of species from different geographical locations/stocks where samples from tag-recapture programs are available.

The objective of this study is improving the accuracy of age data used in stock assessments. It aims to validate different features within the calcified structure by combining well-established validation techniques.

#### **Background**

Age estimates based on the interpretation of otolith macrostructure features have been used extensively in stock assessment for many years. For some stocks good precision in age estimation has been achieved, whilst in other stocks where otoliths are more difficult to interpret precision is lower. Even within the same species the otolith's visual appearance - and thus readability - may vary, presumably as a consequence of a combination of stock-specific environmental conditions and physiological responses. Validation of the biological significance of the structures used for age estimation is essential for improving both precision and accuracy of these estimates and, consequently, improving stock assessment. There are well-established techniques available that can provide information on the timing of the formation of specific otolith features (micro structure analysis) and reveal the relationships between visual patterns in the otoliths and physical and chemical properties of the environment experienced by the fish (micro-chemistry). Application of these methods simultaneously on known-age otoliths from tag-recapture programs will provide the key to understanding the biological meaning of otolith features.

### **Terms of reference**

- References to ageing workshops, PGCCDBS, PGMED, WKNARC and WKA VSG
- Reference to projects TACADAR, EFAN, CODYSSEY, DECODE, AFISA, MARMER and French hake tagging
- Providing input to relevant ICES stock assessment working groups
- Validation of features within otoliths.
- Accurate age data
- Greater understanding of different life histories of stocks within the same species.

The main tasks to be undertaken by the contractor are the following:

1. Compile available material for re analysis from existing otolith archives.
2. Perform comparative micro increment and micro chemical analysis on selected otoliths.
3. Analyse increment patterns in otoliths from different stocks of the same species
4. Re-evaluate age estimates in light of findings.
5. Present the recommendations to end-users, to establish expertise and international cooperation for further work on other species.

### **Timetable and Final Report**

The duration of the study shall not exceed 24 months from the signature of the contract. An interim report of the study should be made available after 12 months of the signature of the contract and a final report should be made available within one month of the termination of the project.

### **Budget**

The maximum budget allocated for this study is € 1,500,000 covering all expenses, including personnel, preparation and analysis of samples, meetings, consumables.

The study proposal was endorsed by ICES WKNARC2.

**LM comments: LM endorses this study proposal.**



### **8.2.5 Discards in European hook-and-line fisheries: mortalities, consequences for stock assessments, and mitigation potential**

Commercial and recreational hook-and-line fisheries are widespread in European coastal waters, yet studies have shown that unaccounted hooking mortalities of over 30% in released fish have rendered fishing regulations like minimum sizes and bag limits ineffective (Coggins et al. 2007). There is also potential for sub-lethal effects, e.g. behavioural changes (Cooke and Sneddon 2007). Sub-lethal effects can occur as a consequence of hooking and handling stress and, even if the individual fish survives, can have significant consequences for the stock. For example, discarded fish may skip spawning or interrupt protection of spawning nests, both of which can lead to a loss of reproductive success (Suski et al. 2003). Fish with altered behavior after being discarded are more prone to predation which can lead to increased mortalities if predators are present (Cooke and Philipp 2004). This lack of knowledge will affect on our ability to effectively manage stocks that are exploited by hook-and-line fisheries.

The European Commission have pledged to end discarding in the period 2014-2018, with only “species for which scientific evidence demonstrates high survival rates, taking into account the characteristics of the gear, of the fishing practices and of the ecosystem” excluded from the landing obligation. For many species, discard mortality is unknown, so programmes have been initiated to collect data on commercially caught fish. However, these studies generally focus on commercial netting and trawling with little data collection planned on hook-and-line fisheries. This represents a large gap in the evidence-base and has a significant impact on effective fisheries management as stock assessments will be inaccurate if discard mortality is not accounted for. This is particularly important if discard proportions and mortality is high, which may lead to a significant underestimation of actual fishing induced mortality (Kerns et al. 2012).

Discards of unwanted bycatch species and target species are high in both commercial and recreational marine hook-and-line fisheries in Europe. European marine recreational anglers often release more than 50% of their Atlantic cod, European sea bass, pollack, and sea trout catches (Ferber et al. 2013). The European eel and some elasmobranch species are protected in many countries so must be discarded, and target species that are under the legal minimum size must also be returned. Catches by recreational anglers can represent a significant proportion of the total removals (e.g. 25% of removals of European sea bass). Hence, post-release mortality is a large uncertainty in the assessment of stocks that are targeted by both commercial and recreational fishers. However, discard mortality of hook-and-line caught fish is not easy to measure and can vary significantly between species and fisheries. Many factors are also important including water temperature, hooking damages and on-board handling (Bartholomew and Bohnsack 2005; ICES 2014).

A mixture of desk-based study and experimental work is needed to compile data on mortality of hook-and-line caught fish, to underpin the evidence-base to account for discard survival. This should consist of reviewing existing literature, assessing the potential for extrapolation between species and fisheries, setting up generic mortality profiles, and conducting two species-specific mortality studies on European seabass and European eel to fill existing data gaps. It needs collaboration across Europe and with other countries including the USA to ensure that the best use of existing data is made.

**Specific knowledge gaps to be addressed and methods to be used:**

1. Despite high discard rates, species and fishery specific discard mortalities are unknown for most of the relevant European marine hook-and-line fisheries, so discard mortalities need to be estimated for use in stock assessments. A desk based review will be done to compile existing data on catch and release mortality, and group species with similar hooking mortalities based on underlying biology and fishing practices. Ranges of post-release mortality will be derived from studies to provide generic hooking mortality profiles for groups of species and fisheries. Species with high survival rates that have the potential to be excluded from discard bans will also be identified.
2. European seabass and European eel are species that are caught regularly on hook and line, have high release rates, and are caught using different fishing practices. However, few data are available that can be used for post-release mortality in existing stock assessments or to develop best practice guidelines to maximise post-release survival. Experimental programmes will be developed for European seabass and European eel that represent best practice for hooking mortality studies based on existing knowledge derived from other marine species including cod and striped bass.

**Estimated cost and timescale:** 350,000 euro over 2 years

**References:**

- Bartholomew, A. & Bohnsack, J. (2005) A review of catch-and-release angling mortality with implications for no-take reserves. *Reviews in Fish Biology and Fisheries* **15**, 129-154.
- Coggins, L. G., Catalano, M. J., Allen, M. S., Pine, W. E. & Walters, C. J. (2007) Effects of cryptic mortality and the hidden costs of using length limits in fishery management. *Fish and fisheries* **8**, 196-210.
- Cooke, S. J. & Philipp, D. P. (2004) Behavior and mortality of caught-and-released bonefish (*Albula* spp.) in Bahamian waters with implications for a sustainable recreational fishery. *Biological Conservation* **118**, 599-607.
- Cooke, S. J. & Sneddon, L. U. (2007) Animal welfare perspectives on recreational angling. *Applied Animal Behaviour Science* **104**, 176-198.

- Ferter, K., Weltersbach, M. S., Strehlow, H. V., Vølstad, J. H., Alós, J., Arlinghaus, R., Armstrong, M., Dorow, M., de Graaf, M., van der Hammen, T., Hyder, K., Levrel, H., Paulrud, A., Radtke, K., Rocklin, D., Sparrevohn, C. R. & Veiga, P. (2013) Unexpectedly high catch-and-release rates in European marine recreational fisheries: implications for science and management. *ICES Journal of Marine Science: Journal du Conseil* **70**, 1319-1329.
- ICES (2014) *Report of the Workshop on Methods for Estimating Discard Survival (WKMEDS)*. 17–21 February 2014, ICES HQ, Copenhagen, 114 pp.
- Kerns, J. A., Allen, M. S. & Harris, J. E. (2012) Importance of assessing population-level impact of catch-and-release mortality. *Fisheries* **37**, 502-503.
- Suski, C., Svec, J., Ludden, J., Phelan, F. & Philipp, D. (2003) The effect of catch-and-release angling on the parental care behavior of male smallmouth bass. *Transactions of the American Fisheries Society* **132**, 210-218.

**LM comments: This proposal has been revised by ICES WGRFS to reduce the scope and costs whilst focussing on the most important information needs. LM endorses this study proposal.**

### 8.2.6 Further developing UWTV Nephrops survey methodologies (DevNepS)

*Proposed by ICES WGNEPS 2013/2014*

**Duration:** 36 months

#### **Background:**

Over the last decade there has been significant progress towards establishing a consistent, efficient and effective method for assessing and advising on the status of *Nephrops* resources in European seas using UWTV surveys. The number of stocks with routine *Nephrops* UWTV surveys has increased linearly over time and in 2014 around 18 Functional Units are expected to have surveys. ICES has developed an approach to give “Category 1” assessments and catch advice consistent in line with the MSY approach for all stocks with regular UWTV surveys. A data limited UWTV based approach has also been used to give precautionary catch advice for stocks with some information (Figure 2). Landings of *Nephrops* in Europe are worth approximately €400m annually and there is also significant downstream economic activity such as processing (source: EUROSTAT). Further research and development work is now needed to improve and extend the UWTV survey and assessment methodologies across Europe. This will ensure that the management of this resource is informed by the best possible science.

#### **Objective:**

The specific objectives of this project are as follows:

- To support the expansion of survey coverage to stocks with no or developing UWTV surveys through technology, methodology and personnel transfer.
- To improve data collection and quality control procedures on existing surveys, making use of new and innovative technologies
- To address the main uncertainties associated with the assessment and provision of advice as highlighted by WGNEPS and other scientific groups.
- To improve data availability and processing by making UWTV survey data and assessment data available through ICES online databases.
- To fully integrate new benthic and ecosystem monitoring requirements under the MSFD and OSPAR into existing UWTV surveys

## WORK PACKAGES:

### **Work Package 1. Technology, methodology and expertise transfer to support the development of new surveys.**

The main aim of this work package is to fast track new surveys quickly through the development phase to a point where they can be used to give high quality management advice. It will involve technology, methodology and expertise transfer from laboratories with established surveys such as the Marine Institute, Marine Scotland Science, CEFAS and AFBI to new or developing surveys in the Skagerrak Kattegat FU3&4, Bay of Biscay (FU23-34), Cadiz (FU31), Botney Gut – Silver Pit (FU5), Devil’s Hole (34), Off Horn’s Reef (33) and in the Mediterranean (Barcelona , Italy, Greece). In areas where *Nephrops* landings are not that substantial strategies for cost effective survey monitoring will be explored such as developing low cost UWTV methodologies for small scale fisheries and multi-annual surveys. This work package will also collaborations with the working with the fishing industry and other stakeholders to identify their main priorities and develop a shared understanding of the method.

### **Work Package 2. Developing data collection and quality control toolbox**

The main aim of WP 2 is to improve efficiency and quality control on existing surveys by:

- Establishing best practice in video collection, archiving, validation and retrieval.
- Developing of standardized paperless systems for count and ancillary data collection (trawl marks & other biota).
- Developing and document an R package for UWTV survey data processing including functions to QC, analyze and visualize data.
- Further developing training material e.g. burrow counting manual, reference footage.

### **Work Package 3. Addressing the major uncertainties**

Although the UWTV methodology has gained widespread acceptance there have been criticism of the approach in the literature and amongst some parts of the fishing industry. The main aim of this WP is to address the key methodological uncertainties and assumptions highlighted in previous ICES Expert Group meetings with a series of well defined experiments and new technologies. These would include;

- Experiments to investigate *in situ* burrow occupancy & edge effects using divers, landers and ROVs
- Further develop video mosaicing and burrow identification algorithms.

- Trial new technologies on existing surveys such as scanning lasers, HD cameras and 3D cameras
- Collection of data to investigate modelling uncertainties, selection size, growth and M?
- To investigate how the uncertainty in the input data/parameters translates into uncertainty in the catch options.

#### **Work Package 4. Improving the data sharing, assessment and advisory processes**

The aim of this WP efficiency and quality of the assessment and advisory process by;

- Working with ICES to develop an international database which will hold burrow counts, ground shape files & other data associated with UWTV surveys.
- Integrating the *Nephrops* stock assessment results format into the new standard plots database.
- Develop and document an R package with functions to carry out all components of the stock assessment process including producing abundance estimates from UWTV survey data, analyzing and plotting commercial data, calculating reference points and producing catch option tables.

#### **Work Package 5. Extending the use of UWTV surveys to ecosystem monitoring & new species**

UWTV surveys have an important role beyond *Nephrops* stock assessment in terms of monitoring the ecosystem. Most existing surveys already collect data on other benthic mega-fauna, environmental data, benthic community data and sediment information using videos, trawls, grabs and CTDs. The aim of this WP is to review existing data holdings and plan for future monitoring requirements under the MFSD and OSPAR.

#### **EXPECTED deliverables**

- Technology & Personnel transfer
  - Several Scientific papers
  - 2 R packages
  - An ICES UWTV database housing survey results, time series burrow density estimates, ground shape files, functional unit shape files.
1. Improved consistency across FUs and EGs in the assessment data, fully reproducible science and integration of *Nephrops* assessments into Standard Plots
  2. Improvement of ICES SIPS and WG efficiency

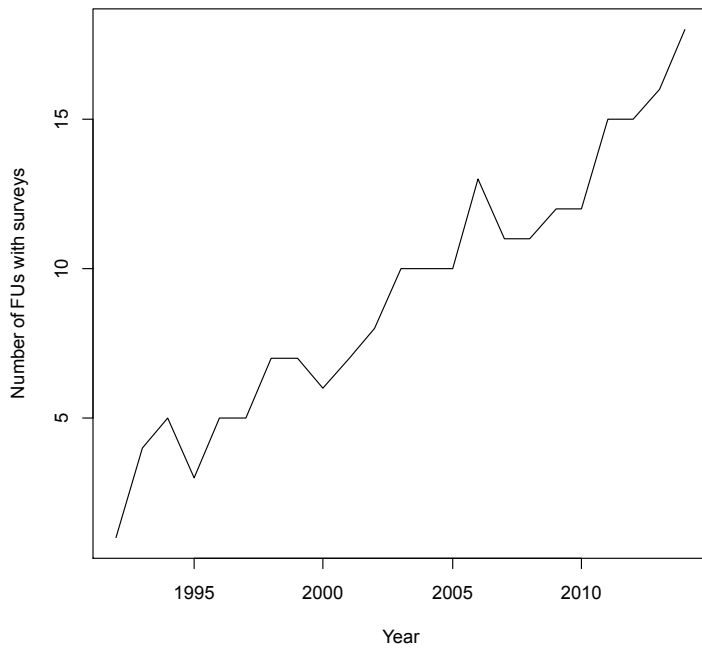
## **Project Justification**

This project is closely linked to the on-going work of WGNEPS and national survey programmes within the DC-MAP. The need for this project was first identified in 2007 by WKNEPHTV and has been restated in the recommendations of most UWTV related ICES expert groups since. The fact that there has been limited progress on several of the activities outlined in the WPs above illustrates that there is a need for additional resources through a dedicated research project at this time. The need for WP1 has also been highlighted by the fishing and other stakeholders. For example the Draft Management Plan for North Sea *Nephrops* being prepared by NSAC calls for improved UWTV coverage in the North sea and greater effort by scientist to explain methodologies. The French industry are run a project to carry out the first pilot UWTV survey of the Bay of Biscay to address the data needs for the FU23&24 stock. WP2 is needed improve survey efficiency and ensure consistent quality across different surveys. WP 3 should improve our understanding of the inherent uncertainties in the methodology and address the concerns raised by detractors which will help with acceptance of the method in new areas. WP 4 is timely because it will make UWTV survey data accessible through dedicated ICES UWTV databases and ensure the quality of ICES outputs. The adaptation of existing surveys to ecosystem surveys is particularly important. UWTV surveys have a clear role in terms of MSFD D6 “The sea floor integrity ensures functioning of the ecosystem” and OSPAR Recommendation 2010/11 on furthering the protection and restoration of sea-pen and burrowing megafauna communities in the OSPAR Maritime Area. It is important that ecosystem monitoring on UWTV surveys is developed in a way that will address new and emerging requirements.

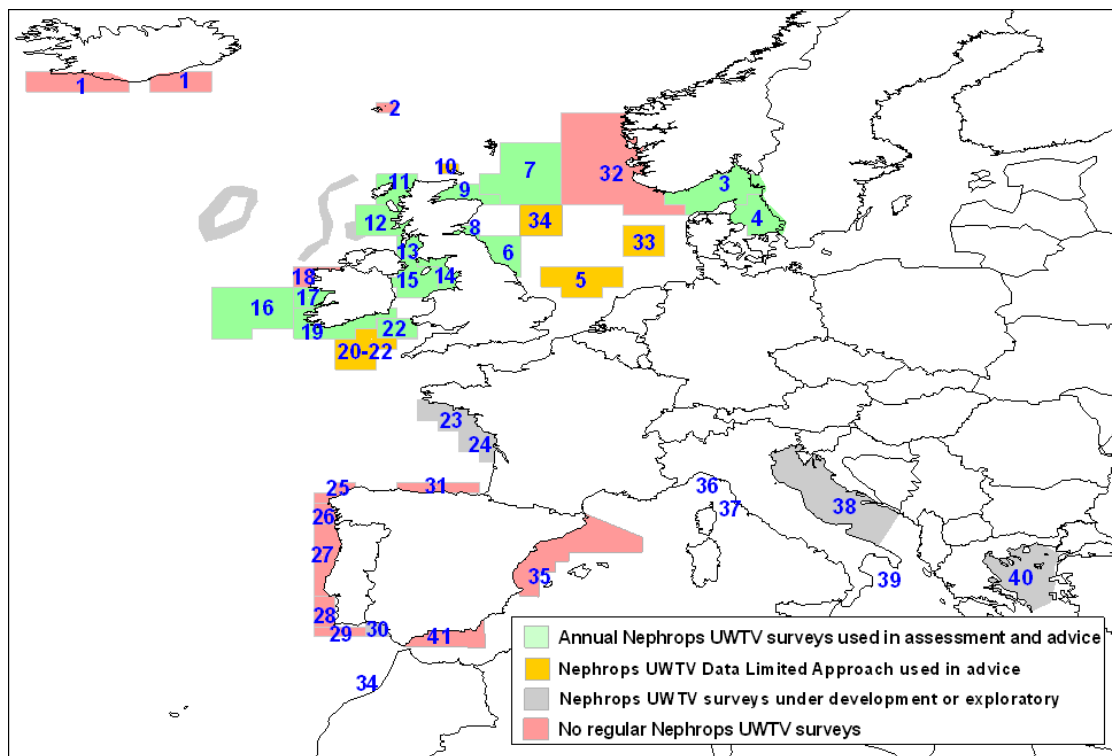
## **INDICATIVE BUDGET**

3 million Euros

**LM comments: LM endorses this study proposal.**



**Figure 8.2.6.1.** The number of *Nephrops* Functional Units with UWTV surveys over time.



**Figure 8.2.6.2.** *Nephrops* UWTV survey Coverage in 2014



### **8.2.7 Tagging program for estimation of Baltic Sea cod growth and movement patterns**

#### *Brief description of the study*

The assessment of the Baltic cod stocks is hampered by severe inconsistencies in age readings which result in poor quality of assessment input data, such as catch-at-age and abundance indices obtained from surveys at sea. Recent sensitivity analyses highlighted the enormous effect of different national age readings on assessment outputs, ultimately resulting in an analytical assessment that was not accepted in 2014 (WGBFAS). Despite inconsistent age readings since decades, age validated calcified material is still lacking. Furthermore, the assessment of the two cod stocks is hampered by considerable, but not yet quantified, mixing between the two stocks, linked to ontogenetic and seasonal movements between management areas.

The objective of this study is to design and carry out a large-scale tagging program including all Baltic cod stock components to 1) obtain growth estimates as input for length-based assessment and 2) quantify patterns in mixing between stocks.

#### *Background*

The assessment methods used for many fish species, such as the two Baltic cod stocks, depend on age-classified data (such as catch, landings, discard, maturity etc.). The age of Baltic cod is at present determined by the traditional method of annual ring interpretation. It is well known that particularly the age reading of Eastern Baltic cod otoliths has suffered from severe inconsistencies since decades, both between readers and national laboratories, despite a wide range of efforts, such as inter-calibration workshops and several projects. Additionally, a wide range of less subjective methods have been evaluated. Studies targeting the link between environmental conditions, fish behaviour and otolith growth have documented that the visual structures used for age estimation often do not correspond to seasonally recurring growth zones. Traditional age reading can therefore not provide a reliable basis for an age-based assessment.

The problems associated with traditional age reading have recently extended well into the Western Baltic cod stock. This may be the result of changes in environmental conditions, but it may also be related to the movements across management area boundaries observed by genetic analyses and historic tagging studies. The extent of these movements is unknown, but preliminary observations indicate that they may be significant and have increased in recent years.

A suitable alternative to the age-based assessment is the use of a length-based approach. Such an approach requires estimates of growth rate. External marking of fish is a cost-efficient method that is used worldwide to derive growth rates and to evaluate migration patterns of many species. Coupling this external marking with the chemical marking of the otoliths in a mark-release-recapture program can provide the

most reliable method to validate fish growth and at the same time to quantify the extent of spatio-temporal patterns in mixing between stock components.

#### *Documentation available*

The study is based on the results of otolith age reading calibration exchanges and evaluation of alternative objective methods that have been achieved within the ICES Working group for assessment of demersal stocks in the Baltic, 1973; ICES Study Group on Baltic Cod Age Reading (SGBCAR), 1996-2000; Study Group on Ageing Issues of Baltic Cod (SGABC), 2004-2006; and EU Call for Tender: *ImproveD mEthodology for Baltic COD age Estimation* (DECODE) (FISH/2006/15; Studies and Pilot Projects for carrying out the common fisheries policy), 2005-2007; ICES Working Group on Baltic Fisheries Assessment (WGBFAS), 2014; and an otolith age reading calibration exchange using 2013 data (WKSIBCA 2014).

#### *Terms of reference*

The main aim of the study is to conduct a large scale tagging program targeting Eastern and Western Baltic cod. The main focus will be the set up and preparation of a tagging program, the internationally coordinated tagging in one specific year and the development of a framework for later analysis of tagging data (mark-release-recapture data for implementation in length-based assessment) within the ICES community (i.e. the ICES Working Group on Baltic Fisheries Assessment - WGBFAS). The main product will be to carry out a tagging program with external and internal marking of the fish, comprising all cod stock components within the Baltic Sea.

The main tasks to be undertaken by the contractor are the following:

1. The preparation of the tagging program:
  - a. Review of existing information including a review of existing knowledge about the movements of cod in the Baltic and the requirements for length-based assessment
  - b. Conceive the optimal design of the tagging program to cover all stock components.
2. Tagging:
  - a. Concerted tagging of juvenile cod in different areas of the Baltic Sea, covering both cod stocks (as rough guideline: at least 10.000 cod per year).
  - b. Intensive public relation work to promote the goals of the project and to increase the public awareness to increase the probability of reported recaptures, involving commercial and recreational fishermen
  - c. Set up a reporting scheme for recaptures and a rewarding system

3. Data handling from recaptures:

- a. Establishment of a data collection and data analysis scheme for recapture data
- b. Analysis of data based from recaptures during the project period

*Duration of the project:* Maximum 18 months. Given that a large fraction of marked fish will be recaptured 1 or more years post-tagging, the focus of this project is mainly on the tagging itself, the establishment of an efficient recapture programme, and the establishment of analytical procedures.

**Indicative budget: € 500.000**

**LM comments: The 10th Liaison Meeting endorsed this proposal. It has been revised in 2014 to take into account recent developments.**

### 8.3 Studies proposed by PGECON

LM regards all studies as suggested by PGECON relevant and in general supports them all. In parallel, LM does not feel to have sufficient expertise to endorse or prioritise the requested studies.

However, aside from the suggested study/handbook on sampling design and estimation methods for fleet economic data collection, all other studies as detailed in the 2014 PGECON report have been suggested and supported repeatedly through several bodies.

PGECON realized that a considerable number of studies that have been recommended through the years have piled up without having been addressed in any way. This jeopardises the usefulness of DCF economic figures that are to be collected under the DCF (DCMAP) with substantial effort.

Some of these studies are listed below. This list is not claimed to be complete nor does the order imply any information on urgency. Moreover, it is not regarded as a PGECON task to follow up on the status of proposed studies. In fact, the lack of the results of the studies listed has impeded the use of DCF data and the development of recommendations for DCMAP.

#### Origin and Sources of Raw Material in the European Seafood Industry

Max. Budget : 550.000 Euro

Objectives and expected results: The study shall evaluate the feasibility of data collection on raw material by species and origin (catches/aquaculture and domestic/EU/non-EU), also assess the consequences of including semi-processed products (problems of double counting, etc.)

The study shall take into consideration existing data collection in order to assess the possibility to link these sources, as there are EU market observatory, trade statistics, Prodcom statistics, control regulation, input-output tables, data from producer associations, EU traceability regulation. Some fish and fisheries products are used in the pet and farming sector, maybe also in the cosmetics and pharmaceutical sector. The proposed study shall also assess the volume of fisheries and aquaculture products going into these sectors and the importance of those purchasers. Furthermore, small size enterprises may be more linked to regional production of fisheries products or integrated enterprises, e.g. aquaculture producers with processing facilities. This should also be taken into account.

#### Terms of Reference of the proposed study

- Investigate the volume and value of raw materials by species being used in the fish processing industry in a sample of at least eight Member States (MS) and also investigate their source and origin. Raw materials should include fish and other aquatic species.

- Investigate the type of processed material used in the fish processing industry
- Investigate the price of raw materials used in the processing industry in the respective countries
- Investigate the percentage of income coming from processing and that coming from other activities
- Assess the feasibility of linking raw material use in the fish processing industry with the fishing and aquaculture sector for the respective MS
- Estimate the costs of regular (could be e.g. every 2 or 3 years) data collection of raw materials used in the fish processing industry
- The selection of countries or the study shall be done by several criterions, leading to different country groups. Those criterions might be:
  - Market size
  - Production volume
  - Important main products (relevant for European market)
  - Main regions, in order to have a cross over approach by commodity and country/area
  - Countries with established data collection and countries with less developed data collection on raw materials

Type of activity and types of bodies/organizations that could carry it out (pilot project, study, collaboration between X MS): The study could be executed by national statistical offices and research institutes involved in the data collection framework of the CFP. The study shall be done in cooperation of at least 5 MS being involved in the current DCF.

Duration: 18 months

Policy relevance/need this activity addresses/end-users of outputs: Data on raw materials purchased from European fishing companies may provide information on outlet and ex-vessel prices which may be of interest for the fleet policy, while data on imported raw materials should provide information on sourcing (including intra-firm trade) which may be of interest for the external side of the CFP. Furthermore, in order to have the connection to the fleet and to evaluate impacts of management measures for the fleet on the fish processing industry, the study may deliver the necessary empirical data basis.

Is output needed by a certain time? Yes, results should be available at least 2 years before the proposed start of regular data collection on raw material by origin and species under the new DC-MAP in order to enable the EU-Commission to change legal provisions and MS to adapt to this new data collection needs.

Activity recommended by whom? Numerous, e.g. SGECA 10-03, PLEN 10-03, SGECA 10-04, STECF-EWG 13-05, PGECON 2013, Liaison Meeting 2013, STECF 13-31

**LM comments: LM endorses this proposal.**

**Study to disaggregate economic variables by activity and area**

Max. Budget : 300.000 €

Objectives and expected results:

- Determination of cost structures within disaggregated units (e.g. métiers): Thus far, cost structures of operations of the same vessel in different fisheries (e.g. métiers) are regarded constant. This is not necessarily realistic, particularly when both passive and active gear operations are compared. The study should provide a method to break down cost structures with respect to the fishing activity performed. The method should as much as possible operate with data that are already available.
- Procedures to derive proper correlations of variable cost data with transversal and capacity data to be applied for specific disaggregation tasks (having specific requirements of spatial, temporal or activity-related resolution): The outcome of this point should be a tool, requiring only standard software, which allows for modelling correlations, including an indication of the reliability of the result. The end-user should then be able to calculate correlations using data which is by default available (e.g. through the DCF or the logbook regulation). The end-user should also be able to assess the robustness of the estimated correlation. The method should be applicable to all DCF segments, allowing the end-user to disaggregate variable cost data.
- Validation procedure: A method should be provided to enable MS to validate the results of the disaggregation procedure. Specifically for the purpose of validation more disaggregated input might be required, e.g. daily cost data.

Type of activity and types of bodies/organizations that could carry it out (pilot project, study, collaboration between X MS): Study, involvement of at least 4 research institutes from different MS advisable to reflect different data collection environments

Duration: 12 months

Policy relevance/need this activity addresses/end-users of outputs: A wide range of applications for fleet economic data has emerged requiring data on a resolution level higher than provided by DCF specifications. In order to find a solution for this problem two workshops have indicated that transversal data which are in several cases available at the requested resolution could serve for disaggregation of fleet economic data. This approach has to be further elaborated.

All stakeholders /end-users of fleet economic data will benefit from the outcome of that study as it will allow to use a common approach for the numerous applications which require disaggregation (see also PGECON 2014 compilation).

Is output needed by a certain time? End of 2015 highly desirable

Activity recommended by whom? (RCM, PGMED, PGCCDBS, PGECON etc.)

PGECON 2013, LM 2013, PGECON 2014

**LM comments: LM endorses this proposal.**

## Handbook on sampling design and estimation methods for fleet economic data collection

Max. Budget: 30,000 euro

### Objectives and expected results:

Produce a practical manual to be used as supporting guidelines in the production process of key fisheries statistics according to EU legislation. Report will contain methodological and technical materials, worked examples and case studies plus annexes (SAS program codes, numerical results).

Expected content of the handbook:

*Approx.50-60 pages*

*Contents:*

- 1. Introduction*
- 2. Survey planning*
  - 2.1. Basic concepts and definitions*
  - 2.2. Survey strategy*
    - 2.2.1. Overall survey design*
    - 2.2.2. Sampling design*
    - 2.2.3. Estimation design*
  - 2.3. The role of auxiliary information*
  - 2.4. The role of statistical models*
- 3. Techniques for sample selection and estimation*
  - 3.1. Preliminaries*
  - 3.2. Basic sampling techniques*
    - 3.2.1. Simple random sampling*
    - 3.2.2. Systematic sampling*
    - 3.2.3. Sampling with probability proportional to size (PPS)*
    - 3.2.4. Stratified sampling and allocation techniques*
    - 3.2.5. Worked examples*
  - 3.3. Use of auxiliary information in estimation phase*
    - 3.3.1. Ratio estimation*
    - 3.3.2. Regression estimation*
    - 3.3.3. Generalized regression estimator (GREG)*
    - 3.3.4. Calibration techniques*
    - 3.3.5. Worked examples*
- 4. Treatment of nonresponse*
  - 4.1. Types of nonresponse*
    - 4.1.1. Unit nonresponse*
    - 4.1.2. Item nonresponse*
  - 4.2. Adjustment for unit nonresponse*
    - 4.2.1. Response Homogeneity Groups method (RHG)*
    - 4.2.2. Post stratification*

4.2.3. *Logistic modelling*4.3. *Worked example*5. *Case studies*5.1. *Italy*5.2. *Finland*6. *Quality assessment of estimates*6.1. *How to evaluate the quality of sampling and estimation procedures?*6.2. *How to improve quality?*7. *Software*7.1. *SAS tools*7.1.1. *SAS SURVEY procedures*7.1.2. *SAS macro CLAN*7.1.3. *SAS macro CALMAR2*7.2. *Other tools*7.2.1. *SPSS Complex Samples module*7.2.2. *R program SURVEY**References**Web links**Annexes*

Type of activity and types of bodies/organizations that could carry it out Study - Joint project by RKTL (Finland), NISEA (Italy) and University of Helsinki (UH)

Duration: 3 months, first month of 2015

Policy relevance/need this activity addresses/end-users of outputs

The handbook will provide methodological guidance for MS when planning their data collection scheme and analysing data collected. It will advise on reporting of data quality and in improvement of data quality, thus considerably increasing the efficiency and effectiveness of data collection.

Is output needed by a certain time?

Preferably prior to the fleet economics data call to be launched in 2015

Activity recommended by whom?

The handbook was proposed by the DCF workshop on statistical issues and recommended by PGECON 2014 and then STECF EWG 14-02

**LM comments: LM endorses this proposal.**



## Harmonise quality reporting and propose methodology in the case of non-probability sample survey

Max. Budget : 40.000 €

Objectives and expected results :

Terms of References of the study

- Investigate examples of the assessment of the quality of non-probability sampling strategies applied in other sectors which could be adapted to fisheries
- Propose a suitable methodology for the estimation of economic variables in case of nonprobability sampling
- Propose indicators for the assessment of the quality of estimates of economic variables in the case of non-probability sampling
- Propose a common format for the presentation of these methodologies in the NP and in the TR in order to harmonise quality reporting
- Propose methods to evaluate the impact of non-response in case of non-probability sampling and also in case of probability sampling and census with low response rates
- Perform a comparative impact on data quality of different sampling strategies (e.g. is sampling preferable to census with low response rate? When a response rate should be considered too low with respect to the reliability of final estimates?).

Type of activity and types of bodies/organizations that could carry it out (pilot project, study, collaboration between X MS)

Study, preferably at least 3 research institutions from different MS should be included

Duration: 4 months

Policy relevance/need this activity addresses/end-users of outputs

Non-probability sampling and low response rates are rather common in the collection of economic data of the fleets. However, there is hardly published information how this affects bias and variability estimates. Any end-users of DCF fleet economic data should have strong interest in this kind of quality information on the data provided by MS. MS in turn would finally be able to provide this kind of information in a standardised manner.

Is output needed by a certain time?

End of 2015

Activity recommended by whom? (RCM, PGMED, PGCCDBS, PGECON etc.)

STECF-SGECA 09-02 and numerous subsequent meetings, e.g. LM2013

**LM comments: LM endorses this proposal.**

**Pilot study on social indicators**

Max. Budget : 200.000 €

Objectives and expected results :

It has been intended to include social variables in the DCMAP legislation. Before social data are included in the new DCMAP and in order to avoid redundant effort possible end-users and applications have to be clearly defined in a first step. Moreover, it has to be clarified how data should be collected, which data are available through common sources and what are the applications/end-users and requirements.

The study should clarify the data needs and, subsequently, elaborate existing sources for social variables and the feasibility of linking them to fisheries. Then it should be specified which data are required but not available through other sources. It has to be born in mind that the use of social indicators might be related to a regional level rather than to a fleet segment level.

The study should cover all 10 variables as listed in EWG 12-15 and should cover all relevant MS.

Type of activity and types of bodies/organizations that could carry it out (pilot project, study, collaboration between X MS)

Pilot study, consortium of research institutes from at least 4 MS

Duration: 9 months

Policy relevance/need this activity addresses/end-users of outputs

The outcome of the study is a prerequisite to set up an efficient DCMAP. DCMAP has to be specific to the end-user needs and has to ensure that existing sources are exploited as much as possible to achieve the requested information prior to demanding additional effort on data collection.

Is output needed by a certain time?

Preferably before adoption of new DCMAP legislation

Activity recommended by whom? (RCM, PGMED, PGCCDBS, PGECON etc)

EWG 12-15, p.20; EWG 13-05, p.15

**LM comments: LM endorses this proposal.**

## Methodologies for estimation of intangible assets in EU fisheries

Max. Budget : 275.000 €

Objectives and expected results :

- Identify different types of fishing rights and identify the available data in relation to fishing rights
- define a methodology for estimation of the value of different types of rights (license, quota, transferable and non-transferable, etc...); specify the input as required for the estimation
- define a methodology to separate the intangible part of capital (quota, license, etc...) from the overall capital value when this value is not directly observable;
- investigate factors determining changes in values of intangible assets.
- ensure a coverage as large as possible so to address all the possible types of fishing rights present at EU level.
- Provide guidelines for estimation which allows the estimation for all circumstances which have been observed in MS

Type of activity and types of bodies/organizations that could carry it out (pilot project, study, collaboration between X MS): Study, involvement of at least 4 research institutes from different MS advisable to reflect different legal circumstances

Duration: 10 months

Policy relevance/need this activity addresses/end-users of outputs: Fishing rights are an essential part of total assets in many fisheries and thus, amongst others, also important for the estimation of capital cost.

Implementation of the CFP in the various MS has led to an introduction of various types of rights (licenses, ITQs, etc.). Some of these rights are freely tradable; others can be only transferred together with the vessel to which they are attached. Still other rights are officially not transferable, but in reality they too can be transferred. In many countries the value of these intangible assets approaches or even exceeds the value of the tangible assets and it plays an important role in operational decision of fishing companies.

Price information on intangibles is scarce and estimations of their value when linked to tangibles are far from simple. Further research in valuation of intangible will be essential, as their value probably exceeds the value of tangible assets in many fisheries. In addition, estimation of intangible assets is required by the DCF and common methodologies should be defined.

Is output needed by a certain time? Preferably before adoption of new DCMAP legislation

Activity recommended by whom? (RCM, PGMED, PGCCDBS, PGECON etc)

Workshop on Evaluation of data collection connected to Fishing Rights and Capital Costs 2013, PGECON 2014

**LM comments: LM endorses this proposal.**

## **9 Any other business (ToR 6)**

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### **9.1 DCF website**

The Commission informed participants that the DCF website has recently been revamped by the JRC and invited participants to send any comments on these changes. Further recommendations are always welcome regarding how to improve the website further.

### **9.2 Access to the RCM SharePoint**

At this Liaison Meeting, the following access rules to the RCM SharePoint were agreed. Only participants of the RCM have access. National Correspondents (even those not attending the RCM) also have access to the respective RCM SharePoint. The chairs of the RCMs have access to all RCMs SharePoints. The chairs of the RCM should provide a list of participants in due time to ICES. The RCMs will do more work intersessionally in the forthcoming year. Therefore, there is a need to have the SharePoint ready early in 2015.

### **9.3 Derogations**

A list of derogations by Member State has been prepared by DG MARE.

### **9.4 Evaluation of surveys**

ICES will provide an update on their plans to re-evaluate surveys. Should this be followed by STECF work on surveys to be included in future EU MAP?

The ICES Bureau has requested that ACOM/SCICOM provide a 10-page position paper reviewing of existing surveys, and how ecosystem data can be included in future surveys. The review should be mindful of the current policy context including the new CFP, MSFD, and the ecosystem approach. ACOM and SCICOM have agreed to establish a workshop on review of the ecosystem survey requirements (WKSUREQ, February 2015) to use the existing information, such as:

- STECF review of DCF surveys (STECF SGRN 10-03)
- A WKECES review of survey methodology based on an ‘ideal ecosystem survey’ developed by WGISUR, and further reviews contained in WGISUR has additional reports contain useful reviews.
- WKCATDAT review of ecosystem data products could currently be delivered by surveys in the context of the 11 MSFD descriptors.

## 9.5 Annual Reports: simplification

STECF EWG 14-17 (Hamburg, 20-24 Oct 2014) will work on the issue of simplification of DCF Annual Reports in the short- and long-term, based on EWG 14-07. The aim is also to make (parts of) future Annual Reports available in a simpler format for end-users.

## 9.6 Data transmission

The Commission briefly presented progress in the evaluation of data transmission from MS to end-users:

- a new platform for information exchanges between COM, MS and end-users
- a new tool for reporting on how MS complied with the DG MARE/JRC data calls.

## 9.7 Landing obligation – and fisheries data collection

The landing obligation will according to the CFP be implemented the 1<sup>st</sup> of January 2015 in the Baltic Sea for fisheries for cod, herring, sprat and salmon, for other regions in pelagic fisheries and for fisheries for industrial purposes (small-meshed fisheries). In the North Sea, the landing obligation for demersal species will gradually come into force between 2016 and 2019.

At the LM 2014, all members of the group expressed their concern on the impact of the implementation of the landing obligation on the fisheries data collection. Data collection is not an isolated issue. Fisheries research institutes in all EU Member States carry out fishery-dependent data collection to enable the assessment of a large number of fish and shellfish stocks. These assessments provide the scientific advice that underpins the management and sustainable exploitation of these stocks. If the fishery-dependent data collection deteriorates this will most likely have consequences for the quality of the assessment and in the long run effective fulfilment of management objectives for exploitation of fish stocks (e.g. MSY targets, Regulation 1380/2013 article 2).

It is also important to realize that the quality of the data in official catch statistics (derived from logbooks and sales notes) are decisive for the quality of the input data for the fish stock assessments, as these data are used to raise samples collected in the data collection to the population level. Proper documentation of catches is thereby a key element for the data collection-assessment-advisory process. This documentation is presently regulated in the control regulation (1224/2009). The control regulation was however agreed before the new CFP and it is unclear to the members of the LM how for example the "*de minimis*" and other exemption rules will be properly documented in the new management regime. Clear rules of such documentation should be a part of

the discard plans to, among other things, enable data collection and also future evaluation of the effectiveness of the different exemption/flexibility rules.

There are a number of specific concerns of the landing obligation related to data collection, outlined below:

### **9.7.1 Quality of catch statistics**

In relation to the compilation and collection of monitoring catch data, the accuracy of the recorded catch statistics in logbooks will be affected by the number of species exemptions from the landing obligation, the minimum weight threshold for recording and the ability of the crew to sort and record the various fractions of the catch. Nor do the present logbook forms allow for the recording of all the potential fractions of the catch. Hence, there is considerable concern that monitoring catch data needed to scale estimates derived from sample data will be adversely affected by the landing obligation. It is also important to realize that there are incentives for fishermen to continue to discard low-value fish (former discards), in particular if effective control measures are not put in place, as the low value fish is deducted from the quota and also requires handling and storage.

### **9.7.2 Access to landings of former discards**

At present, there is little clarity about the conditions or rules of how exempt discards at-sea may take place. Further, it is unclear how storage of unwanted catch onboard should be handled. These and other factors may have the potential to affect the physical condition of the landing (if for example the fish is stored in a non-chilled way) with ramifications for the quality of the biological data that can be obtained from this fraction. Specific concerns include the species composition and identification, the ability to estimate the demographic structure of the catches of the sampled trips, the estimates of sample numbers (depending on access point for sampling), the ability to measure fish and collect otoliths and even the ability to access samples at all (e.g. under health and safety regulations). The landing location and fate of this unwanted catch on shore is also as yet unclear and will remain so until the landing obligation actually comes into force. The unwanted catch fraction will almost certainly not be available at the fish auctions were much of the present sampling of the landed catch occurs. This has implications for on-shore sampling designs and data collection protocols.

### **9.7.3 Role of at-sea observers**

Further, under the new landing obligation, at-sea observers will monitor unwanted catches that has to be landed by the fishermen. However, there is an incentive for the

fishermen to discard part or all of the unwanted catch of a trip, as landing of lower-value unwanted catch is discounted from the quota of the vessel (if proper control measures to counteract is not put in force). Under these new circumstances, the at-sea observer may witness events where fishermen throw unwanted catch over board, i.e. the observer will register an illegal operation. (1) As a consequence, the level of refusal of observers by the skippers may increase. (2) Even if an observer is onboard, the sampled fishing trip may be still biased (e.g. fishing trip in another fishing ground or the fisherman will have a legal behaviour although he would usually discard unwanted catch).

STECF PLEN 14-02 considered that there is a continued need for an “at-sea” scientific data collection programme that delivers representative unbiased data collection from commercial fishing trips. There are several reasons, highlighted by STECF:

Evidence exists that self-reporting of discards stipulated under the control regulation (EC 1224/2009) does not provide accurate estimates of discards and only applies to TAC species.

Scientific observers are not only collecting data on regulated species, but also on unregulated and other unwanted catches.

Fishermen can refuse carriage on grounds of safety and space availability (Council Regulation 199/2009, art. 11.4). This may present a challenge following the introduction of the landing obligation. If fishermen perceive that scientific observers have a dual function of 1) collection biological data and 2) to monitor the compliance with the landings obligation or if fishermen are expecting that the data being collated could be used in subsequent legal action, it is likely that the current ‘good will’ and critically, the observer coverage, could be undermined and refusal rate will increase.

STECF PLEN 14-02 considered that there were a number of approaches to maintaining the collection of unbiased catch data for scientific purposes and a single approach may not be appropriate in all fishery situations.

Option 1: To strive for a clear delineation of responsibilities between scientific observers and observers used for control and monitoring, so that Member States implement separate control and scientific observer programmes.

Option 2: To introduce dual-function observer programmes where observers collect biological data and monitor compliance with fisheries regulations.

Option 3: Recent progress in the use of remote electronic monitoring and CCTV provides a third option for collecting data from fishing vessels and schemes involving this technology may be appropriate in some cases.

#### **9.7.4 Conclusions**

The LM realize that the implementation of the landing obligation is a pervasive change in fisheries management which will have an impact on the fishing industry, management of fisheries and the data collection which is underpinning fish stock assessment and advice. Our main concern is that, so far, relatively little attention have been given key issues for the estimation of exploitation, how to ensure that catches can be properly documented and how to ensure that effective control measures are put in place to make sure that they are documented.

The LM 2014 would like to stress that there is a high probability that quality or reliability of the catch statistics will decrease. This will result in less accurate estimate of stock sizes and fishing mortalities which will result in less accurate scientific advice on the exploitation of the stocks. This may in turn have an impact on fulfilment of management objectives for the exploitation of stocks.

Further, the LM 2014 expresses its concern that MSs national authorities and the Commission expect that data collection according to the DCF can compensate for the lack of adequate and reliable monitoring for compliance purposes. It is in particular important to decide on the role the sea going observers, as a mismatch of objectives may lead to ineffective sampling and biased data.

The LM further stresses that the landing obligation, in particular the sampling of landings of unwanted catch (former discards) and fish discarded under exemption rules, will cause challenges for practical and methodological aspects of data collection. MS need to learn from each other. This may be a task for the future, more operational, Regional Coordination Groups. It is thereby of importance that the process towards more truly regional cooperation gains speed, and the Commission has a key role in this process.



## **10 Meetings in 2015 of relevance for DCF (ToR 4)**

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The LM notes that because of the change in the financing of the National Programmes from direct management to shared management in 2014, a list of meetings eligible for funding under the DCF will not be required from 2014 onwards. The LM, therefore, took note of the list of ICES meeting of relevance for DCF and did not discuss the priority of meetings in 2015. This list of meetings could therefore be seen as a kind of minimum list. More meetings could be relevant for the support of the Common Fisheries Policy (CFP). The draft list of ICES meetings of relevance for the DCF is provided in Table 1. ICES will inform the European Commission about revision/additions of draft list provided after their ACOM meeting in December 2014.

The list of relevant NAFO meetings is included in Table 2. The LM took note also of the list of meetings of relevance regarding Large Pelagics and tuna RFMOs provided in Table 3 and those of GFCM provided in Table 4. The relevant meetings on economic data collection are listed in Table 5.

Apart from the ICES and RFMO meetings, the following meetings remain relevant for the DCF:

### **Data collection: National and EU coordination:**

- National co-ordination
- National Correspondents Meetings

### **Regional co-ordination:**

- RCM for the Baltic
- RCM for the North Sea & Eastern Arctic
- RCM for the North Atlantic
- RCM for the Mediterranean & Black Sea & Large Pelagics sub-group
- RCM for the Long Distance Fisheries
- 12th Liaison Meeting
- Regional database steering group meetings

**Table 1. List of ICES meetings in 2015 related with data collection.**

Note: Meetings listed below and respective days are provisional. Final list will be available in December 2014. For information on dates and venue, consult the ICES meetings calendar (<http://www.ices.dk/news-and-events/meeting-calendar/Pages/default.aspx>).

Acronym	ICES EGs meetings	Estimated number of meeting days	Comments
<b>ICES Planning Groups or Workshops related to the Data Collection Framework</b>			
PGDATA	Planning Group on Data Needs for Assessments and Advice (PGDATA)	5	
WGBIOP	Working Group on Biological Parameters	5	
WGRFS	Working Group on Recreational Fisheries Surveys (WGRFS)	5	
WGCATCH	Working Group on Commercial Catches Sampling (WGCATCH)	5	
WKARCM	Workshop on Age reading of Chub Mackerel ( <i>Scomber Colias</i> ) (WKARCM)	5	
WKARDAB2	Workshop on Age reading of Dab ( <i>Limanda limanda</i> ) (WKARDAB2)	5	
WKARDL	Workshop on Age reading of Seabass ( <i>Dicentrarchus labrax</i> ) (WKARDL)	5	
WKARHOM2	Workshop on Age reading of of Horse Mackerel, Mediterranean Horse Mackerel and Blue Jack Mackerel ( <i>Trachurus trachurus</i> , <i>T. mediterraneus</i> and <i>T. pictatus</i> ) (WKARHOM2)	5	
WKARPV	Workshop on Age Reading of Saithe ( <i>Polliachus virens</i> ) (WKARPV)	5	
WKMSMAC2	Workshop on the maturity staging of mackerel and horse mackerel (WKMSMAC2)	5	
SC-RDB-1	Meeting of the Steering Committee of the Regional Database - 1	3	to be confirmed
SC-RDB-2	Meeting of the Steering Committee of the Regional Database - 2	3	to be confirmed
<b>Planning Groups on surveys at sea</b>			
WGEGBS2	Working Group 2 on North Sea Cod and Plaice Egg Surveys in the North Sea (WGEGBS2)	-	to be confirmed
WGIPS	Working Group of International Pelagic Surveys (WGIPS)	5	
WGBIFS	Baltic International Fish Survey Working Group (WGBIFS)	5	
IBTSWG	International Bottom Trawl Survey Working	5	

	Group (IBTSWG)		
WGMEGS	Working Group on Mackerel and Horse Mackerel Egg Surveys (WGMEGS)	5	
WGISUR	Working Group on Integrating Surveys for the Ecosystem Approach (WGISUR)	3	
WGFTFB	ICES-FAO Working Group on Fishing Technology and Fish Behaviour (WGFTFB)	5	
WGFAST	Working Group on Fisheries Acoustics Science and Technology (WGFAST)	1	
WGELECTRA	Working Group on Electrical Trawling (SGELECTRA)	3	former SGELECTRA
WGBEAM	Working Group on Beam Trawl Surveys (WGBEAM)	4	
WGNEACS	Working Group on North-east Atlantic continental slope surveys (WGNEACS)	5	
WGISDAA	Working Group on Improving use of Survey Data for Assessment and Advice (WGISDAA)	3	
WGTC	Working Group on Target Classification (WGTC)	2	
WGIDEEPS	Working Group on International Deep Pelagic Ecosystem Surveys (WGIDEEPS)	3	former WGRS
WGACEGG	Working Group on Acoustic and Egg Surveys for Sardine and Anchovy in ICES Areas VIII and IX (WGACEGG)	5	
WGNEPS	Working Group on Nephrops Surveys (WGNEPS)	3	to be confirmed
WKEVAL	Workshop on evaluating current national acoustic abundance estimation methods for HERAS surveys (WKEVAL)	5	
WKSCRUT	Workshop on scrutinisation procedures for pelagic ecosystem surveys (WKSCRUT)	5	
WKESUREQ	Workshop on review of the ecosystem survey requirements (WKEUREQ)	-	to be decided
WKFATHOM	Workshop on Egg staging, Fecundity and Atresia in Horse mackerel and Mackerel (WKFATHOM)	5	
WGALES	Working Group on Atlantic Fish Larvae and Eggs Surveys (WGALES)	5	
<b>Support to Scientific Advice</b>			
WGCHAIRS	Annual Meeting of Advisory Working Group Chairs (WGCHAIRS)	3	by invitation
AFWG	Arctic Fisheries Working Group (AFWG)	7	
HAWG	Herring Assessment Working Group for the Area South of 62°N (HAWG)	10	
NWWG	North-Western Working Group (NWWG)	8	
WGBAST	Baltic Salmon and Trout Assessment Working Group (WGBAST)	8	
WGNAS	Working Group on North Atlantic Salmon (WGNAS)	10	
WGBFAS	Baltic Fisheries Assessment Working Group	8	

	(WGBFAS)		
WGBIE	Working Group on the Assessment of Bay of Biscay and Iberian Ecosystem (WGBIE)	7	former WGHMM
WGCSE	Working Group on the Assessment of Celtic Seas Stocks (WGCSE)	10	
WGNSSK	Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak (WGNSSK)	10	
NIPAG	Joint NAFO/ICES Pandalus Assessment Working Groups (NIPAG)	7	
WGWIDE	Working Group on Widely Distributed Stocks (WGWIDE)	7	
WGHANSA	Working Group on Southern Horse Mackerel, Anchovy and Sardine (WGHANSA)	6	
WGDEEP	Working Group on the Biology and Assessment of Deep-Sea Fisheries Resources (WGDEEP)	7	
WGEEL	Joint EIFAC/ICES Working Group on Eels (WGEEL)	7	
WGEF	Working Group on Elasmobranch Fishes (WGEF)	10	
WGNEW	Working Group on Assessment of New MoU Species (WGNEW)	5	
WGMIXFISH - NS	Working Group on Mixed Fisheries Advice for the North Sea(WGMIXFISH - NS)	5	
WGMIXFISH - METH	Working Group on Mixed Fisheries Advice - Methodology (WGMIXFISH-METH)	5	
WGECO	Working Group on the Ecosystem Effects of Fishing Activities (WGECO)	8	
WGMME	Working Group on Marine Mammal Ecology (WGMME)	4	
WGBYC	Working Group on Bycatch of Protected Species Fishing Behaviour (WGBYC)	5	
WGDEC	ICES/NAFO Joint Working Group on Deep-water Ecology (WGDEC)	5	
WKARCT	Benchmark Workshop on Arctic Stocks (WKARCT)	5	
WKICE	Benchmark Workshop on Icelandic Stocks (WKICE)	5	
WKWEST	Benchmark Workshop on Stocks West of Scotland herring stocks (WKWEST)	8	
WKNSEA	Benchmark Workshop for North Sea Stocks (WKNSEA)	5	
WKPLE	Benchmark Workshop on Plaice (WKPLE)	5	
WKBALCOD	Benchmark Workshop on Baltic Cod Stocks (WKBALCOD)	5	
IBPBUT1	InterBenchmark Process of Greenland halibut - Arctic	-	probably by correspondence (tbc)

IBPBUT2	InterBenchmark Process of Greenland halibut - Icelandic	-	probably by correspondence (tbc)
IBPWCFlat	InterBenchmark Process of West of Channel Flatfish (IBPWCFlat)	-	by correspondence
IBPNep17	InterBenchmark Process of Nephrops in FU 17 (IBPNep17)		by correspondence
IBPWoSROUND	InterBenchmark Process of West of Scotland Roundfish (IBPWoSROUND)		by correspondence
WGScallop	Scallop Assessment Working Group (WGSCALLOP)	5	
WGBIRTH	Joint ICES/OSPAR group on seabirds (WGBIRTH)	-	to be decided
WKMEDS	Workshop on Methods for Estimating Discard Survival (WKMEDS)		
WKFAS	Workshop on Fisheries Advice Section (WKFAS)		
WKHERTAC	Workshop to evaluate the TAC calculation for herring in IIIa (WKHERTAC)	-	to be decided
WGBIODIV	Working Group on Biodiversity Science (WGBIODIV)	5	
WGOH	Working Group on Oceanic Hydrography (WGOH)	3	
WGCRAN	Working Group on Crangon fisheries and life history (WGCRAN)	5	
WGCEPH	Working Group on Cephalopod Fisheries and Life History (WGCEPH)	5	
SIMWG	Stock Identification Methods Working Group (SIMWG)	5	
WGFS	Working Group on Spatial Fisheries Data	5	
WKMG	Working Group on Methods of Fish Stock Assessments (WKMG)	5	
WGSAM	Working Group on Multispecies Assessment Methods (WGSAM)	5	
	Workshop on data compilation for the 2016 benchmarks 1	3	The workshop will be renamed
	Workshop on data compilation for the 2016 benchmarks 2	3	The workshop will be renamed
	Workshop on data compilation for the 2016 benchmarks 3	3	The workshop will be renamed
	Workshop on data data compilation for the 2016 benchmarks 4	3	The workshop will be renamed
	Workshop on data data compilation for the 2016 benchmarks 5	3	The workshop will be renamed

**Table 2. NAFO meetings**

- NAFO Scientific Council June meeting and Standing Committees
- NAFO Scientific Council September meeting and Standing Committees
- NAFO WG on Ecosystems Approach to Fisheries Management

**Table 3. List of meetings related with data collection and Large Pelagics**

- Coordination group for data collection on surface tropical large pelagic fisheries (T3 & Observers)

**ICCAT**

- Species Group Meeting
- Standing Committee on Research and Statistics (SCRS)
- Working Group on Tropical Species. Data preparatory - Bigeye and FAD
- Stock Assessment - Bigeye
- Working Group on Bluefin Tuna - Data preparatory
- Sub-Committee Ecosystems and By-Catch
- Working group on Blue Shark: Data preparatory
- Stock Assessment - Blue Shark

**IOTC**

- Working Party on Tropical Tuna (WPTT)
- Working party on Billfish (WPB)
- Working party on Ecosystems and Bycatch (WPEB)
- Working Party on Data Collection and Statistics (WPDCS)
- Working Party on Methods (WPM)
- Scientific Committee (SC)

Table 4. List of GFCM meetings in 2014-2015 relating to data collection

CATEGORY	MEETING	DATE	VENUE
SAC/CAQ	Concerted action for Lebanon	28 October 2014	Beirut, Lebanon
SAC	EIFAAC/GFCM/ICES Working Group on Eels (WGEEL)	3–7 November 2014	FAO HQ, Italy
SAC	MedSuit Regional Workshop	6–7 November 2014	FAO HQ, Italy
SAC	Meeting of the Subregional Group on Stock Assessment in the Black Sea, including harmonization of methodologies and analysis of data for surveys at sea [3 days]	10–12 November 2014	Constanta, Romania
	Ad hoc meeting of the Working Group on the Black Sea on turbot fisheries [2 days]	13–14 November 2014	
SAC	Working groups on Stock Assessment of Demersal and Small Pelagic Species (including assessment of red coral populations) [5 days]	24-27 November 2014	GFCM HQ, Italy
SAC	SAC intersessional meeting on Adriatic management plan [2 days]	28-29 November 2014	GFCM HQ, Italy
SAC	Workshop on the conservation of elasmobranchs [3 days]	10–12 December 2014	Sète, France
CAQ	Aquaculture Multi-Stakeholder Platform meetings [2 days]	9–11 December 2014	Bari, Italy
	Regional conference on sustainable aquaculture [1 day]		
SAC	Workshop on the implementation of the DCRF in the Mediterranean and the Black Sea [3 days]	15–17 December 2014	Madrid, Spain
COM	Working Group on the Amendment of GFCM Rules of Procedures and Financial Regulations [3 days]	26–28 January 2015	FAO HQ, Italy
	CoC Intersessional meeting (including a session on legislation) [2 days]	29–30 January 2015	
SAC	16 <sup>th</sup> session of the Subcommittee on Stock Assessment [3 days]	2–3 February 2015	GFCM HQ (tbc)
	15 <sup>th</sup> session of the Subcommittee on Economic and Social Sciences [2 days]		

CATEGORY	MEETING	DATE	VENUE
	Follow-up workshop for the implementation of management measures in selected case studies [3 days]	4–6 February 2015	GFCM HQ (tbc)
CAQ	9 <sup>th</sup> session of the Committee on Aquaculture including SIPAM [3 days]	24–26 February 2015	Marrakech Morocco
SAC/CAQ	4 <sup>th</sup> meeting of the Working Group on the Black Sea [3 days]	9–11 March 2015	Georgia
SAC	17 <sup>th</sup> session of the Scientific Advisory Committee [4 days]	24–27 March 2015	FAO HQ, Italy
CoC	Working group on VMS and related control systems in the GFCM area [2 days]	20–24 April 2015	Casablanc a, Morocco
CoC	Follow-up workshop on the implementation of the IUU roadmap [3 days]		
CAQ	Pilot study in Albania in support to the development of AZA and on the use of indicators for aquaculture development [2 days]	April 2015	Albania
SAC	Second Regional Symposium on Sustainable Small-Scale Fisheries in the Mediterranean and the Black Sea [4 days]	4–6 May 2015	Algeria
COM	39 <sup>th</sup> session of GFCM [5 days]	25–29 May 2015	FAO HQ, Italy
SAC	Second meeting of the Working Group on Marine Protected Areas (possibly back-to-back with the RAC/SPA meeting on SPAMIs) [3 days]	First half of June 2015	Tunisia

**Table 5. Meetings on economic data collection in 2015**

- Planning Group for Economists [PGECON]
- Workshop on Aquaculture data collection
- Workshop on thresholds for activity levels
- Workshop on linking economic and biological effort data /data call design