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45th PLENARY MEETING REPORT OF THE SCIENTIFIC, TECHNICAL AND ECONOMIC COMMITTEE FOR FISHERIES (PLEN-14-01)

PLENARY MEETING,
24-28 March 2014, Brussels

Edited by John Casey & Hendrik Doerner

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PLENARY MEETING

4-8 NOVEMBER 2013, BRUSSELS

1. INTRODUCTION

The STECF plenary took place at the Centre Borschette, rue de Froissart, Belgium, from 24 to 28 March 2014. The Chairman of the STECF, Dr John Casey, opened the plenary session at 09:30h. The terms of reference for the meeting were reviewed and the meeting agenda agreed. The session was managed through alternation of Plenary and working group meetings. Rapporteurs for each item on the agenda were appointed and are identified in the list of participants. The meeting closed at 16:00h on 28 March 2014.

2. LIST OF PARTICIPANTS

The meeting was attended by 30 members of the STECF and three JRC personnel. 13 Directorate General Maritime Affairs and Fisheries personnel (DG MARE) attended parts of the meeting. Section nine of this report provides a detailed participant list with contact details.

The following members of the STECF informed the STECF chair and Secretariat that they were unable to attend the meeting:
Hazel Curtis
Sakari Kuikka
Simon Jennings

3. INFORMATION TO THE COMMITTEE

3.1. STECF plenary – information from the Commission – general

DG MARE informed the Committee that Szuzsanna Kőnig (DG MARE unit A2) is the new the assigned overall focal point for STECF within DG MARE.

STECF expert compensation payments and new EMFF

With effect from 2014, compensation payments under Article 9.1 of Commission Decision 2005/629/EC (http://stecf.jrc.ec.europa.eu/index.html) should be paid from the European Maritime and Fisheries Fund (EMFF), which has not yet entered into force. Regrettably, until the entry into force of the EMFF, it is not possible to provide this compensation. Therefore, for STECF meetings (Bureau, Plenary and Expert Working Groups) taking place between April 2014 and the entry into force of the EMFF, experts will only receive reimbursement of their travel costs and a subsistence allowance, based on the rules established in the Commission Decision C(2007)5858 of 5/12/2007 (for more information, see the annex). When the Commission is in a position to resume compensation payments for future meetings under Article 9.1 of Commission Decision 2005/629/EC, following the entry into force of the EMFF, experts will be notified accordingly.

The information above is been displayed on all meeting websites and is also included in all expert invitation letters issued by the Commission for meetings taking place after 1 April 2014.

3.2. STECF plenary – information from the Commission - policy developments since last plenary

DG Mare unit A2 informed the STECF about policy developments i.e. the new CFP since the last plenary meeting took place in November 2013. DG MARE's presentations can be found on: http://stecf.jrc.ec.europa.eu/web/stecf/plen1401

3.3. STECF plenary – information from the Commission - feedback on STECF proposals since last plenary

The new DG Mare focal point for STECF Zsuzsanna Kőnig, provided feedback from the Commission on STECF proposals and STECF work.

DG MARE informed the Committee that the STECF economic reports (mainly the AER fleet report, but also the aquaculture and fish processing reports) are becoming more and more helpful for scientific advice and policy analysis.

While both the quality of the AER on the performance of EU fishing fleets and its focus on interpretation of trends have increased in recent years, so has its use for policy making; not only in the EC but also in other international institutions and Member States' administrations.. Examples of recent policy uptakes are:

- Data reference for economic and social indicators of the analysis of the balance between Member States' fishing capacity and their fishing opportunities.

- Reference for recent Impact Assessments of fisheries polices and (socio-economic) evaluations of management plans.

- Support in the analysis of structural policies for the fleet, aquaculture and fish processing sectors (i.e. some indicators in the future EMFF, evaluation of EU-funded programmes in fisheries, etc). Details are available via the following links:

https://fishreg.jrc.ec.europa.eu/web/datadissemination/indicators

http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52013DC0921:EN:NOT

http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52013SC0533:EN:NOT

- AER data has also been used by other international institutions

    - FAO in the context of the FIRMS project (FAO, ICES, NAFO, …)

      http://firms.fao.org/firms/fishery/760/en#FisheryIndicator-Fishing_Capacity

    - Fisheries committee of the OECD : some references in policy analysis in relation to EU fleets

Recent studies:

    - JRC studies commissioned by the European Parliament in 2014 on the EU fleet economic performance and fuel tax concessions.
      http://www.europarl.europa.eu/RegData/etudes/note/join/2013/513962/IPOL-PECH_NT%282013%29513962_EN.pdf
      http://www.europarl.europa.eu/RegData/etudes/note/join/2013/513963/IPOL-PECH_NT%282013%29513963_EN.pdf

    - Sauzade D., Rousset N. (2013). Greening the Mediterranean fisheries: tentative assessment of the economic leeway. PlanBleu, Valbonne.

      http://planbleu.org/sites/default/files/publications/greeningmediterraneanfisheries.pdf

- General public publications

      http://ec.europa.eu/fisheries/documentation/publications/pcp_en.pdf

- References in the scientific literature and recent studies of NGOs.

3.4. DG MARE address to STECF

E. Penas Lado, director of DG MARE Unit A responsible for Policy development and coordination, addressed the STECF to thank the STECF chair John Casey who will resign from the Committee with effect from 15 June 2014 (see section 3.5. of this report) for his work, dedication, commitment and success and to inform the committee on the Commission's plans for the future STECF.

E. Penas Lado expressed the Commission's gratitude to John Casey for having done an excellent job in his role as STECF chair the last 10 years. During his term as chair he successfully manoeuvred the Committee through a challenging and demanding period during which the demands on the STECF had significantly increased. John Casey not only contributed valuable expertise on fisheries to STECF but also been an extremely effective coordinator and people manager, ensuring that STECF could handle the often large number of diverse requests from DG MARE. He was instrumental in ensuring effective coordination and communication between STECF and DG MARE. STECF advice has provided the basis for numerous Commission legislative proposals and communications and nowadays serves as the benchmark for quality scientific advice to the Commission and member States. Mr. Penas Lado said that John Casey's resignation would mean a great loss to STECF but also acknowledged that his expertise and competences will not be entirely lost to the Commission and the STECF as he will soon take up a position at the JRC.

E. Penas Lado explained that the new CFP puts an even greater emphasis on scientific advice than the previous CFP. The scientific advisory bodies have therefore received a crucial and very important role. STECF is seen as a main advice provider regarding fisheries and the only one bringing together different disciplines on a regular basis drawing on a wide range of experts. Because the new CFP will create a high number of requests for scientific advice during the coming months, i.e. in the context of the Landing Obligation and regional discard plans, the Commission prefers to continue relying on the current committee during this period with aim for renewal of the STECF by spring 2015.

3.5. Election of new STECF chair

The STECF chair John Casey informed the committee and DG MARE before the plenary meeting that he must resign from the STECF with effect from 15 June 2014, to take up a position as a senior scientist in the Maritime Affairs Unit in JRC on 16 June 2014.

The committee was therefore requested to nominate candidates for the role of Chair from the remaining membership and potential nominees should confirm that they would be willing and able to take on the role if elected.

The election procedure was chaired by the Commission (H. Doerner, JRC) according to the procedures described in the STECF Rules of Procedures, section 2 (http://stecf.jrc.ec.europa.eu/about-stecf):

- H. Doerner informed the Committee that the Secretariat had received one nomination for the post of Chair; Norman Graham.

- Prior to the vote, Norman Graham declared that he was prepared to accept the post of Chair of the STECF if elected.

- STECF members attending the meeting unanimously decided to waive the secrecy requirement for the ballot.

- The election was therefore conducted via a show of hands and Norman Graham was unanimously elected by those members present.

To facilitate a smooth transition, it was agreed that the vice-chairs would take care of any unforeseen organisational and administrative tasks between the March and the July 2014 plenary meetings and that the STECF secretariat would provide extra resources in support of the preparation and running of the July plenary meeting and production of the meeting report. In recognition of the fact that the appointment of Norman Graham as the new Chair may prove to an interim measure, the Committee agreed to review the situation during the July 2014 plenary meeting.

4. STECF INITIATIVES

4.1. Landing Obligation: potential implications of 9% quota transfers between stocks

Background

STECF addressed potential impacts of *de minimis* and the quota flexibility tool as stipulated in Article 15 of the new CFP Basic Regulation (BR) in its first meeting on the Landing Obligation in EU fisheries (EWG-13-16). STECF 13-23 noted that the inter-species quota flexibility and the *de minimis* provisions can provide flexibility in the system to better adjust catch compositions to resemble fishing opportunities and increase both ecological and economic sustainability. However, depending on how the flexibilities are used and in what sequence they are applied, the same provisions could be used to legally increase catches well in excess of desired or intended levels. For some stocks, this could imply increases in F above those consistent with achieving Fmsy (as required under Article 2 of the Basic Regulation) and may even push the stock outside safe biological limits.

STECF observations

EWG 14-01 proposed a possible objective framework to be considered by Regional Groups when proposing *de minimis exemptions* in discard management plans. The proposed framework takes account of the provisions of Article 2 of the basic regulation (e.g. FMSY and precautionary approach considerations) and aims to ensure that its use does not lead to

increase mortality thereby jeopardising the attainment of MSY. EWG 14-01 was not requested to provide similar guidance in relation to interspecies quota flexibility.

Although there is no requirement to include in discard plans, how and to what extent quota flexibility provisions will be used, STECF notes that both *de minimis* and quota flexibility provisions should not be considered in isolation. STECF would like to reiterate the possible danger of a stock being pushed outside safe biological limits by inappropriate application of the inter-species quota flexibility mechanism, which may lead to deterioration in stock status. STECF furthermore notes that the above problem might be compounded by applying a *de minimis* exemption in conjunction with the interspecies quota flexibility.

The sole and plaice stock in the North Sea could be taken as an example of how the use of quota flexibility could move the sole stock outside safe biological limits in a short space of time. At the moment, both stocks are inside safe biological limits. Assuming plaice is the target species and sole is the non-target species, 9% of the plaice catch quota (9% of the 2014 catch advice (159,600 t) amounts to 14,400t) could be used as an extra allocation for sole catches. Assuming quota uplift of sole (Article 16.2), based on current discard levels (EWG 13-13 calculated a discard rate of 17% for the major gear catching sole (BT2)), the catch advice for sole for 2014 would have been 14 300 tonnes. Adding 9% of the plaice catch quota (14 400 t) to the sole would permit a catch of sole of up to 28,700 t, and would potentially move the sole stock outside safe biological limits within one year (i.e. generating an F of about 0.56 in 2014 and SSB in 2015 of about 33 600 t compared to F_{pa} = 0.4 and B_{pa} = 35 000t). STECF also notes that the advised fishing mortality on sole for 2014 of 0.24 could be overshot by 133%.

4.2. Report on ECFA seminar on control of discard ban

A seminar on the practical implementation of the new features of the Common Fisheries Policy regulation into EFCA Joint Deployment Plans held by the EFCA – European Fisheries Control Agency - and held in Dubrovnik, Croatia on January 15th and 16th 2014.

The new features of the Common Fisheries Policy basic regulation requires to adapt the inspection and control regime accordingly. Consequently the European Fisheries Control Agency needs to remodel its Joint Deployment Plan concept in close cooperation with the European Commission and the Member States. In order to address the control of the discard ban the EFCA organized the seminar. The seminar was attended by representatives from Member States, the European Commission, scientific institutions (ICES, STECF), and stakeholder representatives (Advisory Councils - ACs). The landing obligation has considerable potential to affect both the economic performance of European fishing businesses and the quality of reported catch data, which is crucial for assessment purposes.

There have been three SETCF expert groups on the Landing Obligation (EWG 13-16; 13-17 and 14-01) and recognising the potential impacts of the landing obligation of economic performance and data quality, each of these Expert Groups were asked to specifically address topics related to control, monitoring and enforcement (CME). EWG 13-16 noted

that while aspects of CME are generally dealt with in other fora, they do have a direct bearing on and inexorably linked to a number of key scientific, technical and economic issues. EWG 13-17 concluded that the ability of MS to control monitor and enforce the landing obligation has a direct bearing on the provision of reliable catch statistics while EWG 13-17 noted that the issue of choke species are likely to result in severely curtailed fishing operations if adequately enforced. These and other issues such as exemptions for *de minimis* and high survival create legitimate discards and therefore complicate the verification of compliance. STECF chair John Casey and STECF member Norman Graham attended the Seminar on behalf of the Committee and gave an overview of the work conducted in 2013 under the auspices of the STECF. Their presentations summarised the progress made at the Expert Working Groups 13-16 and 13-17.

The seminar provided an important platform to share the experiences gained during EWG 13-16 and EG 13-17, not only in terms of data concerns and assessing economic impacts, but critically to describe in detail issues relating to species exemptions, *de minimis* allocations and potential impacts on observer programmes, which had been discussed and debated in detail during the EWG's. The sharing of information and the analysis undertaken by EWG 13-16 and EWG 13-17 provided a detailed insight and identified some of the potential challenges that will be faced from a control, compliance and enforcement perspective, which ultimately may impact on the work of STECF.

5. ASSESSMENT OF STECF EWG REPORTS

5.1. STECF-EWG-13-19: Mediterranean Assessments –part II

Request to the STECF

STECF is requested to review the report of the STECF Expert Working Group, evaluate the findings and make any appropriate comments and recommendations.

Introduction

The report of the Expert Working Group on Assessment of Mediterranean Sea stocks - part 2 (STECF EWG 13-19) was reviewed by the STECF during the plenary meeting held from 24 to 28 March 2013 in Brussels, Belgium. The following observations, conclusions and recommendations represent the outcome of that review.

STECF observations

The meeting was the second STECF expert meeting for undertaking stock assessments of small pelagic and demersal species in the Mediterranean planned for 2013. The meeting was held in Brussels, Belgium from 9 to 13 December 2013. The meeting chair person was

Massimiliano Cardinale and the EWG was attended by 23 experts in total, including 4 STECF members plus 3 JRC experts.

Historic fisheries and scientific survey data were obtained from the official Mediterranean DCF data call issued to Member States on April 9th 2013 with deadlines on 3rd June and 29th November 2013. The latter deadline had been specifically set to call for in-year (2013) MEDITS and other surveys data to improve the precision of short term forecasts of stock size and catches under various management scenarios. Greece, and Cyprus did not provide any data for the June 2013 deadline, Italy did not provide data for the 29th November deadline and Spain provided data after the second meeting.

In relation to each of the Terms of Reference (ToRs), STECF notes the following:

ToRs (A-C): the EWG 13-19 aimed to undertake assessments for 16 stocks, including red mullet in GSA 17, which was not originally scheduled. In 8 cases analytical results were considered sufficiently acceptable to form the basis for management advice, in 3 cases the results were accepted as being indicative of trends only, 4 were rejected due to poor model convergence (1), or major data inconsistencies (3), and 1 was not even attempted due to insufficient data. Short-term catch forecasts for the 8 stocks with accepted analytical results were carried out. Medium-term forecasting was carried out for only those stocks for which a meaningful stock /recruitment relationship was available (i.e. anchovy and sardine in GSA 17).

ToR (C.2): the EWG 13-19 calculated the reference points for anchovy and sardine in GSA 17 using the WKFRAME methodology.

ToR (C.3): the EWG 13-19 was unable to fully address the request to estimate on the basis of commercial average catch rates by *métier*, the level of fishing effort by *métier* which is commensurate to the sustainable short-term and medium-term forecasts, mainly due to the following reasons:

- the calculation of partial F by fleet/*métiers* should be carried out with appropriate, more complex multi-fleet models, which allow the possibility to assume different population selection curves for the different fleets. It has not yet been possible to fully utilize such models.
- the lack of long time-series of fishery-dependent and -independent data and lack of knowledge on stock dynamics and connectivity for most of the exploited resources of the Mediterranean, impeded the use of more complex approaches (AlaDym, SS3, ASAP, Fla4a, etc.). In this regard, an explanatory exercise was carried out by the EWG to check the outputs of more complex methods using the AlaDym model, with sole in GSA 17 as the case study;
- time constraints and insufficient expertise in the use of complex multifleet models. In principle, the lack of sufficient expertise, could be solved by promoting appropriate training for example, through ad-hoc courses.

Tor (D.1) Small pelagic assessments in the Adriatic Sea: the EWG 13-19 considered that it may be useful to explore additional means to reconstruct the time-series of the landings

for GSA 18, in order to combine the two GSAs with the aim of delivering more robust assessment results. No strong scientific evidence emerged to justify separate assessments for the stocks of anchovy and sardine in GSA 17 and 18 and therefore the EWG considers that anchovy and sardine in GSAs 17 and 18 should be combined in a single assessment. However, when combining the two GSAs, it is crucial to avoid the breakdown of the long time series of GSA 17. This is especially important when considering the fact that GSA 17 contains by far the largest part of the stocks of both species. Following the preliminary attempts to assess the stocks for GSA 18, the assessment of anchovy and sardine stocks have been performed/updated only for GSA 17.

The stocks of anchovy and sardine in GSA 17 were assessed using the SAM statistical catch at age model. The spawning stock biomass estimated for anchovy for 2012 was 123,871 t, with 95% confidence limits of 71,052 - 215,957 t. The limit and precautionary biomass reference points adopted by the GFCM-SAC for anchovy are Blim=179,000 t and Bpa=250,600 t respectively. Hence, the estimated spawning stock biomass for anchovy in the Adriatic Sea is considered to be below the limit reference point of 179,000 tons. The spawning stock biomass estimated for sardine for 2012 was equal to 220,577 tons, with 95% confidence limits of 144,177 - 337,460 tons. The limit and precautionary biomass reference points adopted by the GFCM-SAC for sardine in GSA 17 are Blim=78,000 tons and Bpa=109,200 tons. Hence, sardine spawning stock biomass in the Adriatic Sea is considered well above both the adopted limit and precautionary reference points.

Since the reference points adopted by the GFCM SAC are based on the values derived from the ICA methodology, and which differ from those estimated by the SAM model, STECF concludes that status of both stocks with respect to the GFCM SAC reference points for biomass, should be considered preliminary. STECF also concludes that the SAM model is more appropriate than ICA for assessing anchovy and sardine in GSA 17 and that the biomass reference points should be re- estimated using the outputs from the SAM model.

Tor(D.2): according to the SAM results, the exploitation rate E on anchovy in GSA 17 is slightly above the Patterson reference point of E=0.40, with a value of 0.43 (estimated for ages 1 and 2). For sardine stock in GSA 17, the exploitation rate estimated by SAM for 2012 is also above the E= 0.4 reference point and equals 0.57 (estimated for ages from 2 and 5).

Tor (E), Evaluation of DCF data quality by EWG experts: As for previous meetings, the quality of the fisheries data from GSA 11 (Italy) prevented the assessment of the status striped red mullet in GSA 11. In addition, for GSA 8, the lack of catch data did not allow the EWG to conduct assessments for any of the species in the area. Thus, EWG 13-19 reiterated that the quality of fisheries data from GSA 8 and 11 is a cause for concern. While for GSA 8 suitable data should be available but have not been provided, for GSA 11 a thorough review of the data and the data collection process in particular, is necessary if informative stock assessments are to be undertaken in the future. Quality checks on the MEDITS database showed a clear improvement of the JRC database over time.

Tor (F), Review of R scripts used for stock assessment, short and medium term forecast and estimation of reference points: all FLR scripts used for the assessment and

forecast were revised before the meeting by the JRC team. Development of new R routines for the standardisation of the MEDITS data is at an advanced stage and a stratified index at length can now be produced by linking the R script to the MEDITS database. A Github public repository to store the R scripts for use by the EWG dealing with Mediterranean assessments is now under development. The EWG 13-19 suggested to continue updating and developing the R scripts to improve the efficiency and the quality of the assessments of the EWG.

Tor (G) 2014 data call evaluation and revision: the EWG 13-19 concluded that the 2015 data call for 2014 data should remain unchanged and in the current format. There is still scope for improvement in data quality and streamlining the process. A file naming convention with clear guidelines for users would be a helpful development to improve the process. It is clear that the Data Validation Tool developed by JRC has not yet been used systematically and there have been cases where attempts to upload incorrect files to the JRC facility, which is highly inefficient. The Expert Group suggested that JRC move to progressively more restrictive checks at the time of upload in order to ensure conformity of the data with the most important data formatting specifications. Future data calls should stabilize the time-series of data without recalling all the series at every deadline. At the same time it should also be possible to revise data that are already uploaded as is the case for the improvements to the MEDITS database.

Tor (H): the EWG 13-19 ranked the stocks for which DCF data are suitable for stock assessment and for the establishment of long term management plans and also ranked their vulnerability according to their productivity, susceptibility and other criteria based on life history parameters. Such rankings are available in a summary table, which is available at http://stecf.jrc.ec.europa.eu.

Tor (I) Revision of historical assessments: In view of some observed abrupt changes in the F or F_{MSY} estimates, the EWG 13-19 was requested to revise the overview table of all the assessments performed since 2008. In general, the most recent assessments are considered more reliable as these were carried out using improved data of improved quality and more appropriate assessment methods. The EWG reported that the differences were mainly due to either a change in the assessment methodologies or in the input parameters of the models (e.g. growth parameters, catch data). In any case, in several occasions the short term differences in the value of fishing mortality and/or different F_{MSY} reference values were not considered significant. The EWG 13-19 noted only one marked difference in F_{MSY} estimates; for hake in GSA 11. The discrepancy in the estimates was attributed to poor quality catch data and ultimately, the EWG 13-19 rejected the assessment.

Finally, EWG 13-19 reiterated the desire to convene an ad-hoc methodological EWG to be held in the beginning of 2015 to set up and test different assumptions of selectivity for a set of stocks and about the use of discard data and slicing methodologies in the future stock assessments. A methodological EWG was regularly held in the past but for several years no such group has met.

STECF conclusions

Based on the findings in the EWG 13-19 report, STECF concludes the following:

Among the 16 demersal and small pelagic stocks assessed by the EWG 13-19, overfishing is not occurring on only 1 stock, Sardine in GSA 1. Of the remaining 15 stocks, 9 are currently being exploited at rates not consistent with achieving MSY (overfishing is occurring) and 6 stocks were not assessed due to data deficiencies or poor model fits. A summary of stock status is given in Table 5.1.1.

Table 5.1.1. Summary of stock status for the 16 stocks assessed by the EWG 13-19. In the case of small pelagic stocks the ratio F/F_{MSY} refers to $E/E_{0.4}$.

GSA	Common name	Species	Assessment	Comment	Status	F/FMSY
1	Sardine	*Sardina pilchardus*	SepVPA	Trends only	Overfishing is not occurring	< 1
5	Striped red mullet	*Mullus surmuletus*	XSA	Accepted	Overfishing is occurring	3
5	Red mullet	*Mullus barbatus*	XSA	Accepted	Overfishing is occurring	6.2
6	Red mullet	*Mullus barbatus*	XSA	Accepted	Overfishing is occurring	3.8
7	Sardine	*Sardina pilchardus*	XSA	Not accepted	Unknown	
9	Sardine	*Sardina pilchardus*	SepVPA	Trends only	Overfishing is occurring	> 1
11	Striped red mullet	*Mullus surmuletus*	Data quality issues		Unknown	
11	Red mullet	*Mullus barbatus*	XSA	Accepted	Overfishing is occurring	9.7
15-16	Striped red mullet	*Mullus surmuletus*	XSA	Accepted	Overfishing is occurring	4.1
4,5,11-16	Common dolphinfish	*Coryphaena hippurus*	Data quality issues		Unknown	
17	Anchovy	*Engraulis encrasicolus*	SAM	Accepted	Overfishing is occurring	2.1
17	Sardine	*Sardina pilchardus*	SAM	Accepted	Overfishing is occurring	2
17	Red mullet	*Mullus barbatus*	SS3	Accepted	Overfishing is occurring	2.6
18	Anchovy	*Engraulis encrasicolus*	Data quality issues		Unknown	
19	Anchovy	*Engraulis encrasicolus*	SepVPA	Trends only	Unknown	
22-23	Anchovy	*Engraulis encrasicolus*	Data not collected		Unknown	

In order to comply with the Commission's requests to provide fleet-based advice and forecasts, the STECF supports the Expert group's proposal to convene a methodological EWG at the earliest convenience. STECF suggests that such a methodological EWG could form part of the 2015 STECF calendar according to the Commissions priorities for STECF or could be convened in a different forum. In either case, STECF proposes that such a group be asked to address the following:

- Collate and assemble the necessary input data by fleet for stocks of hake and Norway lobster in selected GSAs.
- Run statistical catch at age assessment models with different assumptions on selectivity (i.e. dome shaped, logistic, etc).
- Discuss and compare the results with previous assessment conducted by XSA or other models.
- Set up a common methodology to reconstruct time series of discard data by fleet to be used in future stock assessment.
- Decide upon an appropriate slicing methodology to reconstruct time series of catch at age data to be used in future stock assessment.

STECF concludes that the EWG 13-19 adequately addressed the Terms of Reference and endorses the findings presented in the report.

5.2. STECF-EWG-14-01: Landing Obligations part III

Request to the STECF

STECF is requested to review the report of the STECF Expert Working Group, evaluate the findings and make any appropriate comments and recommendations.

Background

The introduction of the landing obligation in the reform of the Common Fisheries Policy (CFP) represents a fundamental shift in the management approach to EU fisheries, switching the focus from the regulation of landings to catches as well as introducing regionalised decision-making into the management of EU fisheries.

A number of scientific and technical issues were examined by an STECF EWG (EWG 13-16) set up with the purpose of providing advice and guidance for the Commission, Member States and the stakeholders to assist in the implementation of the landing obligation. EWG 13-16 provided advice on survivability, *de minimis* and inter-species quota flexibility, discard data issues and control and monitoring issues. A second meeting of this EWG (EWG 13-17) has provided further guidance specifically to assist Member States in formulating joint recommendations that will form the basis of regional discard plans. EWG

13-17 also identified circumstances leading to restrictions in fishing activity associated with restrictive quotas (so-called "choke species"). In combination, both meetings have provided a valuable insight into the implementation of the landing obligation for the Commission, Member States and ACs.

The first timeline in the Basic Regulation of the CFP is the introduction of the landing obligation for pelagic, industrial and also salmon fisheries in the Baltic from 1 January 2015. Other fisheries in the Baltic (other than pelagic, industrial and salmon) also have a start date of 1 January 2015 but with a 2–year transitional period to allow full implementation by 1 January 2017.

In order to further assist regional groups, it is proposed to hold a third STECF EWG in early 2014 to facilitate the development of the joint recommendations and also undertake further analysis of technical issues relating to survivability and the *de minimis* exemption. If available the EWG will use the work carried out to date in the Baltic and for pelagic fisheries as test cases.

In the Baltic Sea, draft joint recommendations have been well advanced by the Baltfish group. These draft joint recommendations would implement the landing obligation in the Baltic Sea from 1 January 2015 for all four species currently subject to TACs: cod, plaice, herring, sprat, salmon and one non TAC species: sea trout. For the pelagic fisheries regional groups of MS and the PELRAC have begun working on the development of discard plans.

Several regional groupings have raised specific issues regarding survivability and the setting of *de minimis* levels. In this regard the EWG is requested to consider survivability in respect of the exemptions being discussed in the Baltic (for salmon) and by the PELRAC (in purse seine fisheries). The EWG is also requested to develop an objective framework for setting *de minimis* levels taking account of F_{MSY} and Precautionary Approach considerations as well as control and monitoring issues

STECF is requested to review the report of the STECF Expert Working Group meeting EWG 14-01, evaluate the findings and make any appropriate comments and recommendations.

Terms of reference given to the EWG were:

1. Evaluate the various elements of the Baltfish draft joint recommendations. Identify areas where additional supporting information may be required.

2. Review the current scientific knowledge on the survival of salmon and identified small pelagic species and where appropriate, provide guidance on additional scientific information that may be required in support of applications for species specific exemptions based on high survival.

3. Develop an objective framework for setting *de minimis* levels taking account of the provisions of article 2 of the basic regulation (e.g. F_{MSY} and Precautionary Approach considerations)

4. Review the control and monitoring issues associated with the documentation of catches to be specified in discard plans.

Test this framework using worked examples from pelagic fisheries and the Baltic Sea

Observations of the STECF

The Report of the STECF EWG 14 -01 represents the findings of the third Expert Group meeting in a series of such meetings planned to address the implications associated with the implementation of the Landing Obligation, the provisions of which are prescribed primarily in Article 15 of the 2013 Reform of the Common Fisheries Policy (Regulation (EU) No 1380/2013 of the European Parliament and of the Council of 11 December 2013).

STECF notes that all the TORs were tackled and efforts were made to provide helpful advice on a number of the additional questions raised by BALTFISH. EWG 14-01 put considerable effort into providing comment and guidance on the BALTFISH plan. Guidance on survivability issues included the identification of existing scientific work relevant to the species concerned. Earlier advice on biological features of some of the stocks was reiterated in the discussion on reducing some MCRSs. The EWG suggested that within the spirit of the basic regulation the problem of seal depredation could in principle be dealt with as a *de minimis* case. The EWG 14-01 considered additional questions, *inter alia*, on the inclusion of sea trout within the plan, on the timing of the introduction of plaice into the plan and on the associated difficulties created by the distribution of plaice quota in the Baltic.

STECF notes that EWG 14-01 developed an 8 point guidance framework for dealing with *de minimis* which considered the requirements of Article 2 of the basic regulation, namely that exploitation rates are consistent with producing maximum sustainable yield (F_{MSY}). The EWG also set out broad principles for achievement of documentation of catches and developed a 4 point 'relative risk score' system to assist in the development of approaches to monitoring and compliance.

Conclusions of the STECF

The STECF concludes that EWG 14-01 contributed new insight to the understanding of how the landing obligation could work in practise. Importantly, the opportunity to examine a proposed discard plan helped to more clearly identify key elements that regional groups need to consider in developing discard plans and for which supporting justifications are likely to be required. STECF also concludes that the EWG 14-01 adequately addressed the Terms of Reference, but notes that the scope for various interpretations of the Regulation and the emerging descriptions of prevailing circumstances in different fisheries continues to generate challenging questions.

STECF concludes that the information provided in the BALTFISH draft plan is not sufficient to permit a meaningful assessment of the plan's likely impacts. The draft plan

largely contained a list of proposed measures with only limited justification. STECF notes the efforts made by EWG 14-01 to provide i) general guidance on the information to include in discard plans sufficient for evaluation purposes and ii) sources of important existing scientific information for the specific case of the BALTFISH plan. STECF further concludes that in order for future evaluations to be made (of the BALTFISH plan or the plans from other regions), Regional Groups will need to focus their efforts in developing plans in line with the guidance provided and with due attention to providing supporting evidence to justify measures.

STECF notes that some items included within the BALTFISH discard plan were considered to be outside the scope of the provisions in Article 15 of the basic regulation and could not be progressed by the Commission by delegated act. Therefore, these were not addressed by EWG 14-01 and STECF has not commented on them.

STECF concludes that when using the provisions of *de minimis* under Article 15, the requirements of Article 2 to fish at F_{MSY} can only be met if the *de minimis* discard quantities are deducted from the agreed catch opportunity (TAC) arising from F_{MSY} based advice. If *de minimis* were operated as an addition to the F_{MSY}-advised catch, then mortality rates would be predicted to exceed the F_{MSY} target. Furthermore, depending on the way in which the *de minimis* quantity is calculated and applied (for example 5% of an aggregate catch of several stocks applied as a *de minimis* on one stock), the departure from F_{MSY} could be substantial.

STECF notes that the scope for the provision on interspecies quota flexibility (Article 15(8)) may lead to fishing mortality rates exceeding F_{MSY}. This provision lies outside the scope of discard plans and was not addressed by EWG 14-01. Instead STECF has initiated an advice which is presented in section 4.1 of this report.

STECF endorses the findings presented in the report of the EWG 14-01.

5.3. STECF-EWG-14-02: DCF Revision part IV

Request to the STECF

STECF is requested to review the report of the STECF Expert Working Group, evaluate the findings and make any appropriate comments and recommendations.

STECF observations and conclusions

EWG 14-02 was the 4th DCF revision meeting. Prior to these, four meetings on the revision of the new DCF were held. STECF recognises that the progress made by the working group throughout the process has been successful, but slow. With the completion of EWG 14-02, STECF considers that all major scientific and procedural issues related to the EU data collection have now been satisfactorily addressed by STECF and submitted to the Commission as input for the drafting of the regulation.

STECF notes that EWG report sections proposing amendments of existing legal text are not intended to be precise legal text, but are simply intended to provide guidance to the Commission in response to the Terms of Reference.

EWG 14-02 successfully addressed the extensive list of terms of reference under the following headings:

1. Architecture of the DCF: Identification of which provisions could be removed from the current EU MAP and devolved to either Regional Coordination Groups (RCGs) or to Member States.

STECF endorses all conclusions of EWG 14-02 under this ToR (section 3.1) and makes the following observation:

The current highly prescriptive requirements of the DCF regarding sampling size have resulted in both under- and over-sampling of data. STECF observes that there is a need to increase the flexibility in the sampling methodology and sample size by delegating decisions on sampling levels to the regional level. The STECF therefore considers that a move towards a model with greater delegation to Regional Coordination Groups (RCGs) and PGECON, leaving key aspects (species, variables and periodicity) at the EU level, is desirable. However, in the case of stocks and fleets managed in multiple areas, coordination and oversight between the regional groups might be necessary.

2. EU MAP outstanding issues

2.1 Recreational fisheries

STECF endorses all the conclusions of the EWG 14-02 under this ToR (report section 3.2.1).

2.2 *Eel & salmon*

STECF endorses all the conclusions of the EWG 14-02 under this ToR (report section 3.2.2) apart from the following:

EWG 14-02 concluded that data on wetted area habitat reported by water type, should be included as a core variable of the EU MAP. However, STECF concludes that this habitat variable falls outside the current scope of the DCF. Should there be an end-user requirement for such information, the data should instead be collected at the regional level.

STECF concludes that the pilot studies for eel suggested by the Expert Group are basic research projects, which are beyond the scope of the DCF.

Despite the potential benefits of extending current data collection of salmon, STECF stresses that there are currently several hundreds of populations of salmon in Europe. The decision on which salmon populations to sample therefore needs to be end-user driven and should include due considerations of the added sampling costs.

2.3 *Data collection in the Mediterranean & Black Sea*

STECF endorses all the conclusions of the EWG 14-02 under this ToR (report section 3.2.3).

2.4 *International dimension of the DCF*

STECF endorses all the conclusions of the EWG 14-02 under this ToR (report section 3.2.4) and makes the following observations.

STECF supports the solutions suggested by the EC that the EU MAP should refer explicitly to Regional Fishery Organisations (RFOs) and to international waters in which EU fishing activity is taking place under Sustainable Fisheries Partnership Agreements (SFPAs). This approach would eliminate the existing gaps, both in the scope of current DCF relating to EU fishing activities in international waters that are not covered by RFMOs and in EU data provision to certain international scientific and management organisations. STECF notes that in cases where new SFPAs are being established, this would mean an expansion of the scope of the data collection for some Member States.

2.5 *By-catch of non-target species*

STECF endorses all the conclusions of the EWG 14-02 under this ToR (report section 3.2.5) and makes the following observation:

STECF considers that the list of species to be sampled should be specified as core variables in the EU MAP. STECF notes that it should be up to the Regional Coordination Groups (RCGs) to identify and prioritise the fishery/species combinations that need to be monitored and sampled for bycatch of non-target species including protected, endangered and threatened species (PETS). STECF also stresses that collection of by-catch data for PETS should always be done at the species level.

2.6 *Landing obligation*

STECF endorses all the conclusions of the EWG 14-02 under this ToR (report section 3.2.5) and makes the following observation:

EWG 14-01 and EWG 14-02 both note that the introduction of the landings obligation has the potential for wide-reaching consequences for the current approaches to monitoring and control. The new CFP signals a change from the current system which is based on the monitoring of *landings*, to one where the monitoring and control of *catches* will be the main focus for the monitoring and control of TACs. STECF considers that *control* observers may have an essential function in this context. This however, may have a number of implications for the current *scientific* observer sampling programme funder under the Data Collection Framework (article 11.2, Council Regulation 199/2008).

Presently, scientific observers have no mandate for the control of fishing regulations, only to collect biological data which is used largely for stock assessment and ecosystem monitoring purposes. STECF considers that there is a continued requirement for an “at-sea”

scientific data collection programme that delivers representative unbiased data collection from commercial fishing trips for the following reasons:

- Evidence exists to indicate that self-reporting of discards stipulated under the control regulation (EC regulation 1224/2009), does not provide accurate estimates of discards and only applies to TAC species.
- Scientific observers not only collect data on regulated species, but also on catches of unregulated and unwanted species.

Although a legal requirement for vessels to carry scientific observers, ships' masters can refuse carriage on grounds of safety and space availability (Council Regulation 199/2009, art. 11.4). In practice, however, the carriage of scientific observers has tended to rely extensively on the good will of masters rather than through any legal obligation or enforced means. This may present a challenge following the introduction of the landings obligation. If masters perceive that scientific observers have a dual function of collection of biological data *and* monitoring of compliance with the landings obligation or where the data being collated could be used in subsequent legal action, it is likely that the current 'good will' and critically, the level of observer coverage could be severely undermined. While this may be somewhat speculative, there have been circumstances where the carriage of observers has suffered from non-cooperation by parts of the fishing industry due to such concerns. Lordan *et al.* (2011) reports a significant reduction in observer coverage due to concerns that the data collated by scientific observers was to be used for control and potentially for prosecution purposes.

STECF considers that there are 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. One option is 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. STECF further notes, that this may pose challenges where fishers breach the landings obligation and continue to discard species to avoid premature fishery closures due to exhaustion of one or more species in a mixed-species context i.e. avoiding 'choke issues'. In these circumstances, the role of a scientific observer could be compromised e.g. by recording illegal activity which could potentially be used for prosecution purposes or by inadvertently collecting biased data because of differences in behaviour between vessels with and without observers.

Another approach would be for Member States to opt to introduce dual-function observer programmes where observers collect biological data and monitor compliance with fisheries regulations. However, STECF notes that such an approach should aim to ensure that both scientific and control data are collected in an unbiased way. STECF has previously pointed out (EWG 13-16) that under a landings obligation, there is an increased risk of behavioural differences in discarding practices on trips where observers are not present. Such effects need to be accounted for through additional data analyses, such as size and species comparison of landings from trips with and without observers.

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 fisheries. Advantages include the opportunity to observe without the

skipper being aware of when this is happening. Fish length and weight information can be collected although age sampling is not possible. Ongoing developmental work on these technologies will improve their utility and on-going trials are demonstrating how they can operate during the fishing process.

It is clear that there are major challenges to be faced in the monitoring process associated with the landing obligation and to devise an effective system a combination of all of the above options is likely to be required.

2.7 Economic issues: spatial disaggregation, data quality, aquaculture and processing

STECF endorses all conclusions of the EWG 14-02 under this ToR (report section 3.2.7 and annex V) apart from the following:

EWG 14-02 stresses the need for separation of economic data from social data and proposes that the disciplines should be treated separately by tasking social scientists with the analysis of social data (needs) and economists with the analysis of economic data (needs). In this respect, the term socio-economic can be misleading and has often led to situations where economists are asked to provide advice on social issues. STECF, however, does not endorse the establishment of a separate sub-group on social issues as the number of social indicators in the DCF are very limited and provided that experts in social science are invited, the issue could be addressed during other meetings such as PGECON.

However, any future legislation on data collection should address economic and social data in separate sections in order to distinguish between the two fields.

STECF observes that even though it would be desirable to create a dedicated formal group for issues concerning the link between economic and biological data, the number of sub-groups in the framework of the data collection are already large and demanding a lot of time and effort for concerned experts. STECF suggest that the Commission consider scheduling a one-off Expert Workshop either as an EWG in the 2015 STECF Calendar or some other forum. In addition, STECF considers that a standing request in the RCGs (for regional concerns) and in PGECON (for pan-European concerns) is introduced to monitor and discuss the link between economic and biological data and methods.

EWG 14-02 stresses the need to have a separation, in terms of revenues and costs, for those enterprises carrying out activities other than aquaculture (even if aquaculture is the main activity). STECF observes that this point has already been addressed by the previous plenary and hence it reiterates what has already been concluded on this issue (p. 15 of the STECF 13-03 report), that is: *"STECF concludes that for companies that undertake both aquaculture and non-aquaculture activities, collection of data disaggregated by activity would be very difficult or impossible and would not be cost-effective. This is because most MSs base the collection of economic data on the official statistics, where companies are classified according to their main economic activity and hence, their incomes and costs relating to secondary activities are not easily distinguishable from those relating to their main activity. STECF also concludes that a feasibility studies will be required if disaggregation of aquaculture production to farm or production unit level, disaggregation of economic data (income and costs) by type of economic activities, or disaggregation*

according to any other aspects of production are needed. The aim of such studies should be to evaluate if it is possible to collect data at the desired level of aggregation and the associated cost of doing so.

STECF has previously recommended the inclusion of some basic social indicators (e.g. the regional importance of the sector and employment) in the EU MAP (e.g. STECF 13-31, page 184). In addition, a study on the inclusion of further social indicators is important to get an overview on the potential usefulness of these. STECF notes that previous recommendations (e.g. STECF EWG 13-05 etc.) to fund such a study together with a study on collection of raw material to provide the link between fishing fleets, aquaculture, and fish processing have not yet been addressed.

2.8 Regional coordination

STECF endorses all conclusions of the EWG 14-02 under this ToR (report section 3.2.8).

3. EU MAP annexes

STECF endorses all conclusions of the EWG 14-02 under this ToR (report section 4) and makes the following observation.

Regarding transversal data, STECF notes that if an existing non-DCF source of data (Control Regulation etc.) does not meet end-user needs, it could be appropriate for such data to be collected under the EU MAP. Before such a step is taken though, it should be investigated if it is possible to firstly improve the quality in the non-DCF data source. If that is not possible, STECF suggests that the Commission and Member States evaluate whether it is feasible to use the DCF data as the primary data source. STECF notes that if the quality of non-DCF data is identified as insufficient, this information needs to be transferred back to the source to facilitate improving the source.

4. AOB

STECF endorses all conclusions of the EWG 14-02 under this section (report section 5.1).

5.4. STECF-EWG-14-03: Management plans: BoB Anchovy, NS flatfish, WSC sole

Request to the STECF

STECF is requested to review the three reports of the STECF Expert Working Group, evaluate the findings and make any appropriate comments and recommendations.

5.4.1. Data analysis to support the impact assessment of the long-term management plan for the anchovy stock in the Bay of Biscay and the fisheries exploiting that stock (COM(2009)399 FINAL)

Background

In July 2009 the Commission adopted a proposal for a Council Regulation establishing a long-term plan (herein referred to as 'the plan') for the anchovy stock in the Bay of Biscay and the fisheries exploiting that stock (COM(2009)399 final). The objective of this plan is to keep the biomass of anchovy in the Bay of Biscay at sustainable levels and maintain levels of exploitation consistent with the maximum sustainable yield while ensuring stability to the fishing sector. Its main element is a harvest control rule prescribing annual TAC levels. The plan's harvest control rule has been provisionally implemented since 2010. After four years of provisional implementation it is appropriate to evaluate the plan and possibly implement relevant measures taking into account recent scientific developments as well as stockholders' views.

Terms of Reference given to the EWG were:

Following ICES advice updating stock dynamics as well as the methodology underlying the assessment of the anchovy stock in the Bay of Biscay, the STECF is requested to assess the biological and socio-economic impacts of options scoped with stakeholders in October 2013 in relation to changes to the harvest control rule, in-year TAC revisions and TAC period. The long-term biological and economic objectives established in the plan should guide this assessment.

Observations of the STECF

STECF reviewed the work of the EWG 14-03 concerning the impact assessment of management plan for anchovy in the Bay of Biscay.

To carry out the analysis the EWF 14-03 used Management Strategies Evaluation (MSE) model, implemented in the FLBEIA R package. Data used for conditioning the MSE model came from a DGMARE data call to the Member States involved in the fishery, Spain and France. Most of the data provided were very useful for the EWG. However, the data submitted by Spain did not contain the required level of disaggregation, and the data from France was submitted only one week before the meeting. As a result, the EWG was unable to include any economic components in the MSE.

STECF notes that the provision of the economic information would have allowed the analysis of fleet dynamics, which would provide additional indications of the economic performance of each fleet involved in this fishery for the whole range of TACs. Additionally, it would provide the necessary methodology to simulate and test for undershoot of the TAC, which has been observed in recent years.

Conclusions of the STECF

The EWG-14-03 addressed the terms of reference to the extent possible with the available resources, data and information. STECF endorses the findings and conclusions presented in the EWG 14-03 report and wishes to emphasise the following:

- The range of alternative HCR formulations (scenarios) assessed by the EWG 14-03 provide a sound base for developing options for fisheries management.
- The current HCR is confirmed to remain within the same precautionary limits of risks as assessed originally in 2008. It proved to be robust to low recruitment scenarios and limited changes in the quota uptake between semesters. Hence STECF considers that the current HCR remains appropriate as a basis for advising on TACs.
- The HCR proposed by the SWWRAC, modified to avoid large inter-annual changes in TAC arising from minor changes in SSB, predicted lower catches (by about 1,000 t – 1,500 t per year) compared to the current HCR but higher stability of annual TACs, while maintaining a similar level of risk of the stock falling below B_{lim}.
- The HCRs that consider a continuous increase of the catches between the minimum and maximum TAC levels, resulted in higher TACs (by about 1,000 t) when compared to the current HCR, while showing similar level of risk of the stock falling below B_{lim} and inter-annual variability of catches.
- Changing the management period to January-December (for all HCR options) considerably reduces the risks of the stock falling below B_{lim}, and leads to a small increase in quantity and stability of catches, as compared to presently applied management period July-June.
- Reducing the maximum TAC from 33,000 t to 25,000 t reduces the risk of the stock falling below B_{lim} by 1-2% and is predicted to give rise to increased catch stability, while average catches decrease by 2,000 t-4,000 t per year.
- Mid-year revisions of TACs were not tested by the EWG due to lack of time. Following the discussions by the EWG and the STECF in plenary, STECF acknowledges that performing a second, within-year stock assessment, to provide updated information for a mid-year revision of the TAC, may be a desirable option especially if the realised recruitment is lower than originally assumed for advising the TAC. In such circumstances it is conceivable that the risk of the stock biomass falling below B_{lim} may become unacceptably high.

5.4.2. Evaluation of the multi-annual management plan for the North Sea stocks of plaice and sole

Background

The multi-annual management plan for North Sea plaice and sole; Council Regulation (EC) No. 676/2007, has been in place since June 2007. Under the reformed CFP it is likely that this management plan will be superseded by a regional management plan for all North Sea demersal stocks caught in mixed fisheries. As a result, it is appropriate to review the past performance of the management plan in order that this retrospective review can form part of the impact assessment for the anticipated mixed-fishery plan.

The evaluation should review the performance of the management plan in achieving its objectives. It should take account of the most recent scientific information on developments in the relevant fish stocks and fishing fleets, and also the any existing studies of the management plan. Where possible, it should consider the individual elements of the plan and summarise how they have contributed to the plan's performance – see STECF SGMOS-10-06a, Annexe C.

Terms of Reference given to the EWG were:

Plan and initiate the work necessary for a retrospective evaluation of the multi-annual management plan for the North Sea stocks of plaice and sole.

Observations of the STECF

The objective of the plan (LTMP) to bring both sole and plaice stocks to a status within safe biological limits has been met.

When the plan became operational in 2008, plaice was already within safe biological limits as defined in the plan (Article 2) and below the level for fishing mortality as defined by Article 7 (F=0.3). The proportion of older (and more valuable) plaice in the stock and in the catches has been increasing since the introduction of the plan.

For sole, when the plan became operational in 2008, the stock was outside safe biological limits as defined in the plan (Article 2) and above the level for fishing mortality as defined by Article 8 (F=0.2), but since that time, fishing mortality has been steadily decreasing towards the target value of F=0.2.

STECF notes that in general, the provisions of the LTMP have not restricted fishing opportunities and that the observed fishing patterns have largely been driven by other factors such as decommissioning schemes, high fuel prices and low prices for plaice. Because of such influences, direct effects on catches and effort that may be attributable to the LTMP cannot be fully evaluated. Nevertheless, STECF notes that the most obvious effect of the LTMP has been to bring stability in the annual TAC for both stocks.

In the absence of the LTMP, the move from ICES Precautionary Approach framework to MSY framework (including MSY transition approach) would have potentially resulted in large variations in annual TACs between 2008 and 2012. Also, it is likely that TAC advice

for both stocks would have followed largely opposite trends, potentially creating larger mismatches between fishing opportunities for the plaice and sole stocks, and hence, between the amount of fishing effort required to catch the respective TACs. The LTMP may thus have contributed to better governance schemes and more possibilities for long-term planning in the fishery.

Fishing effort in the North Sea flatfish fisheries is regulated both by the cod management plan and by the sole and plaice management plan. Effort ceilings defined by the cod management plan have in most cases not been constraining for the beam trawl fishery (BT1 and BT2), but they may now become more limiting as fishing opportunities for sole and plaice increase. The Dutch BT1 fishery has already reached the ceiling imposed by the cod plan in 2012. According to EWG 13-21, effort in the BT1 fishery is low and results in less than 3% of the total cod catches from the North Sea, so its impact on the cod stock is currently limited. STECF notes that if the Dutch industry wanted to allocate more effort to BT1 to operate in the central North Sea, where sole is not caught and where the discarding of plaice is reduced, the interaction with the cod plan would need to be addressed first.

Considering the provisions of Art.2 both stocks are now within safe biological limits and, according to Art.5, the plan should be amended regarding its objectives, HCRs and effort limitations, on the basis of scientific advice by STECF and the opinion of the NSRAC. STECF notes that until such a revision is implemented the current provisions of the plan remain in force. Since the current harvest rules (targets of F = 0.2 for sole and F = 0.3 for plaice) are performing as intended, and are within the estimated F_{MSY} range for both stocks, they are thus compatible with the stage-two objective of exploiting both stocks at rates consistent with MSY.

STECF concurs with the conclusions from EWG 14-03 which relate to a number of additional design issues in the current LTMP that should be considered in a future revision. These issues include (i) revising the formulation of F_{MSY} such that it is either a target or an upper limit instead of the lower limit as currently defined in Art.4; (ii) specification of socio-economic objectives for the second stage of the plan, (iii) potential interactions with the cod management plan regarding effort restrictions and which could be considered in the context of a mixed fisheries plan.

Conclusions of the STECF

STECF considers that the suite of scientific analyses that have been performed over recent years provides a comprehensive overview of the mechanisms of the LTMP for North Sea plaice and sole, and the outcomes provide the basis for the revision of the plan required by Art.5.

STECF notes that until the revision of the plan required in Art.5 is carried out, the current provisions remain in force and the harvest rules laid out in Art.7 and 8 to set fishing opportunities, have delivered Fs that are within the estimated F_{MSY} range for both stocks, and are thus compatible with the stage-two objective of exploiting both stocks at rates consistent with MSY.

5.4.3. Evaluation of the multi-annual plan for the management of Western Channel sole (Regulation EC 509/2007)

Background

Article 6 of the Common Fisheries Policy basic regulation introduces the concept of multi-annual / long term management plans for stocks within safe biological limits. These plans have to be regularly assessed against their objectives with regard to their effectiveness, utility, efficiency (cost-effectiveness) and sustainability taking account of all biological, fisheries, ecological, economic and social impact.

Article 11 of the Western Channel sole plan provides for the Commission to seek scientific advice from STECF on the rate of progress towards the targets of the management plan in the third year of its application and each third successive year thereafter. The first evaluation of the Western Channel sole plan started in 2009 via an evaluation report (Annex, item 1) which was followed by an Impact Assessment in 2010 (Annex, items 3 and 4).
During this process, STECF's 33rd Plenary (Annex, item 2) had noted that the short data series (especially economic ones) prevented the development of any comprehensive analysis: 'The timing of the review, at around 3 years after the plans were implemented, meant that only very limited analysis was possible. STECF notes that a period 48 months after implementation would be required for 3 years of biological data and 60 months for 3 years of economic data to be available'.

Now that seven years have elapsed since the inception of this plan, the Commission wishes to carry out again the evaluation process to assess the performance of the management of this fishery. The following step would normally be to assess options for improving it where the evaluation signals areas of weakness. However, the Commission is also considering the need to evolve towards mixed fisheries or multi-species management plans in line with the new basic regulation.

It is therefore suitable at this time to examine the feasibility of a mixed-fisheries or multi-species fishery plan for the Western Channel. To this end, it seems necessary to assess if the state of knowledge and the data available is sufficient to proceed. If not, it would be necessary to identify the needs in terms of data and/or research that must be covered for the required assessment of management options to take place.

Terms of Reference given to the EWG were:

- Ex-post evaluation of the plan. Evaluate the multi-annual plan for the sustainable exploitation of the stock of sole in the Western Channel (Council Regulation n° 509/2007) according to the procedure described by SGMOS 10-01 (Annex item 5, see Appendix I, pages 30-33) and adopted by PLEN-10-01 (Annex item 2).

- Current scientific knowledge. Filling data or research gaps for a possible future mixed-fisheries or multi-species plan

    - Provide an overview of the current scientific knowledge and data availability regarding mixed-fisheries or multi-species management for the fisheries/stocks concerned by the present request. To this end, the STECF is in particular requested to:

        - Identify the metiers (or higher aggregation level if metiers information is not available) exploiting the Western Channel sole;

        - Identify the catch composition of each metier. Discards figures should be taken into account in this analysis;

        - Identify the economic dependence of the metiers on the species caught in this mixed fishery.

        - Identify possible data or research gaps that must be filled in order to proceed with an assessment of options for a possible future mixed-fisheries or multi-species management plan. This is to assist the Commission in deciding whether or not to move on the Impact Assessment phase for this plan.

- Ex-ante overview for a possible mixed fisheries or multispecies plan. In case STECF considers that there is sufficient scientific basis to proceed with work towards a mixed-fisheries or a multi-species plan, STECF is requested to provide an initial overview based on available science and data on the following aspects:

    - The stocks potentially concerned

    - The suitable geographical scope for the possible management plan taking into account plans currently envisaged or developed

    - What could be the driver/choke species for a future plan

    - Identify the metiers (or fleets segments if not possible) possibly concerned

    - Management measures that should be considered

Observations of the STECF

STECF notes that since the introduction of the plan, a reduction in fishing mortality (F is currently less than F_{MSY}) and an increase in SSB to sustainable levels (SSB>SSBtrigger) have been observed, in line with the objectives of the plan.

STECF notes that the majority of fishing effort (expressed as kW days fishing) deployed in the Western Channel is effort that is not being regulated by the Management plan for sole. The two regulated gear groups, beam trawls and the static nets, account for only a relatively small proportion (about 15%) of the overall deployed effort.

STECF further notes that effort prescribed under the plan has not been restrictive for any fleets, indicating that there may be the potential to increase fishing mortality above current rates if the TAC does not restrict catches. Although the likely effects of a reduction in the effort ceiling to levels that would restrict fishing effort are difficult to predict, it is possible that vessels will return inshore where fuel costs are lower and sole abundance is higher. If this were to occur, catches of undersize plaice may also increase due to increased effort in nursery areas.

Effort in kWdays as well as vessel numbers has been reduced in most of the fleets fishing in VIIe. The UK beam trawl fleet which targets sole, has been reduced through decommissioning. However, for the other fleets operating in VIIe, it is unlikely that the observed reduction in kW days and vessel numbers has been in response to the plan as they have continued to fish with unrestricted effort. Furthermore, they have only low dependence on VIIe sole and exploit resources in adjacent sea areas. For the French fleet, the decrease in kW days is mainly due to a decrease in the number of bottom trawlers fishing in VIIe.

STECF notes that the fleets exploiting sole have only been affected marginally in terms of income, either because their dependence on sole is low (trawlers, netters) or because they have been able to consolidate quota on to a smaller number of vessels and change their spatial pattern of exploitation to utilize other resources available in the area (beam trawlers).

Prices for sole and other species exploited by the fisheries have improved. Increases in prices have been important in a number of stocks. For example cuttlefish prices are now higher than previously, with landings having declined due to a decrease in stock biomass, coincident with the implementation of the sole management plan. In contrast scallops have become more abundant in the area and now represent an important component of the catches. Lastly, angler fish have decreased in abundance as assessed by fisheries independent surveys, but landings and LPUE have increased due to a spatial shift in the beam trawl fleet.

Catch stability (15% TAC constraint) has been invoked occasionally in setting the TAC for VIIe sole, however the differences between the TACs with or without any constraint were minimal. Nevertheless the constraint has increased stability in fishing opportunities by its mere presence in the plan, and may have simplified investment decisions and credit applications, ensuring continued investment and employment in the UK beam trawl fleet at least.

Conclusions of the STECF

The EWG addressed the terms of reference to the extent possible with the available resources, data and information. Nevertheless, the findings presented in the report provide the best evaluation possible at this time. STECF endorses the findings presented in the report and draws the following conclusions:

- There is little doubt that the fishery for sole has been exploited at a rate less than F_{MSY} since 2009 with biomass having been restored to a level exceeding MSY $_{Btrigger}$ prior to the formal implementation of the plan in 2006.
- The TAC restriction is the major management measure currently restricting catches of sole in the area and hence is the only effective element of the plan.
- The TAC has been consistently overshot since 2004 and although compliance regarding area misreporting of catches recently has improved, there still remains scope for further improvement regarding quota overshooting.
- More highly-disaggregated economic data are required to assess the socio-economic consequences of the management plan appropriately. A major problem is that the DCF data are aggregated by national fleets and supra-regions. It thus aggregates vessels fishing for sole in VIIe with vessels not fishing for sole (or fishing for other sole stocks) but belonging to the same DCF fleet category.
- Given the multispecies nature of all the fisheries in the area, STECF considers that efficient management of the fisheries would best be achieved through the development and implementation of a regional multi-annual fishery management plan.
- As the TACs prescribed by the plan appear to have resulted in fishing mortalities in line with the plan's objectives (F<=0.27), there appears to be no need to revise the provisions for calculating TACs.
- Given that the overall effort ceilings prescribed by the plan have not been restrictive, managers may wish to consider whether such provisions need to be retained or revised.
- Management according to the plan is entirely reliant on the availability of a suitable stock assessment to set appropriate quotas. Although currently such an assessment exists, this has not always been the case. STECF suggests that managers consider whether some form of procedure to set TAC in the absence of an acceptable assessment should be included in the plan.

6. ADDITIONAL REQUESTS SUBMITTED TO THE STECF PLENARY BY THE COMMISSION

6.1. Advice on the implementation of scientific trials for two stocks with restrictive TAC

Background

The new Common Fisheries Policy (Regulation 1382/2013) requires the progressive introduction of the landing obligation for all stocks subject to a TAC. Article 14 of Regulation 1382/2013 provides for pilot projects to be conducted in order to facilitate the introduction of the landing obligation. These are intended to fully explore practical methods for the avoidance, minimisation and elimination of unwanted catches.

Several Member States have already undertaken a number of catch quota/ FDF trials which STECF have previously evaluated and STECF have subsequently issued guidance on the design of catch quota and FDF trials (STECF PLEN 12-01).

The UK has identified two projects, the operation of a FDF trial in the West of Scotland and the improvement/ continuation of existing fishery science partnerships in the Irish Sea, where they consider low or zero TACs will make the undertaking of scientific trials more complex.

FDF trial in the West of Scotland.

For the stock of cod in ICES area VIa the TAC is currently zero, with a limited by-catch provision. The ICES advice for a total catch in 2014, based on a MSY approach is 10 tonnes. The 2012 total catch was estimated at 1632t. Current avoidance measures have not been demonstrated to reduce cod mortality below that desired to facilitate rebuilding of this stock. A FDF will develop data on the fisheries assisting future management planning .

Consequently, the UK seek a scientific TAC to be made available for cod in area VIa to enable a pilot project as foreseen in article 14(1) of Regulation 1382/2013 to take place. Further details of the UK proposal are annexed. (**Annex A**)

Maintenance and Improvement of the Scientific Assessment of cod in the Irish Sea.

The UK has identified some concerns with the quality of the data available for the stock assessment of cod in the Irish Sea, in particular data from fisheries dependant sources which has arisen from the decrease in fishing opportunities for cod .he UK has identified a number of ongoing surveys in the Irish Sea which they consider require an additional allocation of cod to continue. They report that the Fishery Science Partnership (FSP) in the Western Irish Sea terminated in 2013, and that an additional quota over and above that possible under the existing provision allowed for scientific research framework is required.

Annex A: Additional Information on FDF proposal for the West of Scotland.

ICES 2013 advice highlights that cod form aggregations, resulting in the potential for areas of high cod density in area VIa despite the low overall stock abundance. This can lead to high catches in localised areas, which results in discards due to the current bycatch provision, and risks choking the west of Scotland whitefish fishery under the future landing obligation.

In order to prepare for the landing obligation, it is therefore necessary to collate information about where/when cod are caught, as well as the species mix and economic dependency, to develop fishing plans; these plans should outline how to avoid cod (thus reducing cod mortality) whilst allowing an economic fishery to continue. The plans should then be tested under 'no discard' conditions.

Stage 1 - Contractor to develop a series of standard questions with the purpose of gaining detailed information from vessel skippers prosecuting stocks in the West Coast of Scotland. Information to be included:

1. Vessel type – length and power (Capacity)
2. Vessel gear – type and dimensions
3. Depths fished
4. Average trip length
5. Location of fishing activity
6. Location related information on target species
7. Location related information on mix of catch
8. Location information on cod caught / discarded
9. Information on the economic dependency of fishing that area at that specific time
10. Alternative fisheries known to exist at that time of year
11. Reasons for not prosecuting the alternative fishery
12. Requirements to allow any alternative fishery to be prosecuted
13. Suggested alternatives – Faroe/North Sea

Stage 2- Contractor to compile data presenting a report/map of spatial, temporal and economic information.

Stage 3- Recommendations to be developed outlining measures to avoid cod capture in area VIa whilst trying to maintain the economic fabric of the business. The recommendations will be supplied in the form of draft individual vessel fishing plans, which will incorporate both spatial and temporal elements.

Stage 4 – Volunteer vessels would use the fishing plans to trial a fully documented fishery in the West of Scotland, with the aim of reducing cod catches to the lowest possible level in a mixed fishery whilst maintaining a profitable fishery. The vessels would operate a catch quota system for a number of species (for example haddock, saithe and hake), including cod, and so would be allocated additional quota to cover catches of these species. The trial would see:

- All caught fish recorded;

- All catches of species included in the trial (including under Minimum Landing Size) retained on board, landed and counted against quota;
- Participating vessels exempted from effort controls under Article 11 of the cod recovery plan;
- Participating vessels fitted out with a fully operational CCTV and REM system and fully functioning vessel monitoring and electronic logbook system.
- Participating vessels ceasing all fishing activity in area VIa when any one of the catch quota species quota allocation is exhausted.

The final part of the trial would also aim to further the development of tools to quantify and remotely measure discarded fish.

In order to trial a Fully Documented Fishery of cod in area VIa, the UK proposes that a 370 tonnes of cod be available, on a relative stability basis, in 2014 for participating vessels. If fully caught, this would be equivalent to maintaining fishing mortality at current levels, with an 8.3% increase in SSB in 2015 compared to 2014.

Annex B: Additional Information on the improvement and maintenance of the Scientific Assessment of Cod in the Irish Sea.

The ICES benchmark assessment in 2012 identified a high mortality rate for Irish Sea cod from the available information. It also included a UK fishery science partnership survey as input to the assessment that provided valuable information on the abundance and age structure of adult cod in the Irish Sea. There are a number of data sources for the assessment of the stock, but the quality of this information has deteriorated for a number of years and in most cases will worsen in future due to more restricted fishing opportunities and the effect of new regulations.

Fisheries dependent information:

Historically the main fleet targeting cod in the Irish Sea has been the semi-pelagic TR1 fleet. This fleet ceased to conduct a directed cod fishery due to reduced fishing opportunities. The fishing method used by this fleet enables a cod fishery when the cod are also distributed in deeper water when there is very little overlap with the TR2 fleet effort distribution. Therefore loss of data collection opportunities in the TR1 fleet reduces our knowledge of the cod stock in areas outside traditional *Nephrops* grounds.

Cod are also taken as a by-catch in the TR2 *Nephrops* fishery operating in the Irish Sea. The significant effort to improve the selectivity of this fleet, primarily to reduce mortality on cod under the cod long term plan, resulted in much reduced cod catches in this fleet. The reduction of cod catches in the *nephrops* fleet particularly affects data on adult cod and may impact on our knowledge of the age structure of the stock, especially older fish.

The combined effect is much reduced sampling opportunities for cod from the commercial sector and a resulting deterioration of data and information in the assessment of the stock. Although there is still some information obtained from the TR2 fleet, the improvement in

the selection of gears deployed by the fleet and lack of seasonal overlap with cod distribution compared to a targeted whitefish fishery means that data collection is becoming more limited. This may hinder our ability to detect improvement in the cod stock. Improved data collection is vitally important to implementation of the new Common Fisheries Policy but in case rules in the Control Regulation (EU 1224/2009) will prevent adequate scientific assessment.

Fisheries independent information:

There is a significant amount of fishery independent information for this stock. Currently, there are 9 fishery independent surveys included in the stock assessment for Irish Sea cod:

- 2 Northern Ireland groundfish surveys (quarter 1 and 4)
- 2 Scottish groundfish surveys (quarter 1 and 4, surveys terminate in 2006-7)
- 2 recruitment surveys (Northern Ireland MIKnet and English beam trawl)
- 1 biomass survey (egg production, for a number of selected years)
- 2 fishery science partnership (FSP) surveys using commercial vessels, one in the eastern Irish Sea using rockhopper gear and one in the west using midwater pelagic gear

For 2014, resources and available TAC only allows for 4 of these surveys to continue, of which only one (the Northern Ireland quarter 1 survey) provide information on the abundance and population structure of adult cod. The survey deploys a rockhopper otter trawl. The information from the survey will thus be influenced by the timing and distribution of cod migration onto the spawning grounds.

An analysis of historic VMS information for the TR1 fleet and the latest tagging information shows a very distinct seasonal distribution of adult cod (Figure 1 and 2). Irish Sea cod shows a clear preference for deeper waters, which confines the geographic movement largely to the deeper waters of the North and St George's Channel. This distribution pattern also coincides with the highest abundance of cod catches from the TR1 fleet. The only exception is during the spawning season in quarter 1, when there is a higher abundance of cod in shallow areas.

These very distinct behaviour and distribution patterns of cod resulted in the development of the semi-pelagic fishing method in the Irish Sea when the cod are in deeper water and slightly off the bottom. A survey conducted with semi-pelagic gear is the only effective way to obtain information of the abundance and size distribution of adult cod in the Irish Sea. This will be essential for monitoring stock recovery and provide information on the adult population to support the current scientific assessment of the stock.

The ICES benchmark assessment identified a high mortality rate for this stock, indicated by all the available data sources, despite the reduction of fishing effort and the closure of the spawning grounds since 2000. Total mortality rates are now higher than when the stock was abundant. The source of this high mortality still remains unexplained. There are a number of possible causes of this, one of which is high natural mortality or emigration. A survey focussing on adult cod will also provide an opportunity to extend the limited tagging programme to help identifying the possible sources of unallocated mortality.

Proposal

The UK proposes that an additional 20 tonnes of cod could be made available for Fisheries Science partnership surveys to support the scientific assessment, monitor cod recovery and provide opportunities to investigate the sources of the high unaccounted mortality estimated for this stock.

Two surveys will be conducted:
Fishery Science partnership survey in the western Irish Sea in quarter 1, following a similar methodology and timing than the survey that was terminated in 2013. The existing survey series that started in 2004 can thus be continued and maximises the value of including this as part of the fishery independent information for the stock assessment. The survey will take place during the spawning season to monitor abundance and population structure of the spawning migration.

A second stratified survey to be conducted in the summer to complement the sentinel fishery initiative conducted by the UK for the last two years. This is during a time of the year when the adult cod are primarily concentrated in the deeper waters. In additional to providing an abundance index, a survey during this time of year will also enable the investigation of migration (resident versus migratory fish) and mortality through a tagging programme.

Terms of Reference

STECF are asked to consider the two requests submitted by the UK and comment on the likely impact of allocating a quota of 370t for the VIa Cod stock in the West of Scotland for vessels to participate in a Fully Documented Fisheries trial and an additional 20t of Cod in the Irish Sea to the UK to allow the UK to operate a FDF trial or continuing FSP surveys in terms of the objective of reaching FMSY by 2015 for these stocks.

STECF are further requested to comment on the usefulness of these proposed surveys / trials in relation to improving the quality of the assessment of the stocks concerned.

STECF response

Cod in Division VIa (West of Scotland)

Likely effects of allocating extra quotas

STECF notes that, according to ICES, fishing mortality of cod in Division VIa is high, that the spawning stock biomass has been below B_{lim} since 1997, has remained very low, well below B_{lim} since 2006 and that recruitment is considered impaired. ICES advises on the basis of the MSY approach, that there should be no directed fisheries in 2014 and by-catch and discards should be minimized.

STECF also notes that management measures taken thus far have not recovered the stock and not constrained catches. In 2012, total catches (landing and discards) have been estimated at 1632t, well above the agreed TAC (0t).

STECF notes that under the proposed fully documented catch quota scheme (everything landed and accounted for) a TAC of 370 tonnes (of which a proportion would be allocated to the UK FDF participating vessels on a relative stability basis) would lead to a fishing mortality slightly above F_{MSY} (set at F = 0.19) and well below current fishing mortality (estimated at F = 0.92). Even though the quota allocation sought by the UK under a FDF trial is significant for a depleted stock such as West of Scotland cod for which no directed fishery is advised by ICES, it could potentially lead, **in the case of perfect implementation** (i.e., assuming that no catches in excess of the TAC of 370t is taken)**,** to a decrease in F and an increase in SSB. This of course assumes that the whole quota is operated under a catch quota scheme which is very unlikely to be the case.

According to the proposal, the participation in the Fully Documented Fishery trial will be done on a voluntary basis. The fishery will thus be split into two vessel "categories" : one with a proportion (currently unknown) of UK vessels involved in the FDF trial and another with non-FDF vessels from UK and other countries catching cod. It can reasonably be expected that the vessels involved in the FDF trial will comply with the total catch of cod allocated to them (a proportion of 370 tonnes currently not known). However, in a fishery in which, as mentioned above, no management measures have been able to constrain the catches in recent years, this is unlikely to be the case with the non-FDF part of the fishery and the 370 t TAC is highly likely to be exceeded. Depending on the extent of the overshoot, recovery of the stock would be impaired and total mortality would be greater than that implied by a 370 t TAC.

STECF further notes that according to the proposal, participating vessels will be exempted from effort controls under Article 11 of the cod recovery plan. STECF reiterates its previous comments that partial exemptions from the effort regimes under CQ/FDF schemes, could potentially cause an increase in fishing mortality on stocks other than those for which they have catch quota. This is particularly likely if the FDF vessels deploy additional fishing effort in order to take their catch quota.

STECF concludes that, if there is a high degree of compliance both from FDF and non-FDF vessels and a low discard level in the non-FDF, a TAC of 370t may not have an adverse impact the recovery of the stock (biomass is predicted to increase by around 70%). However STECF does not have enough information on the degree of future compliance and discarding and is thus unable to comment on the likely impact the TAC requested for this trial may have on the West of Scotland cod stock or on reaching F_{MSY} by 2015.

Usefulness of the proposed trial in relation to improving the quality of the assessment of the stock

Based on past experiences, STECF considers that FDF trials usually result in better estimates of catch from participating vessels. STECF considers that the current proposal should provide valuable information on total catch, by-catch and potential choke species of participating vessels, which may be not only be useful for stock assessments but also for the development of management measures for the fishery, particularly in relation to the landing

obligation. STECF notes however that vessels fishing under FDF will alter their fishing strategy compared to non-FDF vessels and thus information collected under the FDF may not be representative of the fishery as a whole. The usefulness of the data collected during the trial will thus depend on the proportion of vessels involved in the scheme (which is unknown at present) and also on the information which becomes available on the non-FDF vessels. STECF also notes that the provision of information in the trial relating to the implementation of the landing obligation in a mixed fishery context may be useful for other fisheries and stocks.

STECF notes that the prospects of constraining the catches to 370 tonnes and limiting discards would be enhanced if the FDF trial were to include a broad range of vessels including those from other Member States. Given that such an inclusive approach would also provide more broad-based information relating to management measures such as the landing obligation, STECF suggests that opportunities for such a scheme should be discussed between relevant players.

Cod in Division VIIa (Irish Sea)

Likely effects of allocating extra quotas

STECF notes that according to ICES, fishing mortality in recent years is declining and uncertain but that total mortality remains very high. The spawning-stock biomass has declined ten-fold since the late 1980s. The spawning biomass increased from 2010 but remains below B_{lim}. Recruitment has been low for the last ten years. ICES advises on the basis of the MSY approach that there should be no directed fisheries and bycatch and discards should be minimized in 2013 and 2014.

STECF also notes that total catches are unknown due to little information available on discards and that landings were estimated at 200 t in 2012. However, total removals estimated by the assessment model is 2 to 3 times the reported landing suggesting a large amount of unaccounted catches.

STECF considers that the additional 20 tonnes of cod which represents 10% of the current reported landing and probably a lesser proportion of the total catches is unlikely to have a detectable effect on the fishing mortality on Irish Sea cod or to represent a significant additional risk to the stock.

Usefulness of the proposed trial in relation to improving the quality of the assessment of the stock

STECF first notes that 9 independent surveys were used in the last stock assessment of Irish Sea cod, of which only 4 may be conducted in 2014 due to reduced financial resources for the scientific surveys and lack of available TAC for the 2 science partnership surveys (FSP).

STECF notes that the FSP survey conducted in the first quarter of the year in the western Irish Sea has been carried out since 2004 and has been used in recent assessments. The main objective of this survey is to develop a time-series of data to track year-on-year changes in abundance, population structure and distribution of several species (cod, haddock and whiting). STECF considers that this survey can provide useful information on the abundance of larger cod and on the age structure of cod from the western Irish Sea and as such would complement information provided by the other scientific surveys.

The objectives and usefulness of the second survey which UK proposes to conduct in summer is less clear to STECF. It is for instance difficult to evaluate from the information available, what additional information on the abundance of large cod this second survey will provide compared with the FSP survey mentioned above. STECF notes that another stated objective of the survey is to investigate migration (resident versus migratory fish) and mortality through a tagging programme. STECF notes however that according to ICES, "*recent tagging experiments have shown that the majority of cod remains within the management area. The experiments also showed that migration of cod out of the Irish Sea could not account for the high mortality rates and, consequently, the estimated level of unallocated mortality*". STECF thus considers that investigating migration may not be a priority to improve the assessment of this stock. STECF further notes that tagging can provide information on mortality rates (natural mortality and fishing mortality) provided that a dedicated experiment is carried out and a large number of fish are tagged and released. STECF considers that tagging in an opportunistic way during a fishery science partnership survey may thus not be the best way to estimate mortality rates for the stock. STECF concludes that to estimate mortality and emigration rates, a dedicated large scale experiment would be more appropriate.

6.2. Request for a STECF opinion on the biological situation of deep-sea stocks and the state of play of their fisheries in CECAF divisions 31.1.1, 34.1.2 and 34.2

Background

Fishing opportunities for EU vessels for certain deep-sea fish stocks will be fixed at the end of this year in the Council. The Commission will make its proposal according to the most updated scientific advice. The advice is mainly coming from ICES but the Commission also counts on the opinion of the STECF when reviewing the ICES advice. Certainly, for one stock, Black scabbard fish in international waters of CECAF 34.1.2 (BSF/C3412-), the STECF is biannually requested to give advice on the biological situation of the stock.

The Commission is currently discussing in the Council its proposal setting a new deep-sea access regime for fisheries in the North-East Atlantic (COM(2012)371 final). By virtue of this regulation the Council will have the choice to set fishing opportunities in basis of effort only. Notwithstanding, this is a scenario not foreseen feasible for setting fishing opportunities in near future. Therefore, the Commission will make its proposal traditionally, i.e., setting TACs for certain deep-sea stocks for the period 2015-2016.

In order to improve the state, knowledge and monitoring of the EU fisheries in the Northern fishing grounds of CECAF regulatory area, STECF is requested to explore the situation of both the fisheries targeting deep-sea stocks and the biologic situation of the main stocks.

Request to STECF

1 STECF is requested to gather all the information available for the concerned deep-sea species listed below and the state of play of the fisheries targeting these species in CECAF divisions 31.1.1, 34.1.2 and 34.2. STECF is requested to evaluate such information to determine and advise if there is a need to setting management measures, for example setting TACs by individual stocks.

2 In particular, STECF is requested to provide advice as for Black scabbard fish and deep water sharks harvested in waters of CECAF 34.1.1, 34.1.2 and 34.2.

3 In case of scientific uncertainty with regard to the above, identify what are the sources of information that should be provided to achieve the goals 1 and 2 and, if any, what are the difficulties that the STECF has found for not having access of that information.

List of deep-sea species(*)

Scientific name	Common name
Centrophorus lusitanicus	Lowfin gulper shark
Centrophorus granulosus	Gulper shark
Centrophorus squamosus	Leafscale gulper shark
Centroscyllium fabricii	Black dogfish
Centroscymnus coelolepis	Portuguese dogfish
Centroscymnus crepidater	Longnose velvet dogfish
Dalatias licha	Kitefin shark
Etmopterus princeps	Greater lanternshark
Apristuris spp	Iceland catchark
Chlamydoselachus anguineus	Frilled shark
Deania calcea	Birdbeak dogfish
Galeus melastomus	Blackmouth dogfish
Galeus murinus	Mouse catshark
Hexanchus griseus	Bluntnose six-gilled shark
Etmopterus spinax	Velvet belly
Oxynotus paradoxus	Sailfin roughshark (Sharpback shark)
Scymnodon ringens	Knifetooth dogfish
Somniosus microcephalus	Greenland shark
Alepocephalidae	Smoothheads (Slickheads)
Alepocephalus Bairdii	Baird's smoothhead
Alepocephalus rostratus	Risso's smoothhead
Aphanopus carbo	Black scabbardfish
Argentina silus	Greater silver smelt
Beryx spp.	Alfonsinos
Chaceon (Geryon) affinis	Deep-water red crab
Chimaera monstrosa	Rabbit fish (rattail)
Hydrolagus mirabilis	Large-eyed rabbitfish (Ratfish)

Rhinochimaera atlantica	Straightnose rabbitfish
Coryphaenoides rupestris	Roundnose grenadier
Epigonus telescopus	Black cardinalfish
Helicolenus dactilopterus	Bluemouth (Bluemouth redfish)
Hoplostethus atlanticus	Orange roughy
Macrourus berglax	Roughhead grenadier (Rough rattail)
Molva dypterigia	Blue ling
Mora moro *Antimora rostrata*	Common mora Blue antimora (Blue hake)
Pagellus bogaraveo	Red (blackspot) seabream
Phycis blennoides	Greater Forkbeard
Polyprion americanus	Wreckfish
Reinhardtius hippoglossoides	Greenland halibut
Cataetyx laticeps	
Hoplosthetus mediterraneus	Silver roughy (Pink)
Macrouridae other than Coryphaenoides rupestris and Macrourus berglax	Grenadiers (rattails) other than roundnose grenadier and roughhead grenadier
Nesiarchus nasutus	Black gemfish
Notocanthus chemnitzii	Snubnosed spiny eel
Raja fyllae *Raja hyperborea* *Raja nidarosiensus*	Round skate Arctic skate Norwegian skate
Trachyscorpia cristulata	Spiny (deep-sea) scorpionfish
Brosme brosme	Tusk
Conger conger	European conger
Lepidopus caudatus	Silver scabbard fish (Cutless fish)
Lycodes esmarkii	Greater Eelpout
Molva molva	Ling
Sebastes viviparus	Small redfish (Norway redfish)
Dissostichus eleginoides	Patagonian toothfish
Phycis phycis	Forkbeard
Cyclopterus lumpus	
Dissostichus mawsoni	Antarctic toothfish
Hippoglossus hippoglossus	Atlantic halibut
Paralithoides camstchaticus	King crab
Pandalus borealis	Northern prawn

(*) List extensive, not only referred to CECAF Regulatory Area

STECF response

The response provided below is built upon the information provided in STECF 2010 Plen-10-03 report and STECF 2012 Plen-12-03 report which dealt with black scabbard fish in waters around Madeira and fish stocks of Outermost Regions (Madeira and Azores).

The CECAF areas 34.1.1, 34.1.2 and 34.2 include waters around Madeira and Canary Islands and partially the southern part of the Economic Exclusive Zone of Azores, which is the Northern part of wider CECAF area (Figure 6.2.1). Most of the Azorean maritime territory is located within ICES Division X and, thus, all information compiled for Azorean fisheries is considered to belong to ICES statistical subarea X.

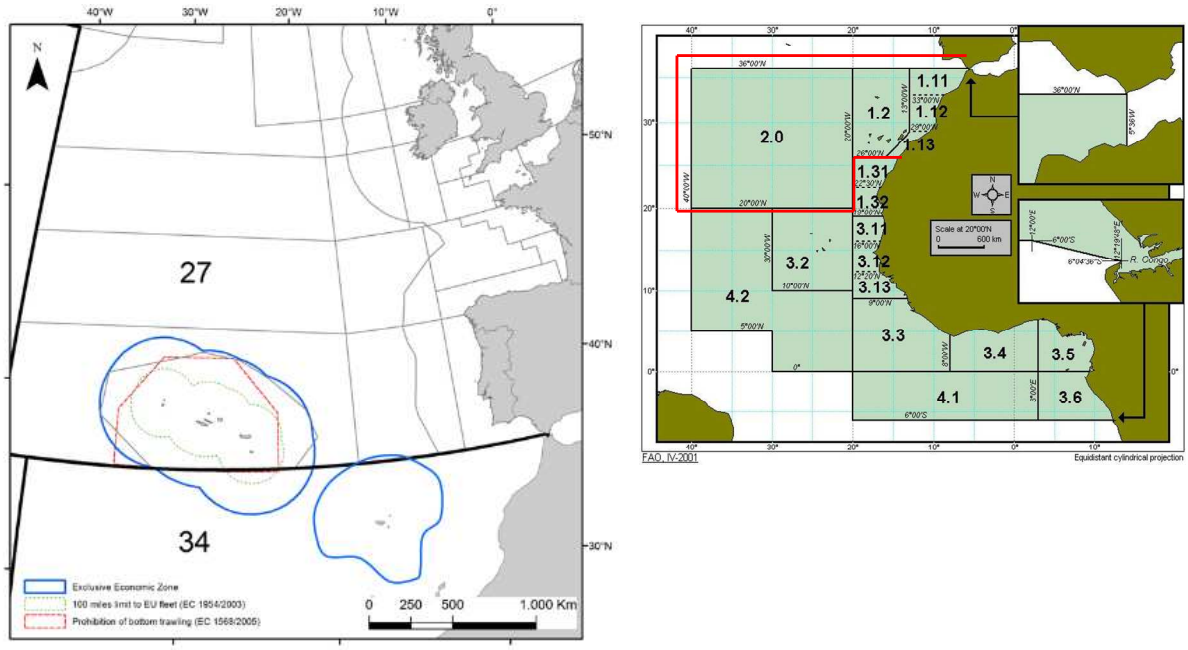

Figure 6.2.1. CECAF areas 34.1.1, 34.1.2 and 34.2

Specific STECF responses to the individual items in the Terms of Reference are given below.

1.- STECF is requested to gather all the information available for the concerned deep-sea species listed below and the state of play of the fisheries targeting these species in CECAF divisions 31.1.1, 34.1.2 and 34.2. STECF is requested to evaluate such information to determine and advise if there is a need to setting management measures, for example setting TACs by individual stocks.

There is very little information available for the fisheries and existing management advice available for the species covered by this request, for CECAF area 34.1.1, 34.1.2 and 34.2. However, there is some fishery information and management advice covering the Azores

region (ICES Subarea X, Divisions Xa1, Xa2) and the East Atlantic wider area (including Subarea IX), but only for species of commercial importance specific to those Subareas. In the absence of any data for CECAF area 34.1.1, 34.1.2, and 34.2; the advice as it is available for stocks and fisheries occurring in ICES subarea X and subarea IX, is the best available, due to similarities of the fisheries in those areas. A summary of the advice for such stocks and fisheries is given in the table below:

			Fishery information and Management Advice available	
Scientific name	Common name	Advice Source	ICES area	CECAF 34.1.1, 34.1.2, and 34.2
Centrophorus lusitanicus *Centrophorus granulosus* *Centrophorus squamosus* *Centroscyllium fabricii* *Centroscymnus coelolepis* *Centroscymnus crepidater* *Dalatias licha* *Etmopterus princeps* *Apristuris spp* *Chlamydoselachus anguineus* *Deania calcea* *Galeus melastomus* *Galeus murinus* *Hexanchus griseus* *Etmopterus spinax* *Oxynotus paradoxus* *Scymnodon ringens* *Somniosus microcephalus*	Lowfin gulper shark Gulper shark Leafscale gulper shark Black dogfish Portuguese dogfish Longnose velvet dogfish Kitefin shark Greater lanternshark Iceland catchark Frilled shark Birdbeak dogfish Blackmouth dogfish Mouse catshark Bluntnose six-gilled shark Velvet belly Sailfin roughshark (Sharpback shark) Knifetooth dogfish Greenland shark	EU FP7 Deepfishman ICES WG DEEP ICES WG on Elasmobranchs	Genetic studies suggest that there is no genetic population structuring in the NE Atlantic for *C. squamosus* and *C. coelolepis* (Verissimo et al., 2011, 2012) so that the management by large area is appropriate. Because of the difficulties in assessing quantitatively elasmobranch populations it is unlikely that population dynamic modelling can be achieved in the absence of (i) fisheries landing data, and (ii) age composition. Therefore, the monitoring and management of deep-water sharks should be carried out using populations indicators derived from surveys and on-board observations. Monitoring and management are required to assess whether sharks populations recover under the current fishing pressure, and to take management actions if not. The most appropriate option would be to monitor abundance of sharks and manage fisheries at scale corresponding to the area of distribution of the main deep-water fisheries. More information on deepwater shark for Northeast Atlantic and ICES Subarea X (Azores) in ICES WG on Elasmobranch reports. Low bycatch and discards levels (around 3 and 5 %) in Azores deepwater longline targeting black scabbardfish (Machete et al., 2011) mainly *C. squamosus* and in Azores bottom longline around 135 tonnes yearly (Silva et al., 2011) Deepsea shark TAC 0 in Northeast Atlantic and ICES Subarea X (Azores) (EC Reg 1262/2012).	No much information of deep-water sharks. Bycatch and discards rates are considered low in the deep longline fishery for black scabbardfish fishery. 0 TAC for deepwater shark in Madeira since 2008 (Morato, 2012). Low bycatch (<2%) in Spanish deepwater trawl fishery for hake off Mauritania (Fernández et al., 2004). Deepsea shark bycatch ranged from 4 to 182 tonnes between 1992 and 2001.
Alepocephalidae	Smoothheads	WG DEEP	No information for CECAF Area or ICES Subarea X	No information for CECAF Area.

Alepocephalus Bairdii *Alepocephalus rostratus*	(Slickheads) Baird's smoothhead Risso's smoothhead	partially	(Divisions; Xa1, Xa2) and IX.	Bycatch and discards rates are considered low in the deep longline fishery for black scabbardfish fishery (Morato 2012)
Aphanopus carbo	Black scabbardfish	WG DEEP Various reports.	See specifically point 2 of the response.	
Argentina silus	Greater silver smelt	WG DEEP EU FP7 Deepfishman	ICES acknowledge there is considerable uncertainty over stock structure in the northeast Atlantic and recommend a further appraisal of the oceanographic conditions, genetic characteristics, morphometric and panmictic characteristics (ICES 2010). The current structure for greater silver smelt is that ICES Subareas I, II, IV, VI, VII, VIII, IX, X, XII and XIV and Divisions IIIa and Vb, are treated as a single assessment unit. It is therefore likely this stock assessment unit and advice will extend at least to the northern part of CECAF. The advice from ICES in 2011, for 2012/13 is "The fishery should not be allowed to expand, and a reduction in catches should be considered, in light of survey data indicating a recent decline."	No information for CECAF area
Beryx spp.	Alfonsinos	WG DEEP EU FP7 Deepfishman	Total landings stabilize around 377 t since 2003 in ICES Subarea X. ICES Advice for 2013 and 2014 was: "Catches should be no more than 280 tonnes". As a consequence of their spatial distribution associated with seamounts, their life history and their aggregation behaviour, alfonsinos are considered to be prone for overexploitation by trawl fishing; they can only sustain low rates of exploitation. Deep water trawling is prohibited in Azorean box of 100 miles limiting fishing to vessels registered in the Azores created in 2003 under the CFP (EC Reg. 1954/2003) (Morato 2012). TAC 296 tones East Atlantic (EC Reg 1262/2012) for 2014.	Deep water trawling is prohibited in Madeira (EC regulation EC 1568/2005) and the Azorean box of 100 miles limiting fishing to vessels registered in the Azores created in 2003 under the CFP (EC Reg. 1954/2003)
Chaceon (Geryon) affinis	Deep-water red crab	WG DEEP partially	No information for CECAF Area or ICES Subarea X (Divisions; Xa1, Xa2) and IX.	
Chimaera monstrosa	Rabbit fish (rattail)	WG DEEP	No information for CECAF Area or ICES Subarea X (Divisions; Xa1, Xa2) and IX.	

Hydrolagus mirabilis *Rhinochimaera atlantica*	Large-eyed rabbitfish (Ratfish) Straightnose rabbitfish	partially		
Coryphaenoides rupestris	Roundnose grenadier	WP DEEP	In Subareas VIII, IX, X, XII and XIV the TAC was set at 3581 t in 2013 and 3223 t for 2014. This TAC covers areas with minor roundnose grenadier catches (VIII, IX and X), part of this assessment area (Division XIIb, the western slope of the Hatton bank) and the Mid-Atlantic Ridge (Divisions XIIa,c and Subarea XIV). The main countries having quotas allocations under this TAC are Spain and Poland. TAC 3223 tones East Atlantic (EC Reg 1262/2012) for 2014.	
Epigonus telescopus	Black cardinalfish	WG DEEP partially	No information for CECAF Area or ICES Subarea X (Divisions; Xa1, Xa2) and IX.	
Helicolenus dactilopterus	Bluemouth (Bluemouth redfish)	WG DEEP partially	No information for CECAF Area or ICES Subarea X (Divisions; Xa1, Xa2) and IX.	
Hoplostethus atlanticus	Orange roughy	WG DEEP EU FP7 Deepfishman	The fishing grounds so far discovered in the North Atlantic have appeared to support relatively small aggregations of fish, usually associated with seamounts and other topographical features. Fisheries have been conducted in Subareas Va, Vb, VIII, X, and XII. Most started in the early 1990s, the exception being Subarea X which started in 1996. In the last seven years, fisheries are mainly occurring in X and XII, with sporadic catches in Va, Vb and IX. The ICES advice for 2013 and 2014 is: Due to its very low productivity, orange roughy can only sustain very low rates of exploitation. Currently, it is not possible to manage a sustainable fishery for this species. ICES recommends no directed fisheries for this species and bycatches in mixed fisheries should be kept as low as possible. The conclusion from the Deepfishman project was that the sustainable management of orange roughy could only be done at the scale of every small	

			aggregation. In each aggregation a fishing mortality not exceeding that producing MSY, i.e. F between 0.04 and 0.05 should be applied to keep the biomass of every aggregation at or above a B_{MSY} level. The techniques to assess the biomass of every aggregation in order to set the catch level associated with the target (below or equal to F_{MSY}) remain to be defined. In the current technological context, the small aggregations of orange roughy that occur in the NE Atlantic cannot be managed sustainably. TAC 0 in East Atlantic including ICES Div IX and X (Azores) (EC Reg 1262/2012).	
Macrourus berglax	Roughhead grenadier (Rough rattail)	WG DEEP partially	No information for CECAF Area or ICES Subarea X (Divisions; Xa1, Xa2) and IX.	
Molva dypterigia	Blue ling	WG DEEP	No information for CECAF Area or ICES Subarea X (Divisions; Xa1, Xa2) and IX (In those ICES area few catches as bycatch in other fisheries).	
Mora moro *Antimora rostrata*	Common mora Blue antimora (Blue hake)	WG DEEP partially	Mora are caught in targeted and mixed species longline fisheries in Subareas VIII, IX and X. Landings in Subarea X since 2004 have been about 60 tonnes. No quotas are set for this species in EC waters or in the NEAFC Regulatory Area. None of these species are included in Appendix I of Council Regulation (EC) No 2347/2002 meaning that vessels are not required to hold a deep-water fishing permit in order to land them; they are therefore not necessarily affected by EC regulations governing deep-water fishing effort.	
Pagellus bogaraveo	Red (blackspot) seabream	WG DEEP EU FP7 Deepfishman	ICES considered three different components for this species, namely (i) Areas VI, VII, and VIII, (ii) Area IX, and (iii) Area X (Azores region), (ICES, 1996; 1998). Given the known distribution of the species by depth, ICES Subarea X can effectively be considered as a separate assessment unit. Historically, landings increased from 400 t at the start of the eighties to approximately 1000 t at the start of the nineties. Between 1990 and 2009 the annual landings have fluctuated around 1000 t, with a peak in 2005. During the last three years (2011 – 2013) the landings decreased significantly to 687 t,	

			624 t and 613 t which correspond to about 60%, 55% of the actual TAC (1136 t). In general a continuous decrease has been observed since 2005. The ICES advice for Subarea X for 2013 and 2014 is: "Catches should not be more than 400 tones". TAC for 2013 and 2014 was set in 1022 and 920, respectively.	
Phycis blennoides	Greater Forkbeard	WG DEEP EU FP7 Deepfishman	Minor quantities of *Phycis blennoides* are landed by Portugal in Subarea X. Landings peaked at 136 t in 1994 and 91 t in 2000. Since then landings have continuously decreased with the lowest landing recorded in 2012 (6 t). *P. blennoides*, typically represents less than 1% of total deep-water landings in the last three years, and can mainly be considered as bycatch in this Subarea. TAC 54 tonnes in ICES Div X (Azores) (EC Reg 1262/2012).	
Polyprion americanus	Wreckfish	WG DEEP partially	Wreckfish are caught in targeted and mixed species longline fisheries in Subareas VIII, IX and X. The landings in the last 3 years (2010 – 2012) from Subarea X have been about 250 tonnes per year. No quotas are set for this species in EC waters or in the NEAFC Regulatory Area. None of these species are included in Appendix I of Council Regulation (EC) No 2347/2002 meaning that vessels are not required to hold a deep-water fishing permit in order to land them; they are therefore not necessarily affected by EC regulations governing deep-water fishing effort.	
Reinhardtius hippoglossoides	Greenland halibut		No information for CECAF Area or ICES Subarea X (Divisions; Xa1, Xa2) and IX.	
Cataetyx laticeps			No information for CECAF Area or ICES Subarea X (Divisions; Xa1, Xa2) and IX..	
Hoplosthetus mediterraneus	Silver roughy (Pink)		No information for CECAF Area or ICES Subarea X (Divisions; Xa1, Xa2) and IX.	
Macrouridae other than Coryphaenoides rupestris and Macrourus berglax	Grenadiers (rattails) other than roundnose grenadier and roughhead grenadier		No information for CECAF Area or ICES Subarea X (Divisions; Xa1, Xa2)	
Nesiarchus nasutus	Black gemfish		No information for CECAF Area or ICES Subarea X (Divisions; Xa1, Xa2) and IX.	
Notocanthus chemnitzii	Snubnosed spiny eel		No information for CECAF Area or ICES Subarea X (Divisions; Xa1, Xa2) and IX.	

Raja fyllae *Raja hyperborea* *Raja nidarosiensus*	Round skate Arctic skate Norwegian skate		No information for CECAF Area or ICES Subarea X (Divisions; Xa1, Xa2) and IX.	
Trachyscorpia cristulata	Spiny (deep-sea) scorpionfish		No information for CECAF Area or ICES Subarea X (Divisions; Xa1, Xa2) and IX.	
Brosme brosme	Tusk	WG DEEP EU FP7 Deepfishman	No information for CECAF Area or ICES Subarea X (Divisions; Xa1, Xa2) and IXa	
Conger conger	European conger		No information for CECAF Area or ICES Subarea X (Divisions; Xa1, Xa2) and IX.	
Lepidopus caudatus	Silver scabbard fish (Cutless fish)	WG DEEP partially	Silver scabbardfish are caught in targeted and mixed species longline fisheries in Subareas VIII, IX and X. The standardized abundance index for Silver scabbard fish in the Azores longline survey declined between 1995 and 2000 and has remained at very low levels since then with landings in 2011 and 2012 being 148 and 271 tonnes, respectively. Mean length has also declined across the time-series. No quotas are set for this species in EC waters or in the NEAFC Regulatory Area. None of these species are included in Appendix I of Council Regulation (EC) No 2347/2002 meaning that vessels are not required to hold a deep-water fishing permit in order to land them; they are therefore not necessarily affected by EC regulations governing deep-water fishing effort.	
Lycodes esmarkii	Greater Eelpout		No information for CECAF Area or ICES Subarea X (Divisions; Xa1, Xa2) and IX.	
Molva molva	Ling	WG DEEP EU FP7 Deepfishman	No information for CECAF Area or ICES Subarea X (Divisions; Xa1, Xa2)) and IX (In those ICES area few catches as bycatch in other fisheries).	
Sebastes viviparus	Small redfish (Norway redfish)		No information for CECAF Area or ICES Subarea X (Divisions; Xa1, Xa2) and IX.	
Dissostichus eleginoides	Patagonian toothfish		No information for CECAF Area or ICES Subarea X (Divisions; Xa1, Xa2) and IX.	
Phycis phycis	Forkbeard		No information for CECAF Area or ICES Subarea X (Divisions; Xa1, Xa2) and IX.	
Cyclopterus lumpus			No information for CECAF Area or ICES Subarea X (Divisions; Xa1, Xa2) and IX.	
Dissostichus mawsoni	Antarctic toothfish		No information for CECAF Area or ICES Subarea X (Divisions; Xa1, Xa2) and IX.	
Hippoglossus hippoglossus	Atlantic halibut		No information for CECAF Area or ICES Subarea X (Divisions; Xa1, Xa2) and IX.	
Paralithoides camstchaticus	King crab		No information for CECAF Area or ICES Subarea X (Divisions; Xa1, Xa2) and IX.	
Pandalus borealis	Northern prawn		No information for CECAF Area or ICES Subarea X (Divisions; Xa1, Xa2) and IX.	

STECF conclusions

STECF concludes that the information available for stock structure, catches, biology, and population status of the species listed above and occurring in CECAF divisions 34.1.1, 34.1.2 and 34.2 are very scarce or non-existent, which limits the ability of STECF to provide a comprehensive response to this request.

STECF observes that the bycatch in the deep longline fishery targeting black scabbard fish in Madeira (CECAF 34) as well as in Azores (ICES Subarea X) and Portugal mainland (ICES Subarea IX) is very low (Morato 2012), however, STECF did not have access to any information about bycatch of industrial fisheries operating in International waters of CECAF area.

2.- In particular, STECF is requested to provide advice as for Black scabbard fish and deep water sharks harvested in waters of CECAF 34.1.1, 34.1.2 and 34.2.

Stock structure

The stock structure of Black scabbard fish was investigated in the Southeast Atlantic (Madeira, Azores and Portuguese waters) during the APHACARBO project (Gordo 2009 and references therein). The stock structure was investigated using a combination of methodologies including life history parameters, otolith shape analysis, parasites, landings-and-effort data, genetics and contaminants.

This project concluded that the majority of the techniques used showed the existence of different black scabbard fish population units in the three study areas, (mainland Portugal, Azores and Madeira) or at least between two of them, namely mainland Portugal and Madeira (Gordo et al., 2009). However, the project also recommended that further genetic techniques be used in the future to complement the results found by this project.

The fish caught off Madeira and Azores (and off mainland Portugal) are generally larger than those caught in more northerly areas off Scotland and Ireland; which are mainly immature fish. This has supported the hypothesis of a single spawning stock around Madeira, which with Canary Islands are the only known spawning areas of this species in the East Atlantic (Gordo et al., 2009). The possible migration of pre-adults caught to the west of the British Isles to the south in combination with results from morphometric and stable isotopes suggested that black scabbardfish from the west of the British Isles, west Portugal and Madeira may form one single panmitic population (Longmore et al., 2010).

STECF observed that the stock structure of black scabbarfish is not clear in the distributional range of the species in the east Atlantic. STECF also notes that, for stock assessment and fishery advice, ICES currently considers three assessment units, namely (i) northern (Divisions Vb and XIIb and Subareas VI and VII), (ii) southern (Subareas VIII and IX), and (iii) all other areas (Divisions IIIa and Va Subareas I, II, IV, X, and XIV). Although ICES X area overlaps with northern part of CECAF 34, STECF notes that the population in CECAF area 34.1.1, 34.1.2, and 34.2 is treated as a separate stock unit.

STECF concludes that further stock identity and migration studies are needed to confirm current understanding of the stock structure in the ICES area and adjacent CECAF area 34.

The Fisheries

There are a number of black scabbard fisheries in different areas, such the Northern Europe (ICES subareas II, IV, V, VI and VII combined), continental Portugal (mainly ICES IXa), Azores (ICES X) and Madeira waters (CECAF 34.1.2).

The Northern Europe fisheries are characterised by the fact that *A. carbo* can be considered a by catch in the trawl fisheries in these fisheries. In Subareas VI, VII, and XII, and Division Vb, black scabbard is mainly taken in mixed trawl fisheries along with roundnose grenadier and sharks.

In the waters off mainland Portugal, black scabbard is taken in a targeted longline fishery that started in the late 1980´s. The fleet comprised small artisanal vessels (Bordalo-Machado et al., 2009). The number of vessels in the fleet reached a maximum in 1986 (28), decreased to 15 in 2004 and, at present, fleet size remains below 20, with more than 95% of the vessels registered in the port of Sesimbra. Fishing takes place on hard bottoms along the Portuguese continental slopes at depths ranging from 800 to 1450 m. The catches increased from late 80s to highest historic level of around 4,500 tonnes in mid-90s and decreased thereafter to 2,500 tonnes between 2000 and 2006. Catches increased to levels around 3,500 tonnes in 2007 to be maintained at that level in recent years (Figure 6.2.2).

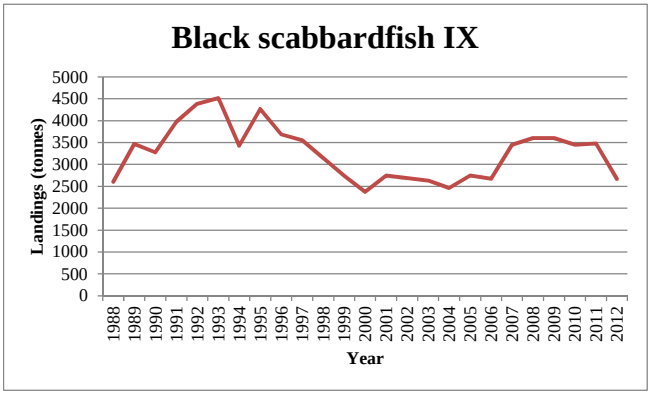

Figure 6.2.2. Trends in landings of black scabbardfish in ICES subarea IX

In Azores, a drifting deep-water longline fishery targets black scabbardfish (Morato 2012). This fishery is still in an experimental phase in the Azores and landings are small (Figure 6.2.3). On average, for the past 10 years yearly landings were around 50 tonnes (< 1% of total landings) with a peak in 2005 of about 320 tonnes (3.3% of total landings) (Morato 2012). Landings from ICES Subarea X increased since 2006 to reach historic highest levels at around 462 tonnes in 2012 (ICES 2013). According to a report prepared by seaExpert (2012) there are about 10 fishing vessels with a mean length of 14m operating the drifting deep-water longline in the Azores.

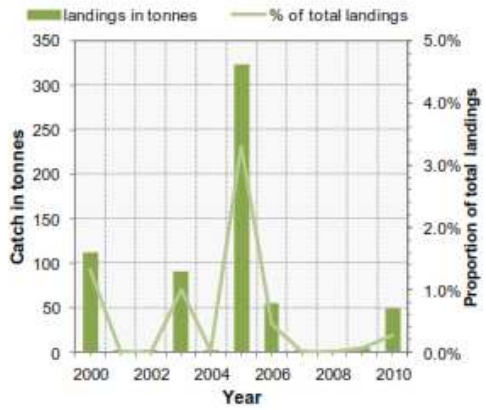

Figure 6.2.3. Landings of black scabbardfish from waters around the Azores

In Madeira CECAF 34.1.2 area, the black scabbarfish longline fishery is one of the oldest recorded deep-water fisheries dating back to the mid 17th century. The drifting deep-water longline in Madeira Islands is very specialized targeting black scabbardfish (Morato 2012). The fishery takes place year round in CECAF area 34.1.2 largely inside the Madeira Exclusive Economic Zone. The number of vessels dedicated to this fishery peaked in 1988 with a total of 95 vessels. After that period the fleet suffered a considerable reduction, mainly between 1990 and 1995, when the number of vessels dropped from 84 to 44 (Bordalo-Machado et al., 2009). Between 1998 and 2000, the fleet comprised ca. 40 vessels (on average 13 m LOA) (Reis et al., 2001). Fleet size continued to decrease to around 15 vessels in recent years (2009-2010). Annual catches represent on average 48% of all landings in Madeira (Figure 6.2.4). However, landings of black scabbardfish have steadily declined since 1998 and continued declining during the period between 2000 and 2012. In recent years total landings ranged from 4,200 tonnes in 2000 to 1,800 tonnes in 2010.

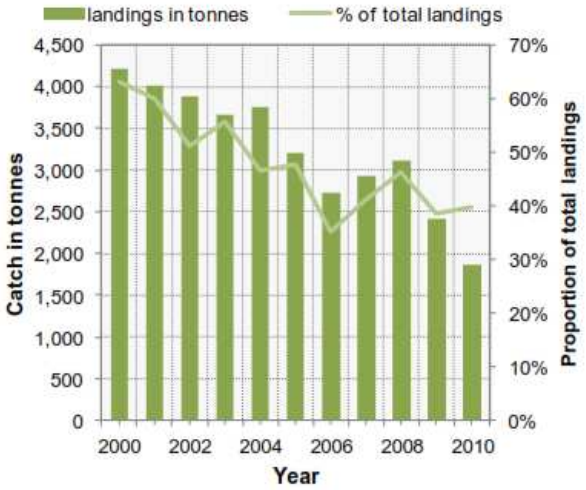

Figure 6.2.4. Trends in landings of black scabbardfish into Madeira

No information on fisheries statistics was available to STECF for other areas, such as International waters, of CECAF area 34.1.1., 34.1.2, 34.2

STECF notes that longline fisheries from the Portuguese EEZ (Madeira, Azores and Portugal mainland) exhibited similar catch and fishing capacity trends, i. e. fisheries showing an increase in fleet size between the late 1980s and the early 1990s followed by a decrease from the late 1990s to the late 2000s (Figure 6.2.5). STECF also notes that the most recent reduction was closely accompanied by an investment in technology with larger vessels with higher engine power and new equipment, however, the vessels can still be considered artisanal or semi-industrial. STECF observed that this increase in vessel dimensions and power is more pronounced in the mainland fishery.

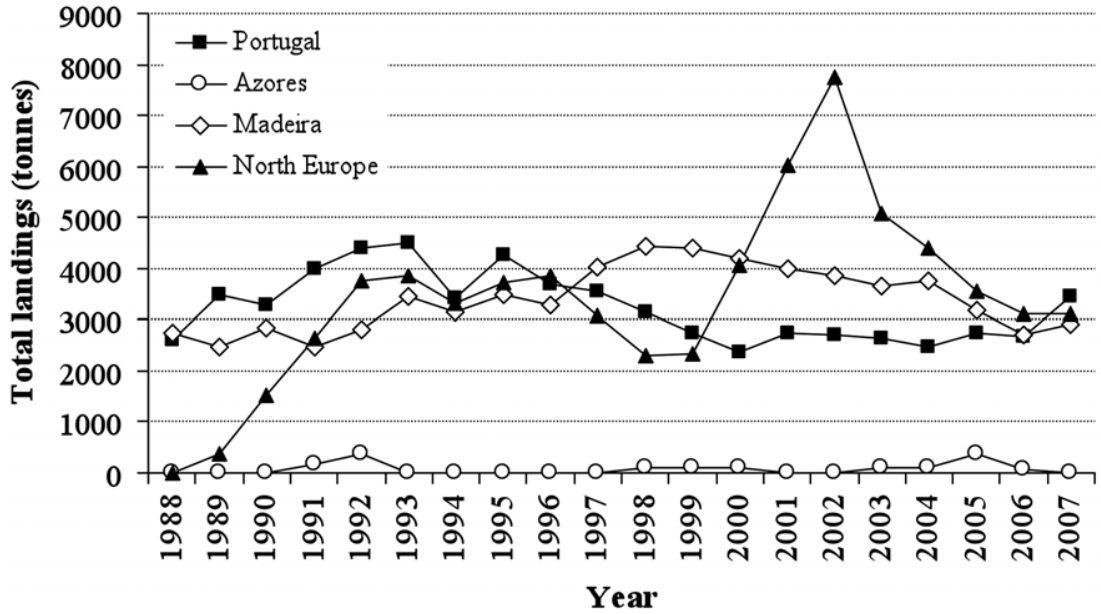

Figure 6.2.5. Total landings (tonnes) reported by mainland Portugal (ICES Subarea IX), the Azores (ICES Subarea X), Madeira (CECAF 34.1.2) and northern Europe (subareas II, IV, V, VI and VII combined) from 1988 to 2007. Taken from Gordo et al. (2009) (sources for Madeira data: DREM (2008); Other data: ICES (2008)).

Discards and other species caught (Deep Sea Sharks)

In mainland Portugal (ICES Subarea IX) discards of the black scabbardfish fishery were 6.3% and 2.2% of the total catch of black scabbardfish in number and weight, respectively (Bordalo-Machado et al., 2009). 23 species were present with baird's smooth-head (*Alepocephalus bairdii*) and smooth lanternshark (*Etmopterus pusillus*) being the most frequent species caught in most of the sets (85.7 % and 78.6 % presence, respectively). All the other species were present in less than 50% of the sampled trips. The species with the highest mean discard percentage was *E. pusillus*, with 3.24% of total catch in numbers of all species, while other species did not reach 1 % of total catch (Bordalo-Machado et al., 2009). The vast majority of discarded specimens corresponded to non-commercial species, with the exception of small-sized commercial sharks (*Centroscymnus coelolepis, C. crepidater, Scymnodon ringens, Prionace glauca*).

In Azores (Subareas X), by-catches of other species ranged between 3% and 5% of the weight of black scabbardfish caught (Machete et al., 2011) with an estimated maximum of 16 tonnes, which are rates similar to those observed for other longline fisheries such as in Madeira or mainland Portugal (Martins and Ferreira, 1995; Bordalo-Machado and Figueiredo, 2009) but smaller to those observed in the deep-water trawl fishery targeting black scabbardfish (Anon, 2002). A recent report (seaExpert, 2012), however, estimated a much higher by-catch of deep water sharks than that reported in Machete et al. (2011). In the Azores as in other regions, deep sea sharks (mainly leafscale gulper shark, *C. squamosus* and the Portuguese dogfish, *Centroscymnus* sp.) composed the main by catch (Machete et al., 2011). Other species reported as by-catch of the drifting deep-water longline targeting black scabbardfish but with low numbers include *Etmopterus* sp., *Mora mora*, *Deania* cf *Calcea*, *Centroselachus crepidater*, *Alepochepalus rostratus*, *Deania profundorum* and *Chiasmodon niger* (Morato 2012).

In CECAF 34.1.2 (Madeira), the longline black scabbardfish fishery has the potential to capture other deep-water species, mainly deep-water sharks. The discard rates are known to be low and some species of deep water sharks are landed in Madeira (Morato 2012). However, a zero TAC for deep-water sharks has been established in Madeira since 2008 which may potentially lead to an increase in discarding of deep-water sharks.

Moreover, other fisheries in Madeira can also catch some deepsea species. The catches from bottom longline and handline fisheries for example, include more than 20 demersal species in Madeira but their landings are estimated to be lower than 50 tonnes annually (Morato 2012). The most frequent species for the period 2000-2010 included the red porgy with average annual landings of 19 t, the forkbeard with about 11 t, the wreckfish with about 10 t, the blacktail comber with about 6 t per year, the blackspot seabream with average annual landings of 4 t, barracudas (*Sphyraena* sp.) with 2 t per year (DGRM, http://estatistica.gov-madeira.pt).

STECF notes that discards rates and species composition are well known for the Azores (Machete et al., 2011) and Mainland Portugal (Bordalo-Machado et al., 2009), however, little information is available for the Madeira fleet (Morato, 2012). STECF considers that, due to the similarities of the deep longline fisheries for black scabbardfish in Madeira with those in the Azores and mainland Portugal, bycatch and discard levels may also be similar. STECF suggests that although only low levels of discards have been observed in these fisheries, bycatches should be closely monitored in the future in order to assess the impact of the fisheries for black scabbardfish on deepwater sharks.

Assessment of the species

Black scabbardfish stock assessments are conducted in the framework of scientific working groups from regional fisheries organizations: ICES and CECAF. ICES considers the existence of a single stock in the northeast Atlantic but divided into three components: north, south and other areas (ICES, 2013). The north component corresponds to subareas V, VI, VII and XII, the south component to subareas VIII and IX, and other areas to Division IIIA and Va Subareas I,

II, IV, X, and XIV. Madeira Islands are included in the CECAF area 34.1.2.

Latest ICES assessment for black scabbard fish in Subareas VIII and IX was carried out in 2012 and the stock assessment results showed that population abundance remains stable (ICES, 2012). The latest ICES advice for this species in Subareas VIII and IX for 2013 and 2014, based on the ICES approach for data-limited stock, was that catches should be no more than 3700 tonnes (ICES, 2013). There is no reliable assessment and stock status is unknown for black scabbardfish in Subareas I, II, IV, X, XIV and Divisions IIIa, Va, however, the latest advice provided by ICES for 2013 and 2014 was *that fisheries should not be allowed to expand until there is sufficient information showing that the fishery is sustainable (ICES, 2013)*. In the Azores (ICES Subarea X), the stock status of black scabbardfish is unknown; however, the resource is being regarded as a nearly virgin stock (Machete et al., 2011). The absence of a local market for this species and the complexity and labour requirements of the gear and operation have limited the development of the fishery in the Azores and the catches have remained very low.

No assessment of black scabbardfish has been carried out in CECAF area 34 and, thus, the status of the stock is unknown.

Management regime

Management advice from ICES on deepwater species including black scabbard is biennial and is based on the reports of the ICES WGDEEP. The black scabbard fisheries in those areas are regulated by Council Regulation (EC) No 1262/2012, which fix the fishing opportunities for EU vessels for black scabbard in those areas and areas off Madeira (CECAF area 34) for 2013 and 2014 as presented in the table below.

TACs (t) proposed for ICES area, ICES area in Azores and Portugal mainland, and Madeira scabbard fish fishery.

Black scabbard	EU and international waters of V, VI, VII and XII (BSF/56712-)		EU and international waters of VIII, IX and X (BSF/8910-)		EU and international waters of CECAF 34.1.2. (BSF/C3412-)	
Year	2013	2014	2013	2014	2013	2014
Spain			12	12		
France			29	29		
Portugal			3,659	3,659	3,674	3,490
EU	3,051	3,966	3,700	3,700	3,674	3,490
TAC	3,051	3,966	3,700	3,700	3,674	3,490

The current fisheries resource management strategy of the Azores and Madeira is based on the EU Common Fishery Policy, implemented primarily through Total Allowable Catches (TACs) for various species including blackspot seabream (*Pagellus bogaraveo*), alfonsinos (*Beryx splendens* and *B. decadactylus*), and deepwater sharks such as *Deania* spp., *Centrophorus* spp., *Etmopterus* spp., *Centroscymnus* spp. and kitefin shark, *Dalatias licha* (EC Reg. 2340/2002; EC Reg. 2270/2004). In addition to TACs, the Azores and Madeira Regional Governments have implemented technical measures such as minimum landings sizes or weights, minimum mesh sizes, allowable percentage of bycatch species, area and temporal closures (Morato et al., 2010) and ban on the use of certain gears. Examples include the Azores and Madeira regulation that prohibited deep-sea trawling, which recently became an EC regulation (EC 1568/2005) and the Azorean box of 100 miles limiting fishing to vessels registered in the Azores created in 2003 under the CFP (EC Reg. 1954/2003).

STECF observes that only deepwater longlining is permitted in EEZ waters of Azores and Madeira. No information was available to STECF for other fisheries operating in International waters.

STECF conclusions

STECF notes that ICES considers that there is a single Northeast Atlantic stock, but for management purposes three components are differentiated. STECF also observes that stock structure of black scabbard fish in the Northeast Atlantic and northern part of CECAF is still unknown. Thus, STECF concludes that further stock identity and migration studies are needed to confirm or reject to current understanding of the stock structure in the ICES area and adjacent CECAF area 34.

STECF notes that information is available for the Madeira deepwater longline fishery for black scabbard fishery in CECAF areas 34.1.1, 34.1.2 and 34.2. STECF concurs with the conclusion in Morato (2012) that deep water sharks are taken as bycatch by this fishery but at low levels. STECF is unable to assess whether the low bycatches of deepwater sharks pose a threat to the stocks of such species in these areas. No information was available to STECF for fisheries in international waters of the CECAF area 34.1.1, 34.1.2, and 34.2 that targeting black scabbarfish and which take a bycatch deepwater shark species.

STECF notes that there is no assessment of black scabbarfish in the waters adjacent to Madeira or in the wider CECAF area 34. However, the catch trends and number of vessels fishing for black scabbard fish in Madeira has been decreasing and recently a catch of around 2000 tonnes by 15 vessels operating in the area has been taken. STECF concludes that there is insufficient information to advise on an appropriate catch level.

From the information available to STECF, it is apparent that in conjunction with Madeira area of CECAF, ICES sub-area IX is the most important area for the exploitation of black scabbard in the northeast Atlantic. However the paucity of appropriate and reliable fishery-related data on black scabbard continues to compromise the ability to provide pertinent management advice for fisheries exploiting this species. STECF considers that appropriate data and information is

needed, either through collation of existing information or collection of additional information, to permit a reliable assessment of the resources of black scabbard in the northeast Atlantic.

3.- In case of scientific uncertainty with regard to the above, identify what are the sources of information that should be provided to achieve the goals 1 and 2 and, if any, what are the difficulties that the STECF has found for not having access of that information.

STECF did not have access to information available of fisheries statistics in CECAF area 34.1.1, 34.1.2, 34.2.

STECF conclusions

STECF notes that there is no available information on stock structure, catch trends or fisheries catching the deep sea species (specified in the list) for CECAF areas 34.1.1, 34.1.2 and 34.2. STECF also notes that such information should be collected through the DCF for EU vessels operating in these waters and if such data were made available, assessments of black scabbard fish and other deepwater resources in North East Atlantic (Azores – ICES Div X and Portugal mainland – ICES Div IXa and CECAF area 34.1.1, 34.1.2, 34.2) could be attempted.

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6.3. Prioritisation of Data Poor stocks

Background

The European Commission is desirous of prioritising actions in support of the estimation of fishing mortality rate in relation to the rate that will deliver maximum sustainable yield in the long term. To assist this process, STECF is requested to compile systematically the information considered pertinent to the prioritisation.

Terms of Reference

STECF is requested to evaluate, for appropriate combinations of species and sea areas for commercial stocks exploited by EU fleets where estimates of fishing mortality compared to Fmsy (or appropriate proxies for this parameter) are not available or not reliable, the following:

- The average catch over the available time-series of data.
- The average catch over the last three years of available data.
- The average first-sale price over the last three years of available data.
- A description of trends in prices over the last three years.
- Whether the species is normally caught as a by-catch when targeting other species.
- Whether restricting fishing on the species in question may be likely to restrict substantially the fishing opportunities for other species.
- Whether the species has unusual vulnerability or sensitivity to fishing.
- Whether there is evidence that the stock may be depleted substantially below Bmsy levels.
- Whether there is any evidence of a declining trend in stock size.
- Whether preliminary estimates of F_{MSY} and current fishing mortalities exist.

For each stock, STECF is requested to briefly identify one or two principal reasons why reliable MSY estimation is not currently available.

ICES work on classification and prioritisation of fish stocks should be taken as background document for this request.

STECF observations

Until 2011, ICES provided only qualitative advice regarding the future exploitation of stocks for which there is limited knowledge of their biology and/or lack of data to assess their exploitation status. In 2012, ICES developed a framework in order to provide quantitative advice regarding such Data Limited Stocks (the DLS framework). The principles underlying this framework are that "the available information should be used, that the advice to the extent possible should be based on the same principles as applied for stocks with analytical assessments and catch forecasts, and that a precautionary approach should be followed" (ICES 2012). The latter implies that as information becomes increasingly limited more conservative reference points should be used and a further margin of precaution should be adopted when the stock status is poorly known.

ICES identified six categories of data-limited stocks, ranging from data-rich to truly data-poor stocks, according to the availability of data collected under the DCF:

. Category 1: data-rich stocks (quantitative assessments)
. Category 2: stocks with analytical assessments and forecasts that are only treated qualitatively
. Category 3: stocks for which survey-based assessments indicate trends
. Category 4: stocks for which only reliable catch data are available
. Category 5: data-poor stocks
. Category 6: negligible landings stocks and stocks caught in minor amounts as bycatch

Within each category (related to data availability, but also to the method used), subcategories are defined. For each subcategory, there is an associated rule which prescribes how the catch advice should be derived (for instance, correcting the advice on TAC by a precautionary buffer). The subcategories are provided in Annex 1, below.

Based on information provided to STECF by the ICES Secretariat compiled from reports of 11 ICES assessment working groups (WGBFAS, WGNSSK, WGCSE, WGDEEP, WGWIDE, WGNEW, WGHMM, NIPAG, WGHANSA, WGEF, and HAWG), the DLS approach has been applied to 151 and 159 stocks, in 2012 and 2013 respectively (over a total of 242 stocks considered by ICES). Table 6.3.1 specifies the number of stocks per DLS category and per ICES Ecoregion.

STECF notes that the proportion of stocks where advice was provided based on the DLS approach increased from 62% to 66% between 2012 and 2013 (due to a decrease in the number of stocks not considered in any category). More stocks were assessed according to categories 2 and 3, and less to categories 4 and 5, reflecting an improvement in the capacity of ICES WGs to have access to more or better information.

Table 6.3.1 - Number of stocks per DLS category and per ICES Ecoregion in 2013; comparison with 2012 and with the target proportions for each category as defined by ICES WGs.

EcoRegion	ND*	Cat.1	Cat.2	Cat.3	Cat.4	Cat.5	Cat.6	Total	%in2to6	Target
Baltic Sea		6		7				13	54%	46%
Barents Sea and Norwegian Sea		4	3	2				9	56%	11%
Bay of Biscay and Atl.Iberian waters	1	9		11		13	2	36	72%	67%
Celtic Sea and West of Scotland		24	3	19	2	5	10	63	62%	49%
Faroe Plateau Ecosystem		3		1				4	25%	0%
Iceland and East Greenland		6	1	6				13	54%	46%
North Sea		22	3	15	5	6	7	58	62%	41%
Widely Distributed	1	7	1	18	1	11	7	46	83%	74%
Total 2013	2	81	11	79	8	35	26	242	66%	
Total 2012	10	81	6	69	10	40	26	242	62%	
Target DLS categories	0	117	6	66	22	12	19	242		52%

ND* Status not defined

In 2013 ICES WGs were asked to define what should be the achievable DLS category for each of the 242 considered stocks. Based on this information, STECF notes that the proportion of DLS stock (categories 2 to 6) should be reduced from 66% to 52%, 36 stocks being expected to move to category 1 (quantitative assessment) while the number of stocks in categories 5 or 6 would be markedly reduced.

The comparison between ecoregions highlights large differences. Few quantitative assessments have been carried out for stocks in the Bay of Biscay and Iberian waters, or for widely distributed stocks. Targets defined by ICES do not drastically change the status quo and the largest improvements currently planned are for ecoregions where DLS stocks are already proportionally less numerous (e.g. Barents Sea, Iceland, Faroe, North Sea)

STECF attempted to compile the requested information on DLS stocks in order to address the ToRs, but due to lack of time, the compilation could not be completed during the current plenary meeting and it was possible to compile the information requested for 32 stocks from the Baltic and the North Sea only (see Table 6.3.2). Data on catch and stock status were extracted from the STECF Consolidated Review of Advice for 2014 (STECF-13-27); prices (and estimate of the trend over the last three years) come from the 2013 Annual Economic report database; vulnerability index by species (from Cheung et al. 2005, based on life history parameters) was extracted from FishBase; and DLS categories were provided by the ICES secretariat. Stock value in 2012 was estimated as landings x price.

A number of the 32 Baltic and North Sea stocks considered appeared economically important (landings in 2012 above 1 million euros for 22 stocks, and above 10 million euros for 5 of these). Fourteen stocks are mainly exploited as target within specific fisheries (including 5 *Nephrops* stocks, and 4 sandeel stocks). No stock is classified as highly vulnerable, according to the Cheung et al. (2005) index (the index value 71 provided in Fishbase for plaice was assumed to be erroneous). Seven stocks seem to exhibit a declining trend in abundance.

STECF notes that three stocks have been categorised by ICES as being in category 6.30 (referring to depleted biomass), but there is no information available on the trends in stock size.

DLS target categories defined by ICES, on a case by case analysis, take into account the feasibility to move to category 1. On the other hand, it is not considered here whether stocks currently managed using full analytical assessments could be managed using less resource-demanding alternative assessment methods.

STECF conclusions

Based on the preliminary analysis conducted during the plenary, the set of indicators requested by the Commission is a useful synthesis of information from several data sources, and which provides some insight into the relative importance of the various DLS stocks and their categorisation with regard to their vulnerability and MSY. Nevertheless, such indicators are probably not sufficient to establish a fully-meaningful prioritisation. In particular, the feasibility to move to category 1 as estimated by ICES is an important criterion and the actual costs of additional data collection supporting this prioritisation needs to be considered in the context of the EU-MAP for data collection. STECF considers that this suite of indicators is therefore a useful starting point to initiate the dialogue with ICES and other regional bodies, and to define priorities based on case by case analysis. STECF considers that it would be useful to complete Table 6.3.2 for other ICES Ecoregions and other sea areas.

With regard to the CFP objective to minimize the fishing impact on marine resources and ecosystems, STECF considers that complete assessment coverage for all stocks is not a realistic aspiration. From the ecosystem perspective, a risk based approach could be defined in order to identify and assess a sufficient number of the key species that could provide a representative overall assessment of fishery impacts in each ecoregion.

STECF concludes that the DLS approach has contributed to the increase in scientific advice for fisheries management and can inform on some of the diagnostics on ecosystem health, according to descriptor 3 of the MSFD. STECF considers that defining priorities for stock assessment and advice procedures is a necessity for all stocks and not only for the current data-limited stocks. However, STECF stresses that more work is likely to be required in order to define criteria and indicators for such a prioritisation.

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Table 6.3.2 - Indicators on 32 stocks for which the DLS approach was used in 2013, in the Baltic and the North Sea. 2013 and target DLS categories were provided by the ICES secretary. Coloured 2013 DLS categories refer to stocks assessed as being at low level, while coloured target DLS categories identify stocks which should move to category 1 (full quantitative assessment) according to ICES WGs.

Stock name	FishStock	Range of catch (t) over the available time-series of data	Catch (t) over the last year	Average first-sale price (€) over the last 3 years	Catch in value ('000 €)	Trends in prices (last three years)	Is species normally caught as a by-catch	Impact of fishing restriction on other species	Vulnerability index	Evidence that the stock is depleted below Bmsy	Evidence of a declining trend in stock size.	Preliminary estimates of Fmsy and current F	2013 DLS category (and sub category)	Target DLS category
Brill in Subarea IV and Divisions IIIa and VIId,e	bll-nsea	1,400 to 2,700	1,515	6.18	9,365	15,2%	Yes	Yes?	31	No	No(+56%)	No	3 (.20)	1
Brill in Subdivisions 22–32 (Baltic Sea)	bll-2232	1 to 160	30	4.38	131	-37,1%	No	No	31	No	No (+26%)	No	3 (.20)	3
Dab in Subarea IV and Division IIIa	dab-nsea	6,000 to 13,000	6,019	0.73	4,400	7,5%	Yes	Yes?	43	No	No(+7%)	No	3 (.20)	3
Dab in Subdivisions 22–32 (Baltic Sea)	dab-2232	1,000 to 1,900	1,300	0.80	1,042	8,0%	Yes	?	43	No	No (+44%)	No	3 (.20)	3
Flounder in Division IIIa and Subarea IV	fle-nsea	1,500 to 5,560	2,187	0.68	1,483	11,5%	Yes	Yes?	45	No	No(+7%)	No	3 (.20)	3
Flounder in Subdivisions 22–32 (Baltic Sea)	fle-2232	10,000 to 20,000	15,900	0.43	6,841	3,9%	Yes	Yes	45	No	Yes (-15%)	No	3 (.20)	2
Grey gurnard in Subarea IV (North Sea) and Divisions VIId (Eastern Channel) and IIIa (Skagerrak–Kattegat)	gug-347d	180 to 4,600	600	0.39	237	4,6%	Yes	Yes	30	No	No	No	6 (.20q)	3
Herring in Subdivision 31 (Bothnian Bay)	her-31	?	3,50	0,.5	843	4,0%	No?	No	34	No	No (+59%)	No	3 (.20)	2
Horse mackerel (Trachurus trachurus) in Divisions IIIa, IVb,c, and VIId (North Sea stock)	hom-nsea	?	21,375	0.64	13,642	8,0%	No	No?	56	No	No?	No	5 (.20)	1
Lemon sole in Subarea IV and Divisions IIIa and VIId	lem-nsea	3,000 to 8,000	3,084	3.73	11,498	-0,7%	Yes	Yes?	51	No	No(+16%)	No	3 (.20)	1

Nephrops in Noup (FU 10)	nep-10	13 to 173	13	5.30	69	93,9%	No	No	14	No	Yes?	No	4 (.14)	4
Nephrops in the Norwegian Deep (FU 32)	nep-32	310 to 1,200	310	5.30	1,642	93,9%	No	No?	14	No	No	No	4 (.14)	1
Nephrops in Botney Gut–Silver Pit (FU 5)	nep-5	?	1,240	5.30	6,568	93,9%	No	No?	14	No	No?	No	4 (.14)	1
Nephrops off Horn's Reef (FU 33)	nep-33	806 to 1,467	1,191	5.30	6,309	93,9%	No	No?	14	No	No	No	4 (.14)	1
Nephrops in Devil's Hole (FU 34)	nep-34	597 to 1,305	597	5.30	3,162	93,9%	No	No?	14	No	No?	No	4 (.14)	1
Northern shrimp (Pandalus borealis) in Division IVa (Fladen Ground)	pan-flad	0 to 6,000	0	8.08	0	84,2%	No	No	?	No?	No	No	6 (.30)	6
Plaice in Subdivision 20 (Skagerrak)	ple-skag	6,000 to 14,000	7 600	1.37	10,442	10,5%	No	?	71 ?	No?	Yes (East)	No	3 (.20)	1
Plaice in Division VIId (Eastern Channel)	ple-eche	2,000 to 10,000	3,600	1.37	4,946	10,5%	Yes	Yes?	71 ?	No	No	Yes (Fmsy)	2 (.11)	1
Plaice in Subdivisions 21, 22, and 23 (Kattegat, Belts, and Sound)	ple-2123	?	1,845	0.92	1,689	-0,1%	Yes	Yes	71 ?	No	No(+76%)	Yes(F<Fmsy)	3 (.10)	1
Plaice in Subdivisions 24-32 (Baltic Sea)	ple-2432	?	848	0.92	776	-0,1%	Yes	Yes	71 ?	No	No(+61%)	No	3 (.20)	3
Pollack in Subarea IV and Division IIIa	pol-nsea	?	1,500	2.61	3,913	17,0%	Yes	Yes	59	Yes?	Yes	No	5 (.20)	3
Sandeel in the Central Western North Sea (SA 4)	San-ns4		2,500	1.21	3,031	102,6%	No	No?	?	No	?	No	3 (.20)	5
Sandeel in the Viking and Bergen Bank areas (SA 5)	San-ns5	59,705	8,048	2.21	17,806	202,6%	No	No?	?	No?	?	No	6 (.30)	6
Sandeel in Division IIIa East (Kattegat, SA 6)	San-ns6		210	3.21	675	302,6%	No	No?	?	No?	?	No	5 (.20)	5
Sandeel in the Shetland area (SA 7)	San-ns7		0	4.21	0	402,6%	No	No	?	No?	?	No	6 (.30)	6
Sprat in Division IIIa (Skagerrak – Kattegat)	spr-kask	10,000 to 70,000	10,400	0.26	2,733	5,4%	No	Yes	25	No?	Yes(-36%)	No	3 (.20)	3

Striped red mullet in Subarea IV (North Sea) and Divisions VIId (Eastern English Channel) and IIIa (Skagerrak–Kattegat)	mur-347d		720	11.06	7,963	101,7%	Yes	Yes?	37	Yes?	Yes	No	3 (.20)	3
Turbot in Subarea IV	tur-nsea	3,000 to 6,000	2,800	9.24	25,866	-25,1%	Yes	Yes	51	No	No	Yes	2 (.11)	1
Turbot in Division IIIa	tur-kask	?	189	9.24	1 746	-25,1%	Yes	Yes?	51	No?	No	No	3 (.20)	3
Turbot in Subdivisions 22–32 (Baltic Sea)	tur-2232	42 to 1,210	230	3.62	832	21,4%	Yes ?	?	51	No ?	Yes ?	No	3 (.20)	3
Whiting in Division IIIa (Skagerrak – Kattegat)	whg-kask	63 to 2,000	63	1.14	72	10,7%	Yes	Yes?	37	No?	?	No	5 (.20)	3
Witch in Subarea IV and Divisions IIIa and VIId	wit-nsea	?	1,500	2.42	3,627	-16,7%	Yes	Yes?	68	Yes?	No(+>20%)	No	3 (.20)	1

Annex 1 – Subcategories of the DLS framework

Category 1: Data-rich stocks (quantitative assessments)
Category 2: Qualitative analytical assessments and forecasts 2.11 stock biomass greater than MSY Btrigger 2.12 stock biomass less than MSY Btrigger 2.13 Extremely low biomass
Category 3: Survey-based trends 3.10 A biomass/abundance index, and Fsq is known 3.11 B>MSY Btrig and Fsq>F0.1 3.12 B>MSY Btrig and Fsq<F0.1 3.13 B<MSY Btrig 3.14 Extremely low biomass 3.20 A biomass/abundance index is known, but no F and no MSY Btrig 3.30 Biomass index is increasing or stable
Category 4: Trends from reliable catch data 4.10 A suitable exploitation rate is known 4.11 Catch greater than DCAC 4.12 Catch less than DCAC 4.13 Fsq and Fmsy known 4.14 Data borrowing for sedentary species 4.20 Catch trend considered to be representative of a substantial reduction in biomass
Category 5: Data-poor stocks 5.10. Productivity and Susceptibility Analysis (PSA) risk assessment 5.20 No F and no positive trends in stock indicators 5.30 Catch trend considered to be representative of a substantial reduction in biomass
Category 6: Negligible landings stocks and stocks caught as bycatch 6.10. Productivity and Susceptibility Analysis (PSA) risk assessment 6.20 No F and no positive trends in stock indicators 6.30 Catch trend considered to be representative of a substantial reduction in biomass

6.4. Special Chapters for 2014 Processing and Aquaculture reports

Background

The AER reports (including the aquaculture and fish processing reports) are becoming more and more helpful for scientific advice and policy analysis.

As the quality of the AER reports and its focus on trends and interpretation increased in recent years, so did its use for policy analysis and scientific advice of structural policies on fisheries. An important element contributing to this objective is the preparation of special chapters on topics of applied analysis in the reports. These special reports should focus on specific and relevant aspects helping to policy interpretation and scientific advice.

Terms of Reference

The STECF is requested to provide recommendations on possible special topics for the new reports on aquaculture and fish processing 2014.

STECF observations

STECF observes that three economic reports will be produced in 2014 covering 1) the EU fishing fleet, 2) the EU aquaculture sector and 3) the EU processing industry.

STECF observes that the two latter reports will both include a chapter devoted to a topic of special interest which is not normally covered in the reports.

STECF proposals

In relation to the aquaculture report produced by EWG14-10, STECF proposes that the special chapter reviews and documents the barriers to growth in aquaculture in EU Member States, focusing on economic regulatory and organisational aspects. This was partly addressed in the publication "*Summary of the 2013 Economic Performance Report on the EU Aquaculture Sector (STECF 13-30)*". However, the section did not cover a more detailed analysis at the Member State level. Such a chapter would provide an overview to inform on the initiatives and measures that could facilitate future growth in the sector.

In relation to the processing report produced by EWG14-15, STECF proposes that the special chapter investigates the medium-/long-term outlook for the investment situation in the industry. In the report of the 2013 EWG report (STECF 13-31), an indicator is calculated to reflect the future expectations of the industry. This indicator can be interpreted as a proxy for the industry's intention to remain in the market in the medium-/long-term. If investment minus depreciation is positive, the sector is allocating resources to increase its production capacity, and therefore it expects to remain in the market to recover the cost of the investments. A value close to zero could be interpreted as an indication that sector is only wishing to maintain its production capacity in the future and is not planning to expand. When depreciation is higher than investments, it is possible to assume that the industry wants to reduce its presence in the market in the future. Therefore, this indicator can be used as a proxy for the expected investing behaviour in the future.

Using this indicator, expert knowledge can be used to compare the results for different countries and try to draw some observations and conclusions about the structural developments within the processing industry. For instance, the German processing industry is not investing so much in Germany itself. Instead they are investing in Poland, and thus Poland may show a positive development, not generated solely by the Polish industry.

6.5. Request for an evaluation of the effectiveness of Highly Selective Gears based on a net grid being used by English administered vessels

Background

STECF has previously considered the application of a Net Grid, a modified inclined separator panel in PLEN 12-02 (section 7.1) and PLEN 13-3 (section 6.17). At its November 2013 plenary STECF

commented on a preliminary report about the performance of a gear tested by a Fisheries Science Project. This trial tested two variants of a Net Grid trawl design being used in the North Sea n*ephrops* fishery to avoid catches of whitefish. However, STECF was unable to evaluate second variant of Net Grid design because data collection on the efficacy of the second variant (short version) was still in process and not provided.

Terms of reference

The UK has now submitted final report *including the performance of a second variant of the gear tested by this trial* with the outcome of further trials. The STECF is requested to consider:

1 The extent that each design can be expected to reduce the catches of adult and juvenile cod. STECF are further asked to comment on the possible impact on cod mortality arising from the use of this gear.
2 To what extent does the data and information provided in relation to the technical characteristics of each of the designs support the conclusion that catches of cod by such gears will be less than or equal to 5% (five) from the total catches
3 The extent that both variants of the design can be expected to reduce the catches of whitefish that are frequently caught and discarded from the North Sea *nephrops* fishery. In particular the STECF is asked to comment on the overall reduction in the catches (both landings and discards) of other commercial species likely to be achieved by this trawl.
4 The extent to which both variants of the design can be expected to retain catches of *nephrops*.
5 In cases of scientific uncertainty please specify the information and data that have to be improved; in particular concerning the sampling strategy including sampling precision levels and intensities in relation to catch and discards data and, where relevant, the description of gear properties and its effect.

STECF observations

The STECF response is based on the information contained in the project report 'North East Coast Net Grid Trials' prepared by Armstrong and Catchpole (2013). The work was carried out as part of the Fisheries Science Partnership (FSP) programme, FSP (2013-14) (37).

STECF has previously considered the application of a Net Grid in PLEN 12-02 (Section 7.1) and PLEN 13-3 (Section 6.17). Information and data provided in Armstrong and Catchpole (2013) are improved compared to reports previously reviewed by STECF, especially regarding the description of the gears and their effects.

Armstrong and Catchpole (2013) tested two variants of a Net Grid trawl design referred to as the long and short versions (Figure). The Net Grid was an industry driven alternative to the Swedish grid. The rigid construction of the Swedish grid design was considered inappropriate for vessels working in the English NE *Nephrops* fishery, due to handling difficulties with net drums and power blocks.

A commercial vessel with a twin-rig trawl was used for the trials. One rig was modified by including a version of the Net Grid, the other was left in its standard commercial configuration to provide direct comparisons of catch. Data from the long- and short -version were collected from 10 and 8 valid tows, respectively.

The STECF response to the specific requests in the Terms of reference can be summarised as follows:

1. ***The extent that each design can be expected to reduce the catches of adult and juvenile cod. STECF are further asked to comment on the possible impact on cod mortality arising from the use of this gear.***

The Armstrong and Catchpole (2013) report states that a statistical analysis using General Linear Mixed Model (GLMM) demonstrated that significantly fewer cod were caught across the length range with both Net Grid designs. However, the information presented in support of this statement is insufficient to permit such a conclusion. The model formulation is not presented and the model outputs do not show a good fit to the experimental data. Nevertheless, there are indications that the total numbers of cod retained by both versions of the Net Grid trawl are less than the standard trawl, see for example Figure 16 in Armstrong and Catchpole (2013), but in the absence of the raw data resulting from the trials, STECF is unable to conclude that this is the case.

STECF considers that the data and information presented in Armstrong and Catchpole (2013) is insufficient to conclude whether the long and short Net Grid versions can be expected to significantly reduce the catches of adult and juvenile cod. In the absence of data on the total catches of cod associated with the Net Grid metier, STECF is also unable to assess the potential impact of either gear on cod mortality.

Furthermore, while Armstrong and Catchpole (2013) conclude that the long version was more efficient at releasing cod than the short version, the information required to confirm whether this is indeed the case are not presented in the report. STECF is unable to conclude whether each NetGrid design reduces the catches of adult and juvenile cod.

Compared to the control trawl, there was a significant reduction in the catch of cod using both versions of the Net Grid. Compared to the control, the cod catch in weight in the long version of the NetGrid was reduced by 75% and in the short version by 61%. Unfortunately, as raw data of total catch per haul were not provided, it is not possible to determine the total reduction in the catch with the use of the modified gears (both in the long- and short-version).

2. ***To what extent does the data and information provided in relation to the technical characteristics of each of the designs support the conclusion that catches of cod by such gears will be less than or equal to 5% (five) from the total catches***

STECF notes that there were few cod in the area at the time of the trials with a mean catch weight of 9 kg of cod per haul. Cod accounted for 2.9% of the total catch in the control trawl and 2.6% in the long version of the Net Grid trawl. In trials with the short version of the Net Grid trawl, cod accounted for 2.1% of the total catch in the control trawl and 1.5% in the Net Grid trawl. STECF concludes that the data presented in Armstrong and Catchpole (2013) indicate that catches of cod by weight using both the long and short versions of the Net Grid trawl and the control trawl was less than 5% of the total catches of each gear. STECF reiterates that the percentage of cod in the total catches is not only determined by the selection properties of a gear, but also by the abundance of cod relative to the abundance of all other species in the area and at the time the fishing takes place. Furthermore, STECF reiterates that the metric of percentage of cod in the total catch is not necessarily related to fishing mortality rate on cod.

3. ***The extent that both variants of the design can be expected to reduce the catches of whitefish that are frequently caught and discarded from the North Sea Nephrops fishery. In particular STECF are asked to comment on the overall reduction in the catches (both landings and discards) of other commercial species likely to be achieved by this trawl.***
4. ***The extent to which both variants of the design can be expected to retain catches of Nephrops.***

As regards the extent that both variants of the Net Grid can be expected to retain catches of *Nephrops* and to reduce the catches of whitefish that are frequently caught and discarded from the North Sea *Nephrops* fishery, it can be seen that *Nephrops* and whiting dominate the catch in both Net Grid versions. The *Nephrops* catch was unaffected using both version of the Net Grid, but the catches of whiting and the majority of other fish were reduced.

5. ***In cases of scientific uncertainty please specify the information and data that have to be improved; in particular concerning the sampling strategy including sampling precision levels and intensities in relation to catch and discards data and, where relevant, the description of gear properties and its effect.***

STECF concludes that if the raw haul by haul data had been included in the report of Armstrong and Catchpole, STECF would have been able to provide a much more comprehensive informed opinion of the effectiveness of the Net Grid trawl on reducing catches of cod and other species except *Nephrops*, for which it is clear that catches by both the Net Grid and control trawls were unaffected. No other additional data is required.

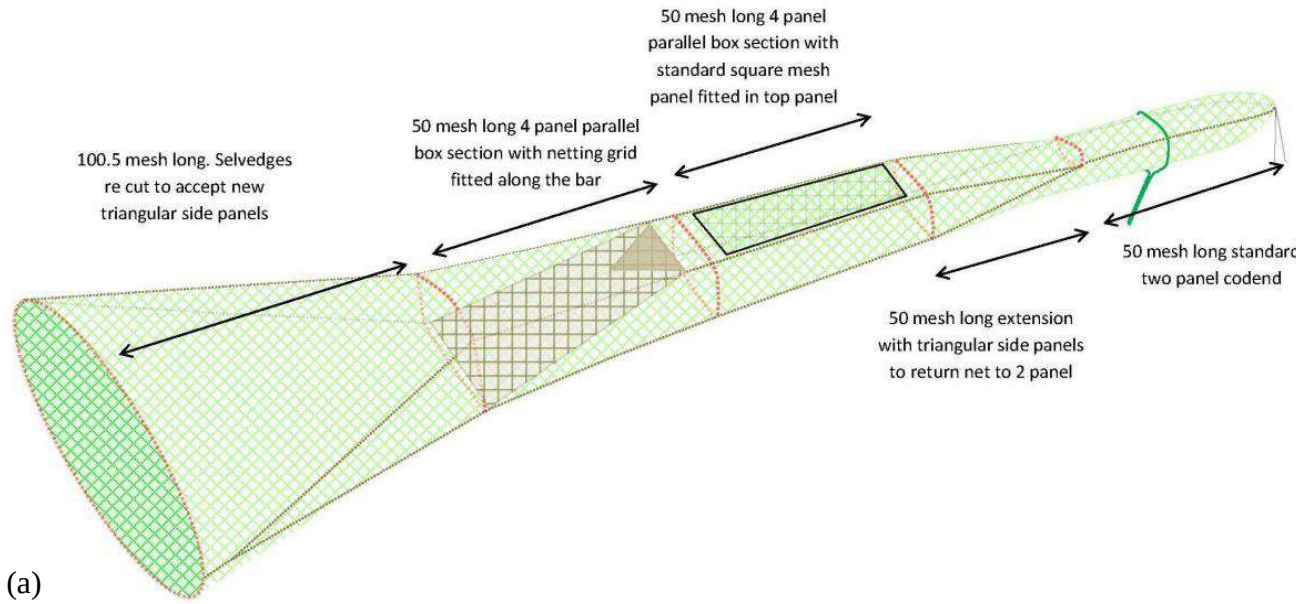
STECF conclusions

STECF acknowledges the initiative by the UK fishing industry and scientists, through the Fisheries Science Partnership (FSP) of the Defra-funded collaborative research programme of scientific research, for having undertaken trial studies on gear modifications designed to reduce catches of cod and other by-catch species.

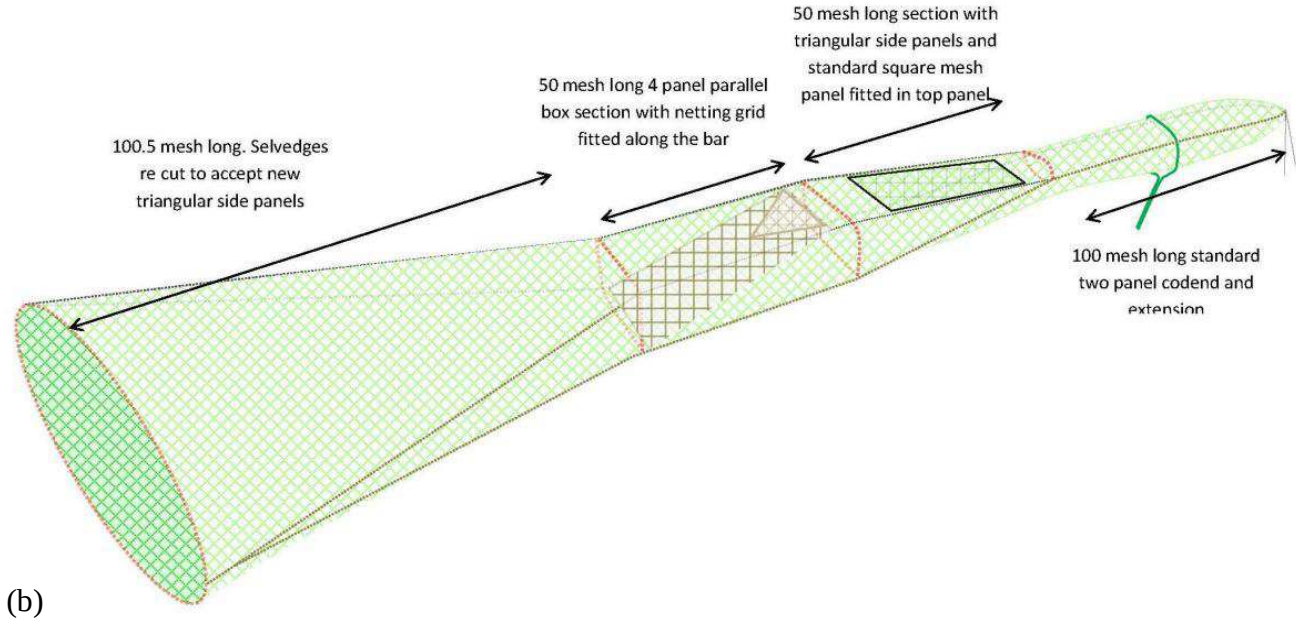
Catches from the modified trawls showed that both versions of the Net Grid did not affect the retention of marketable *Nephrops*.

There are indications that the Net Grid can potentially reduce the adult and juvenile cod catches, as well as catches of whitefish that are frequently caught and discarded from the North Sea *Nephrops* fishery. The few cod on the fishing grounds during the period the study was carried out and the lack of raw data in the report prohibit any conclusions with regard to trawl selectivity.

STECF concludes that if raw data and information are provided, a much more comprehensive informed opinion of the effectiveness of the Net Grid trawl could be undertaken.



(a)



(b)

Figure 6.5.1. Net Grid modified (a) Design 1 long version; (b) design 2 short version.

6.6. Request for exclusion from the cod plan effort regime in accordance with Article 11(2) of Regulation (EC) No 1342/2008 for two groups of vessels in the UK

Background

Article 11(2) of Council Regulation (EC) 1342/2008 establishing a long-term plan for cod stocks and the fisheries exploiting those stocks lays down the conditions under which the Council, acting on a Commission proposal and on the basis of the information provided by Member States and the STECF advice, may exclude certain groups of vessels from the effort regime.

Following a number of requests by Member States to the European Commission, the STECF assessed in 2009, 2010, 2011 and 2012 the activity of groups of vessels against the criteria mentioned in Article 11(2) of the cod plan, in particular based on the concept of technical or biological decoupling. The Commission's approach to vessels' exclusions from the cod plan effort regime has taken into account the STECF's concept of technical and/or biological decoupling as well as vessels' group activities or characteristics that result in cod catch rates equal to or below 1,5% of the total catches for each group of vessels concerned, provided that:

a) the Member States provide appropriate information to the Commission and STECF in order to establish that the conditions are and remain fulfilled in accordance with the detailed rules adopted by the Commission and;
b) the Member States concerned put in place a monitoring system that provide representative catch data enabling the Commission to assess whether the fulfilment of the exclusion criteria at the group or vessel level continues to be met.

Member States requests for exclusion must follow the requirements prescribed by Commission Regulation (EU) No 237/2010 laying down detailed rules for the application of Council Regulation (EC) No 1342/2008.

Terms of Reference

Under the conditions laid down in Article 11(2) of Regulation (EC) No 1342/2008 establishing a long-term plan for cod stocks, the STECF is requested to evaluate two UK requests for exclusion from the cod plan effort regime for groups of vessels in the Firth of Forth and the Clyde.\

Following the approach described in the background and taking into account the information and data provided by the UK to the European Commission, the STECF is requested to advice on the following:

1) To what extent does the data on catches and landings submitted by the UK support the conclusion that during the reference period for which the data have been collected, the vessel group has (annually on average) caught less than or equal to 1.5% of cod of its total catches?
2) In cases of scientific uncertainty with regard to question 1), please specify the information and data that have to be improved; in particular concerning the sampling strategy including sampling precision levels and intensities in relation to catch and discards data and, where relevant, the description of gear properties and its effect.
3) In cases of scientific uncertainty with regard to question 1), please specify whether the information presented gives indications that the non-fulfilment of the assessment criteria is due to a specific activity of the vessel group, e.g. when the group fishes in a particular area.

In carrying out its assessment, the STECF should consider the rules on vessel group reporting established in Article 3 of Commission Regulation (EU) No 237/2010 laying down detailed rules for the application of Council Regulation (EC) No 1342/2008.

The STECF advice should be consistent with comparable advices.

The STECF is requested to complete the table below summarising its findings in relation to the present request.

Table 6.6.1: Summary of STECF findings in relation to vessels groups requests for exclusion

Country	Description of vessel group	Data submitted	STECF advice
			[to include a statement on a favourable or negative opinion on the exclusion in question]

STECF observations

The UK administration submitted two requests for exemption from the effort regime of the cod plan through the provision of Article 11(2) of Regulation (EC) No 1342/2008 establishing a long-term plan for cod stocks. One request concerns a group of 49 TR2 vessels, targeting *Nephrops* in the Firth of Clyde in ICES Subarea VIa, and the other concerns a group of 17 TR2 vessels targeting *Nephrops* in the Firth of Forth in ICSE Subarea IVb. The first request specifically concerns fishing activity in statistical rectangles 39E4, 39E5, 40E3, 40E4, and 40E4, while the second request specifically concerns statistical rectangles 41E6 and 41E7. The requests claim that the respective vessels' catches from the respective areas contain annually on average <1.5% cod. In support of their claim the administration provided observer data on the catches in the format of Table 3 as specified in Annex I to Commission Regulation 237/2010.

The request concerning the Firth of Clyde provides observer data of 161 trips of 42 vessels, mainly in August-December. Two and three trips respectively took place in statistical rectangles 41E3 and 41E4 respectively, which do not belong to the area for which exemption is requested (see above). The remaining 156 trips of 40 vessels, representing 2% of the total effort of the group concerned, had on average 0.37% cod in their catches, which was discarded. Only 5 of the trips, all in statistical rectangle 40E4 and three of which by the same vessel (GBRB12281), had >1.5% cod in their catches, namely 1.6%, 1.8%, 5.0%, 9.8%, and 12.6% respectively. The latter trip had 201 kg of cod. The 60 trips in statistical rectangle 40E4 had on average 0.7% of cod in their catches, more than twice that in the next-highest statistical rectangle (0.3%). One vessel, GBRB12281, whose observed trips were all in statistical rectangle 40E4, had on average 3.2% cod in its catches.

STECF notes that unlike many previous submissions in support of Article 11 exemptions, the UK administration provided a detailed description of the protocols by which the independent observation of relevant fishing vessels was conducted and the values of catch weights were derived, accompanied by the statement that they (UK Scotland) will make arrangements for independent observation of relevant fishing activity to continue in the future in order to meet the requirements described in paragraph 4 of Annex I of Commission Regulation 237/2010.

The request concerning the Firth of Forth provided FDF observer data of 366 trips of 4 vessels, all in statistical rectangle 41E7, in April-November, representing 12% of the total effort of the group concerned. On average the 366 trips had 0.24% cod in their catches, which was landed. Only 5 of the trips had >1.5% cod in their catches, namely 1.6%, 1.6%, 1.9%, 2.3% and 2.7% respectively.

The UK administration also provided a description of the methods by which the Remote Electronic Monitoring of relevant fishing vessels is conducted, accompanied by the statement that they (UK Scotland) will make arrangements for Remote Electronic Monitoring of relevant fishing activity to

continue in the future in order to meet the requirements described in paragraph 4 of Annex I of Commission Regulation 237/2010.

STECF conclusions

STECF concludes that, with regards to the Firth of Clyde fishery, the data on catches and landings submitted by the UK support the conclusion that during the reference period for which the data have been collected, the catches of cod by the vessel group taken in statistical rectangles 39E4, 39E5, 40E3, 40E4, and 40E5 were on average less than or equal to 1.5% of the total catches of that vessel group in those statistical rectangles. STECF notes that given the relatively higher catches of cod in rectangle 40E4, in particular by one vessel, GBRB12281, it would be advisable to closely monitor such catches to verify that the conditions for exemption under Article 11(2) continue to be met.

STECF concludes that, with regards to the Firth of Forth fishery, the data on catches and landings submitted by the UK support the conclusion that during the reference period for which the data have been collected, the catches of cod by the vessel group taken in statistical rectangles 41E6 and 41E7 were on average less than or equal to 1.5% of the total catches of that vessel group in those statistical rectangles.

Table 6.6.2: Summary of STECF findings in relation to vessels groups requests for exclusion

Country	**Description of vessel group**	**Data submitted**	**STECF advice**
UK Scotland	49 TR2 vessels targeting *Nephrops* in the Firth of Clyde in ICES Subarea VIa, specifically statistical rectangles 39E4, 39E5, 40E3, 40E4, and 40E5.	Observer data of 156 trips of 40 vessels, mainly in August-December, representing 2% of the total effort of the group concerned.	The data on catches and landings submitted by the UK support the conclusion that during the reference period for which the data have been collected, the catches of cod by the vessel group taken in the relevant statistical rectangles were on average less than or equal to 1.5% of the total catches of that vessel group in those statistical rectangles. STECF notes that given the relatively higher catches of cod in rectangle 40E4, in particular by one vessel, GBRB12281, it would be advisable to closely monitor such catches to verify that the conditions for exemption under Article 11(2) continue to be met.

UK Scotland	17 TR2 vessels targeting *Nephrops* in the Firth of Forth in ICSE Subarea IVb specifically statistical rectangles 41E6 and 41E7.	FDF observer data of 366 trips of 4 vessels in April-November, representing 12% of the total effort of the group concerned.	The data on catches and landings submitted by the UK support the conclusion that during the reference period for which the data have been collected, the catches of cod by the vessel group taken in the relevant statistical rectangles were on average less than or equal to 1.5% of the total catches of that vessel group in those statistical rectangles.

7. STRATEGIC ISSUES

7.1. Preparation and Planning for the future role of STECF EWGs dealing with stock advice

Background

The new Common Fisheries Policy regulation ((EU) No 1380/2013) gives the Commission the possibility to consult not only STECF but other appropriate scientific bodies while avoiding duplication of work by such bodies. The Commission would therefore like to review STECF's role in the assessment of stocks and the provision of advice for the management of stocks.

Under the new policy STECF should:

- provide advice on stocks complementary to advice received by other advisory bodies on a case by case basis
    - where such advice is not provided according to CFP relevant criteria (e.g. FMSY)
    - where further clarifications are needed
- support the Commission in its annual reporting obligation on the progress of achieving MSY for stocks fished in Union waters and by Union fishing vessels outside Union waters by
    - developing a reporting format (allowing comparison of different EU regions and external waters)
    - providing annual advice accordingly
- provide an economic assessment of the MSY policy

Terms of Reference

The STECF is requested to comment on the options for its future role in stock advice specified above in particular in terms of feasibility and potential implications for the planning of Expert Working Groups.

STECF response

Use of STECF in future advice on stocks of interest to the EU

Noting that under the 2012 reform of the CFP, the Commission is required to consult appropriate scientific bodies which includes *inter alia* the STECF (Article 7), STECF considers that there are a number of options on the most appropriate use of the Committee's expertise in giving advice on stocks of interest to the European Union in the future and which are given below.

1. **Continue with the current process.**

For over a decade, STECF has produced annual reports documenting summaries of the stock status and advice from regional advisory bodies and RFMOs and where appropriate, has provided additional comments, clarifications and in some cased pointed out discrepancies errors and omissions. This process has been conducted in response to the requirement under Article 2.3a of the Commission Decision establishing the STECF (Commission Decision 2005/629/EC), which states the STECF shall draw up an annual report on the situation as regards fishery resources relevant to the European Community.

The contents of such reports have also been produced annually as a consolidated report. Noting that the reports largely repeat information that is available elsewhere, the Commission will need to consider the benefits of continuing to have all such information summarised in a single volume.

2. **Refine the current process**

A second option would be to continue to request a review of stock status and advice for stocks of interest to the EU but to prepare a report that documents summary information for only those stocks where the review process has identified the need for additional comment by the STECF. Such additional comments may arise through the identification for the need for clarifications, discrepancies errors and/or omissions.

3. **Respond to specific requests only**

A third option would be to dispense with the requirement to conduct a comprehensive review of stock status and advice for stocks of interest to the EU and use the Expert Group to respond to specific requests for advice from the Commission that arise following the advice provided by relevant advisory bodies. Such requests may originate from Member States, the Commission itself or from other stakeholders.

4. Focus on reporting obligations on progress to achieving MSY

STECF notes that Article 50 of CFP Regulation (Regulation (EU) No 80/2013) states: "The Commission shall report annually to the European Parliament and to the Council on the progress on achieving maximum sustainable yield and on the situation of fish stocks, as early as possible following the adoption of the yearly Council Regulation fixing the fishing opportunities available in Union waters and, in certain non-Union waters, to Union vessels.

STECF also notes that indicators to comply with the provisions of Article 50 need to be developed and that such indicators as far as is practicable should be

- *Stable and comparable over time*
- *Objective*
- *Thoroughly documented*
- *Based as closely as possible on raw data*
- *Have a minimum of intermediate processsing*
- *Ideally, also be usable by EUROSTAT*
- *Reproducible*

STECF also notes that since the 2002 reform of the CFP, the Commission has published numerous metrics/indicators to monitor various aspects of performance including *inter alia* the following:

- ***Trends in fisheries management performance.***
    - Metric: number of stocks for which TACs are fixed in line with advised catches
- ***Trends in the state of fish stocks***
    - Metric: number of stocks exploited at Fmsy
    - Metric: number stocks outside safe biological limits
    - Metric: number of stocks for which zero-catch advice (or similar) is given
- ***Trends in the coverage of scientific advice***
    - Metric: number of stocks for which a quantitative advice is available
    - Metric: number of stocks for which F with respect to Fmsy is known

STECF considers that if requested, the task of providing appropriate indicators to report on the progress towards MSY could also be undertaken by the Expert Group dealing with the review of advice on stocks of interest to the EU. An initial discussion on how devise appropriate indicators that comply with the above requirements, concluded that the process is not straightforward and could not be adequately addressed in the current plenary meeting. STECF also concluded that the best way to proceed would be to convene an Expert Working group meeting in the second half of 2014 to review those indicators that have routinely been used to monitor performance against CFP objectives and if necessary, derive appropriate additional or alternative indices. The requirement for such a meeting (EWG 14-20) was already anticipated during the Bureau 14-01 Meeting held in Brussels in January 2014.

Economic assessment of MSY

STECF was requested to assess how STECF should provide an economic assessment of the MSY. Taking into account information from recent publications and ongoing FP 7 projects, STECF considered the following options:

1. Economic benefits achieving B_{MSY} or Maximum Economic Yield (MEY)

Several publications have assessed possible economic consequences of stock rebuilding (e.g. Döring and Egelkraut 2008), to pre-defined levels of biomass (B_{MSY}) for a group of stocks for which estimates of B_{MSY} are available from advisory bodies (Quaas et al. 2012, Froese and Quaas 2012; using their own Bmsy estimates). The reasoning behind such studies is to compare the status quo (in many cases under existing multi annual management plans) with the objective to achieve Bmsy. Such analyses would inform managers on costs and benefits of alternative harvest control rules (e.g. the 15% limit of fluctuations of the TAC). A similar approach could be taken with respect to achieving MEY, provided that a suitable definition for MEY (certain level of profits compare to invested capital, earned interests on invested capital, resource rent) can be defined.

Major disadvantages of the above approaches are that agreed B_{MSY} estimates are not available for many stocks and such estimates, together with a clear indication of the management approaches that are likely to be implemented in an attempt to achieve B_{MSY} will be required, in order to undertake informative economic assessments especially for mixed fisheries.

2. Regular impact assessment

STECF no longer regularly assesses the economic consequences of annual TAC advice as was done in the past using the EIAA model (SEC(2007). However, in the interim more sophisticated models like FishRent, FLR, FLBEIA allow the assessment of economic consequences of the introduction of management measures, changes of TACs or in case of the Mediterranean e.g. changes in effort. As an example, the FishRent model (Salz et al. 2011) is being further developed in several EU FP 7 projects (such as COEXIST, VECTORS, SOCIOEC, MYFISH) to assess the likely impact of management measures with respect to MSY. However, these developments and the broad application of the FISHRENT model have been made possible through the additional resources that are made available by the European Commission via FP 7.

It is, questionable whether STECF will be able to regularly assess the consequences of the MSY policy in all regional seas on an annual basis. There is a general shortage of experts able to run the bio-economic models (including within STECF) and the effort required will be substantial if there is a requirement to assess a large number of stocks. Additionally, experiences from impact assessments undertaken by STECF for multi-annual plans or the experiences of STECF Mediterranean EWG where economists participate, have demonstrated that detailed knowledge of specific fleet segments is crucial to the assessment of certain fisheries. Hence for example, such assessments could not be successfully be undertaken by a small number of economists participating in stock review EWG meetings. STECF suggests that further thought on this topic be addressed during the proposed EWG 14-20 (see below).

STECF proposal

STECF proposes that EWG 14-20 should be convened (timing and venue to be decided) during the second half of 2014 with the following terms of reference:

1. Review the metrics and indicators that have already been developed by the Commission to assess various aspects of performance of the CFP and assess the suitability for such metrics and indicators in evaluating performance against the objectives of the 2012 CFP reform (Regulation (EU) No 1380/2013 of the European Parliament and of the Council).

2. In the light of that review, and if necessary, develop and propose appropriate alternative indicators to evaluate progress towards achieving maximum sustainable yield and on the situation of fish stocks in accordance with Article 50 of Regulation (EU) No 1380/2013 of the European Parliament and of the Council, taking into account the requirements that such indicators should as far as practically possible should be:
    - *Stable and comparable over time*
    - *Objective*
    - *Thoroughly documented*
    - *Based as closely as possible on raw data*
    - *Have a minimum of intermediate processsing*
    - *Ideally, also be usable by EUROSTAT*
    - *Reproducible*
3. Describe the utility of the indices developed under point 2 above regarding their suitability to meet with the requirements of Article 50 of the CFP (Regulation (EU) No 1380/2013 of the European Parliament and of the Council). In particular assess the suitability of each indicator as a measure of performance for stocks that fall into the different categories of the ICES data limited stocks classification.

~~4.~~ Test the available bio-economic models and their potential for an economic assessment of the MSY policy for a limited number of stocks. STECF suggests that case studies should be undertaken using a diversity of stocks covering different ecoregions and under different management regimes.

5. Devise an appropriate reporting format for the proposed indices.

For 2014, it was agreed at the Bureau 14-01 meeting, that the 2014 stock review process would go ahead on the same basis as in previous years. While STECF is not averse to attempting an alternative approach, it is worth noting that as the mandate for the existing Committee derives from the 2005 Commission Decision establishing the STECF, the commitment to draw up an annual report on the situation as regards fishery resources relevant to the European Community is still in place. STECF also notes that it would not be possible to develop an alternative approach in addition to the current approach with the time and resources available for the planned stock review meetings. Finally, STECF considers that the Expert group meeting proposed above is required before an alternative approach to the current stock review process can be attempted.

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8. STECF RECOMMENDATIONS FROM STECF-PLEN-14-01

No new recommendations arose during discussions at the 45th plenary meeting of the STECF.

9. CONTACT DETAILS OF STECF MEMBERS AND OTHER PARTICIPANTS

[1] - Information on STECF members and invited experts' affiliations is displayed for information only. In some instances the details given below for STECF members may differ from that provided in Commission COMMISSION DECISION of 27 October 2010 on the appointment of members of the STECF (2010/C 292/04) as some members' employment details may have changed or have been subject to organisational changes in their main place of employment. In any case, as outlined in Article 13 of the Commission Decision (2005/629/EU and 2010/74/EU) on STECF, Members of the STECF, invited experts, and JRC experts shall act independently of Member States or stakeholders. In the context of the STECF work, the committee members and other experts do not represent the institutions/bodies they are affiliated to in their daily jobs. STECF members and invited experts make declarations of commitment (yearly for STECF members) to act independently in the public interest of the European Union. STECF members and experts also declare at each meeting of the STECF and of its Expert Working Groups any specific interest which might be considered prejudicial to their independence in relation to specific items on the agenda. These declarations are displayed on the public meeting's website if experts explicitly authorized the JRC to do so in accordance with EU legislation on the protection of personnel data. For more information: https://stecf.jrc.ec.europa.eu/adm-declarations and http://stecf.jrc.ec.europa.eu/web/stecf/about-stecf/cv .

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Abstract

The Scientific, Technical and Economic Committee for Fisheries hold its 45th plenary on 24-28 March 2014 in Brussels (Belgium). The terms of reference included both issues assessments of STECF Expert Working Group reports and additional requests submitted to the STECF by the Commission. Topics dealt with were *inter alia* assessments of multi-annual management plans, the future DCF, and Mediterranean stock assessments.

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The Scientific, Technical and Economic Committee for Fisheries (STECF) has been established by the European Commission. The STECF is being consulted at regular intervals on matters pertaining to the conservation and management of living aquatic resources, including biological, economic, environmental, social and technical considerations.

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