European Commission

JRC SCIENTIFIC AND POLICY REPORTS

SCIENTIFIC, TECHNICAL AND ECONOMIC COMMITTEE FOR FISHERIES – 51st PLENARY MEETING REPORT (PLEN-16-01)

PLENARY MEETING,
11-15 April 2016, Brussels

Edited by Clara Ulrich, Jesper Levring Andersen &
Hendrik Doerner

2016

Report EUR 27917 EN

Joint Research Centre

European Commission
Joint Research Centre (JRC)
Institute for the Protection and Security of the Citizen (IPSC)

Contact information
STECF secretariat
Address: Maritime Affairs Unit, Via Enrico Fermi 2749, 21027 Ispra VA, Italy
E-mail: stecf-secretariat@jrc.ec.europa.eu
Tel.: 0039 0332 789343
Fax: 0039 0332 789658

JRC Science Hub

https://ec.europa.eu/jrc

Legal Notice

JRC 101442

EUR – Scientific and Technical Research series – ISSN 1831-9424

ISSN 2467-0715

ISBN 978-92-79-58383-4

doi:10.2788/55727

Luxembourg: Publications Office of the European Union, 2016

How to cite this report:

Reports of the Scientific, Technical and Economic Committee for Fisheries (STECF) – 51st Plenary Meeting Report (PLEN-16-01). 2016. Publications Office of the European Union, Luxembourg, EUR 27917 EN, JRC 101442, 95 pp.

Abstract

Commission Decision of 25 February 2016 setting up a Scientific, Technical and Economic Committee for Fisheries, C(2016) 1084, OJ C 74, 26.2.2016, p. 4–10. The Commission may consult the group on any matter relating to marine and fisheries biology, fishing gear technology, fisheries economics, fisheries governance, ecosystem effects of fisheries, aquaculture or similar disciplines. The Scientific, Technical and Economic Committee for Fisheries hold its 51st plenary on 11-15 April 2016 in Brussels (Belgium).

TABLE OF CONTENTS

51st PLENARY MEETING REPORT OF THE SCIENTIFIC, TECHNICAL AND ECONOMIC COMMITTEE FOR FISHERIES (PLEN-16-01)

PLENARY MEETING

11-15 APRIL 2016, BRUSSELS

1. INTRODUCTION

The STECF plenary took place at the Centre Borschette, rue de Froissart, Brussels, from 11 to 15 April 2016. The interim chair of the STECF, Jesper Andersen, opened the plenary session at 09:15h. The terms of reference for the meeting were reviewed and discussed with DG MARE focal points before and consequently 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 14:00h on 15 April 2016.

2. LIST OF PARTICIPANTS

The meeting was attended by 27 members of the STECF, one invited expert and three JRC personnel. 23 Directorate General Maritime Affairs and Fisheries (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:
Massimiliano Cardinale
Thomas Catchpole
Leyla Knittweis
Loretta Malvarosa
Jenny Nord

3. INFORMATION TO THE COMMITTEE

3.1. Renewal of the STECF – Election of the STECF board

Following the appointment of the new Committee for the three-year term 11 April 2016 – 11 April 2019, elections for the positions of chair and two vice-chairs of the STECF were held. Two nominations for the chair position and four nominations for the vice-chair positions were received

by the secretariat. Before the election, the candidates presented themselves to the plenary on 12 April.

STECF members present elected Clara Ulrich as chair. Ralf Döring and Massimiliano Cardinale were elected vice-chairs. Elections took place on the morning of 13 April and were chaired by the secretariat.

3.2. STECF plenary – visit of DG MARE Director General

The spring plenary meeting was the 1st meeting of the new STECF. Director-General João AGUIAR MACHADO of DG MARE visited the plenary meeting to welcome the new committee. His visit provided the opportunity to listen and learn from the discussion, and to exchange in an open way on the mutual expectations of the role of STECF and its interactions with the Commission. Mr Aguiar Machado congratulated the members on their appointment and thanked them for their willingness to serve in the committee. He pointed out that quality and independence of the advice provided are crucial for the credibility of the Commission's policy development. This can only be ensured if STECF continues safeguarding independent advice and at the same time DG MARE will make sure that questions remain firmly on scientific ground. He stressed the importance of multi-species approaches to the long-term management plans, as well as more regionalized advice, in particular for the Mediterranean Sea. DG MARE sees STECF as key advice provider in the Mediterranean and Black Seas, in social and economic aspects of fisheries as well as with respect to the landing obligation and to technical measures. Finally, he also thanked the JRC for its continued support to the STECF by providing the secretariat and also for its high quality work in data collection. The speech was followed by a presentation by the STECF chair Clara Ulrich on STECF's role, functions and main areas of advice. The visit continued with a dialogue on what STECF would need from DG MARE (and vice versa) to work most efficiently.

4. ASSESSMENTS OF STECF EWG REPORTS

4.1. EWG 15-16: Mediterranean assessments - Part 2

Request to the STECF

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

Observations of the STECF

The meeting was held in Rome, Italy, from 14th to 18th of December 2015 and hosted by National Research Council of Italy (CNR). It was the second of the STECF expert meetings, within STECF's

2015 work programme, planned to undertake stock assessments in the Mediterranean Sea. The meeting was chaired by Massimiliano Cardinale and attended by 21 experts, including 4 STECF members. Furthermore, two JRC experts, one observer and one DG MARE representative were also present. Data of historical fisheries and scientific surveys derived from the official Mediterranean DCF data call issued to Member States on April 2015 with deadline on 2nd of July 2015 and 'operational deadline' on 17th of August.

The terms of reference for EWG-15-11of the meeting were:

ToR 1 – Compile and provide the most updated information on stock identification, age and growth, maturity, feeding, habitat, and natural mortality.

Table 4.1.1 – List of proposed stocks

Geographical Sub-Areas	Common name	Scientific name
GSA 17-18	Hake	*Merluccius merluccius*
GSA 19	Hake	*Merluccius merluccius*
GSA 17-18	Red mullet	*Mullus barbatus*
GSA 19	Red mullet	*Mullus barbatus*
GSA 17	Common sole	*Solea solea*
GSA 17-18	Norway lobster	*Nephrops norvegicus*
GSA 17	Spot-tail mantis shrimp	*Squilla mantis*
GSA 18	Spot-tail mantis shrimp	*Squilla mantis*
GSA 17-18	Spot-tail mantis shrimp	*Squilla mantis*
GSA 18	Deep-water rose shrimp	*Parapenaeus longirostris*
GSA 19	Deep-water rose shrimp	*Parapenaeus longirostris*
GSA 17-18-19	Deep-water rose shrimp	*Parapenaeus longirostris*
GSA 18	Giant red shrimp	*Aristaeomorpha foliacea*
GSA 19	Giant red shrimp	*Aristaeomorpha foliacea*
GSA 18-19	Giant red shrimp	*Aristaeomorpha*

foliacea

In case it is not possible to carry out an evaluation of those stocks listed in table 4.1.1, below is provided a reserve list of stocks (Table 4.1.2.).

Table 4.1.2. – Reserve stock list

Geographical Sub-Areas	Common name	Scientific name
GSA 25	Red mullet	*Mullus barbatus*
GSA 25	Striped red mullet	*Mullus surmuletus*
GSA 15-16	Giant red shrimp	*Aristaeomorpha foliacea*
GSA 15-16	Norway lobster	*Nephrops norvegicus*
GSA 22-23	Hake	*Merluccius merluccius*
GSA 22-23	Red mullet	*Mullus barbatus*
GSA 22-23	Norway lobster	*Nephrops norvegicus*

ToR 2 – Compile and provide complete sets of annual data on landings and discards for the longest time series available up to and including 2014. This should be presented by fishing gear as well as by size/age structure.

ToR 3 – Compile and provide complete sets of annual data on fishing effort for the longest time series available up to and including 2014. This should be described in terms of amount of vessels, time (days at sea, soaking time, or other relevant parameter) and fishing power (gear size, boat size, horse power, etc.) by Member State and fishing gear. Data shall be the most detailed possible to support the establishment of a fishing effort or capacity baseline.

ToR 4 – Compile and provide indices of abundances and biomass by year and size/age structure for the longest time series available up to and including 2014.

ToR 5 – Assess trends in historic and recent stock parameters on fishing mortality, stock biomass, spawning stock biomass, and recruitment. Different assessment models should be applied as appropriate, including retrospective analyses. The selection of the most reliable assessment should be explained. Assumptions and uncertainties should be specified.

ToR 6 - Propose and evaluate candidate MSY value, range of values and safeguard points in terms of fishing mortality and stock biomass. The proposed values shall be related to long-term high yields and low risk of stock/fishery collapse and ensure that the exploitation levels restore and maintain marine biological resources at least at levels which can produce the maximum sustainable yield.

ToR 7 - Provide short and medium term forecasts of spawning stock biomass, stock biomass and catches. The forecasts shall include different management scenarios, inter alia: zero catch, the status quo fishing mortality, and target to FMSY or other appropriate proxy by 2018 and 2020. In

particular, predict the level of fishing effort exerted by the different fleets which is commensurate with the short- and medium-term forecasts of the proposed scenarios.

ToR 8 - Summarize and concisely describe all data quality deficiencies, including possible limitations with the surveys of relevance for stock assessments and fisheries. Such review and description are to be based on the data format of the official DCF data call for the Mediterranean Sea launched on the 22 April 2015. Identify further research studies and data collections which would be required for improved fish stock assessments. This review shall be presented in a manner that is compatible with the online platform developed by the JRC for data issues[2].

ToR 9 - Provide a synoptic overview of: (i) the fishery; (ii) the most recent state of the stock (spawning stock biomass, stock biomass, recruits, and exploitation level by fishing gear); (iii) the source of data and methods and; (iv) the management advice, including MSY value, range of values and safeguard points.

ToR 10 - Review the assessments of sardine and anchovy in the Adriatic Sea (GSAs 17-18), made by the GFCM-SAC at the Working Group on stock assessment on small pelagic species (23-27 November 2015).

ToR 11 - Review the scientific basis of the Spanish management plan "rastrillo de cadenas" and its sampling programme. Make any appropriate comments and recommendations, with respect to the measures proposed therein.

STECF comments

STECF observes that EWG 15-16 undertook the stock assessment of 15 stocks.
Mediterranean hake and red mullet were assessed in GFCM GSA 19 and jointly for GFCM GSAs 17 and 18. Common sole was assessed in GFCM GSA 17. Norway lobster was assessed jointly in GFCM GSAs 17 and 18. Spot-tail mantis shrimp was assessed in GFCM GSAs 17 and 18 and jointly for GFCM GSAs 17 and 18. Deep-water rose shrimp was assessed in GFCM GSAs 18 and 19 and jointly for GFCM GSAs 17, 18 and 19. Giant red shrimp was assessed in the individual GFCM GSAs 18 and 19 and jointly for GFCM GSAs 18 and 19.

For two stocks (Norway lobster in GSAs 17-18 and Giant red shrimp in GSA 18), the assessment was conducted, but not accepted due data issues. In particular for Norway lobster in GSAs 17-18, no consensus was reached during EWG 15-16 about the stock configuration to be analysed (jointly GSA 17-18 or separately for Pomo/Jabuka pit in GSA 17, outside the Pomo/Jabuka pit in GSA17 and GSA 18). If a future assessment is required to be carried out, several potential methods are available to do so.

STECF notes that the 13 stocks for which assessment was accepted were classified as exploited above F_{MSY} (see Table 4.1-1 for details).

Table 4.1-3 - Synoptic table of the stock assessed during EWG 15-11. In red are stocks for which current F is larger than F_{MSY}.

Stock area	Common name	Species	Assessment	F*	F_{MSY}	F_{MSY} range	F/F_{MSY}	B_{lim}	B_{curr}	B/B_{lim}	Short term	MSE
GSA 17-18	Hake	*Merluccius merluccius*	XSA	0.89	0.16	0.11 - 0.23	5.56	2569	3285	1.28	Yes	0
GSA 19	Hake	*Merluccius merluccius*	XSA	0.87	0.18	0.12 - 0.25	4.83	452	1167	2.58	Yes	0
GSA 17-18	Red mullet	*Mullus barbatus*	XSA	0.54	0.41	0.27 - 0.56	1.32	3439	6635	1.93	Yes	
GSA 19	Red mullet	*Mullus barbatus*	XSA	0.99	0.45	0.30 - 0.62	2.20	496	496	1.00	Yes	0
GSA 17	Common sole	*Solea solea*	SS3, XSA	0.62	0.26	0.18 - 0.36	2.38	1454	3545	2.44	Yes	
GSA 17-18	Norway lobster	*Nephrops norvegicus*	XSA	not accepted								
GSA 17	Spot-tail mantis shrimp	*Squilla mantis*	XSA	0.63	0.48	0.32 - 0.66	1.31	10452	11536	1.10	Yes	
GSA 18	Spot-tail mantis shrimp	*Squilla mantis*	XSA	1.05	0.43	0.29 - 0.59	2.44	848	1712	2.02	Yes	0
GSA 17-18	Spot-tail mantis shrimp	*Squilla mantis*	XSA	0.69	0.56	0.37 - 0.76	1.23	12878	13176	1.02	Yes	
GSA 18	Deep-water rose shrimp	*Parapenaeus longirostris*	XSA	1.46	0.72	0.48 - 0.98	2.03	1580	1963	1.24	Yes	0
GSA 19	Deep-water rose shrimp	*Parapenaeus longirostris*	XSA	1.45	0.89	0.59 - 1.21	1.63	386	386	1.00	Yes	
GSA 17-18-19	Deep-water rose shrimp	*Parapenaeus longirostris*	XSA	1.53	0.69	0.46 - 0.94	2.22	2863	3557	1.24	Yes	0
GSA 18	Giant red shrimp	*Aristaeomorpha foliacea*	XSA	not accepted								
GSA 19	Giant red shrimp	*Aristaeomorpha foliacea*	XSA	0.66	0.29	0.19 - 0.40	2.28	44	250	5.68	Yes	0
GSA 18-19	Giant red shrimp	*Aristaeomorpha foliacea*	XSA, a4a	0.46	0.42	0.28 - 0.57	1.10	184	525	2.85	Yes	0

*Last year

STECF notes that EWG 15-16, in fulfilment of Tor 9, estimated F_{MSY} values and ranges, and safeguard points in terms of stock biomass. EWG 15-16 addressed this TOR by using Management Strategy Evaluation (MSE) to evaluate whether the FMSY upper range is precautionary or not. The MSE functions were run using R-scripts developed for and tested during STECF 15-09. The MSE included stochasticity in: a) variability of the recruitment around the geometric mean of the last 3 years of data, b) uncertainty in the MEDITS survey indices to represent the true density (observation error), and c) uncertainty in the perceived stock status to represent the true abundance (assessment error).

F_{MSY} ranges were proposed and tested for robustness of the upper range (F_{upper}) for all assessed stocks. F_{upper} was considered safe if the probability of SSB to fall below B_{lim} at F = F_{upper} was less than 5%, which was the case for all stocks for which the results of the MSE were considered valid. F_{MSY} ranges are summarized in Table 4.1-3.

STECF notes that EWG 15-16 conducted short term forecasts of stock size and catches for 13 stocks. The forecasts were also conducted by fleet. No medium term forecasts were carried out for any of the stocks assessed at the meeting because no meaningful stock-recruitment relationship was estimated for any of the stock assessed.

STECF notes that in fulfilment of TOR (8), stock specific evaluations of the data quality were conducted for all stocks requested under ToR (1-7) by the experts.

STECF notes that some unresolved issues remain, in particular relating to data quality for certain stocks and delays in data submission. Moreover, the change in the timing of MEDITS survey has occurred in recent years. According to the MEDITS manual V 7 2013, the period of the MEDITS survey is centred in June (from May to July). This is a fundamental aspect of a standardized international survey that is used to perform stock assessment and provide management advice. The timing has likely a significant effect on the CPUE and the size composition of fish sampled by the survey. Shifts in survey timing could impact its internal consistency, and thus cohorts are more difficult to track in time. This can result in poorly fitting stock assessments and poor estimates of stock status.

STECF notes that EWG 15-16, in fulfilment of TOR (10), was requested to review the assessments of sardine and anchovy in the Adriatic Sea (GSAs 17-18), made by the GFCM-SAC at the Working Group on stock assessment on small pelagic species (23-27 November 2015). Given that the input data for both stocks of anchovy and sardine were substantially revised in different key aspects and were not available during the meeting, EWG 15-16 was not able to conduct the review of the assessments of sardine and anchovy in the Adriatic Sea (GSAs 17-18).

STECF notes that EWG 15-16, in fulfilment of TOR (11), was requested to review the scientific basis of the Spanish management plan "*rastrillo de cadenas*" and its sampling programme. The EWG 15-16 concluded that the information in the MP is not sufficient for assessing the sustainability of the activity neither from a biological nor from a socio-economic point of view.

STECF conclusions

STECF concludes that the EWG-15-16 adequately addressed most of the Terms of Reference, except ToR 10.

STECF concludes that the stock assessment results presented in the EWG 15-16 report and summarised in Table 5.1-3 above represent the best information currently available on the status and exploitation rate on those stocks.

For three species, spot-tail mantis shrimp, deep water rose shrimp, giant red shrimp, accepted assessments were undertaken for single GSA and for GSAs combined (respectively 17-18, 17-18-19, 18-19). The EWG 15-16 did not indicate which assessments are likely to best reflect the status of these species in the Adriatic and western Ionian Sea.

STECF concludes that according to StockMed project (Fiorentino et al., 2015), for deep water rose shrimp and giant red shrimp the combined assessments are likely to better reflect the status of these stocks.

STECF is unable to determine the best assessment configuration for spot-tail mantis shrimp, as the stock identity is still unclear for this species in the area.

In relation to the assessment of Norway lobster in GSAs 17 and 18, STECF concludes that the assessment should be done using methods that allow the separation of the stock into different sub-populations (i.e. Pomo/Jabuka pit; GSA 17 outside the Pomo/Jabuka pit; GSA 18).

STECF is unable to determine if changes in the timing of MEDITS survey that occurred in the last years has an impact in the assessments carried out during EWG 15-16 and EWG 15-11. Such an analysis should be conducted.

STECF concludes that regarding ToR 10 (review of the assessments of sardine and anchovy in the Adriatic Sea made by the GFCM-SAC), a better coordination among GFCM-SAC, FAO AdriaMed regional project and EU is needed in order to make best use of the human resources and provide

advice for a sustainable management of small pelagics stocks in the Adriatic Sea (see also items 6.8 and 7.5 in PLEN report).

Reference

Fiorentino F., E. Massutì, F. Tinti, S. Somarakis, G. Garofalo, T. Russo, M.T. Facchini, P.Carbonara, K. Kapiris, P. Tugores, R. Cannas, C. Tsigenopoulos, B. Patti, F. Colloca, M. Sbrana, R. Mifsud, V. Valavanis, and M.T. Spedicato, 2014. Stock units: Identification of distinct biological units (stock units) for different fish and shellfish species and among different GFCM-GSA. STOCKMED Deliverable 03: FINAL REPORT. September 2014, 215 p.

4.2. EWG 16 01: EU Map and template for National Workplans

Request to the STECF

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

Observations of the STECF

STECF observes that, according to the terms of reference, the meeting of EWG 16-01 addressed two different tasks:

1. to provide expertise on outstanding issues of the future EU Multi-annual programme;

2. to provide expertise for the preparation of the National Work Plan template.

STECF observes that the meeting was organized with a very short notice and the tasks were rather complex to be addressed in only one meeting. However, STECF recognizes that the level of participation was high and covered all the required expertise with the exception of sustainability of aquaculture which, for this reason, was not assessed. EWG 16-01 referred to the DCF workshop on aquaculture (Gydnia, 2015) where the issue of sustainability of aquaculture was discussed.

STECF also observes that the legal set up for the future data collection framework is still not completely defined and this increased the time necessary to clarify and address the terms of reference. The revision of the Data Collection Framework (Council regulation (EC) No. 199/2008) is still under negotiation. Therefore, the discussions on EUMAP only reflect the principles reported in the version of the re-cast available at the moment of the meeting.

The future EU Multi-annual programme

Concerning the preparation of future EU MAP, the EWG 16-01 was required to critically assess if the basic principles of the DCF re-cast and the major recommendations by STECF have been taken into account in the draft EU MAP where deemed necessary.

STECF notes that the EWG worked on the draft "Commission Decision adopting a multiannual Union programme for the collection, management and use of data in the fisheries and aquaculture sectors", using the "track changes" mode for proposing amendments and provided explanations and comments on those changes in the report of the meeting.

STECF observes that the proposed version of EU MAP has been produced in compliance with the basic principles of the DCF re-cast and the previous STECF recommendations, as it contains several suggestions for including the regionalization approach and for establishing sampling plans according to statistical sound principles.

STECF notes that the EWG 16-01 amended the list of definitions by deleting the redundant ones, adding the missing ones and changing some of them. In particular, STECF observe that EWG suggested changing the definition of "fishing days" according to the conclusion of the DCF workshop on transversal variables (Cyprus, February 2016).

STECF observes that EWG suggested a roadmap for evaluation and updating the list of mandatory surveys. In line with proposals of previous STECF meetings, as well as RCMs in 2015, and not to disrupt current well-established surveys, the EWG agreed that the EU MAP shall contain a basic list of mandatory internationally coordinated surveys, however, this list shall be evaluated against updated eligibility criteria. Once this evaluation is completed, the list of mandatory surveys shall be updated.

STECF notes that EWG discussed the issue of thresholds and suggested to maintain the current provisions of the DCF because thresholds for national work plans should be considered as interim measures only prior to the development and implementation of regional sampling plans through which regionally coordinated sampling and task-sharing would accommodate data collection requirements.

Regarding economic data, STECF observes that EWG proposed to include the fleet segmentation in the EUMAP and suggests re-define the population for aquaculture and processing enterprises

STECF observes that the proposal of the EWG to collect data on annual investments for inactive vessels is questionable and should not be considered for inclusion in the EU MAP. The collection of such variable for the inactive vessels will imply the implementation of a specific survey and therefore it will require too much sampling effort compared to the information that will be gained.

STECF observes that EWG discussed the role of PGECON and the need to have a clear legal establishment of this group at the same level of Regional Coordination Groups. The task for PGECON is to advice on definitions, methodologies and best practices for the collection of economic and transversal data.

STECF notes that the EWG reviewed the tables to be included in the EUMAP. The revision is in line with previous STECF and RCM recommendations. However, STECF observes that Table 1D (List of species to be monitored because of species protection programmes in the EU or under international obligations) is not referred in the text of the EU MAP and it contains redundant information compared to previous tables which already include list of species to be monitored.

Preparation of the National Work Plan (NWP) template

Under the EMFF, the MS Operational Programmes must be supplemented by a work plan for data collection (Reg. 508/2014, Article 21), which will replace the National Programme. This work plan

will be submitted by Member States to COM for the first time on 31st October 2016 in a specified format (Article 4(4) of Regulation (EC) No 199/2008). The content of the work plan must be consistent with Article 4(2) of that Regulation, referring to multi-annual sampling plans, schemes for at sea monitoring, surveys and data use. COM needs to provide Member States with a template for the work plan before the summer, to allow for sufficient time for preparation. In addition, there is a need to streamline existing reports on data collection, namely Operational Programmes and Annual Reports (ARs), and avoid duplication of information.

STECF observes that the EWG 16-01 was invited to critically assess the draft National Work Plan template and guidelines as proposed by COM and improve it where necessary. The aim was to develop a template that is streamlined with existing templates and in line with the emerging EU MAP, as well as end user needs.

STECF notes that to address this issue the EWG was provided by the European Commission with a draft "Commission Implementing Decision laying down rules on procedures, format and timetables for the submission of work plans for data collection". In addition, the EWG reviewed the work done by two experts contracted ad-hoc by the Commission prior to the meeting with the aim to prepare draft tables and explanatory notes on changes suggested regarding the NWP tables.

STECF observes that the focus of the exercise was on simplification, user-friendly formatting and standardisation. Guidance consideration has been given to make the NWP template more relevant for evaluation and statistical analysis, to simplify the tables, and where possible to look to the potential to automate table production with standard software and data formats.

STECF notes that the EWG 16-01 suggests keeping the table "National Organisation" and to include a clarification about national organisation and coordination of data collection in the new WP structure. The EWG suggests including a table "Data availability", where the name of the data sets and timing when the final data will be available are provided.

STECF notes that considerable changes are suggested in the WP templates for the sampling of fisheries, prompted by 1) the move to probability-based sampling methods and, 2) the introduction of regional sampling plans.

Regarding surveys, STECF notes that an additional table was suggested to include information on data dissemination and use in advice.

Regarding economic data, STECF notes that the EWG suggested to provide all necessary information about economic data collection in only one table for fishery, two tables for aquaculture and one table for fish processing. STECF notes that this suggestion fully addresses the aim of simplification.

STECF notes that substantial changes have been suggested for the section on activity data. The previous NP table "Transversal Variables Data collection strategy" was changed into the new table "Fishing Activity Variables Data collection strategy". The new table provides a link between economic and biological modules through the new included columns: Supra-region; Fleet segment; Metiers (level 6). The data sources, either Control Regulation or complementary data collection, should be clearly stated for each variable group or variable in the case different sources should be used within a specific variable group.

STECF conclusions

STECF concludes that the EWG 16-01 fully addressed all Terms of Reference.

STECF endorses the proposed guidelines and standard tables prepared by EWG 16-01 for the EUMAP.

STECF agrees with the roadmap for evaluation and updating the list of mandatory surveys. According to this roadmap, a dedicated STECF EWG should be convened at the beginning of 2017 to evaluate all surveys according to predefined and updated criteria. This EWG will then propose the list of mandatory surveys to be included in EU MAP.

STECF concludes that the EU MAP will improve the general framework of the data collection in terms of data requirements and end user's needs. Even if one of the basic principles considered in the preparation of the future EU MAP is to keep homogeneity in time-series, STECF is aware that some of the proposed changes compared with the present DC MAP (EU Decision 93/2010) may have an impact on sampling activities as well as on final estimates. In these cases, an assessment of the proposed changes is needed. STECF considers that the implementation and functioning of the EU MAP need to be monitored at national and EU level to allow future adjustments if necessary.

STECF concludes that collection of investments for inactive vessels should not be included in the EUMAP.

As far as the template for NWP, STECF concludes that the preliminary work done by EWG 16-01 fully addresses the terms of reference. The proposed set of standard tables have been produced in compliance with the aim of simplification, as requested by the Commission, as they contain several suggestions for deletion of redundant information and guidance on definitions and on reporting requirements. In addition, the proposed set of standard tables has been drafted with the aim of standardisation (possibility to use standards for completion of both NWP and Annual Report) and automatically compilation.

STECF considers that NWP template text in Chapter 2, "data to be collected in accordance with the new multi-annual Union programme" should make reference to the EU MAP and not repeat the text.

STECF endorses the proposed guidelines and standard tables prepared by EWG 16-01 and recommends that their finalization will happen as soon as possible in order to provide Member States with new reporting formats and guidance to be applied for the forthcoming programming period (NWP 2017-2020 to be submitted by Member States by the end of October 2016).

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

5.1. Review of the ad-hoc contract on scoping for the Landing Obligation EWGs and quota adjustment

Background

a. Reporting and monitoring on landing obligation

Regulation (EU) No 2015/812[1] (the so-called Omnibus Regulation), introduced an obligation for the Commission to report on the implementation of the landing obligation. The Commission has to submit its first report to the European Parliament and the Council before 31 May 2016, covering implementation in 2015.

According to Article 9 of the Omnibus Regulation, which introduces a new paragraph 14 to Article 15 of Regulation (EU) No 1380/2013 of the CFP this report should include the following elements:

- steps taken by Member States and producer organisations to comply with the landing obligation;
- steps taken by Member States regarding control of compliance with the landing obligation;
- information on the socioeconomic impact of the landing obligation;
- information on the effect of the landing obligation on safety on board fishing vessels;
- information on the use and outlets of catches below the minimum conservation reference size of a species subject to the landing obligation;
- information on port infrastructures and of vessels' fitting with regard to the landing obligation; for each fishery concerned; and
- information on the difficulties encountered in the implementation of the landing obligation and recommendations to address them.

Article 9 of the Omnibus Regulation clarifies that the report shall be based on information by, among others, the Member States and the Advisory Councils concerned.

b. TAC adjustment

In accordance with article 16(2) of EU Regulation (No) 1380/2013 , for stocks subject to the landing obligation, fishing opportunities shall be set taking into account the change from setting fishing opportunities based on the landed component of the TAC , to one that reflects catches. This necessitates an increase or "top-up" in TAC's to account for previous discarding patterns.

1 Regulation (EU) 2015/812 Of The European Parliament and of the Council of 20 May 2015 amending Council Regulations (EC) No 850/98, (EC) No 2187/2005, (EC) No 1967/2006, (EC) No 1098/2007, (EC) No 254/2002, (EC) No 2347/2002 and (EC) No 1224/2009, and Regulations (EU) No 1379/2013 and (EU) No 1380/2013 of the European Parliament and of the Council, as regards the landing obligation, and repealing Council Regulation (EC) No 1434/98 OJ L 133, 29.5.2015, p. 1

These TAC adjustments were applied to stocks and in fisheries coming under the landing obligation in 2015 (pelagic stocks in all sea basins and most stocks in the Baltic) and in 2016 (some demersal fisheries in the NWW, SWW and North Sea). However, the methodology used for calculating TAC adjustments when setting the fishing opportunities for 2016 was the subject of extensive discussion, particularly in cases where available discard data was incomplete or MS chose to use catch thresholds based on historic landings to determine whether a vessels was subject or not to the landing obligation.

c. Assessment of joint recommendations of discard plans

Joint recommendations for discard plans have the purpose to provide the Commission with the agreement among Member States cooperating at sea-basin level on the elements for the preparation of Union law (Commission delegated Act) in accordance with Article 15.6 of the CFP Regulation. The six potential elements that can be contained in a discard plan are the following:

- definitions of fisheries and species;
- provisions for survivability exemptions;
- provisions on de minimis exemptions;
- the fixation of minimum conservation reference sizes;
- additional technical measures needed to implement the landing obligation; and
- the documentation of catches.

STECF has reviewed the joint recommendations prepared by the regional groups of MS in 2014 for fisheries subject to the landing obligation in 2015 and in 2015 for fisheries subject to the landing obligation in 2016. During the course of 2016 STECF will be asked to review and evaluate joint recommendations received for fisheries coming under the landing obligation in 2017.

Request to the STECF

STECF is requested to review the ad-hoc contract and to comment and identify any additional information to be taken into account in the exercises a, b and c.

STECF response

Summary of report of ad hoc contract (DG MARE Contract No. SI2.699950 'Quota top-ups and preparation for reporting on the landing obligation')

The ad hoc contract request sought guidance relating to the three different aspects of the Landing Obligation (LO) listed above, each of which will involve specific work sessions during 2016. Monitoring and reporting requirements for the LO will be addressed at STECF EWG 16-04 May 2016, TAC adjustment issues will be addressed at the STECF Summer plenary PLEN 16-02 and assessment of joint recommendations of discard plans will be undertaken at EWG 16-06 June 2016. The report of the contract is divided into three sections each covering one of the aspects

of the LO as listed above. In each section, an overview of the relevant issues and the basic data requirements is followed by suggested Terms of Reference for the 2016 work sessions.

On monitoring and reporting, the contract report describes the requirement added to Article 9 of the Omnibus Regulation for member states to report on progress and experience in the implementation of the LO. The contract report first considers what might be possible in providing an initial evaluation of 2015. The various types of information to be included in MS reports are discussed, drawing attention to the fact that most relate to actions taken by MS and industry to comply with the LO. Given that submissions from MS and available data are, for the present, limited, it is not expected that the 2015 evaluation will be very informative. Greater focus is given to MS reporting beyond 2015. In addition to the material detailed in the Omnibus Regulation, the contract report discusses the need for information reflecting what is happening at sea and illustrating substantive outcomes of the LO.

The contract report provides an overview of the previous TAC adjustment process and discusses difficulties created by data quality issues. In relatively straightforward situations involving the incorporation of complete fleet segments, the ICES catch forecast and relevant discard rates can be used to generate an appropriate TAC. In situations, however, where incorporation into the LO is partial and involves 'catch thresholds', various approaches are possible -worked examples are included to illustrate the effects of three such approaches. The contract report also lists the detailed MS data required for handling catch threshold cases such as landings and effort data for vessels affected and not affected by the LO.

In relation to the assessment of discard plans, the contract report lists the main elements which can be included in plans and summarises the evaluations that took place in 2014 and 2015. The report also draws attention to the 5 STECF EWGs which have contributed to a greater understanding of the LO and to an evaluation process which remains valid and provides a consistent approach. The contract report suggests that only minor changes to the established process will be required. A brief overview of the elements of discard plans highlights some specific actions for the 2016 process including the need to revisit high survival, *de minimis* and MCRS cases where STECF previously advised that additional information was required to justify the cases. The contract also highlights STECF's earlier discussion on the importance of compliance and robust catch monitoring and suggests that other bodies (DGMARE control unit or EFCA) should undertake evaluation of this discard plan element.

STECF comments

STECF reviewed and discussed the report of the ad hoc contract and considers this to be a helpful document which forms a sound basis for guiding and undertaking three important landing obligation exercises. The scoping work undertaken has addressed each of the exercises a, b and c offering a well-structured overview of the issues and the types of data required and suggesting Terms of Reference for the planned work sessions in 2016.

During discussion, STECF identified a few additional points which could be taken into account during subsequent work on the three topics a, b and c.

STECF notes that for reporting and monitoring on the landing obligation there is likely to be an increasing requirement, over time, to demonstrate the effects of the landing obligation. STECF supports the view in the contract report that while the reporting elements listed in the Omnibus Regulation are necessary, careful attention should be given to the development of metrics which reflect the experience at sea and can illustrate how well the LO is working. Amongst other things examination of catch profiles, monitoring of the distribution of fishing activity in relation to fish distribution and information on observer refusal rates are all likely to be important.

STECF notes that in order to obtain necessary MS buy-in for the reporting process, the requirements will need to be reasonable and focused on a series of key metrics. The data needed should be clearly identified. Cumbersome processes for submission are best avoided and guidance for submission will need to be clear. STECF notes that over the course of time some adjustment and refinement in the information requirements could be necessary as the implementation of the LO progresses and experience grows.

STECF notes that the process of adjustment of TACs is not straightforward and that it relies on data (particularly discard data) which are often uncertain. STECF notes that examples in the contract report illustrate the use of different approaches for calculating TAC adjustments in situations involving the application of 'catch threshold' criteria to decide whether vessels come under the LO or not. STECF draws attention to the need for thorough investigation of the pros and cons of using different variables when calculating TAC adjustments in catch threshold cases. STECF considers that owing to the different characteristics of fisheries and gears in different areas, it may not be possible to adopt the same approach in all cases. STECF welcomes the early opportunity to address this topic at its summer plenary meeting (as opposed to late in the year) and draws attention to the need to ensure MS are made aware of the vessel based data requirements ahead of this meeting.

During the previous discussions by STECF of all aspects of the LO, the importance of comprehensive and robust catch monitoring has repeatedly been emphasized to ensure successful implementation of this policy. STECF again draws attention to the critical importance of obtaining reliable catch estimates and the need to closely scrutinize diagnostic material. Failure to achieve this, risks not only the ability to judge progress in implementation of the LO, but also the utility of future scientific assessments of fish stocks and the reliability of catch forecasts which inform decisions on catching opportunities. Regardless of who assesses the proposals for catch monitoring contained within the Joint Recommendation Discard Plans, this assessment and the subsequent monitoring activity remain fundamental to achieving the overall objectives of the current CFP.

STECF conclusion

STECF concludes that the ad hoc contract report together with the additional comments above provide a sound basis for conducting the Landing Obligation work sessions scheduled in 2016.

5.2. Sole VIId: assessment of TAC constraints (15%, 20%) in NWWAC management measures

Background

The STECF answered four Commission requests on the eastern Channel sole VIId in 2015:
- assessment of Belgian technical measures in April plenary[2]
- assessment of French technical measures in July[3]
- assessment of the management strategy proposed by the NWWAC in July and November[4]

The STECF concluded that the management strategy proposed by the NWWAC (constant TAC of 3,000 t plus technical measures plus biomass safeguard) was in line with ICES' precautionary approach and that F_{MSY} would be reached in the course of 2018. The NWWAC produced a final advice in December 2015[5] which formed the basis for the 2016 TAC setting (see the statement below). In this political agreement between the Council and the Commission, the biomass safeguard would be triggered if the SSB fell in any year before 2019 below MSY $B_{trigger}$ (point ii in the statement). The current SSB as evaluated by ICES in June 2015 is very close to the limit reference points (SSB = 8,440 t, MSY $B_{trigger}$=B_{pa}=8 000 t) so there is a possibility, pending ICES advice for 2017, that the biomass safeguard should be triggered next year. In such case, the TAC recommended would be equal to the level corresponding to a fishing mortality=F_{MSY}, *i.e.* presumably lower than 3,000 t. The NWWAC requested in December 2015 that a maximum of 15% and 20% inter-annual TAC variations be also assessed by the STECF.

In addition, the UK, France, Belgium and the Commission issued a joint statement during the December 2015 Fisheries Council:

'The Commission notes the assessment of the management measures introduced by France and Belgium in 2015 to support the recovery of the eastern Channel stock. Nursery areas for this stock are located in estuarine areas and bays and the Scientific, Technical and Economic Committee for Fisheries (STECF) indicates that these measures are expected to provide beneficial effects and recognises the vital role played by nurseries in the productivity of the sole stocks and the necessity to protect juveniles. Inside these areas, the Commission will, if appropriate, seek further scientific advice before 2017 on measures that would benefit the conservation of juveniles of this stock. Upon such advice, the Member States commit to consider measures which will efficiently protect juveniles of this stock in the areas recommended by such scientific body.

The Commission also welcomes the implementation of additional French conservation measures in 2016: i) strengthen the protection of the nursery areas, ii) increase the area closed to fishing within the nursery areas, and iii) increase the minimum conservation reference size to 25 cm for French vessels in accordance with EU legislation, where appropriate. The Commission and the Member States concerned welcome the management strategy proposed by the North Western

2 https://stecf.jrc.ec.europa.eu/documents/43805/991908/2015-04_STECF+PLEN+15-01_JRC95802.pdf
3 https://stecf.jrc.ec.europa.eu/documents/43805/1099561/2015-07_STECF+PLEN+15-02_JRC97003.pdf
4 https://stecf.jrc.ec.europa.eu/documents/43805/1281129/2015-11_STECF+PLEN+15-03_JRC98672.pdf
5 http://www.nwwac.org/_fileupload/Opinions%20and%20Advice/Year%2011/NWWAC%20Advice%20Management%20Strategy%20for%20sole%20VIId%20-%20Dec-2015_EN.pdf

Waters Advisory Council based on a constant Total Allowable Catch to manage this stock and assessed by the STECF in 2015.

In light of the positive assessment of the STECF, and notwithstanding relevant top-ups for this stock in application of the landing obligation, it is appropriate to set a TAC of 3000 tonnes for 2016 corresponding to a 14% decrease as compared to 2015. ***The Commission and the Member States concerned agree that the following rules should be considered in future years unless scientific advice indicates that they are no longer appropriate: i) keep the TAC constant at 3000 tonnes, ii) if the biomass in any year before 2020 is below the precautionary level (Bpa), then the TAC will be set at a level corresponding to a fishing mortality equal to FMSY and iii) if ICES indicates in 2019 that the fishing mortality in 2020 risks being above FMSY, then the TAC will be set at a level corresponding to a fishing mortality in line with FMSY. If the fishing mortality is below FMSY for any 2 consecutive years before 2020 then the Commission will request the STECF to provide advice on the situation of this stock.'***

Documents

- Please refer to the footnotes for the other documents

Request to the STECF

Assessment of a 15 % and 20 % inter-annual maximum TAC variation

The STECF is requested to re-run the assessment performed during the third plenary in 2015 by applying inter-annual TAC variations constraints to the management strategy agreed by the Council and the Commission for the 2016 TAC setting[6]:

a. a 15 % maximum inter-annual TAC variation constraint when the management strategy foresees the application of the biomass safeguard (point ii in the management strategy agreed by the Council and the Commission)
b. a 20 % maximum inter-annual TAC variation constraint when the management strategy foresees the application of the biomass safeguard (point ii in the management strategy agreed by the Council and the Commission)

The STECF is invited to compare those results with its previous advice and comment on the development of the stock, fishing mortality and fishing opportunities from 2017 to 2019 if such TAC constraints were applied.

STECF response

STECF has used the same MSE code as in November Plenary 2015, including the same set of 1000 recruitment random draws, so the results are strictly comparable with the previous ones, with the exception of the additional clause of inter-annual TAC constraint when SSB falls below MSY $B_{trigger}$ (=B_{pa}).

STECF notes a lack of clarity regarding the application of the clause when F falls below F_{MSY}. This clause, referred to "Clause 2" in November 2015, stated that "*If (in any year between 2016 and*

6 Management strategy: 4th paragraph of the statement in bold.

2019) a TAC of 3,000 t is predicted to result in a fishing mortality rate below F_{MSY}, then the TAC is set to a level corresponding to a fishing mortality equal to F_{MSY}." The 2015 Joint Statement mentions that "***If the fishing mortality is below F_{MSY} for any 2 consecutive years before 2020 then the Commission will request the STECF to provide advice on the situation of this stock".***

After clarification STECF has kept this clause in the simulations, so the base case is the scenario referred to as "Clauses 1+2+3+safeguard" in STECF PLEN-15-03.

As a main outcome, STECF notes that the results of the MSE are little affected by adding a TAC constraint. The risk of not achieving F_{MSY} and/or being below MSY $B_{trigger}$ is low after 2018. Additionally, the TAC constraint may even bring some stability in the simulations of the stock, avoiding the cycling behaviour where the advice changes abruptly from year to year when the stock oscillates between slightly below and slightly above MSY $B_{trigger}$.

The tables and figures as in PLEN-15-03, updated with the new scenarios, are given below.

Table 5.2.1. – Risk (in %) by year of each management strategy for sole VIId (risk of realised F being above Fmsy in the given year, and risk of SSB being below MSY $B_{trigger}$ at the start of the following year).

	2016		**2017**		**2018**		**2019**		**2020**	
	$F>F_{MSY}$	**$B<B_{trig}$**	**$F>F_{MSY}$**	**$B< B_{trig}$**	**$F>F_{MSY}$**	**$B< B_{trig}$**	**$F>F_{MSY}$**	**$B< B_{trig}$**	**$F>F_{MSY}$**	**$B< B_{trig}$**
F_{MSY} ICES_AR	32.5	0.8	39.5	1	33.9	0.2	20.8	0.1	22	0.1
Clauses 1+2+3+safeguard	100	10.8	80.4	6.3	64.3	2.9	52.8	1.8	23	0.5
Clauses 1+2+3+safeguard +15%	100	10.8	87.5	7.6	72.4	3.6	53.7	2.5	22.8	0.6
Clauses 1+2+3+safeguard +20%	100	10.8	84.4	6.9	67	3.4	49.1	1.7	22.4	0.5

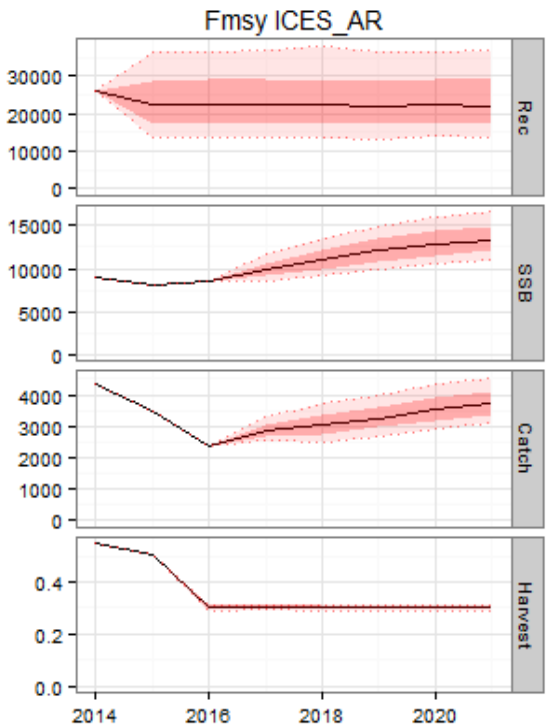
Table 5.2.2: Median results of the various scenarios between 2016 and 2020.

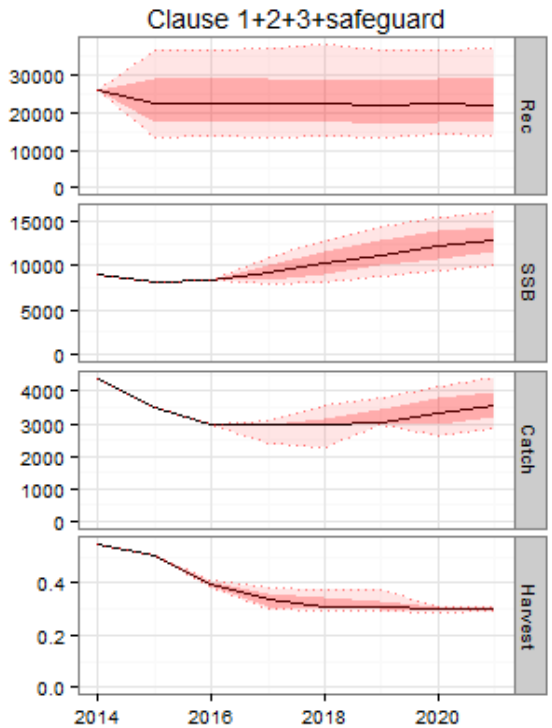
Median Landings	**2016**	**2017**	**2018**	**2019**	**2020**
F_{MSY} ICES_AR	2369	2841	3031	3255	3515
Clauses 1+2+3+safeguard	3000	3000	3000	3041	3335
Clauses 1+2+3+safeguard+15%	3000	3000	3000	3034	3315
Clauses 1+2+3+safeguard+20%	3000	3000	3000	3035	3340

Median F	**2016**	**2017**	**2018**	**2019**	**2020**
F_{MSY} ICES_AR	0.301	0.303	0.302	0.301	0.301
Clauses 1+2+3+safeguard	0.398	0.334	0.31	0.306	0.301
Clauses 1+2+3+safeguard+15%	0.398	0.34	0.317	0.306	0.301

Clauses 1+2+3+safeguard+20%	0.398	0.336	0.313	0.305	0.301

Median_SSB	**2017**	**2018**	**2019**	**2020**	**2021**
F_{MSY} ICES_AR	9816	11003	12090	12838	13389
Clauses 1+2+3+safeguard	9145	10207	11268	12242	12862
Clauses 1+2+3+safeguard+15%	9145	10186	11252	12173	12802
Clauses 1+2+3+safeguard+20%	9145	10201	11279	12265	12879





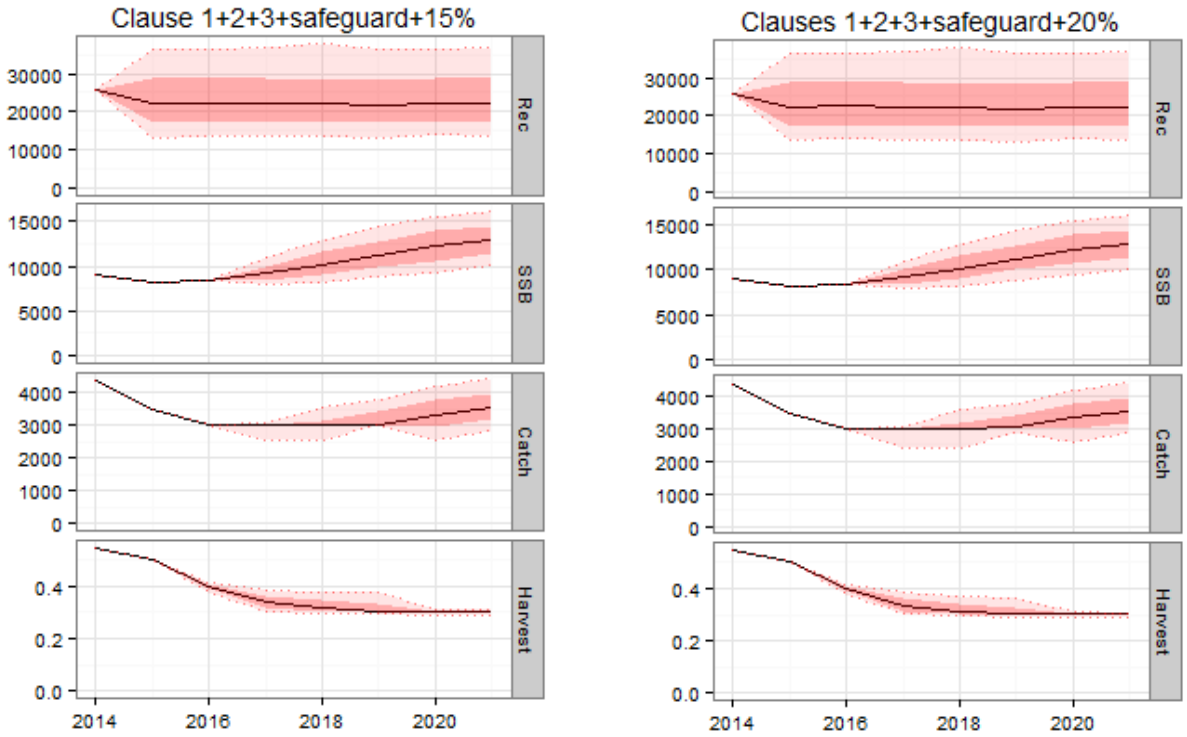


Figure 5.2.1. 2014-2021 time series of projections for recruitment, SSB, catch, and F_{bar} for the seven strategies. Black line= median. Dark pink: 25-75 % quantiles. Pale pink= 10-90 % quantiles.

STECF conclusions

STECF considers that adding the Inter-Annual TAC constraint on the rule agreed in the 2015 Joint Statement would not increase the biological risks from now to 2020 in any significant way. Rather, the constraint may actually reduce the risk the cycling behaviour where the advice changes abruptly from year to year when the stock oscillates between slightly below and slightly above MSY $B_{trigger}$.

5.3. Assessment of a proposal for a constant TAC for sole in VIIfg

Background

Belgium is the main stakeholder in the sole fishery in ICES divisions VIIfg and holds approximately 63 % of the TAC. In the period 2012-2016, the TAC decreased by 26 %, from 1,060 t to 779 t.

In its response to a Commission's request, ICES revised, among others, the reference points for

this stock[7]. In particular F_{MSY} was revised downwards from 0.31 to 0.27. The Commission notes that the stock's fishing mortality is currently increasing and above F_{pa}, while the biomass is slightly above MSY $B_{trigger}$.
Based on the work done in 2015 on sole in VIId (management strategy proposed by the NWWAC and assessed by STECF[8]), the Belgian authorities provided a deterministic forecast and requested that a Management Strategy Evaluation (MSE) be performed for this stock with a constant TAC of 770 t. The Commission notes however that such constant TAC would only deliver a fishing mortality level equal to F_{MSY} in 2020.

Request to the STECF

The objective of this request is to assess whether a constant TAC is compatible with: i) the requirements of the CFP and with ii) the precautionary approach (*i.e.* respectively: i) $F \leq F_{MSY}$ by 2016, 2017, 2018, 2019 and 2020 at the latest and ii) the probability that the SSB falls below B_{MSY} trigger[9] is below 5 %: p (SSB < MSY $B_{trigger}$) ≤ 0.05 and the probability that F_{MSY} is reached is superior or equal to 50 %: F_{MSY} as a target, p ($F \leq F_{MSY}$) ≥ 0.5)).

1. The STECF is requested to use the documents provided by the Belgian authorities to perform a stochastic Management Strategy Evaluation (MSE) based on F_{MSY}= 0.27 and TAC_{2016}= 779 t. The STECF is invited to provide a table showing:
   a. the level of constant TAC over the period 2016-2020 that would deliver F_{MSY} in: 2016, 2017, 2018, 2019, 2020. The Commission wishes to underline that for sole in VIId, the management strategy proposed by the NWWAC and evaluated by the STECF would deliver F_{MSY} in 2018;
   b. for each of the above, the risk of $F>F_{MSY}$ and SSB< MSY $B_{trigger}$ (please refer to table 6.7.1 from STECF's November plenary on sole VIId advice, page 35).

In its analysis, the STECF is requested to take into account the following pieces of information:

- ICES' assessment of the 'Trevose Box' closure and its impact on the VIIfg sole stock[10].

The Commission would like to point out that:
- ICES noted in its advice that the impact on this stock is unclear, both as regards the effect on the fishery and on the protection of the spawning grounds but also that *'the spawning grounds for plaice and sole in the eastern Celtic Sea largely overlap with rectangles 30E4 and 31E4'*
- ICES advice dates back to 2007 and the STECF is invited to update it as far as sole is concerned
- the 'Trevose box' closure is enshrined in Article 29e of the Technical Measures regulation[11]

- STECF's assessment of the Belgian decision to increase the mesh size in the extension piece of beam trawls from 80 to 120 mm, as assessed by the STECF in April 2015[12].

---

7 See page 3: http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2016/Special_Requests/EU_FMSY_ranges_for_selected_Western_Waters_Stocks.pdf

8 See pages 28 and subs.: https://stecf.jrc.ec.europa.eu/documents/43805/1281129/2015-11_STECF+PLEN+15-03_JRC98672.pdf

9 The Commission understands that B_{lim} is now referred to by ICES as MSY $B_{trigger}$.

10 http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2007/Special%20Requests/EC%20Trevose%20closure.pdf

11 http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:01998R0850-20150601&from=EN

12 See pages 34 to 46: https://stecf.jrc.ec.europa.eu/documents/43805/991908/2015-04_STECF+PLEN+15-01_JRC95802.pdf

2. As regards the conservation of the stock, the STECF is invited to comment on adding a biomass safeguard to the constant TAC(s) examined in question 1 to cater for cases where the SSB would fall below MSY $B_{trigger}$.

STECF response

STECF notes that to answer the above request, a Management Strategy Evaluation (MSE) needs to be conducted. However, STECF wishes to stress that carrying out such a complex quantitative analysis needs to be undertaken before the plenary meetings in order to allow a proper review of such an analysis. This is especially the case for sole in VIIfg, where no MSE has previously been undertaken. STECF suggests that this should be done by a dedicated expert working group, through national scientists or through a specific contract.

Furthermore, STECF notes that the updated information on stock status for this stock will be available from ICES before the next STECF plenary meeting (PLEN-16-02, 04-08/07/2016). STECF suggests that the MSE analysis be conducted before that meeting on the basis of this updated assessment, and a STECF response to the current request could then be formulated by the PLEN-16-02.

5.4. Support tools for evaluating implementation of the landing obligation and multiannual plans in North West Waters

Background

The CFP (Regulation (EU) No 1380/2013) supports the adoption of multi-annual plans for fisheries management as an effective mechanism to meet the objective of sustainable exploitation of marine biological resources. The objectives of multi-annual plans are to be achieved by joint recommendations from the respective Member States incorporating advice of the appropriate Advisory Council.

To examine the potential implications of this approach STECF [13]have already undertaken an assessment of the likely impacts on fleets operating in the South Western Waters and in the Celtic Sea based on bio-economic models. At this time STECF identified that appropriate models covering the Irish Sea, Western Channel and West of Scotland were not available. While key lessons from their analysis of the Celtic Sea area will be applicable to other areas it was not possible to provide a similar level of assessment for these areas. ICES have now provided a range of FMSY for some stocks in these areas.

The North West Waters contain a number of stocks which will present potential choke species under a full landing obligation, and this will have implications for the development of multi-annual

[13](STECF 15-08)

management plans. In the framework of regionalisation the advisory process would be strengthened by examination of possible management scenarios; such as recently provided by the DAMARA decision support tool for the Celtic Seas. The Commission is aware that other possible decision support tools may be available, for example MAREFRAME.

Ideally any decision support tool should be able to provide a means to examine the impact of multi-annual plans, the landing obligation and identify possible choke species

Request to the STECF

STECF are asked to inform the Commission which bio-economic models are available which could be applied to the Irish Sea, Channel and West of Scotland as part of decision support tool referred to above.

For each of these models STECF are asked to identify the advantages and disadvantages, in particular identifying the data needed. Where sufficient data is not available STECF are asked to make recommendations as to how such data can be developed. This road map for data development should identify the sources and providers of the data needed, timescales and where possible costs.

STECF response

STECF is aware of some applications of bioeconomic models in the area concerned, but at various stages of development.

In the case of the West of Scotland a combination of the ECOSIM with ECOPATH, FishSums and Fishrent is being used in the framework of the FP7 MAreFrame project, where several management options are investigated, including the effects of the landing obligation. Furthermore, STECF is aware that this area is part of the EU H2020 DiscardLess project, where bio-economic impact assessment of the landing obligation is to be developed.

STECF is also aware that for the English Channel there are several applications of bio economic models such as the ISIS-Fish (http://www.isis-fish.org/en/publications.html) for the Eastern and Western Channel, where several management strategies have been assessed. STECF is also aware that the Eastern Channel is part of the EU H2020 DiscardLess project, where bio-economic and ecosystem impact assessment of the landing obligation is being developed.

STECF is not aware of any operational bioeconomic model available to simulate the likely consequences of different fisheries management scenarios for fisheries in the Irish Sea.

STECF considers that the data currently available is sufficient to perform bioeconomic simulations for these areas. ICES provides scientific assessments of the key stocks in each area, including stocks that could potentially act as choke species for the fleets operating there. The transversal and economic data collection provided through the DCF should be sufficient to condition and implement one or more of the existing bioeconomic models to undertake simulation modelling.

With regard to the existing bioeconomic models and their suitability as decision-support tools in assessing the impact of multi-annual plans or of the landing obligation the choice of model is dependent on the management scenario to be tested, the perception and input to the process of the different groups of stakeholders and on how decision support tables are to be presented to them.
STECF underlines though that most existing bio-economic models are built on similar approaches and underlying principles, and are also quite flexible in the management scenarios they can evaluate. STECF notes that the results obtained may thus be somehow robust to the model choice. The likely candidates are those currently used for these areas and those used for the evaluation of MAPs in other sea areas (e.g. ISIS-FISH, Ecosim with Ecopath, FishSums, FISHRENT, a4a, BEMTOOL, FCube, FLBEIA, IAM, MEFISTO and SIMFISH).

STECF considers that a good approach to provide a roadmap for the analysis in the Atlantic areas where no model is available at present is to use the one developed by the DAMARA project as a blueprint. This project is likely to provide an overview of the main resources necessities (including scientific personal and technical skills, timing and financial resources) required to perform a biological, economic and social impact assessment of the management scenarios selected. In that sense, STECF considers, in agreement with the DAMARA project, that the selection of the methodology in general (including the model, the scenarios to be tested and the how to interact with different stakeholders) should be part of this roadmap, in order for the outcomes of the process to be salient, credible and perceived as legitimate by the stakeholders involved in the process.

5.5. Evaluation of additional information related to management measures for sole in area VIIa (STECF-16-04)

Background
In March 2016 STECF was asked to review documents submitted by the Belgian authorities, supporting their request for the setting of a 'small' commercial quota in order to incite the participation of fishing vessels in a scientific programme.

This programme would comprise 5 objectives further detailed in the Belgian report:

1: Extend the fishery-independent data collection
2: Improve the knowledge of the population behaviour of the sole stock
3: Assess the validity of the survey
4: Improve the stock assessment
5: Strengthen the cooperation and communication between fisheries scientists and fishermen.

The STECF was requested to review the document presented by ILVO and:
1. Comment on the suitability of the proposed survey to achieve the 5 objectives stated above.
2. List the pros and cons of setting a TAC of 54 t in relation to the following:
    a. Potential benefits in terms of enhancing the knowledge base for the stock
    b. Potential impacts on conservation status and development of the stock

3. Provide an expert opinion if the benefits (2a) could outweigh the impacts (2b)

STECF delivered its conclusions in report STECF-16-04, recognising the limitations of the programme and identified some elements on which further clarification is required.
The STECF report is publicly available and has been brought to the attention of the Belgian authorities. They delivered additional information to respond to STECF's concerns.

Request to the STECF

STECF is asked to:

1. evaluate the information provided by the Belgian authorities in response to the findings of report STECF-16-04
2. Advise whether the additional information, especially with regards to survey design for the proposed May survey, and with regards to the statistical underpinning of the design, change the STECF conclusions.
3. Where relevant, STECF are also asked to make observations in respect of the UK (E&W)-BTS-Q3 survey which might further improve the knowledge on this stock.

Background document: STECF report STECF 16-04; additional information from Belgian authorities.

STECF response

Summary of previous STECF conclusions

In its conclusions from report STECF 16-04, STECF recognised that there are potential scientific and cooperative benefits in undertaking the work proposed by ILVO and the Belgian authorities. Indeed, as the current UK (E&W)-BTS-Q3 survey does not cover the entire distribution, it would be appropriate to carry out an additional survey covering the entire distribution of the stock. The STECF concerns expressed in the 16-04 can be briefly summarised as follows:

- ILVO/Belgian authorities proposed to carry out the survey over two periods (May-June and September-October). STECF considered that a survey in May-June may have more limited scientific benefits than a survey in September-October, on the basis of earlier experience. STECF notes that in the past there has been a May survey incorporated in the sole VIIa assessment (UK (E&W)-BTS-Q1 – 1993-1999). This survey was omitted by ICES WKFLAT 2011 due to little effect on catchability residuals and a slightly improved retrospective pattern (ICES, 2011). It was furthermore noted that in the proposal, the May-June survey would not be carried out within the 12 NM zone which would further reduce its scientific value. STECF also noted that there was no statistical basis for the number of hauls planned for each survey and that more specific details were needed on the survey design.
- There was insufficient information on the proposed population genetic project and more particularly on its potential ability to quantify the contribution of various spawning areas to the Irish Sea sole stock and to better understand the stock structure and its spatial dynamics.

- Regarding the so-called assessment of the "validity" of the UK survey, STECF noted that more information was needed on the *modus operandi* planned by ILVO to carry out a comparison between the UK (E&W)-BTS-Q3 survey and the proposed survey.
- STECF considered that, from the document presented by ILVO, it was unclear how the proposed survey would potentially improve the stock assessment. In its response, STECF stressed the need, if a survey were to be used as an index of abundance, to have a time-series of at least 5 years.
- Regarding the additional quota of 14 t, STECF also noted that:
    a) Although the additional quota would reduce the predicted rate of recovery, this would likely be marginal (5 percentage points below a zero TAC (Catch) advice).
    b) The additional quota would be well in excess of the provision laid out in the control regulation for additional catches for the purpose of scientific research.
    c) If not applied to other member states, the additional quota would break the relative stability share of fishing opportunities.

Request 1. Evaluate the information provided by the Belgian authorities in response to the findings of report STECF-16-04

In the document provided to STECF, the Belgian authorities delivered additional elements regarding their request for a new survey, which covered the major concerns raised by STECF in its report (STECF 16-04).

<u>Extended data collection and survey design</u>

STECF notes that for 2016, the May-June survey planned in the request submitted in March cannot be carried out and that only the September/October survey can be undertaken. STECF further notes that September/October survey is planned to cover the areas within 12 NM from the coast and the "offshore" zones outside 12 NM from the coast. However, it is not clear from the information provided whether the Belgian authorities/ILVO are still planning a survey in May-June for subsequent years. STECF reiterates its conclusion that an autumn survey can potentially provide more information than a May-June survey and that if a May-June survey was to be carried out, it would need to be extended to the 12 NM zone.

STECF further notes that the proposed September/October 2016 survey is intended to be a pilot exercise to test feasibility and utility of undertaking such a survey and develop an adequate survey design for the future. Adjustment to the proposed sampling protocol will be conducted afterwards based on the results of the pilot survey. A detailed technical description of the gears used in the proposed September/October survey is also provided. Two vessels will be involved in the survey, using two types of gears depending on the types of sea bottom they sample. Each boat will simultaneously deploy twin beam trawls equipped with different mesh-sizes in order to sample a large spectrum of fish sizes.

According to the additional elements provided by ILVO, this work will be carried out in consultation with experts in survey design and with ICES working groups dealing with surveys and the use of survey data in stock assessment. STECF agrees that such an approach is appropriate.

Comparison of planned survey with the current UK (E&W)-BTS-Q3 survey

Much more information is provided by the Belgium authorities on the objectives of this part of the study and on the sampling design which will be implemented. The aims will be to compare the samples obtained by both surveys, focusing on the catch composition.

Improvement of the stock assessment.

Additional information given on this aim by ILVO clarifies how this survey may improve the stock assessment. STECF particularly notes that, if the pilot survey is successful and provides useful supplementary information to the UK survey, a multi-annual survey, as suggested by STECF (STECF 16-04), would be envisaged to produce an index of abundance for the stock assessment. It is however not clear to STECF, why "Survey design will be adjusted where needed, with a focus on the main nursery grounds and important areas for adult sole, which will be identified in the 2016 survey"[14]. Such an adjustment has the potential to bias the indices of abundance and biomass derived from the survey, if the survey effort is focused on specific areas.

Additional quota

The request for an additional quota has been revised downwards to 7 t (instead of 14 t) to cover the expected catches from the 80 hauls planned for the September-October survey only. The impact on the predicted rate of stock recovery is still low and the conclusions in STECF 16-04 remains valid. STECF notes that the additional quota would still be in excess of the provision laid out in the control regulation for additional catches for the purpose of scientific research (800 kg).

Request 2. Advise whether the additional information, especially with regards to survey design for the proposed September survey, and with regards to the statistical underpinning of the design, change the STECF conclusions.

The survey initially planned for May 2016 will not be carried out, and the following comments relate to the proposed autumn 2016 survey only.
STECF considers that the information provided on the survey design clarifies the main concerns raised on the previous version of the proposal (i.e., spatial coverage of the survey, technical specification of the gears, sampling design for the comparison with the UK (E&W)-BTS-Q3 survey). As suggested by STECF, ILVO is also planning to carry-out such a survey on an annual basis, which is needed, if the aim of the survey is to produce an abundance index for stock assessment purposes. Considering that the current proposal is for a pilot study only, and will be later adjusted according to the experience gained, STECF observes that it will potentially help to design and undertake a survey best suited to deliver the objectives stated in the proposal.

Request 3. Where relevant, STECF are also asked to make observations in respect of the UK (E&W)-BTS-Q3 survey which might further improve the knowledge on this stock.

14 Last sentence of the first paragraph of the section entitled **Aim 4: improvement of the stock assessment**

STECF notes the following:

- The UK (E&W)-BTS-Q3 survey has been used for many years as an index of abundance in the assessment carried out by ICES.
- Since the last ICES benchmark assessment, the UK (E&W)-BTS-Q3 is the only index used to tune the ICES assessment. The other indexs (Belgian commercial beam trawl – BEL-CBT, UK(E&W) commercial beam trawl – UK-CBT and the UK first quarter survey – UK(E&W)-BTS-Q1) previously used, were dropped because they were deemed to be of poor quality
- Retrospective analysis carried out shows that the information provided by the currently used index (UK (E&W)-BTS-Q3) on recruitment is consistent with the observations made in the catch in terms of cohort strength
- This survey (UK (E&W)-BTS-Q3) has been "validated" by ICES/ WGBEAM to provide adequate index of abundance for the area

STECF conclusion

STECF notes that despite the concern that the UK (E&W)-BTS-Q3 survey covers only part of the distribution of the sole stock in Division VIIa, it performs well as a tuning index in the ICES assessment indicating that the relative abundance of different age groups observed in the survey reflect those observed in the commercial catches. Hence, STECF concludes that at present there is no essential requirement for an additional survey to provide a reliable assessment of the VIIa sole stock.

However, in principle, an annual survey that covers the whole distribution of the stock would potentially provide a more appropriate time-series of data for stock assessment purposes (minimum of 5-years before it could be used), since it would be able to better capture any relative changes in the distribution of the stock over time and provide an additional tuning index for sole and therefore eliminate the exclusiveness of one single index driving the assessment. Such a survey may also prove useful as a tuning index for stocks other than sole, if the appropriate data and information were to be collected. While the proposed pilot survey in September/October 2016 may provide valuable insight into what might be an appropriate area to be surveyed to derive an additional time-series index for sole in VIIa in the future, the results from the pilot are unlikely to provide information that will prove useful for the VIIa sole assessment in the short-term.

Reference

ICES. 2011. Report of the Benchmark Workshop on Flatfish (WKFLAT), 1–8 February 2011, Copenhagen, Denmark. ICES CM 2011/ACOM:39. 257 pp.

5.6. Fishery management of the *Nephrops* stock in the Farn Deeps

Background

The UK made a commitment at the last December Council to introduce a package of technical measures to reduce the harvest rate (fishing mortality) on *Nephrops* in the Farn Deeps (FU 6) in

order to achieve an exploitation rate consistent with the maximum sustainable yield (MSY) in 2017.
Following a recent UK consultation with our industry, stakeholders and balancing socio-economic issues, the UK is proposing the implementation of a phased reduction in fishing mortality over three consecutive years. STECF is asked to consider the following question:

Is a staged approach to the reduction of fishing mortality for the Farn Deeps *Nephrops* fishery appropriate for recovery of this *Nephrops* stock?

Request to the STECF
STECF is invited to comment on the appropriateness of the measures proposed and their alignment with the aims of the CFP to achieve exploitation of marine biological resources and maintenance of populations of harvested stocks above levels that can produce MSY, at the latest by 2020.

STECF response
Summary of the UK background document

The UK background document sets out its 2015 December Council commitment to develop a package of technical measures designed to achieve F_{MSY} by 2017. The ICES estimate of the F_{MSY} harvest rate for FU6 *Nephrops* is 8.1 %, and the average 2012-2014 harvest rates reported by ICES is 17.1 %. Therefore a cut in fishing rate of at least 53% would be required.

The UK paper evaluates the potential fishing effort reductions that might be realised using the package of technical measures proposed by the UK administrations. The proposed package of measures contains the following elements:

- Vessel owners will be required to use a minimum mesh size of 90mm using single twine of 5 mm.
- The use of a lifting bag will continue to be permitted.
- Only single-rig vessels of 350 kW (476 hp) or less will be permitted to fish within 12 NM of the coast.
- Multi-rig vessels (vessels with three or more rigs) will be prohibited from operating within the Farn Deeps. Twin rig vessels will be permitted to operate outside 12 NM.
- No vessel will be permitted to use gear with more than one codend per rig.
- The Farn Deeps will be defined as ICES rectangle 38E8, 38E9, 39E8, 38E9, 40E8 and 40E9.

The UK document estimates that the combined effect of these measures would deliver a cut in fishing rate of 25.6 % during 2016, compared to the average fishing rate 2012-2014. The analyses were undertaken using data from 2012-2014 as a reference period due to the atypical nature of the 2015 fishery. The 2015 fishery has seen a significant reduction in both effort and landings, and catches in 2015 are likely to be close to the ICES advice for 2015. If the impact of the new package of measures is in addition to the recent effort reductions, then effort in 2016 should be reduced by over 50 % (relative to the 2012-2014 average) as recommended by ICES.

The effort reductions observed in 2015 may be transitory and therefore additional technical measures could be required over the next few years to maintain overall effort at a level associated with MSY.

STECF comments

STECF was asked whether a staged approach to the reduction of fishing mortality for the Farn Deeps *Nephrops* fishery is appropriate for the recovery of the FU6 *Nephrops* stock in line with the aims of the CFP to achieve exploitation of marine biological resources and maintenance of populations of harvested stocks above levels that can produce MSY at the latest by 2020.

STECF recognizes the positive intentions behind the proposed package of technical measures to achieve the intended reduction in harvest rate for FU6 *Nephrops*. However, in order to fully evaluate the claims made in the document a number of additional pieces of information would be required. Overall, STECF finds that the metrics of fleet development (effort, harvest rate) has been presented in a rather limited form, only referring to the years 2012-2014 and without a clear separation into different fleet components. A longer time series of effort metrics would be informative to assess the developments of the fishery in this functional unit.

The exclusion of the 2015 data from the analysis does require a more thorough reasoning. Given the intention of the UK package of measures, one would expect that changes in fishing effort and catches, such as occurred in 2015, should be explained by an understanding of the overall drivers of effort expenditure in this FU, and whether such drivers might also operate in this FU in the future. Looking at the stock trajectory as shown by the TV-survey, low catch rates in the FU6 fishery should not come as a surprise.

STECF notes that there is a proposal to restrict the number of codends per rig to no more than one. The proposal document does not contain details of the net configuration to which the restriction will apply or the expected effect of this measure. Developments in more selective fishing gears are expected to make a contribution to reducing unwanted catch (and discards). One potential technical option involves the use of horizontal panels within a rig which separates different components of the catch into an upper and lower codend. A restriction limiting any multiple codend could inhibit potentially helpful gear developments.

A general lesson that could be learned from creating specific zones or measures for specific types of vessels, is that such measures can create incentives that have unintended behavioural responses. Rules that make the fishery less efficient create an incentive to compensate for loss of efficiency. An example of such a development is shown in the management of the North Sea plaice box (Beare et al., 2013) where the allowance for small vessels within the coastal zone, triggered an expansion of that type of vessels in the fishery.

STECF conclusion

Overall, STECF finds that the package of measures could generate some changes in the selectivity of the fishery. The measures with the highest potential impacts are the restriction of the larger vessels to the zone outside the 12 mile and the ban on multirig vessels. However, the

quantification of the effects are not very well underpinned and do not provide a convincing argument of why the expected drop in fishing rate would be at 25.6 %. There are no time series presented on the development of those fleet components over time and space. The plan as proposed does not limit in any way the development of the different fleet components and in particular there is presently no restriction on the movement of smaller vessels into the zone inside 12 miles. As such, the plan can be considered as a set of potential useful measures but without strong guarantees that the intended reduction in fishing rate will be achieved.

Reference

Beare, D., Rijnsdorp, A. D., Blaesberg, M., Damm, U., Egekvist, J., Fock, H., Kloppmann, M., et al. 2013. Evaluating the effect of fishery closures: lessons learnt from the Plaice Box. Journal of Sea Research, 84: 49-60.

5.7. Multi-annual plan for the small pelagic fisheries in the Adriatic Sea

Background

Anchovy and Sardine in the Adriatic are currently both exploited beyond sustainable levels. The Commission is preparing a proposal for a multi-annual plan (MAP) for small pelagic (sardine and anchovy) fisheries in the Adriatic (GSA17 and GSA18) and an accompanying Impact Assessment. In this context, addition information is required to assess possible management approaches and their impacts in terms of achieving the MSY targets of the CFP. In addition, in order to implement management measures which are based on stock biomass (e.g. harvest ratios), it is important to know before the end of a given year what the estimated stock size is as well (as the quantities caught of each stock), in order to determine what the harvest ratio is in that year and/or to determine what catches would be sustainable in the following year based on current stock size.

Request to the STECF

1. STECF opinion on the MEDAC advice on a long-term management plan for small pelagics in GSA 17 (Northern Adriatic); STECF should advise on whether implementing these measures is likely to deliver F_{MSY} by 2020 at the latest.

2. Additional input for the small pelagics MAP impact assessment. STECF is requested to:

   a) Assess whether a fixed harvest ratio (HR = Catch/Stock biomass) of 0.2 is likely to deliver F_{MSY} by 2020 at latest, taking into account stochastic variability of recruitment around the average low, medium and high values experienced over the whole time series and/or the last 10 years. Estimate the development of stock biomass overtime relative to management reference points.

   b) If the fixed harvest ratio of 0.2 does not allow reaching F_{MSY} by 2020, estimate the maximum harvest ratio likely to deliver F_{MSY} by 2020 at the latest taking into account

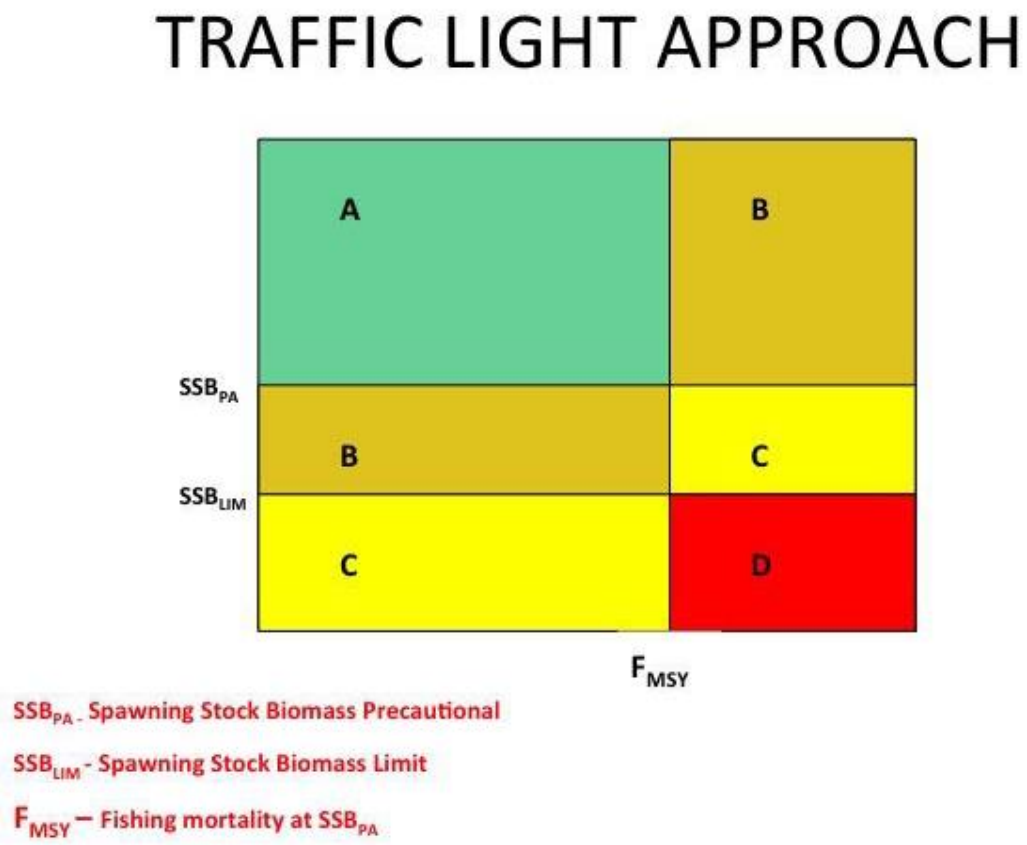
stochastic variability of recruitment around the average low, medium and high values experienced over the whole time series and/or the last 10 years. Estimate the development of stock biomass overtime relative to management reference points.

c) STECF should also indicate whether the current sampling scheme under the DCF will allow having the estimates of the available total and spawning stock biomasses by the end of each calendar year.

STECF observations

ToR 1

STECF welcomes the initiative of the MEDAC. The traffic light approach presented by the MEDAC merges several management measures in a single management framework, which STECF considers appropriate to avoid multiple regulations.



ZONES ACCORDING TO THE TRAFFIC LIGHT APPROACH	PROPOSAL
A – GREEN ZONE	Max. 180 fishing days per year, max. 20 fishing days per month, to be applied on all fleet segments.
	Max. 180 fishing days per year, max. 20 fishing days per month, to be applied on all fleet segments.

B – ORANGE ZONE	+ Introduction of spatial-temporal closures, not to be applied on fishing vessels <12 m LoA1 in GSA 17 and on fishing vessels <15 m LoA in the area of Trieste Bay, i.e. Gulf of Trieste, Western coast of Istria, down to Lim Channel: • East Adriatic: 30 % of closure of national territorial waters for at least six months. • West Adriatic: 50 % of closure of national territorial waters for at least four months.
C – YELLOW ZONE	Max. 180 fishing days per year, max. 20 fishing days per month, to be applied on all fleet segments. + Introduction of spatial-temporal closures, not to be applied on fishing vessels <12 m LoA in GSA 17 and on fishing vessels <15 m LoA in the area of Trieste Bay, i.e. Gulf of Trieste, Western coast of Istria, down to Lim Channel: • East Adriatic: 30 % of closure of national territorial waters for at least six months. • West Adriatic: 50 % of closure of national territorial waters for at least four months; + According to GFCM Recommendation, introduction of an additional temporal closure of minimum 15 continuous fishing days in the spawning period of the target species for all fleet; + Max 144 fishing days/year for target species.
D – RED ZONE	Emergency measures adopted by the European Commission under Article 12 of Regulation (EU) No 1380/2013

STECF was unable to identify the scientific basis for the proposal, as such cannot assess if it will deliver F_{MSY} by 2020. The evaluation of the traffic light approach should be based on the most recent assessments and a set of forecasts in a simulation framework (*e.g.* MSE), including the most relevant uncertainty sources.

STECF reiterates its past advice (STECF-15-14) that pelagic fisheries in the Mediterranean qualify for a TAC control system, which should be based either on the classic MSY framework (F_{MSY} and Blim and Btrigger with HCRs) or on an escapement strategy.

STECF calls attention that the red zone should extend to all the area below B_{lim}, not just the area where F is above F_{MSY} and SSB is below B_{lim}, as it's represented now in the traffic light plot. Additionally, in page 6, F_{MSY} is referred as the fishing mortality at SSB_{pa}, which needs verification. Usually F_{MSY} refers to the fishing mortality at MSY (B_{MSY}).

STECF calls the attention that the management action foreseen in the red zone action, 'Emergency measures adopted by the European Commission under Article 12 of Regulation (EU) No 1380/2013', might not be enough to recover the stock. Setting new measures requires a process of negotiation which may take some time. Considering that the stock assessment is lagged behind the current fishing season by 2 to 3 years, the emergency measures should be clearly specified and immediately applied if needed.

ToR 2.a and 2.b

STECF was unable find the necessary background studies to reply to these requests. STECF looked into the recent work carried out by STECF (STECF 15-16) and GFCM (GFCM, 2015, GFCM, 2016) but was unable to find information which could be used.

STECF considers that these ToRs should be replied by a specific EWG or ad-hoc contract.

ToR 2.c

The DCF has the elements which allow the MS to design appropriate sampling programmes, taking into consideration management requirements. The evaluation of the sampling programmes carried out by STECF looks into these issues. STECF is aware of design changes in the surveys that support the assessments of these species (MEDIAS Coordination Committee meeting held in Split from 6-8. April 2016). STECF suggests that this issue should be added to the ToRs of the relevant DCF EWG, where a thorough evaluation of the impacts this change may have can be carried out.

Regarding the estimation of biomass and fishing mortality to support the implementation of the plan, STECF notes that the common setting of assessing data from the previous year and make recommendations for the following year should not create any problems to the scientists involved in the stock assessment process.

References

GFCM, 2015. Report of the Working Group on Stock Assessment of Small Pelagic species (WGSASP) Rome, Italy, 23 November – 28 November 2015, 82 pp.

GFCM, 2016. Report of the workshop on bioeconomic assessment of management measures (WKMSE) GFCM headquarters, Rome, Italy, 1–3 February 2016, 93 pp.

Scientific, Technical and Economic Committee for Fisheries (STECF) – Small pelagic stocks in the Adriatic Sea. Mediterranean assessments part 1 (STECF-15-14). 2015. Publications Office of the European Union, Luxembourg, EUR 27492 EN, JRC 97707, 52 pp.

5.8. Request for derogation for bottom trawl fishery in the area of Western Istria (Croatia)

Request to the STECF

STECF is requested to review and comment on the information provided by the Croatian Authorities to support an eventual request for derogation to Article 13 "Minimum distance and depths" of the Mediterranean Regulation for bottom trawl fishery in the area of Western Istria.

STECF observations

STECF examined a document entitled "Derogation for bottom trawl fishery in the area of western Istria". The document is providing several elements to support the submission by the Croatian Authorities of a request of derogation from paragraph 1 of Article 13 of the Council Regulation (EC) No. 1967/2006 for fishing with bottom trawls in an area with depth <50 m at a minimum distance of 1.5 NM from the coast. Article 13 of the Mediterranean Regulation prohibits the use of trawl fishing gears within 3 NM from the coast or inside the 50-m isobaths, if this depth is reached at a closer distance from the coast.

The requested derogation applies to 140 vessels listed in the document.

<u>Main elements included in the Croatian document</u>

The document states that fishing along the western coasts of Istria outside the 3 NM zone from the coast is to a large extend inhibited due to 'extremely high-traffic waterway of the international merchant fleet', the presence of 'underwater cables, water pipelines, oil platforms, explosives landfills, sets, directed navigation and other'. Consequently, prohibiting fishing inside the 3 NM zone will constitute 'a significant reduction of available fishing areas'.

The Croatian bottom trawl fleet fish almost exclusively within the county's territorial waters. This is partly due to the technical features of the Croatian vessels (small, old and poorly equipped) and data are provided illustrating this particular structure of fleet along the Istrian coastline in terms of vessel length, engine power (kW) and GT (mainly small vessels). Data are also provided showing the increase in fuel price during the last years, which adds substantially to the cost of travelling away from the coast, as well as the high frequency of days with bad sea conditions not allowing the small trawl vessels to operate at sea, except in waters quite close to the coast. According to fishing effort data given for fishing zone A (west of Istria), the number of fishing days in the first five months of the year (January-May) was 27 % lower in 2015 (fishing allowed at a minimum distance of 3 NM from coast) compared to 2012 (minimum distance 1 NM). VMS data are also provided from a period before adopting the 3 NM limit (2012-2013) showing that the 1.5-3 NM zone was the major fishing ground off the west Istria.

The percentage composition of trawl catches in fishing zone A (representing the bulk of the area for which the derogation is requested) indicates that landings are dominated by cephalopods (57

%), especially musky octopus (39 %), followed by red mullet (16-18 %). The spatial distribution of musky octopus (*Eledone moschata*), cuttlefish (*Sepia officinalis*) and squid (*Loligo vulgaris*) in the northern Adriatic as well are time series of abundance and biomass indices from the MEDITS survey in Croatian territorial waters are provided for these three cephalopod species showing no particular trends.

Although no maps of the distribution of *Posidonia* beds are provided by the Croatian authorities, it is argued that, in the fishing area covered by the request, there are no known sites with seagrass beds. Predictions of a 'mathematical model' (presumably statistical habitat model) are provided indicating that the presence of *Posidonia* is not likely in the area concerned.

Finally, it is stated in the document that gear construction limitations will be imposed to the vessels operating in the area covered by the request in order to increase the selectivity of the trawl, with emphasis on reducing the share of cephalopods in the total catches. Vessels listed in the request will be required to adapt their nets when fishing between 1.5 and 3 NM from the coastline which would imply the following (adjusted "volantina" net):

- Only 40 mm square-mesh codend will be allowed
- The use of protection bobbins and additional load on the leadline will be prohibited
- The use of strengthening bag over the codend will be prohibited
- Net wings will have to be connected through two ropes (bridles) to the spreader before connecting to sweepline
- The use of additional tickler chain or any line in front of net mouth will not be allowed

Results of a selectivity experiment carried out in October-November 2014 are presented in the document testing the escapement of different species from 40D codend (40 mm diamond), 40S (40 mm square) and 50D (50 mm diamond). The escapement of musky octopus, the most abundant species in the area, was 16.6 % from 40D, 89 % from 40S and 57.3 % from 50D codend.

Furthermore, a field catch comparison of the "volantina" versus the traditional trawl net was carried out in November 2015 onboard a commercial fishing vessel in the area of western Istria, over the zone of 1.5 - 3 NM from coast, showing a larger portion of fish in the volantina catch (90 % vs 73.4 %) and a lower percentage of cephalopods (2.3 vs 8.3 %).

The requested derogation applies to 140 vessels with the age structure of the employees dominated by the 52-49 age class (74 %). In 2016, all vessels subject to the request will be equipped with VMS, e-logbook as well as with electronic sensor for winch activity.

STECF comments

STECF notes that according to the geographical coordinates specified in the document, the area of derogation includes the so-called 'fishing zone A', but also parts of fishing zones B and E. Most data provided in the document concern the fishing zone A.

Prohibiting bottom trawling in the 1.5-3 NM zone is considered to cause a reduction of available trawling area even though there is no quantitative information in the document concerning the extent or proportion of the area that would be affected.

According to the information provided in the document, there are no areas with phanerogams, coralligenous habitats or maërl beds in the 1.5-3 NM zone.

No information is provided in the document concerning the catches (volumes, size compositions, discards) of red mullet (*Mullus barbatus*), which is the most abundant fish species in the trawl landings. STECF is therefore unable to evaluate the impact of fishing in the 1.5-3 NM zone on the red mullet stock, which is overexploited in GSA17. Generally, information related to fishes is lacking in the document. STECF notes that in the shallow coastal waters covered by the request, juvenile fish might be abundant.

STECF notes that the schematics of the standard gear "romanjola" and the adjusted "volantina" in Figure 19 are not accurate. Furthermore, with the exception of mesh size and type, it is unclear how the proposed modifications of the gear will improve both its size- and species-selectivity. Both net drawing and rigging information following normal standards are required.

STECF notes that the differences between the volantina and the standard gear are both in the net design and the rigging (i.e. tickler chain or line in front of net mouth). It is therefore difficult to infer which of these differences could have caused the lower catch of octopus.

The comparison of catches vs landings compositions of the trawl operations presented in Table 4 suggests that the landings composition (in terms of fish and cephalopod percentages) is substantially different from the actual catches composition. However, no data are provided concerning discards of the trawl fishery in the Croatian coastal zone.

Concerning the selectivity experiment carried out in October-November 2014 and the field catch comparison of the "volantina" versus the traditional trawl net carried out in November 2015, STECF notes that no statistical analysis is provided and the information presented is not sufficient to permit any general conclusion. There is not any selectivity model formulation following conventional methods. Although some indications are provided that the numbers of musky octopus retained by the volantina are less than the standard trawl, in the absence of raw data from the trials, STECF is unable to assess the significance of this difference.

STECF considers that the data and information presented in the document are not sufficient to conclude whether the "volantina" version of the bottom trawl will reduce the catches of both adult and juvenile octopus and, consequently, STECF is unable to assess the potential impact of either gear on octopus mortality.

STECF conclusions

Given the available information, STECF concludes that it is unable to assess the potential impact of the requested derogation to allow the 140 trawlers indicated in the document to fish within 1.5-3 NM of the coast of Istria.

Given the available information, STECF is unable to assess whether the "volantina" is more size- and species-selective than the traditional gear

In order to fully assess the impact of the requested derogation, the following additional information is required:

a) Estimates of monthly catch volumes and CPUEs (in units of fishing time or km^2) separated into landed and discarded shares by species (including non-target organisms) and corresponding size compositions from catches taken inside the 1.5-3 NM zone and fishing grounds beyond the 3 NM zone.
b) An assessment of the socio-economic impacts of not granting the request for a derogation to fish in the 1.5-3 NM zone.

Such information could be derived from: (i) the analysis of available data (e.g. DCF data) before and after the implementation of the 3 NM limit; and/or (ii) a trial fishery undertaken with limited fishing effort.

5.9. Management Plan for shore seine nets fishing in the Republic of Croatia

Request to the STECF

STECF is requested to review the scientific basis for the above mentioned management plan, evaluate their findings and make appropriate comments with respect to the measures proposed therein. In particular, STECF is requested to advice whether the management plan contains the adequate elements in terms of:

1. The biological characteristics and the state of exploited resources;
2. The description of the fishing pressure and the measures to accomplish a sustainable exploitation of the main target stocks;
3. The data on catches, effort and catches per unit of effort (CPUE), as well as the biological reference points ensuring the conservation of the concerned stocks;
4. The catch composition in terms of size distribution, with particular reference to the percentage of catches of species subject to minimum sizes in accordance with Annex III of the Mediterranean Regulation;
5. The potential impact of the fishing gear on the marine environment with particular interest on protected habitats (i.e. seagrass bed, coralligenous habitat and maërl bed);
6. The social and economic impact of the measures proposed;
7. Objectives that are consistent with the objectives set out in Article 2 and with the relevant provisions of Articles 6 of Regulation (EU) No 1380/2013;
8. Quantifiable targets such as fishing mortality rates and/or spawning stock biomass;

9. Clear time-frames to reach the quantifiable targets;
10. Conservation reference points consistent with the objectives set out in Article 2 of Regulation (EU) No 1380/2013;

    a) Objectives for conservation and technical measures to be taken in order to achieve the targets set out in Article 15 of Regulation (EU) No 1380/2013, and measures designed to avoid and reduce, as far as possible, unwanted catches;

    b) Safeguards to ensure that quantifiable targets are met, as well as remedial action, where needed, including for situations where the deteriorating quality of data or non-availability put the sustainability of the main stocks of the fishery at risk;

    c) Other conservation measures, in particular measures to gradually eliminate discards, taking into account the best available scientific advice, or to minimise the negative impact of fishing on the ecosystem;

    d) Quantifiable indicators for periodic monitoring and assessment of progress in achieving the targets of the management plan.

STECF comments

The Management Plan (MP) refers to shore seine net fisheries within the area of about 500 m off the coast. Three groups are considered, based on the mesh size and target species: shore seines of small mesh size (10-20 mm) for Atherinidae ("oližnica"), Belonidae ("igličara"), Clupeidae and Engraulidae fishing ("srdelara"); shore seine for picarel fishing (2 types: "migavica" and "girarica", mesh size 24 mm); and shore seine of large mesh size targeting mainly amberjack ("šabakun", min mesh size 56 mm). Derogations are requested related to fishing over the sea grass beds (mainly *Posidonia*), minimum mesh size and minimum required distance from coast or depth. The MP is proposed for three years, and might be revised every year.

STECF observations in relation to each of the elements outlined in the Terms of Reference

1) The biological characteristics and the state of exploited resources

<u>*Elements outlined in the plan*</u>

The MP includes the biological characteristics of the target species of each shore seine type (preferential habitat, growth, maturity, length-weight relationship, seasonality of catches).

When data availability made it possible, YPR analyses have been performed to investigate the status of the target stocks of the different shore seines. YPR is presented for *Spicara smaris*, *Atherina boyeri* and *Seriola dumerilii*.

STECF comments

From the information provided, it is not possible to know the current exploitation status in terms of F and biomass.

STECF notes that a common practice may be to use $F_{0.1}$ as proxy of F_{msy}, thus the comparison of current F could be carried out against $F_{0.1}$.
Reference points are not defined.

2) *The description of the fishing pressure and the measures to accomplish a sustainable exploitation of the main target stocks*

Elements outlined in the plan
The MP includes a detailed description of the active shore seine fleets and characteristics of the different fishing gears. The total number of authorized vessels for fishing with shore seines is smaller than the total number of issued licenses for fishing gear. This is because only license holders that have a historical record of catch were authorized to use shore seines. In addition, the authorization is linked to one area so as to prevent increased effort in a given fishing zone.
A total of 177 vessels would be authorized: 127 for shore seines for picarel fishing, 31 for shore seines of small mesh size and 19 for shore seine of large mesh size.

Shore seine	Total number of licenced vessels	Fleet capacity		Estimated number of authorised vessels	Estimation of fleet capacity before authorisation	
		kw	GT		kW	GT
Girarica	150	10026,32	1520,17	31	1371,33	95,39
Migavica	348	24288,11	2256,96	96	5295,55	409,12
Šabakun	69	5167,83	425,08	19	1442,82	114,4
Oližnica	20	1366,39	61,61	5	294,14	8,12
Igličara	38	1832,87	254,01	2	92	7,84
Srdelara	124	6736,87	621,13	24	656,46	44,52

A number of measures of control of fishing effort are proposed: permanent cessation of fishing activities to reduce capacity (shore fishing authorization will be limited to those license holders with historical catch records); temporary suspension of fishing activities based on the exploitation status of the target species; spatial and temporal closures of areas identified as hatching and nursery areas of target species; and additional closures for each of the shore seine types. Fishing outside the permitted areas or periods may result in the revocation of the authorization.
The installation of a tracking device will be a pre-condition to authorization.
Selectivity studies are presented to support the request of derogation regarding the mesh size. The research was done using traditional shore seine for picarel fishing migavica (length 280 m, mesh size of 24 mm) that cover codend of minimum mesh size of 40mm.

STECF comments
STECF notes that the number of vessels authorized is much smaller than that of the total number of licenses issued for the fishing gear.
Clarification is needed on how the selectivity study was performed.

3) *The data on catches, effort and catches per unit of effort (CPUE), as well as the biological reference points ensuring the conservation of the concerned stocks*

Elements outlined in the plan

All vessels must keep logbook and fill landing declaration, regardless of the vessel length. According to Croatian regulations, catches above 10 kg will be registered at species level and the remaining catch will be registered as "others". Regardless of the quantities, the catch of *Spicara* sp., *Lophius* sp., *Homarus gammarus*, *Engraulis encrasicolus*, *Palinurus elaphas*, *Zeus faber*, *Arca noae*, *Eledone* sp., *Merluccius merluccius, Sprattus sprattus*, *Maja squinado*, *Sardina pilchardus, Mullus barbatus*, *Mullus surmuletus*, *Nephrops norvegicus* and *Scorpaena* sp.

Catches are characterized qualitatively and quantitatively, for each shore seine type. Monthly catches are presented for each shore seine type, for the period September 2014-September 2015 (DCF). Other available data have also been used (catch data 2008-2012 and January-July 2013; Croatian Directorate of Fisheries).

CPUE data are presented for the most recent year available.

Catches of the species listed in Annex III of the Mediterranean Regulation and those of cephalopods are shown to be low.

The landings annual mean length and weight trends of picarel are presented for the period 1994-2015.

YPR analyses have been performed to investigate the status of the target stocks.

STECF comments

The daily catch, depending on the type of shore seine, is reported to vary between 65 kg/day and less than 10 kg/day. STECF suggests recording all catch at species or common name level, not only those above 10 kg, so as to have a detailed characterization of the shore seine catches.

STECF notes that the trends of the annual mean length and weight of picarel over 1994-2015 are shown to suggest population stability. Nevertheless, the landings displayed a decreasing trend until 2000, and since then have fluctuated around 150 tonnes annually. From the information in the MP it is not possible to know whether the variations in landings are linked to changes in effort or in the abundance of the species.

Reference points are not established.

4) *The catch composition in terms of size distribution, with particular reference to the percentage of catches of species subject to minimum sizes in accordance with Annex III of the Mediterranean Regulation*

Elements outlined in the plan

For each species, and for landings and discards, the species percentage in the catch is given.

The size-range of all species that were caught by the different shore seines is given for landings and discards. In addition, for the target species, the distribution of sizes and age composition is presented for landings and discards.

In support for the derogation request on mesh sizes, a study of selectivity of shore seine for picarel fishing ("migavica") according to minimum mesh size, bottom type and distance from the

coast has been included in the MP. Results point to the fact that *Spicara smaris* catch is almost entirely related to mesh size of 24 mm.

STECF comments

Information on the length distributions of Annex III species can be found in the selectivity study.

5) The potential impact of the fishing gear on the marine environment with particular interest on protected habitats (i.e. seagrass bed, coralligenous habitat and maërl bed)

Elements outlined in the plan

In shore seine fishing it is prohibited to haul a net while the vessel is in motion. Floating plastic and rubber objects can be placed on hauling rope so as to prevent that the main rope touches the bottom, to prevent touching seagrass and/or getting caught in an obstacle.

The use of artificial light is allowed for shore seine fishing for small pelagics (Atherinidae, Clupeidae, Engraulidae). These shore seines would not touch the seagrass beds.

Maps on the marine phanerogams coverage of the eastern side of the Adriatic are not available. However, based on the available data and modeling it has been estimated that less than 5% of the total area covered with *Posidonia oceanica* (total coverage 1451.29 km^2) would overlap with shore seine fishing.

The study of selectivity of shore seine for picarel fishing ("migavica") according to mesh size, bottom type and distance from the coast indicates that *Spicara smaris* is mainly linked to marine phanerogams. In this same study, in support for the derogation request on 300 m from the coast or fishing <0 m depth, some trials were done at >300 m and >50 m depth, but the characteristics of this shore seine are such that can not be intended to fish on those grounds.

STECF comments

From the catch composition of small mesh size shore seine for small pelagic fish, the light used during the fishing operation does not attract species other than the target ones.

No details are given neither on the modeling approach, nor on the covariates used, and therefore, it is difficult to assess whether the coverage estimated by modeling represents the real coverage.

6) The social and economic impact of the measures proposed

Elements outlined in the plan

A study on the socio- economic impact is presented. The use of shore seine is combined along the year with gillnets, traps and longlines. Due to the combination of several kinds of fishing gears during one year, the revenue generated by each of them individually is not sufficient for economic sustainability, and on the average is about 6500 euros for seine nets. Some additional information is given, as for example, the number of fishermen involved in each shore seine fishery and the average price on fish market.

Expected socio-economic impacts of not granting the requests for derogation are described in a general way.

STECF comments

The MP points out that the implementation of the DCF will result in better insight into the economical element of the fishery, but the social and economic impact is presented in a general way, with little quantitative information.

7) ***Objectives that are consistent with the objectives set out in Article 2 and with the relevant provisions of Articles 6 of Regulation (EU) No 1380/2013***

Elements outlined in the plan

Fishing areas and seasons for each type of shore seine have been defined on the basis of fishery and biological data as well as historical statistical data of the Croatian Directorate of Fisheries. Shore seines for small pelagics shall not be permitted for fishing during the temporary cessation period for sardine and anchovy in the Adriatic Sea (May).

8) ***Quantifiable targets such as fishing mortality rates and/or spawning stock biomass***

Elements outlined in the plan

Values of F not to be exceeded are defined in some cases. When it has not been possible to assess the stocks (small mesh size shore seines for Atherinidae, Belonidae, Clupeidae and Engraulidae), general biological, economic and social objectives are proposed, with no quantifiable targets.

STECF comments

No quantifiable targets such as fishing mortality rates and/or spawning stock biomass are presented.

9) ***Clear time-frames to reach the quantifiable targets***

Elements outlined in the plan

No clear time-frames defined to reach the quantifiable targets.

STECF comments

No time frame is proposed given that no quantifiable targets have been defined.

10) ***Conservation reference points consistent with the objectives set out in Article 2 of Regulation (EU) No 1380/2013***

a) *Objectives for conservation and technical measures to be taken in order to achieve the targets set out in Article 15 of Regulation (EU) No 1380/2013, and measures designed to avoid and reduce, as far as possible, unwanted catches*

Elements outlined in the plan

Based on 2000-2010 data, the trends of landings, discards, and Annex III species landings and discards along the year are shown. This information will be used for the limitation of fishing during the time of the year when the catch of Annex III species is higher.

Discards appear to be relatively high in the case of girarica seine (*Boops boops* and *Sardina pilchardus*) and sabakun (*Mustelus punctulatus*).

shore seine	% discards	%cephalopods in landings	target	% target in landings	mesh size (mm)
migavica	12.2	9.2	S. smaris	48.5	24
girarica	25.4	2.5	S. smaris	55.9	24
small mesh size	1.8	0.0	A. boyeri	95.7	10-14
small mesh size	0.0	4.1	B. belone	28.2	20
small mesh size	0.1	3.4	sardine, anchovy	92.9	16
sabakun	24.9	9.8	several species		56

Percentage of discards in relation to total catch, and percentage of cephalopods and shore seine target species in the landings.

b) *Safeguards to ensure that quantifiable targets are met, as well as remedial action, where needed, including for situations where the deteriorating quality of data or non-availability put the sustainability of the main stocks of the fishery at risk*

Elements outlined in the plan

General objectives are proposed, but safeguards to ensure that quantifiable targets are met are not defined.

No remedial action for situations of deteriorating quality of data is foreseen. It is expected that the implementation of the MP will improve data quality.

c) *Other conservation measures, in particular measures to gradually eliminate discards, taking into account the best available scientific advice, or to minimise the negative impact of fishing on the ecosystem*

Elements outlined in the plan

Discards are low, except in the case of girarica and sabakun. The definition of temporal closures for the different shore seines types aims at lowering unwanted catches.

STECF comments
No information is available on the impact on non-commercial species vulnerable to shore seine fishing.

d) Quantifiable indicators for periodic monitoring and assessment of progress in achieving the targets of the management plan

Elements outlined in the plan
The monitoring and evaluation of the activity includes scientific monitoring and evaluation (fishing effort, catches and discards; selectivity of the fishing gear; escape rates for fish; specific scientific surveys if necessary), and control and surveillance of fishing, catch and trade.
No harvest control rules are proposed.

STECF conclusions
STECF reviewed in its plenary meeting of November 2014 the "Management plan for shore seine and purse seine nets in the Republic of Croatia" and indicated that to fully assess the impact of the requested derogations, additional information was required. These requests of additional information, which have been included to a large extent in the new MP, were the following:

- Estimates of monthly catch volumes separated into landings and discards by species (included in this MP) and corresponding size composition from catches taken outside and inside 300 m / 50 m isobath zone. A study on the selectivity of shore seine for picarel fishing ("migavica") according to minimum mesh size, bottom type and distance from the coast has been included in the MP.
- Quantitative information about monthly fishing effort outside and inside the 300 m of the coast / 50 m isobath zone (information presented on the defined fishing areas; vessels will be allowed to fish only in a given area)
- Estimates of monthly catch volumes separated into landings and discards by species, including non-target organisms (included in the MP), and corresponding size compositions from catches taken using the current mesh sizes and those prescribed Mediterranean regulation (size compositions in the MP correspond to the mesh sizes of each shore seine type, for which derogation is requested when mesh size is smaller than that prescribed in the Mediterranean regulation). A study on the selectivity per dominant species of "migavica" with 20 and 40 mm mesh size has been included.
- An assessment of the socio-economic impacts of the plan (presented, with little quantitative information)

The Republic of Croatia derogation requests refer to *i)* the distance off the coast of 3NM and 50m depth; *ii)* derogation on minimum mesh sizes; *iii)* derogation for fishing over seagrass beds, based on the fact that shore seine impact on this bottom would affect a small part of the total seagrass beds coverage.

Depending on the characteristics of the gear, the target species and the fishing grounds where the shore seine is operated, derogations are requested for each type of shore seine. Specifically, the derogation requests are the following:

Shore seine for picarel fishing (2 types: "migavica" and "girarica")

i) approaching the coast

ii) possibility to operate above the seagrass beds

iii) maintaining the current mesh size of 24 mm

Shore seine of small mesh size for Atherinidae, Belonidae, Clupeidae and Engraulidae fishing:

i) approaching the coast

iii) maintaining the current mesh size of 10 mm to 20 mm

Shore seine of large mesh size:

i) approaching the coast

STECF concludes that the plan contains most of the elements prescribed by the regulation. The main shortcomings are the absence of quantifiable targets, harvest control rules and remedial actions.

The derogations regarding the distance from the coast and 50 m depth are requested because, by definition, shore seines are operated from the shore. The derogation on minimum mesh size is requested based on the length distribution of the target species, which would not be caught with larger mesh sizes. The derogation for fishing over seagrass beds is based on the fact that shore seine impact on this bottom would affect a small part of the total seagrass coverage, and some of them (as "oliznica" and "iglicara") are pelagic and not operated on seagrass beds.

On the basis of the information provided STECF acknowledges that shore seine can likely not be operated without the derogations, but STECF is unable to provide a quantitative assessment of the consequences of granting the requested derogations.

5.10. Data collection- filling in gaps of raw data

Background

DCF raw data (termed primary data) are held in national databases by Member States with restricted access for reasons of data protection and confidentiality. Only aggregated data (totals or averages within certain stratification levels) are available to end-users and made publicly available.

When a question arises where DCF data need to be used, it is necessary to construct an aggregate data set according to a stratification that matches the question in hand. Currently, this construction is done manually because certain parts of the data set are unsampled or under-sampled, and imputation (or filling-in or interpolation) has to be made concerning the missing values.

Each time a new analysis is needed with a different stratification to meet a new problem, this process is being repeated.

This has two strong disadvantages:

1) It is extremely laborious and time-consuming, because the process is ad-hoc and manual.
2) As different imputation procedures are used in different cases, the totals from the various analyses sometimes have important differences, which detracts from the credibility and consistency of the analyses.

This issue is a blocking point for the use and analysis of DCF data across a range of topics, e.g. the integration of economic and biological analyses, the provision of advice on regional long-term plans, etc.

The intention is to develop a working method that allows the development of an interpolation method that is independent of aggregation level, always produces the same aggregate results, and requires reduced manual intervention. To this end, it is suggested that interpolation be done once only for each years' data, and at the level of primary data.

Member States would be encouraged to pool their primary data in a common temporary working environment. This would be maintained with a high degree of confidentiality and security. Within the environment, a common data-interpolation procedure would be developed in order to produce imputed values for primary data in the missing or poorly-sampled parts of the data sets. At the end of the exercise, the pooled primary data set would be destroyed (though the procedures used would be documented) and Member States would retain ownership of the imputed primary data needed to complete their own, national primary data sets.

For subsequent data calls, Member States would then provide end-users with aggregated data sets based on both the real and the imputed primary data. With this approach, no further detailed manual intervention would be needed and the totals would remain consistent irrespective of the stratification structure of the data call.

DG MARE has developed draft legal text to enable Member States to use this approach, as below:

Chapter 4

Source of data, procedures and methods to collect and process data

1. Member States shall coordinate to design and implement methods on a EU wide or regional basis in order to provide interpolated values for those parts of the sampling plans which are not sampled or are inadequately sampled. The interpolation of primary data for each Member State shall take account of relevant primary data held by other Member States and the relevant fishing activity primary data of the MS that should support implementation of the methodology .

2. The work of interpolation of primary data described in Paragraph 1 shall take place at the level of primary data and shall be maintained in a fully confidential environment in compliance with Articles 2 and 12 of this Regulation.

3. For biological variables, interpolated values for primary data shall be calculated on an annual basis by 31 March of the year after the data have been collected. For economic variables,

interpolated values for primary data shall be calculated on an annual basis by 31 January one year after the data have been collected.

4. When providing detailed or aggregated data to end-users, Member States shall supply data based on:

a) the primary data alone, and
b) the primary data and the interpolated values.

However, where necessary in order to maintain conformity with Articles 2 and 12 of this Regulation, Member States may supply data as follows:

a) detailed or aggregated data based on both the primary data and the interpolated values, and
b) for each data aggregation unit, the number of primary data and the number of interpolated values used.

5. Interpolated values are subject to the same confidentiality rules as primary data.

6 For the purposes of this Article, "interpolation" includes the use of model-based estimation procedures.

Request to the STECF

1) STECF is requested to advise as to whether the general approach set out above is feasible and workable and presents the best available working method to address the stated problem.

2) Initial comments are requested from STECF as to the main conditions necessary in order to make this working method operational.

STECF observations and comments

The reason of creating a raw data pool was not clear for STECF. And it was not clear whether other options were explored before coming with this proposal, e.g. fines for non-compliance, use of common methodologies, clear definitions of variables and use of common procedures.

STECF observes that the text was proposed to be used in the Guiding document for the preparation of the National Work Plans. In case the procedure is included in the DCF it should be part of the Council and Parliament Regulation defining the general rules of processing and dealing with primary data and have to be discussed and agreed by MS.

STECF notes that more information from the Commission is needed to clarify what the problem is. Specifically, STECF is not clear what problem exists that could not be resolved by work done by PGECON, RCGs and as part as development of Regional data bases (including common methodologies, common definition of variables and use of common procedures).

STECF conclusions
STECF concluded that there is no need to incorporate the legal text proposed by the Commission to Guidelines document for the preparation of the National Work plans. It is advised to use relevant bodies responsible for the methodological development within the future DCF to address the issue if needed.

STECF invites the Commission to come back with clearly identified issues and examples of the problem.

5.11. Scoping on feasibility of economic analysis related to MSY and TAC proposals

Background
1) Feasibility of an economic analysis of the impacts of moving MSY
The new EU's Common Fisheries Policy (CFP) aims to ensure that exploitation of living marine biological resources restores and maintains populations of harvested species above levels which can produce the maximum sustainable yield (MSY). To do so, the maximum sustainable yield exploitation rate (F_{MSY}) is to be achieved by 2015 where possible and, on a progressive, incremental basis at the latest by 2020 for all stocks.
In this context of implementing the new CFP, fishing at levels that correspond to MSY creates the prospect of stock recovery to levels that could deliver high yields and increasing economics returns from fishing at MSY. The potential benefits of moving to MSY from a state of overexploitation are documented in some fleets and fishing regions but probably not enough documented in other regions such as in the Mediterranean or in the small scale coastal fleets. (See preparatory work on MSY for the Mediterranean fleets).This transition to MSY may imply important short term economic losses and long term gains that should be better understood for the different fishing regions and fleet categories.
The purpose of this discussion is to brainstorm on how an analysis on economic impacts of exploiting fisheries at MSY could be produced by STECF in the future and what tools (DCF data, bio-economic modelling, etc…) would be required. This scientific advice should able to help to implement the new CFP.

Request to the STECF
In particular, STECF is requested to
1. to review the 2 ad-hoc contracts
2. to discuss whether this analysis is feasible and could be undertaken by a dedicated working group? Which tasks or action (such as develop specify bio-economic modelling, appropriate data) are required to provide analysis on economic impacts of exploiting fisheries at MSY.
Part of this discussion could be also relevant for the below point.

2) Feasibility of the evaluation of potential economic impact on EU fleets of TAC proposals

Several years ago, STECF WG (SGECA) attempted to evaluate the short and long term economic impacts of the TAC proposal. (See "SGECA report on The Potential Economic Impact on Selected Fishing Fleet
Segments of TACs Proposed by ACFM for 2005, Subgroup on Economic Assessment SGECA, October 2004").

Since these early attempts to evaluate the economic impacts of TACs proposals, bio-economic modeling and economic data have significantly improved.

Request to the STECF

- STECF is requested to provide advice whether it would be feasible to set up an experts group similar to SGECA (conformed by economists, biologists and modelers) in future work programs of STECF to evaluate the economic impact of TAC proposal in the Atlantic, North Sea and Baltic Sea and Black Sea.

- If these were feasible, what actions (such as identify the appropriate bio-economic modelling, biological and economic data needed), roadmap and resources (meetings, preparatory work, etc.) would be needed?

STECF comments

1) Feasibility of an economic analysis of the impacts of moving [towards] MSY

1. Review the reports of the two *ad hoc* contracts.

STECF reviewed the reports of the contracts and observes that two experts contracted *ad-hoc* by the Commission were asked to provide an economic analysis of fleets which depend on fisheries or stocks that are considered to be exploited sustainably in the Mediterranean or Black Seas.

The terms of reference of these contracts specify that experts should select fisheries or stocks in the Mediterranean or Black Seas that are considered to be exploited sustainably in recent years, and whose economic performance follows a positive trend. The ToR defines the economic and social indicators to be considered in the analysis and the way in which the analysis should be presented (a summary of maximum 10 lines and a description of the trends in the economic performance accompanied by relevant graphs).

The reports state that, according to the most recent STECF assessments, more than 95 % of Mediterranean stocks are fished in excess of F_{MSY} levels. Very few demersal stocks are currently being harvested at rates consistent with achieving the stocks size that could produce MSY. Among these, Deep Sea Pink Shrimp (*P. longirostris*) and Giant Red Shrimp (*Aristaeomorpha foliacea*) in area GSA 9, Red mullet (*Mullus barbatus*) and Deep sea pink shrimp (*P. longirostris*) in area GSA 10 and Red mullet (*Mullus barbatus*) in area GSA 18 have shown sustainable harvest rates in recent years. The experts selected four fleets that have been targeting these species and which are economically profitable.

However, as pointed out in the reports, these fleets have been targeting multiple species, and stocks harvested at rates consistent with achieving MSY represent just 10 % - 15 % (by volume) of total production. Therefore, these fleets have not been highly dependent on the selected

stocks for their economic performance. In addition, the economic performance of fleets is only partially influenced by the harvest rates of some target species. Profitability is strongly dependent on other factors such as operating costs, prices, market conditions, etc.

STECF also considers that, according to the terms of reference of the ad-hoc contracts, experts have not been asked to provide model for assessing the economic impacts of exploiting fisheries at MSY or to assess if there was a relationship between F and profit over time. Therefore, they did not provide a "model" to be used as a reference to be applied also for other fleets.

The reports presented only look at the past, presenting an analysis of data on fishing during a period in which harvesting of the chosen stocks was moving towards MSY. Evaluating the impacts of future transitions towards MSY requires simulation modelling or assumptions on future developments, rather than reporting past performance.

STECF considers that Member States already have to assess, for each fleet segment, the level of balance between each fleet segment and the stocks they rely on (2015-10_STECF 15-15 - Balance capacity_JRC97991). This assessment considers the extent to which each fleet relies on stocks that are fished above the target rates and the level of profitability. Member States are invited to calculate a small number of biological, economic and technical parameters each year and compare the results against standard values. STECF notes that the visualisation of stock dependency information for fleets could be improved using dedicated tools such as the Stock/Dependency tool (https://fishreg.jrc.ec.europa.eu/web/stockdependency).

STECF concludes that the *ad hoc* reports presented do answer their own TOR. However STECF also concludes that these *ad hoc* Terms of Reference and the *ad hoc* reports presented do not include a method for assessing the economic impacts of fishing at F_{MSY}. Suggestions on how to do this are discussed below.

2. **Is an analysis of economic impacts of exploiting fisheries at MSY feasible?**
   a. **Could the analysis be undertaken by a dedicated working group?**
   b. **Which tasks or action (such as develop specify bio-economic modelling, appropriate data) are required to provide analysis on economic impacts of exploiting fisheries at MSY.**

STECF observes that the TOR for plenary meeting 16-01 ask about the impacts of "moving towards MSY" and also refers to the impacts of "fishing at MSY". STECF notes that these are two different things. Exactly what is to be analysed or evaluated must be clearly defined and agreed before any analysis can be undertaken.

STECF notes that the results of analyses of the economic impacts of exploiting fisheries at MSY that would simply use single-species estimates of MSY or assume that B_{MSY} can be achieved simultaneously for all species in a sea area will not be realistic.

However, it would be possible and feasible to provide analysis of the economic impacts of e.g. moving at different rates towards fishing at F_{MSY}, or of moving towards fishing at F_{MSY} with priority given to different species within the mix in any given sea area. As noted in the background notes of the TOR, this task has been done for some fleets and fisheries. A lot of this type of analysis is covered by e.g. the STECF MAP (Multi-Annual Plans) working groups in 2015 and 2016, and

numerous research projects, e.g. EU FP7 MYFISH, SOCIOEC, MAREFRAME etc. It would be helpful to ask a EWG to summarise the outcomes of the most recent modelling work in the areas where it has been done, and to choose the most appropriate approaches to do this analysis for fisheries where it has not already been done.

However, because the reality of fishing is complex, it is difficult to provide simple and robust answers without conducting underlying complex analyses. This complexity has important implications:

- These analyses are not quick or inexpensive jobs.
- All these evaluations are based on some assumptions, which were considered the most appropriate assumptions at the time the evaluations were done. But these assumptions are unlikely to be shown to be definitely appropriate during the next four years while the Landing Obligation is being phased in. Therefore, the analyses are conditional on these assumptions which may not hold true. Ideally, models should be updated when new knowledge on the changes in the fisheries linked to the LO is available
- The models that exist for each sea basin, which are all largely based on the same bioeconomic principles, do not usually cover all the fleets and species that are covered by the CFP. They mostly cover commercial stocks and fleets, but level of coverage of bycatch or less marketable species is lower.

In order to analyse further situations it would be necessary to address the issues of multi-species fisheries, the landing obligation, any resulting choke stock situations, and in some areas, especially the Mediterranean Sea, there may be some important stocks that are not yet assessed.

In considering the issue of relating fishing at F_{MSY} to economic performance of fleets, it is important to note that the economic performance of fleets is more dependent on costs and prices than just the effects of having population size that produces MSY, such as higher quantity of fish landed and more efficient catch rate per unit of effort.

STECF conclusions

STECF concludes that there are models and data for assessing ways to move towards achieving MSY. A regular assessment of the effects of moving towards achieving MSY may require additional effort as there are a lot of issues to consider. A dedicated EWG could look at available information, summarise and visualise the main outcomes and propose how to assess regularly the effects of moving towards achieving MSY. The EWG should also evaluate the feasibility of using existing and potential reference points compatible with achieving the MSY as defined by the CFP. Finally, the management options to move towards MSY should be pre-agreed and given by DGMARE to the EWG.

2) Feasibility of the evaluation of potential economic impact on EU fleets of TAC proposals

a. STECF is requested to provide advice whether it would be feasible to set up an expert group similar to SGECA (consisting of economists, biologists and modellers) in future work programs

of STECF to evaluate the economic impact of TAC proposals in the Atlantic, North Sea, Baltic Sea and Black Sea.

b. If these were feasible, what actions (such as identify the appropriate bio-economic modelling, biological and economic data needed), roadmap [order of events, dates, times] and resources (meetings, preparatory work, etc.) would be needed?

STECF observes it would be feasible to estimate short term economic impacts of different TAC and quota proposals, taking account of possible choke situations due to the LO for each member state. Such analysis could be designed to highlight when a proposed reduction in TAC or quota might be expected to create a severe economic impact on the fleets concerned and could also show if the impacts could be mitigated if the TAC reduction were to be smaller than proposed.

However, during the phasing-in years of the Landing Obligation, these estimates would not be very reliable as there is no valid baseline year of vessel activity, particularly catch rates per species in mixed species catching operations. Some untested assumptions, especially regarding catch rates, which would have strong influence on any choke situation, would have to be employed. The results of the analysis would therefore be subject to debate as to their usefulness in helping to decide TACs and quotas.

STECF observes that this process is also linked to the mixed-fisheries advice performed by ICES for an increasing number of sea basins, and coordination with ICES should be sought to streamline data exchanges and avoid duplication of work.

STECF observes that, in order to produce these impact estimates, the actions, order of events, human resources, data, model needed would be:

a. An initial EWG should develop a procedure for how to regularly assess the short term economic impacts of TAC and quota proposals. It is most likely not possible to apply a single model for all fleets and stocks but it should be possible to develop a workable approach to cover most of the EU sea areas with a limited number of models. All these models must be able to operate, including effects of the landing obligation on possible choke stocks, using only DCF data.
b. The EWG should run the models for relevant fleets and changes to the TACs of a limited number of stocks and produce impacts of proposed TACs and quotas as example outputs for review.
c. The report of that EWG will then be evaluated by STECF plenary for robustness and evaluated by DGMARE for whether these outputs are useful for their needs.
d. The agreed procedure can then be implemented and outputs delivered in the following year.
e. Outline order of events:

Time of year	**Event**	**Pre-requisites**
Year 0 (e.g. 2016)		

Any time	EWG tests, evaluates, visualises and chooses appropriate models, that can use DCF data only and can estimate any possible choke stock effects. EWG then develops procedure as described in a. above	TOR for the EWG, agreed by STECF
Year 1		
July	ICES stock advice published	MS stock assessment surveys
September	EWG to follow prescribed methods, using chosen models, prepare and visualise economic advice on impacts of TAC adjustments.	Models, DCF biological, transversal and economic data, proposed TACs for selected stocks.
October	STECF plenary	Report from EWG

5.12. Data reconciliation – CFP monitoring

Background provided by DG MARE

We thank STECF and JRC for the report STEF 16-05. This is a high-impact topic and it is important for us that this topic be addressed comprehensively and that the results be fully explained and understandable.

One topic of importance for us is that changes from the previous edition of the report should be fully documented. With the help of JRC staff, we have tracked down a number of issues that we think need to be fully documented (see annex).

We may also have identified some errors in the report:

1) The stock of herring in VIa(N) appears to have been counted twice, due to an erroneous inclusion in the ICES stock database.

2) We think STECF may have made a mistaken imputation that stocks not under minimum size regulations in the Mediterranean Sea are not managed under the Common Fisheries Policy (Section 2.1 of the document "Common Fisheries Policy Monitoring Protocol for computing indicators").

In addition:

- We see a serious need to have some analysis or reporting concerning the Black Sea.
- We would like an updating of Figure 15 and Table 1 as soon as STECF has reviewed the latest Mediterranean assessments so that these can be included.

Request to the STECF

With this background, we request STECF to address:

1) Document the changes between the 2015 and 2016 reports, having regard to the Annex; this documentation should be accessible to the stakeholders and interested parties.

2) Correct the double-counting of Herring (VIa) in the report and recalculate the relevant analyses.

3) Update the Mediterranean analysis:

a) after the adoption of new relevant assessments in the April 2016 plenary session and,

b) if considered appropriate, with the inclusion of stocks not under minimum size regulations. If not appropriate, reasons should be given.

4) Report briefly on available information concerning the Black Sea.

ANNEX: Request for clarifications with respect to STECF- 16-05

Internal consistency of the 2016 report

1) **Why are there 57 stocks with F/Fmsy figures in Table 11 but 59 stocks in Table 1 ?** It needs to be known that Table 11 in the 2016 report excludes values for **five** short-lived stocks managed under escapement strategies These stocks have been taken into account in Tables 1,2 and 3 in respect of assessing whether the stocks conform to MSY in the short term, but are not included in the analysis in Tables 7 and 8. Furthermore, Table 11 includes stocks with assessments in both 2014 and in 2013. There were **three** stocks included in the data set to 2013 which are not assessed in 2014: Herring in VIa(N), Irish Sea cod, and blue ling 5b6-7. We have therefore:

57 stocks with F/Fmsy estimates in Table 11

Plus 5 short-lived stocks included in Tables 1-3 (this is not documented)

Minus 3 stocks assessed in 2013 but not 2014

= 59 stocks documented in Table 1.

Comparison between 2016 and 2015 Reports

2) There are 59 stocks reported as assessed with respect to F in comparison to Fmsy in STECF 16-05 compared to 62 stocks in STECF 15-04. This made up as:

62 stocks in the 2015 report

Minus 6 "losses"

Plus 3 gains

= 59 stocks documented in Table 1 of the 2016 report.

Stocks "lost" in 2014 [- 6 stocks]

3) Three stocks were not assessed in 2015 because assessments are programmed every second year for deep-sea species: Blue ling V, VI, VII; Roundnose Grenadier in VI, VII, Vb, XIIb. This is also the case for Irish Sea cod **[-3 stocks]**

4) Two *Nephrops* functions units were merged into a single assessment: *Nephrops* in the Sound of Jura and *Nephrops* in Firth of Clyde are now assessed as a single stock **[-1 stock]**

5) STECF has not included the assessment of Atlanto-Scandian herring in the 2016 report, though it was included in 2015. STECF decided not to cover stocks in Areas I, II **[-1 stock]**

6) The assessment of plaice in VIIe was downgraded from analytic assessment to data-limited following a benchmark review due to internal inconsistencies (retrospective pattern) and lack of discard data. **[-1 stock]**

Additional stocks in 2014 (+3 stocks)

7) Three new stocks are added because technical improvements in benchmark meetings have allowed them to be moved up from data-limited to fully assessed: Plaice in Subdivisions 21,22,23 (Kattegat, Belts and Sound), *Nephrops* IIIa and Plaice VIId. **[+3 stocks]**

8) An additional assessment stock was introduced for herring VIa+VIIbc, which replaces the herring VIa stock for 2014 due to a redefinition of stock identity **[+0 stock in 2014].** However, the herring VIa assessment has been retained in the data set, which means that this stock is double-counted in the years up to 2013.

STECF comments

ToR 1

The accounting presented in the ToR 1 annex is correct. The changes in the 2016 report in comparison with the 2015 report are the result of applying the protocol, which introduced a new method to select stocks based on TACs and revised some indicators. In particular the Safe Biological Limits (SBL) indicator, which now requires both SSB and F to be evaluated simultaneously.

SBL in 2015 was computed for stocks which had biomass reference points **or** fishing mortality reference points, while in 2016 the computation is carried out only for stocks that have the two reference points.

The reason for Table 11 having more stocks than those referred in Table 2 for 2014 (59) is because this table reports stocks assessments carried out after 2013 and not just the last year. The rationale behind this decision is that a stock assessment which is carried bi-annually (or

every three years) is still informative of the status of the stocks. Furthermore, this rule stabilizes the list of stocks in the Mediterranean, where it's common for stocks not being assessed every year. This rule was discussed and approved during the current plenary (see section 6.4 of this report).

For stocks managed under escapement strategies, there is only one reference point, the escapement biomass, which under a MSY policy should be/are based on B_{MSY}. As such assessing the current biomass with relation to the escapement biomass was used as a proxy for assessing the exploitation status of the stock (F/F_{MSY}) and those stocks counted in sections 3.1.1 and 3.1.2. Nevertheless, the values of the ratio between escapement biomass and B_{MSY} are not comparable with F/F_{MSY} and were omitted from Table 11, where the symbol "*" is used.

With regards to stocks in areas I, II and V the mapping of the TACs with biological stock units requires further work to deal with boundaries that cross ICES divisions. On the other hand these stocks are not fully under the influence of the CFP. The decisions about the fishing opportunities for these stocks are shared with third countries, like Norway, and the level of responsibility that can be attributed to the CFP must be mitigated. The way forward to deal with these stocks requires further work.

ToR 2 and 3.

STECF agrees that the MLS sampling frame leaves out some important stocks, as already stated in STECF 16 05. STECF decided to include all the Mediterranean stocks for which there were assessments since 2013 and update the indicators. A discussion about the Mediterranean list of stocks will be carried out during this year (also see section 6.4 of this report).

The update will also include the recent assessments carried out by EWG-15-16 and approved in this plenary session, as well remove the stock of HER-VIaN. The following figures and tables update STECF-16-05.

Note: Figure and Table numbering below refers to the equivalent numbering in the STECF-16-05 report.

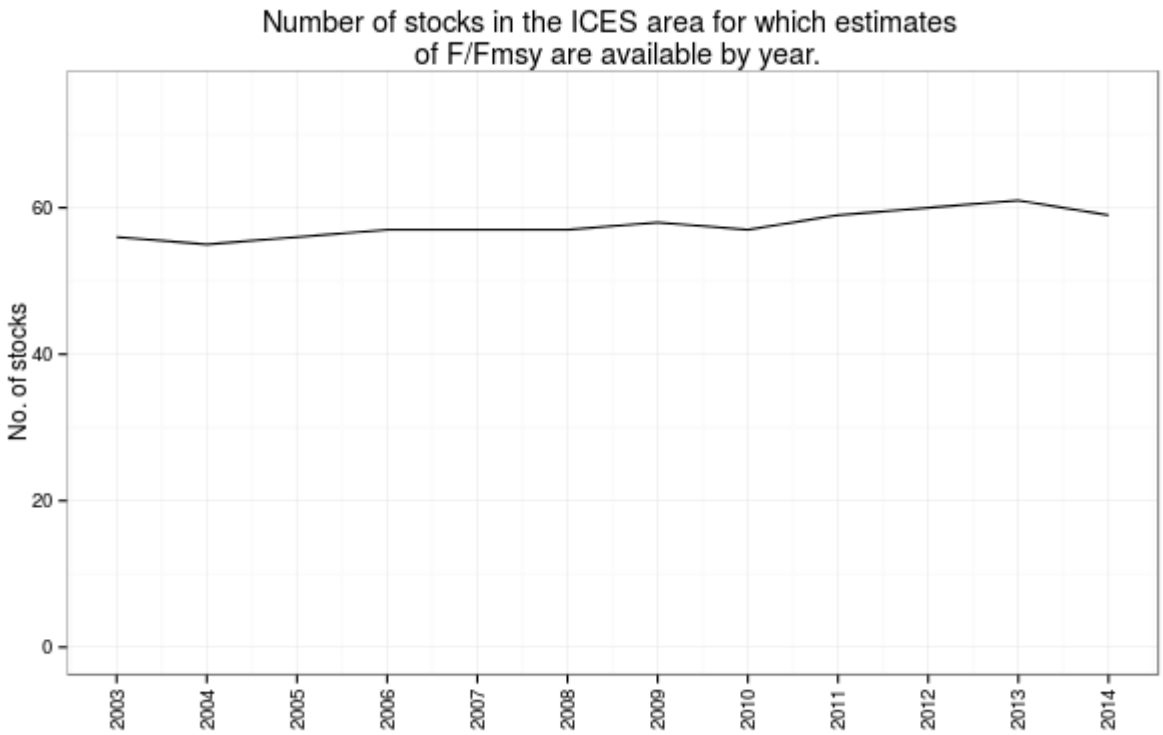


Figure 1:

Table 2: Number of stocks in the ICES area for which estimates of F/F_{MSY} are available by ecoregion and year.

Region	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
ALL	56	55	56	57	57	57	58	57	59	60	61	59
Baltic Sea	7	7	7	7	7	7	7	7	7	7	7	7
Greater North Sea	20	20	20	20	20	20	20	20	21	21	21	21
Western European	24	23	24	25	25	25	26	25	26	27	28	27
Widely distributed	5	5	5	5	5	5	5	5	5	5	5	4

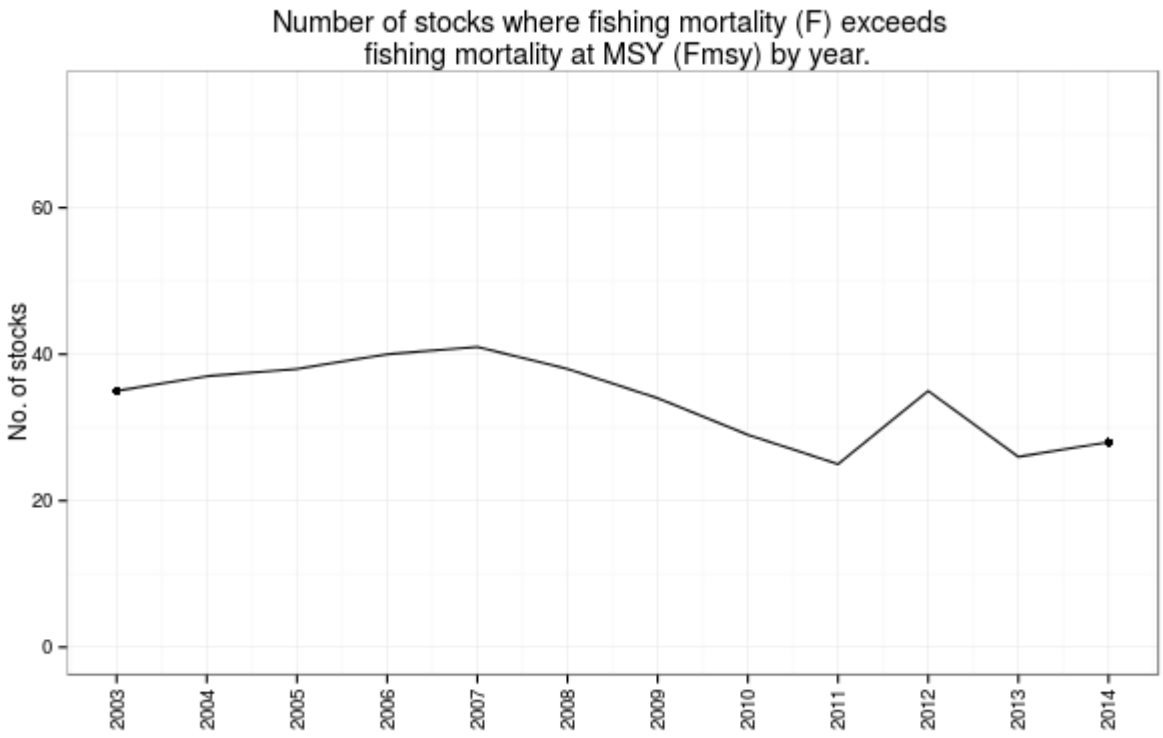

Number of stocks where fishing mortality (F) exceeds
fishing mortality at MSY (Fmsy) by year.
No. of stocks
0
20
40
60
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014

Figure 2:

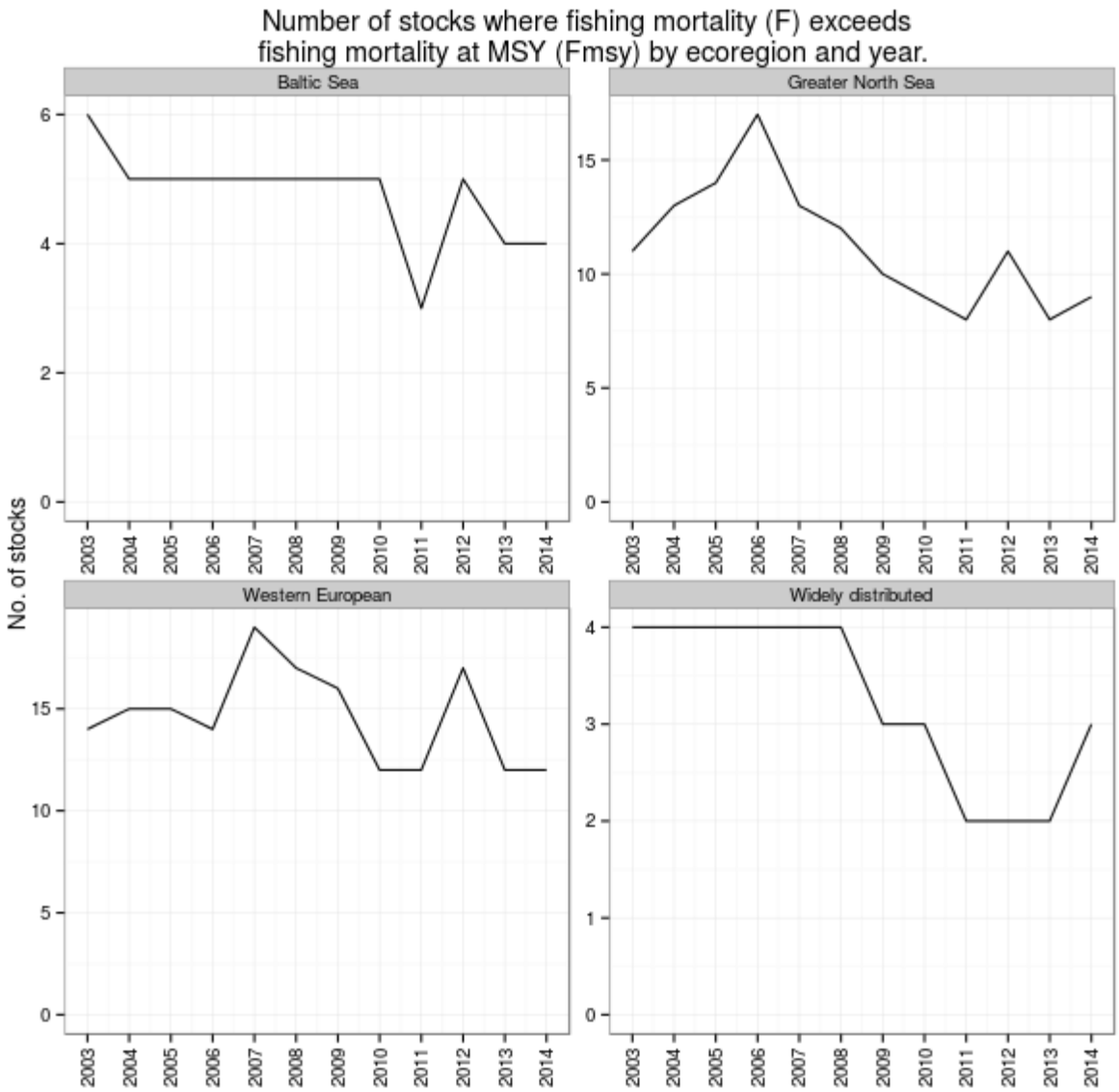


Figure 3:

Table 3: Number of stocks where fishing mortality (F) exceeds fishing mortality at MSY (F_{MSY}) by ecoregion and year.

Region	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
ALL	35	37	38	40	41	38	34	29	25	35	26	28
Baltic Sea	6	5	5	5	5	5	5	5	3	5	4	4
Greater North Sea	11	13	14	17	13	12	10	9	8	11	8	9
Western European	14	15	15	14	19	17	16	12	12	17	12	12
Widely distributed	4	4	4	4	4	4	3	3	2	2	2	3

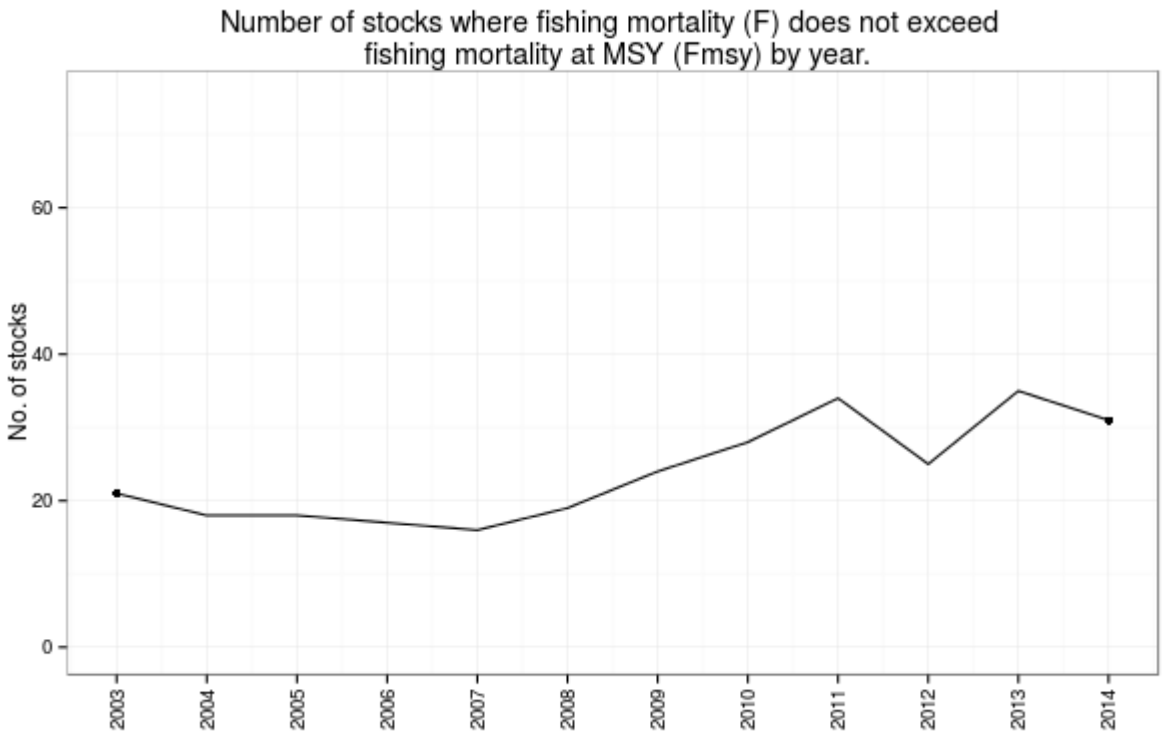

Number of stocks where fishing mortality (F) does not exceed
fishing mortality at MSY (Fmsy) by year.
No. of stocks
0
20
40
60
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014

Figure 4:

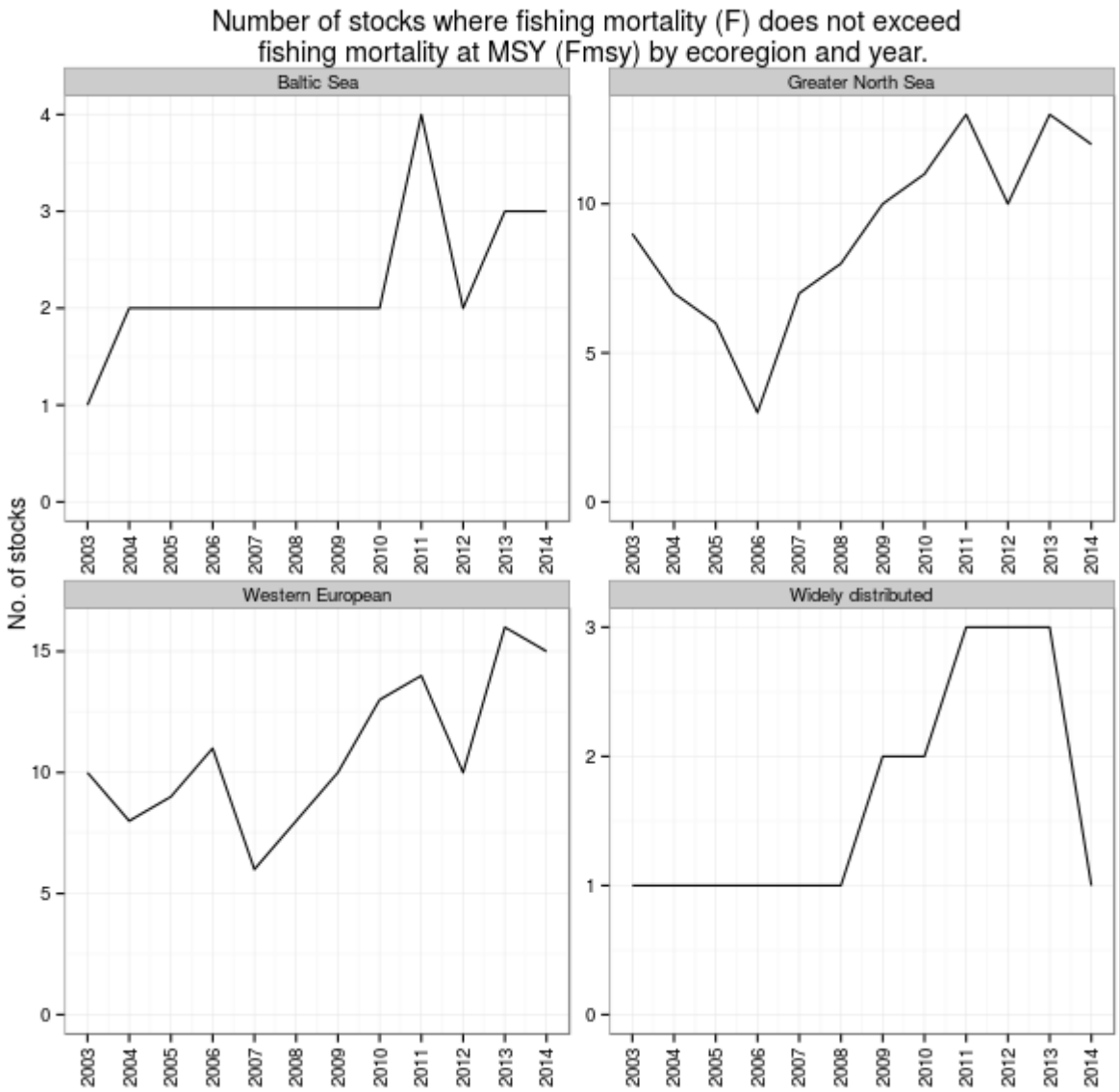


Figure 5:

Table 4: Number of stocks where fishing mortality (F) does not exceed fishing mortality at MSY(F_{MSY}) by ecoregion and year.

Region	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
ALL	21	18	18	17	16	19	24	28	34	25	35	31
Baltic Sea	1	2	2	2	2	2	2	2	4	2	3	3
Greater North Sea	9	7	6	3	7	8	10	11	13	10	13	12
Western European	10	8	9	11	6	8	10	13	14	10	16	15
Widely distributed	1	1	1	1	1	1	2	2	3	3	3	1

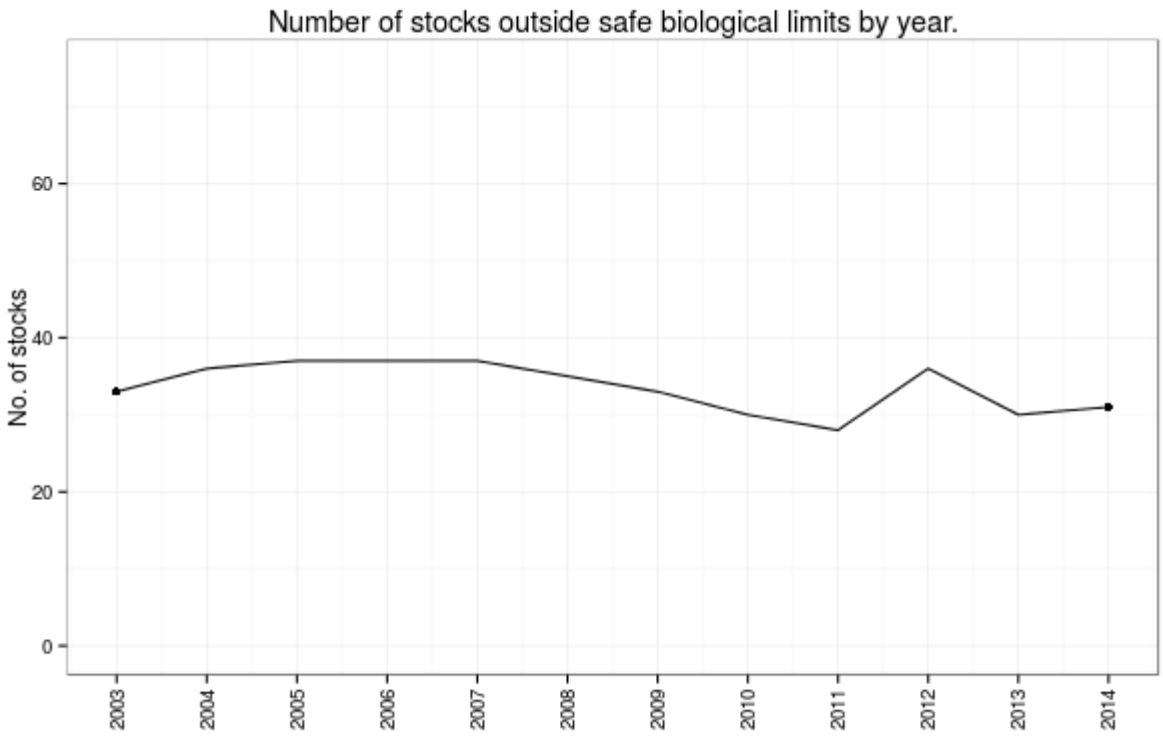

Number of stocks outside safe biological limits by year.
No. of stocks
60
40
20
0
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014

Figure 6:

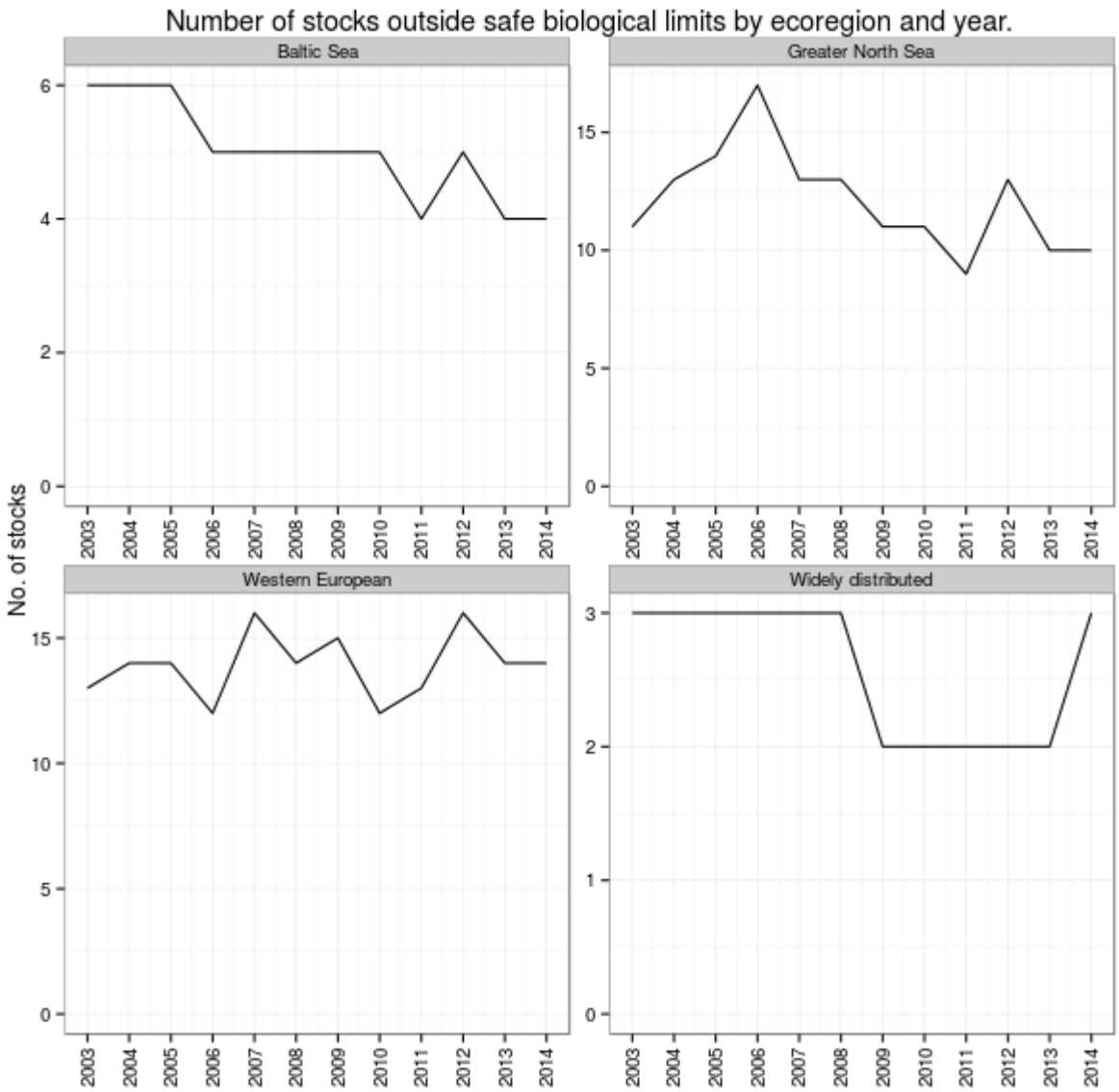


Figure 7:

Table 5: Number of stocks outside safe biological limits by ecoregion and year.

Region	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
ALL	33	36	37	37	37	35	33	30	28	36	30	31
Baltic Sea	6	6	6	5	5	5	5	5	4	5	4	4
Greater North Sea	11	13	14	17	13	13	11	11	9	13	10	10
Western European	13	14	14	12	16	14	15	12	13	16	14	14
Widely distributed	3	3	3	3	3	3	2	2	2	2	2	3

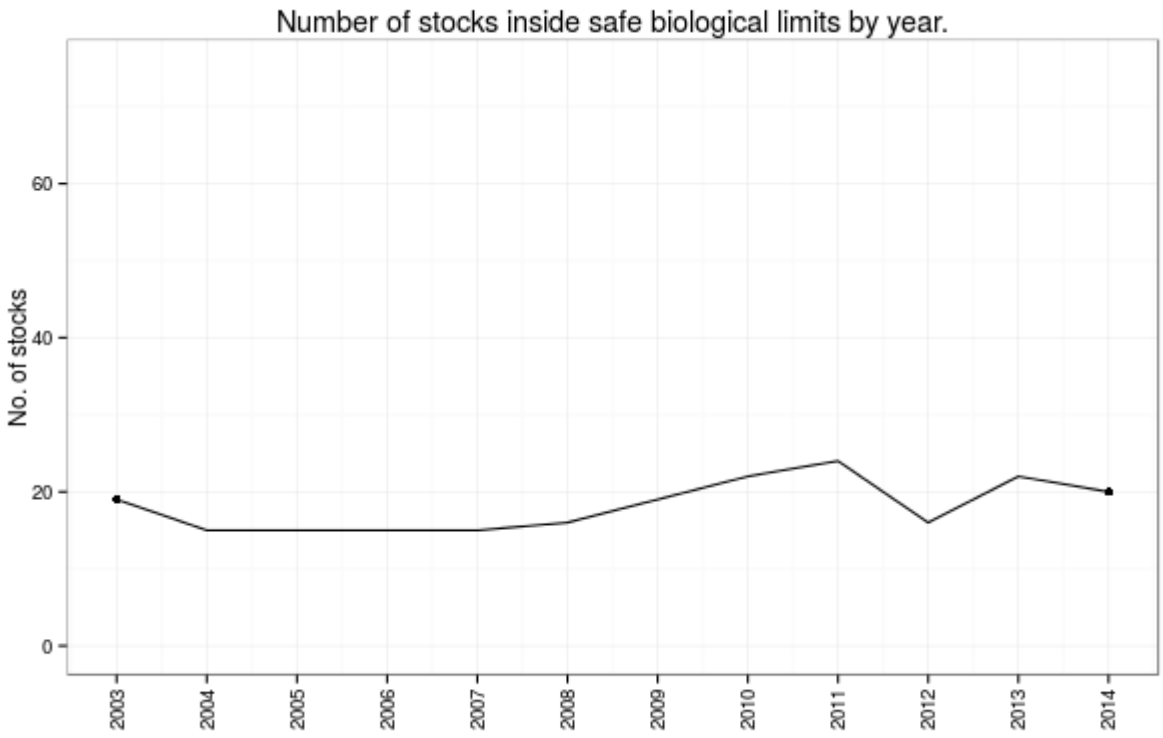

Number of stocks inside safe biological limits by year.
No. of stocks
0
20
40
60
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014

Figure 8:

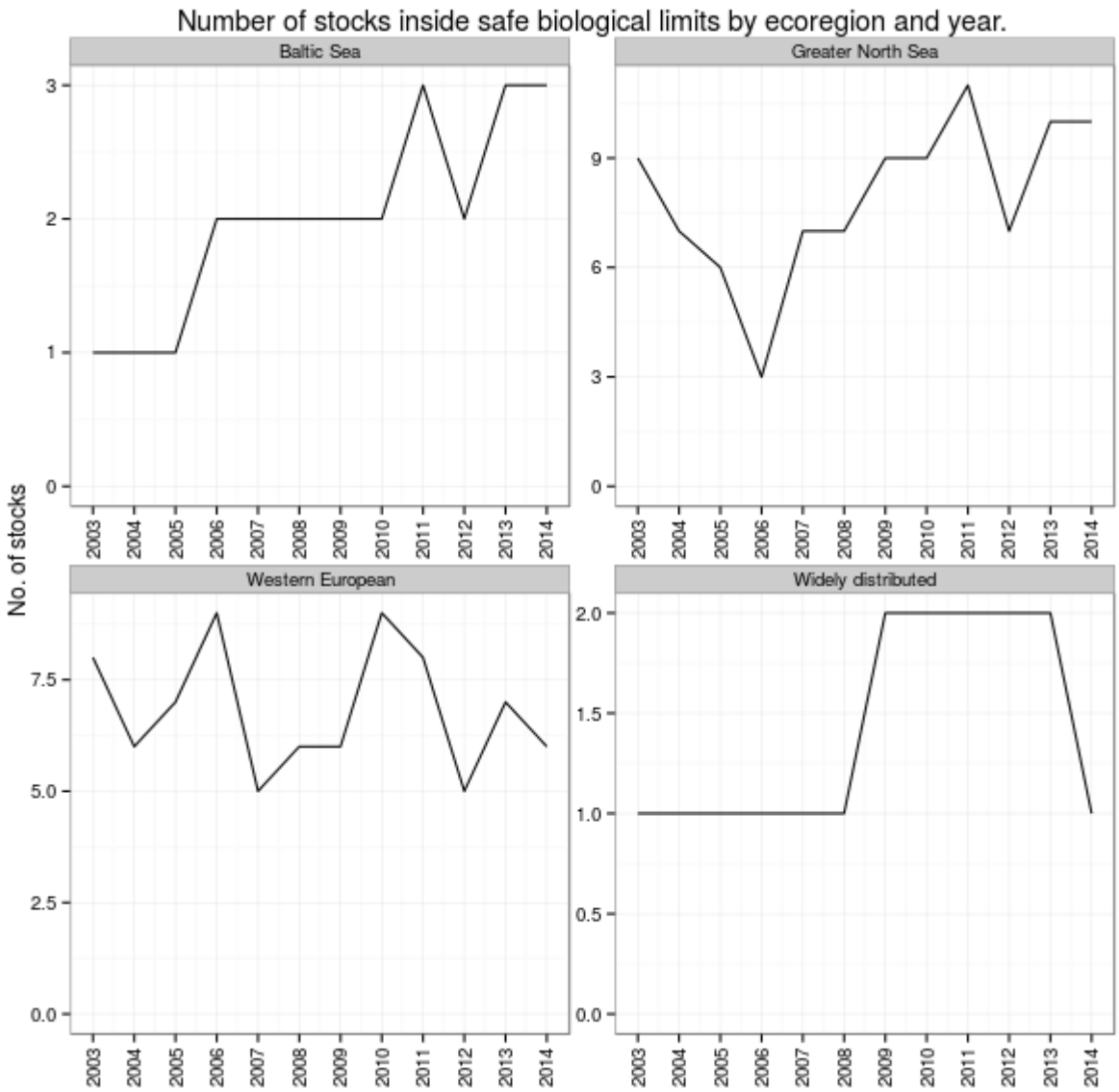


Figure 9:

Table 6: Number of stocks inside safe biological limits by ecoregion and year.

Region	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
ALL	19	15	15	15	15	16	19	22	24	16	22	20
Baltic Sea	1	1	1	2	2	2	2	2	3	2	3	3
Greater North Sea	9	7	6	3	7	7	9	9	11	7	10	10
Western European	8	6	7	9	5	6	6	9	8	5	7	6
Widely distributed	1	1	1	1	1	1	2	2	2	2	2	1

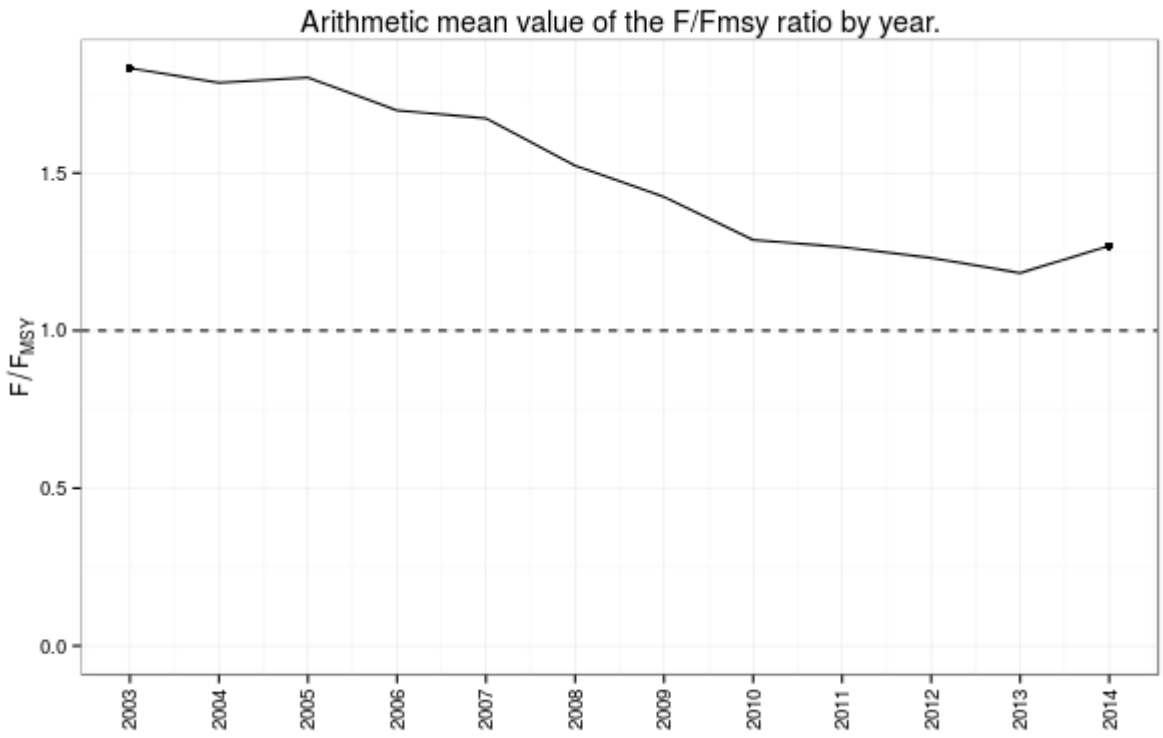

Arithmetic mean value of the F/Fmsy ratio by year.
F / F_MSY
1.5
1.0
0.5
0.0
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014

Figure 10:

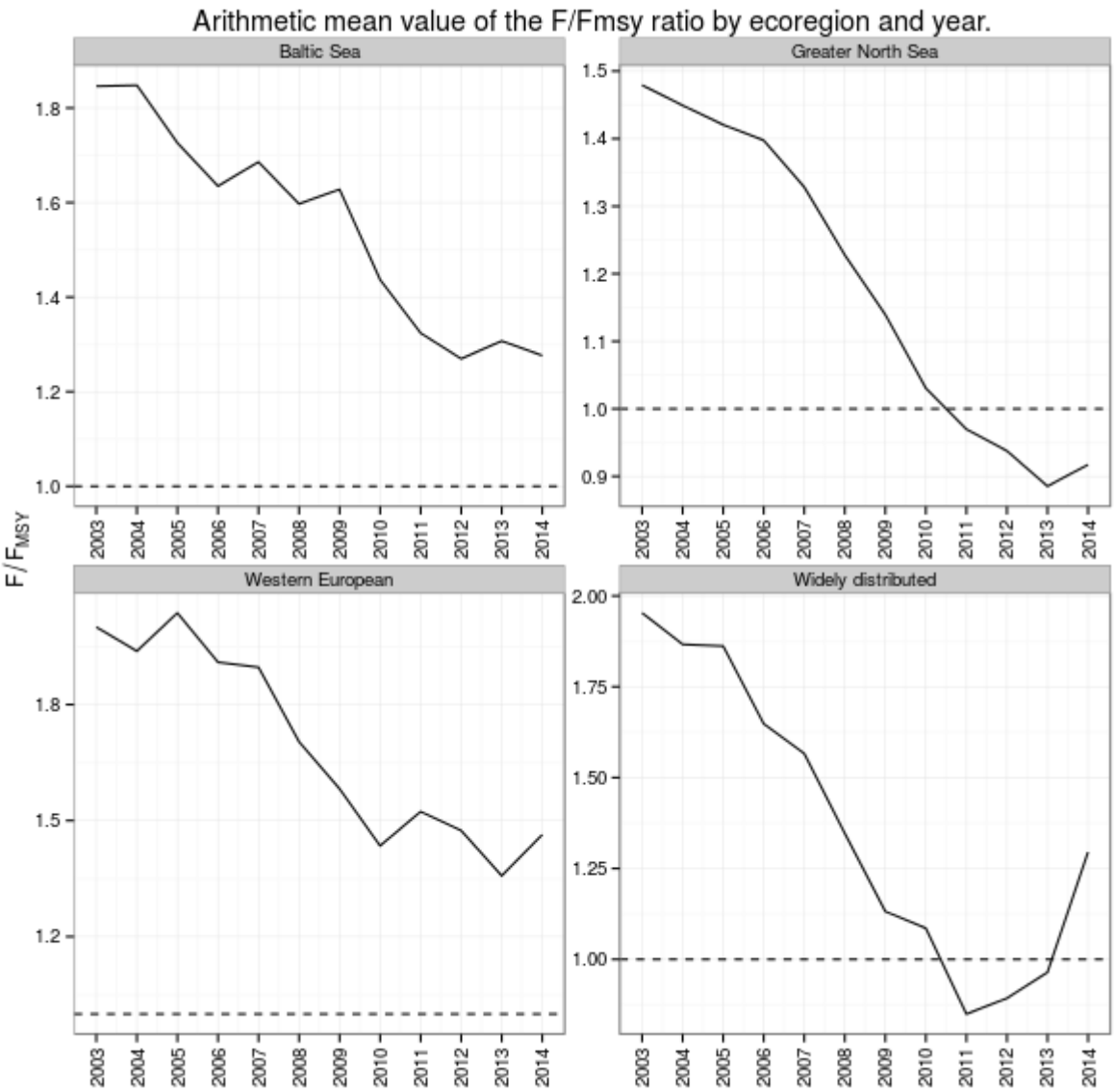


Figure 11:

Table 7: Arithmetic mean value of the F/F_{MSY} ratio by ecoregion and year.

Region	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
ALL	1.83	1.79	1.80	1.70	1.67	1.52	1.42	1.29	1.26	1.23	1.18	1.27
Baltic Sea	1.85	1.85	1.73	1.63	1.69	1.60	1.63	1.44	1.32	1.27	1.31	1.28
Greater North Sea	1.48	1.45	1.42	1.40	1.33	1.23	1.14	1.03	0.97	0.94	0.89	0.92
Western European	2.00	1.94	2.04	1.91	1.90	1.70	1.58	1.43	1.52	1.47	1.36	1.46
Widely distributed	1.95	1.87	1.86	1.65	1.57	1.35	1.13	1.09	0.85	0.89	0.96	1.30

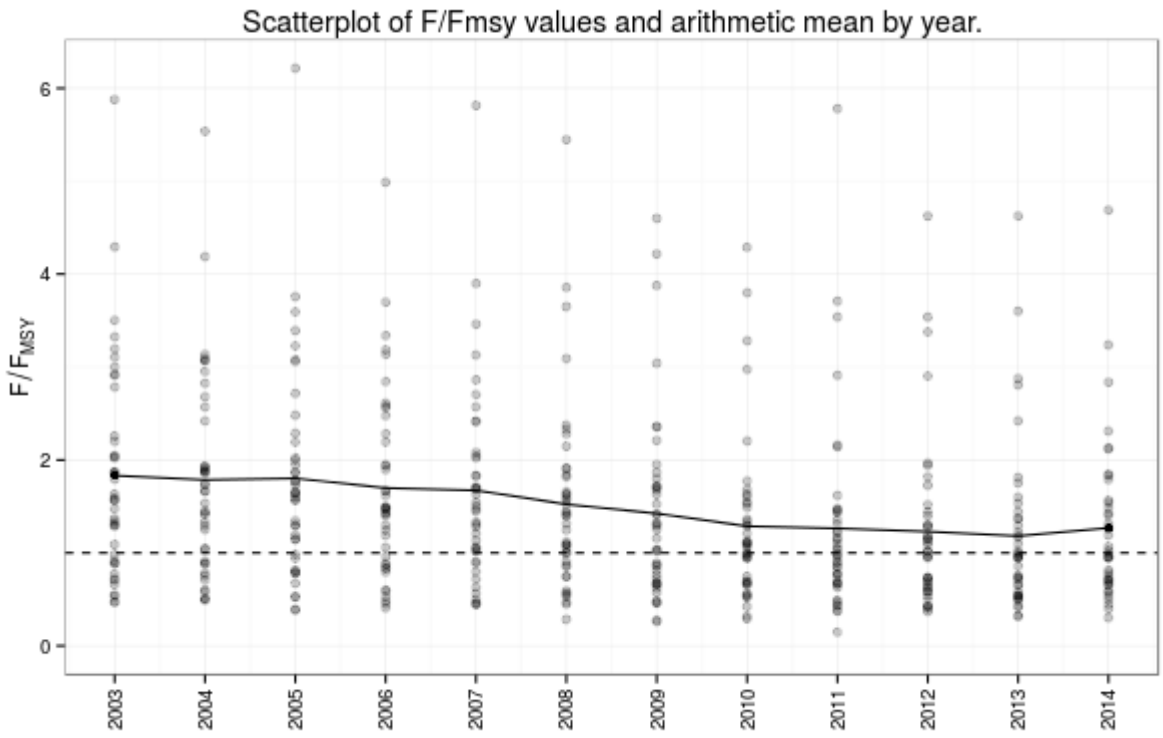


Figure 12:

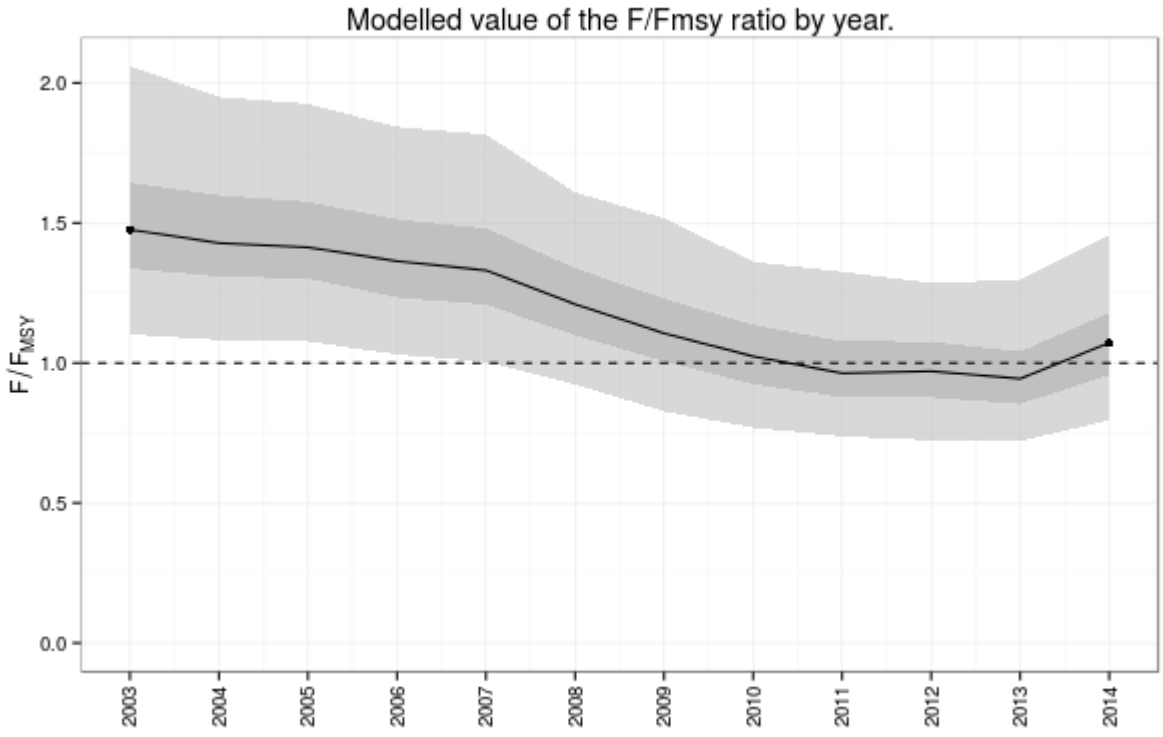


Figure 13:

Table 8: Quantiles of the F/F_{MSY} ratio by year.

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
2.50%	1.102338	1.082189	1.077158	1.030449	1.004596	0.9235	0.827681	0.76961	0.738037	0.723938	0.721372	0.795554
25%	1.337291	1.309961	1.30191	1.234658	1.208835	1.098747	1.006271	0.924878	0.878478	0.877515	0.854252	0.956791
50%	1.47626	1.428397	1.413249	1.363536	1.330656	1.209694	1.105739	1.023497	0.963389	0.970778	0.943805	1.071753
75%	1.644372	1.598705	1.575456	1.512256	1.480752	1.338139	1.229212	1.135932	1.077721	1.076538	1.040439	1.178589
97.50%	2.060195	1.949713	1.925355	1.842922	1.81571	1.609102	1.517359	1.361699	1.325864	1.28649	1.296476	1.455184

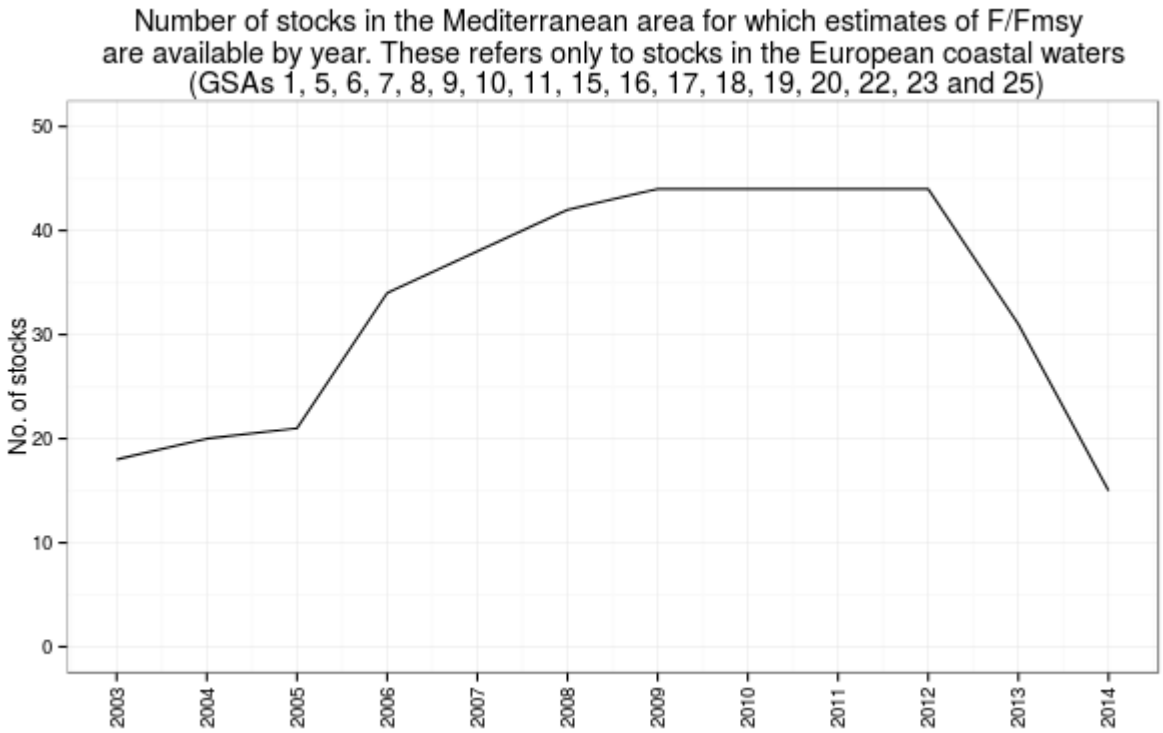


Figure 14:

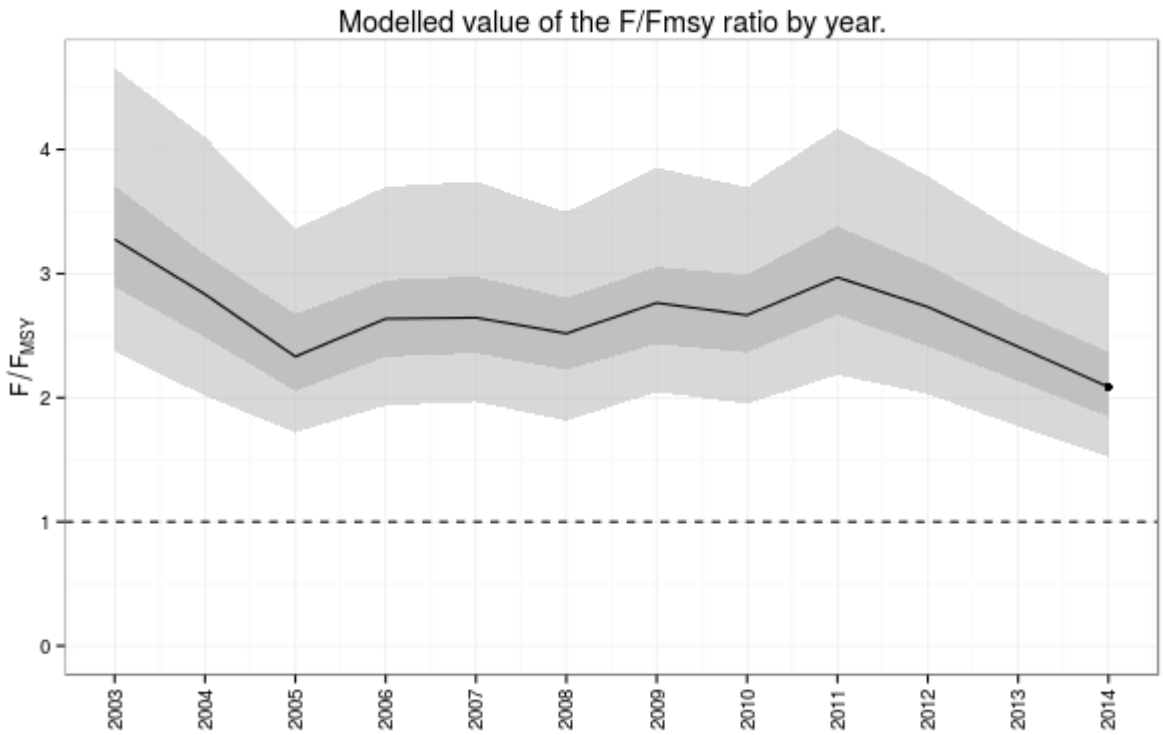


Figure 15:

Table 10: Quantiles of the MSY ratio by year.

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
2.50%	2.375086	2.01575	1.720477	1.93834	1.966388	1.814731	2.0466	1.951379	2.184513	2.029608	1.769418	1.524721
25%	2.893066	2.488786	2.05435	2.33107	2.360207	2.225412	2.434391	2.36563	2.669252	2.415727	2.135831	1.847582
50%	3.275844	2.833545	2.33103	2.63597	2.644631	2.517641	2.764317	2.665548	2.969253	2.731575	2.410062	2.08586
75%	3.709388	3.151217	2.673164	2.946468	2.976532	2.803992	3.053095	2.989388	3.381223	3.068258	2.689441	2.368885
97.50%	4.655729	4.10116	3.359491	3.701706	3.741828	3.496545	3.853705	3.696525	4.169693	3.787123	3.33019	2.984285

Table 11: Stock status for all stocks in the sampling frame in 2013. Columns refer to stock description, value of the F2013/Fmsy ratio (F ind), F2013 lower than Fmsy (F status), and whether the stock is inside safe biological limits (SBL).

Year	Stock	Description	F ind	F status
2014	ARA_9	Blue and red shrimp in GSA 9	0.55	•
2014	ARA_10	Blue and red shrimp in GSA 10	1.40	
2014	ARA_11	Blue and red shrimp in GSA 11	0.23	•
2014	ARS_1	Giant red shrimp in GSA 1	3.90	
2014	ARS_6	Giant red shrimp in GSA 6	1.23	
2014	HKE_01_05_06_07	European hake in GSA 01, 05, 06, 07	2.88	
2014	HKE_09_10_11	European hake in GSA 09, 10, 11	5.26	
2014	ARS_18_19	Giant red shrimp in GSA 18, 19	1.10	
2014	DPS_17-19	Deep-water rose shrimp in GSA 17-19	2.21	
2014	HKE_19	Hake in GSA 19	4.86	
2014	HKE_17_18	Hake in GSA 17, 18	5.57	
2014	MTS_17_18	Spot-tail mantis shrimp in GSA 17, 18	1.69	
2014	MUT_19	Red mullet in GSA 19	2.20	
2014	MUT_17_18	Red mullet in GSA 17, 18	1.32	
2014	SOL_17	Common sole in GSA 17	2.44	
2013	ANE_17_18	European anchovy in GSA 17, 18	2.09	
2013	ANK_5	Blackbellied angler in GSA 5	7.63	
2013	ANK_6	Blackbellied angler in GSA 6	6.49	
2013	DPS_9	Deep-water rose shrimp in GSA 9	0.97	•
2013	MUT_1	Red mullet in GSA 1	4.84	
2013	MUT_18	Red mullet in GSA 18	1.07	
2013	MUT_6	Red mullet in GSA 6	2.77	
2013	MUT_7	Red mullet in GSA 7	3.11	
2013	MUT_9	Red mullet in GSA 9	1.17	
2013	NEP_5	Norway lobster in GSA 5	1.69	
2013	NEP_18	Norway lobster in GSA 18	6.08	

Continued on next page

Year	Stock	Description	F ind	F status
2013	NEP_9	Norway lobster in GSA 9	2.03	
2013	PIL_6	European pilchard(=Sardine) in GSA 6	1.66	
2013	PIL_17_18	European pilchard(=Sardine) in GSA 17, 18	2.32	
2013	WHB_6	Blue whiting(=Poutassou) in GSA 6	7.88	
2013	WHB_9	Blue whiting(=Poutassou) in GSA 9	1.15	
2012	ARS_9	Giant red shrimp in GSA 9	1.72	
2012	DPS_1	Deep-water rose shrimp in GSA 1	1.65	
2012	DPS_10	Deep-water rose shrimp in GSA 10	1.33	
2012	DPS_19	Deep-water rose shrimp in GSA 19	2.39	
2012	DPS_5	Deep-water rose shrimp in GSA 5	1.10	
2012	DPS_6	Deep-water rose shrimp in GSA 6	5.48	
2012	HKE_18	European hake in GSA 18	5.76	
2012	MUR_15-16	Surmullet in GSA 15-16	4.11	
2012	MUR_5	Surmullet in GSA 5	2.64	
2012	MUT_11	Red mullet in GSA 11	9.54	
2012	MUT_17	Red mullet in GSA 17	2.61	
2012	MUT_5	Red mullet in GSA 5	7.64	
2012	NEP_15-16	Norway lobster in GSA 15-16	0.75	•

Table 11: Stock status for Mediterranean stocks in the sampling frame in 2012-2014. Columns refer to the bassessment year, stock name and description, value of the F/F_{MSY} ratio (*F ind*), and whether F is lower than F_{MSY} (*F status*).

ToR 4

There are only 2 assessments with reference points in the Black Sea, which was considered insufficient to compute the current indicators.

STECF conclusions
STECF concludes that the updates required by DGMARE don't change the advice given in STECF 16 05.

STECF notes that the inclusion of 2015 assessments allowed the computation of the indicator F/F_{MSY} for 2014, which shows a decrease since 2011. Nevertheless there's still a large instability on the number of assessments carried out in the Mediterranean Sea, 44 stocks were assessed in 2012 while only 15 in 2014. Additionally, most of the stocks assessed in 2015 were shrimps stocks, and not demersal fish, and these stocks are often less heavily over-exploited The impact of those changes in the indicator is therefore potentially large, but was not evaluated.

6. ITEMS/DISCUSSION POINTS FOR PREPARATION OF EWGS AND OTHER STECF WORK

6.1. Future needs for the economic advice to support the implementation of the CFP

Background provided by DG MARE
This point aims at presenting the future needs of social and economic advice by DG MARE to support the implementation of the CFP, discuss ways how to satisfy these needs in future STECF work program, strengthen the dialogue with STECF and discuss further collaboration for the years ahead.
In this context, the economists' team of DG MARE wishes firstly to debrief STECF on the conclusions of the international Conference on economic advice in fisheries management on 4-5 February 2016[15]. Secondly the economists' team of DG MARE wishes to explore ways to exploit or implement these results with a relevant group of interested STECF members. Identified follow-up steps will then be discussed at the next STECF.

This conference has been organised by the team of Economists of DG MARE. It gathered some 225 participants from a broad range of stakeholders (fisheries scientists, policy makers, NGOs, industry representatives from the harvesting, processing and marketing sectors).

15 http://ec.europa.eu/newsroom/mare/itemdetail.cfm?item_id=27575

This conference confirmed that our main concern should now be to consolidate and the process of integration of economic analyses in the production of scientific advice for fisheries management purposes, the following issues were highlighted:

- The need to improve or complete the economic data (e.g. on small scale coastal fisheries, raw material of fish processing).
- The need to involve the economists early on to ensure maximum integration of social and economic analysis for DGMARE policy proposals (e.g. impact assessments etc.).
- The need to link the economic performances of the fleet to the social and economic benefits of the fish stocks fished.
- The need to develop mechanisms to compensate for the time lags between economic and biological data (Annual Economic Report publishes data with 2-years' time lag).
- The need to develop further or to refine methods of economic and bio-economic analysis both for the short term as well as the long term.
- The need to advance in the assessment of the value of services provided by marine ecosystems.

STECF observations

DG Mare Unit A3 Economic team presented some conclusions from the Malta Conference on economic advice in February 2016. Additionally, STECF provided a short overview on the economic advice in STECF (regular tasks and specific requests). After the presentations a smaller group discussed possible ways forward and the requirements of DG Mare for the upcoming years. One of the important requirements will be the social and economic assessment of the TAC and quota regulation as well as the MSY policy as detailed under TOR 6.12.

STECF conclusions

STECF concludes that the meeting between Unit A3 and STECF was a good start and should be repeated as often as possible at the plenary meetings. It was stressed several times that there will be an increasing demand for social and economic advice in the upcoming years. A close dialogue will give STECF a better understanding which issues to be addressed, how the advice will be used and how to further improve procedures.

6.2. Preparation of EWG on NW Mediterranean MAP

A group of STECF members together with the chair of EWG and DGMARE met during this plenary meeting to discuss DGMARE's options paper and the models and data available to perform the evaluation of the Multi-annual management plan proposal for the Northwestern Mediterranean. The discussion will be summarized and distributed among the experts involved in the EWG, together with a detailed description of the scenarios to be simulated. Both documents will need to be further discussed to establish what can be achieved in the time frame available.

The main conclusions of the discussion are summarized below:

- There's not a single bio-economic mixed-fisheries and multispecies simulation model that includes all the stocks and fleets in the area, as such the analysis will be similar to what was done in the North Sea and Western Waters, where different models were ran with similar assumptions and the final outcomes will have to be summarized from scattered results.
- Updating stock assessments from 2012 may be impossible due to the workload the analysis requires.
- The model compilation for the area (Table 7.2.1) shows that there aren't models for areas 1,5 and 8.
- The experts will look into the Mediterranean data call database to check which data is available regarding fleet segmentation. On that basis the National Institutes involved in the analysis will be informed of data limitations and asked for potential solutions. Furthermore, DGMARE will be informed of potential limitations regarding the evaluation of the options given.
- The modellers involved in the models presented in Table 7.2.1 will be asked about the possibility of extending their models to new species and areas.
- Capacity reductions may be tested using a bracket/envelop approach as used for Fmsy ranges, adding two scenarios, one where capacity reduction is translated into fishing mortality 1:1, and another where capacity reduction has no effect on fishing mortality reductions.
- There's a general perception of growth overfishing in the Mediterranean and as such it was considered important to include analysis of changes in fleet behaviour that result in changes in the exploitation pattern (fishing mortality by age). These changes can be implemented in a number of ways, *e.g.* through changes in mesh size or enforcement of closed areas.
- DGMARE will have an internal discussion about (i) the species to be in the MAP, (ii) the indicators required, (iii) other management measures that may be implemented, and will amend the options paper.

Table 6.2.1. Summary of models available for the Northwest Mediterranean ex-ante evaluation (x = implemented, * = possible to implement but not implemented yet, empty cell = not implemented)

Model		**a4a MSE**	**MEFISTO**	**BEMTOOL**	**SSFDYN (in development)**
Fishery description					
Multispecies (M) / Single species (S)		S	M	S	M
Seasonal				x	
Vessels LoA group		*	*	x	*
	< 12 m (small scale fishery)			x	
	12-24 m			x	
	24-40			x	
	>40 (long distance fishery)			x	
Type of gear used		*	*	x	*
	bottom trawl			x	
	longlines			x	
	bottom-set nets (including trammel nets and gillnets)			x	
	traps			x	
Fleets disagreggation Level		*		x	
	Economic fleet segments			x	
	Metier 4 (gear type)	*		x	*
	Metier 5 (gear type & target assemblage)		x	x	
	Metier 6 (gear type & target assemblage & mesh size)			x	
Model characteristics					
Optimisation					
Simulation		x	x	x	x
MSE		x			
	full feedback loop with stock assessment model	x			
	implementation error	x			
Time step		year	year	month	year
Spatial model					
Spatial coverage		NWMED	GSA06 GSA07	NWMED, CENTRALMED	NWMED
Population dynamics					
	Biological structure	x	x	x	x
	age (A)	x	x	x	x
	size (S)			x	
	biomass (B)				
	Processes: dynamic recruitment (Drec), growth (Gr), Migration (Mig), ... ?	Drec.	Drec.	Drec	Drec (multispecies)
	Simulate recruitment failure (Y/N)	x		x	*
Fleet dynamics					
	based on F (F) / effort (E)	F	E	F and E	F
	capacity exit-entry model		E	x	
	selectivity (model or fixed)	x	fixed	x	x
Economic dynamics					
	Price elasticity	*	x	x	*
	Fixed costs	*	x	x	*
	Variable costs	*	x	x	*
	Employment or FTE	*	x	x	*
	Fuel costs	*	x	x	*
Management options					
	De minimis			x	
	Interspecies quota flexibility				
	Swaps				
	Borrow and banking	*			
	ICES data limited stocks				
	F target	x	x	x	x
	TAC & quotas	x		x	
	Biomass safeguards	x		*	
	Combined TACs (multiple species in one TAC)				
	Diferenciated management between driver and non-driver stocks				
	Multipecies Fmsy ranges		x		x
	Harvest control rules	x		x	
	Temporary closure of fishery	x		x	
	Area closures	x		x	
Indicators					
	catch	x	x	x	x
	SSB	x	x	x	x
	recruitment	x	x	x	x
	revenue	*	x	x	*
	employment in total employed and FTE	*	x	x	*
	average wage	*	x	x	*
	GVA	*	*	x	*
	gross/net profit margin	*	x	x	*
	labour productivity (GVA/FTE)	*	*	x	*
	energy consumption/efficiency	*	*	x	*
	RoFTA		*	x	
	CR/BER			x	
	percentage of inactive vessels		x	x	
	sustainable harvest indicator			*	
Stocks					
	Hake	GSA06,07	GSA06,07	GSA9, 11, 10, 17, 18	GSA06
	Blue and red shrimp	GSA06	GSA06	GSA10	
	Red mullet	GSA06,07	GSA06,07	GSA9, 11, 10, 17, 18	GSA06
	Deepwater rose shrimp	GSA06	GSA06	GSA9, 10, 18	
	Norway lobster			GSA9, GSA18	
	Giant red shrimp			GSA11, 10	
	Blue whiting		GSA06	GSA17	GSA06
				GSA9, 17, 18	
				GSA17	

6.3. New STECF - Discussion and possible agreement on STECF rules of procedures

Article 6, point 7, of the Commission Decision of 25 February 2016 setting up a Scientific, Technical and Economic Committee for Fisheries (C/2016/1084) requires the STECF to adopt its rules of procedure on the basis of the standard rules of procedure for expert groups. The STECF bureau consisting of STECF chair and vice-chairs, DG MARE focal and STECF secretariat will prepare draft rules of procedure in preparation of the 2016 summer plenary meeting for discussion and possible adoption by the committee.

6.4. Discussion on revision/amendments of the protocol for the CFP indicators

According to Article 50 of the Common Fisheries Policy (CFP Regulation (EU) No 1380/2013), the European Commission is requested to report annually on progress in achieving MSY objectives and on the situation of fish stocks in Union waters and in certain non-Union waters, where Union vessels are operating. In 2016, an STECF ad hoc Expert Group was convened to prepare this report, which was reviewed and adopted by STECF by written procedure (STECF-16-03). In the process, several difficulties emerged. They were discussed during the current STECF plenary meeting with the aim to improve the protocol used for this monitoring of the CFP performance.

STECF notes that the annual report does not aim to monitor the performance of the entire CFP, but only to monitor two aspects of it: the progress made in achieving maximum sustainable yield, and the situation of stocks status. This implies not only monitoring the ability of the management measures taken by the UE to achieve the MSY objective, at the latest in 2020, but also to draw an overall synthesis on stocks status and trends in European seas. During its plenary session, STECF has thus discussed which further development could be undertaken in the coming years, to progressively expand the scope of the current report.

A revision of the protocol could be envisaged for the October 2016 Plenary. The following sections discuss various aspects that could be included in this revision, including e.g. the need for additional indicators, the time windows and spatial scales, and the stocks to be included.

Indicators used

According to protocol previously defined (Jardim et al., 2015), the ad hoc Expert Group especially used three types of indicators:

- The numbers of stocks for which fishing mortality is greater or smaller than F_{MSY},
- The numbers of stocks inside or outside safe biological limits (SBL, jointly defined as $F <= F_{MSY}$ and $B >= MSYB_{trigger}$, and using B_{pa} in place of $MSYB_{trigger}$ where $MSYB_{trigger}$ is not available)
- The average ratio of F/F_{MSY}, for all stock where data are available, either using the arithmetic mean or a model based estimate of this ratio.

STECF notes that the wording "Safe Biological Limits" (SBL) is defined with regards to F_{pa} and not F_{MSY} in the CFP regulation. STECF is well aware that F_{pa} have not been updated recently for most stocks, and therefore, the current protocol has used F_{MSY} for the definition of SBL. Nevertheless, this protocol might be updated in the future if F_{pa} becomes available again. When this happens, the current indicator of the number of stocks within SBL but with $F <= F_{MSY}$ will still be computed.

STECF notes that the initial list of indicators, issued from the STECF-14-23 EWG report and discussed during its November 2015 plenary meeting, also included exploration of some indicators related to the trends in stocks biomass, SSB and B/B_{MSY}. Such indicators would be useful in order to assess if fisheries management reaches its final "*objective of progressively restoring and maintaining populations of fish stocks above biomass levels capable of producing maximum sustainable yield*" (Article 2 of the CFP Regulation (EU) No 1380/2013). Thus, STECF considers that indicators on biomass trends, and associated B_{MSY} proxies, should be further developed in order to be integrated in the protocol.

With the aim to assess "the situation of fish stocks", additional indicators could also be tested and included in the protocol if appropriate, such as for instance the trend in the mean stock recruitment (following the outcomes of STECF 12-12 suggesting that this indicator decreased in all European seas over the last decades), or the ratio between current yield and the maximum sustainable yield. STECF also notes that drawing an overall picture of stocks status and trends might lead to investigate complementary approaches providing e.g. indicators by stock categories (such as pelagics versus demersals as an example), into synthetic graphs.

Time windows and spatial scales

As specified in the protocol, indicators have to be calculated on a large and constant number of stocks. Thus, all stocks falling within the agreed selection criteria should be taken into account in the analysis. This should include stocks assessed over the very last year, but also stocks assessed only during previous years, according for instance to multiannual assessment procedures. Thus, STECF decided to consider a time period of three years, in the selection of stocks included in the analysis, using for each stock the parameters of the last available assessment. In case this assessment does not cover the very last year (or the two last years), time series should be completed, assuming constant values over these years.

For ICES areas, the protocol considered stocks from subareas III, IV, VIb, VII, VIII and IX, aggregated in three ecoregions, the Baltic Sea, the Greater North Sea, and the Western European waters, and an additional category for the widely distributed stocks. STECF notes that the Western European waters cover a very large and heterogeneous area, from West Scotland to the Iberian coast, merging two ICES ecoregions, the "Celtic sea" and the "Bay of Biscay and Iberian coast". In ICES database, all stocks are assigned to a specific ecoregion, and thus STECF intends to present a separate analysis for each of the two ICES ecoregions. STECF also notes that Article 50 of the CFP regulation refers to "non Union waters" where Union vessels are operating, and STECF intends thus to add an additional category for stocks from subareas I, II, V, VIa, X, XII and XIV.

In the Mediterranean Sea, the protocol takes into account stocks from the European part of the Mediterranean Sea (GSA 1, 5-11, 15-20, 22, 23 and 25). Ideally the Black Sea should also be included. Nevertheless, there are so far only very few stocks falling within the required criteria, and therefore the scope of such a report is limited at present.
It should be further investigated if some Union vessels are operating in the southern and eastern parts of the Mediterranean Sea, thus justifying to consider also the related GSAs. The same apply for Union vessels operating in areas outside the Northeast Atlantic and the Mediterranean Sea.

Coverage of advice in the Northeast Atlantic

In the Northeast Atlantic, ICES provides scientific advices for 220 stocks, among which 183 stocks are (mainly) in European waters (Table 7.4.1). The analysis of the stocks status shows that 11 % are known to be inside SBL, 21% are known to be outside SBL, and 68% have an unknown status. Nevertheless, it can be noticed that many of the poorly-known stocks are small, while in contrast a large majority of the fish landed comes from stocks whose SBL are known. STECF will further investigate the utility of including such overall indicators in the protocol, either based on the number of stocks or in total catch weight.

Table 6.4.1. Total number of stocks for which ICES provides a scientific advice (from ICES MAPS), and number of these stocks for which SBL are known, or for which the stock is inside the SBL.

	Number of stocks	**Nb. where SBL are known**	**Nb. within SBL**	**% inside SBL**	**% outside SBL**	**% unknown**
Baltic Sea	16	7	1	6%	38%	56%
Greater North Sea	56	20	11	20%	16%	64%
Western European waters	106	28	8	8%	19%	74%
Widely distributed stocks	5	4	1	20%	60%	20%
Total Europe	**183**	**59**	**21**	**11%**	**21%**	**68%**
Others	37	9	-			
Total Nb. of stock	220	68	-			

According to the protocol, the 2016 ad hoc Expert Group estimated the number of TACs for which a full assessment (including SBL estimates) was provided by ICES, for at least one subdivision of the TAC management area. As the boundaries of the stocks are frequently not aligned with TAC management areas, this does not mean that the related TACs are entirely based on a scientific advice (i.e. for the whole management area). Thus, such an indicator is useful in order to identify how many TACs in the ICES area do not refer to any scientific advice.

Currently this indicator refers to the ICES area only, but ideally it would need to include the advices issued from all the relevant scientific bodies (not only ICES). Options to include advice on stocks without a full analytical assessment may also need to be considered.
Future work on this indicator would also need to investigate the number of TACs where advice covers partially the management area, advice is divided in several TACs, etc.

Coverage of advice in the Mediterranean Sea

According to the protocol previously defined, the 2016 ad hoc Expert Group tried to calculate the proportion of Mediterranean stocks covered by a scientific advice, by taking into account all species which were subject to a legal minimum landing size (MLS). But the Expert Group noticed that this excluded stocks of some important commercial species which are routinely assessed (such as Lophius and Octopus). STECF decided to use a list gathering all species subject to MLS and all stocks assessed by STECF.

STECF conclusion
STECF concludes that the protocol used to prepare the annual reports, and the future reports as well, could be expanded, which would require amendments. A revision of the protocol including the need for additional indicators and their definition could be envisaged for the October 2016 plenary meeting.

6.5. Advice requirements for the Mediterranean

During the STECF Bureau meeting 16-01, the situation regarding assessment of stocks in the Mediterranean and the advisory needs of DG MARE were discussed. It was agreed that DG MARE would give some thought as to what is really required in terms of scientific advice for management of Mediterranean fisheries. This was followed by subsequent discussions (tele-conference of the bureau) to explore further how STECF can best contribute to providing such advice.

An aide memoire on advice requirements for the Mediterranean was drafted by the STECF chair (with input from the MED assessment EWG chair, STECF secretariat and JRC experts) and provided to DG MARE. The aim of this document was to give some background and suggestions to inform the process and to kick-off the discussion.

The aim during the April plenary meeting was to have follow-up discussions within the STECF bureau (and STECF).

STECF Plenary 16-01 Discussion
A discussion with staff from DG MARE Unit D2, took place in relation to their anticipated requirements for advice on fisheries management in the Mediterranean under the 2013 reform of the CFP with a view to optimise the provision of such advice . The text below presents an

overview of that discussion and outlines both the current policy area priorities and the associated priority issues.

Policy priority areas

Fisheries issues in the Mediterranean are currently high on the policy agenda for DG MARE. This has occurred without any increase in resources within DG MARE.

Three areas of policy priorities that have an influence on the potential advice requirements can be identified.

a) There is a need to revise Member States' National Management plans implemented under the Mediterranean Regulation so that they comply with the objectives of the 2013 CFP reform. There is also a need for discard plans that are submitted by regional groups to be reviewed, and adopted by Member States
b) There is a need to increase knowledge and receive advice on the status and exploitation rate for stocks that are shared with third countries e.g stocks in the Sicily Channel and the Alboran Sea. There is also a shortage of recent information on stocks in the EU Aegean Sea, and for other areas where the EU has a fishing interest.
c) There is a need for advice relating to the development, implementation and evaluation of multi-annual fisheries management plans, with the current areas of priority being the Adriatic, Sicily Channel and the Western Mediterranean.

Priority issues for advice.

The following three areas of priority were identified

d) DG MARE needs advice on stock status and exploitation rates that are scientifically robust. The ideal situation would be for such advice to be available on an annual basis for all stocks that drive the fisheries in the Mediterranean, although DG MARE recognises that for numerous reasons this is not feasible. Nevertheless, DG MARE needs scientific advice that is robust and defensible for as many stocks as possible. Such advice need not necessarily be based on annual assessments, but DG MARE needs assurance that the advice arising from the STECF based on the most recent assessments undertaken remains valid and can be used for management purposes. For example, MARE needs assurance that the advice based on a stock assessment undertaken some years in the past is still valid for the purposes of taking management decisions or making management proposals. STECF notes that Mediterranean fisheries are highly dependent on the annual recruitment, which varies from year to year. In the other hand, for stocks exploited much above Fmsy, it is unlikely that dramatic changes will occur within a short time frame, so the advice in terms of required management options is likely to be rather stable over some years.
e) For certain Mediterranean areas, e.g. in the Agean Sea, there are serious gaps in knowledge and increased advice on stock status and exploitation rates is needed. A large number of species is exploited but stock assessments are only available for few species and, and the available stock assessments are not updated regularly, some have not been updated over the past 5-6 years. Data and information for stocks exploited by fleets from Corsica are also absent.

f) There is a need for data and advice on stocks for which EU fleets account for the bulk of catches, in particular for EU fleets operating in the eastern Mediterranean e.g. Italian catches of deep water shrimps from Crete, Gulf of Antalya, Mersin bay and Cyprus. EU data are required so that such data can be transmitted to the GFCM for stock assessment purposes. Improving relations and cooperation on data exchange and carrying out joint stock assessment with third countries are necessary priority areas. Information on third country catches from certain areas of the Mediterranean are also lacking e.g. Egyptian catches from the Sicily Channel.

STECF considerations

One of the priority issues for advice raised by DG-MARE concerns the need to receive advice on stock status and exploitation rates for as many stocks as possible. STECF is currently unable to provide an inventory of stocks for which advice could be provided. STECF therefore suggests that one way forwards would be to organize a consultation between the key representatives from DG-MARE and the GFCM, with scientific input from appropriate experts that participate in the scientific committees of the GFCM and the STECF. The aim would be to prioritise the stocks and fisheries for which advice is needed and to agree on a work programme. Such an approach should aim to avoid duplication of effort and make best use of available expertise.

In principle, the EU Commission could simply take advice on Mediterranean stocks from the GFCM SAC. However, it is likely that for the foreseeable future, there will continue to be a need for advice from the STECF on Mediterranean stocks and fisheries, in particular for stocks which are not shared with third countries.

The needs of the Commission as outlined above appear to fall into three main groups; i) those dealing with data issues ii) those related to advice on the status and exploitation rates for a greater number of stocks than is currently available iii) future requests for advice on the potential effects of National management plans, discard plans and long-term management plans.

For meaningful advice on the potential impact of proposed long-term management plans there is also a need for appropriate stock assessments for a larger number of stocks than is currently available. This is important because the LTMPs will relate to fisheries that are driven by more than one species/stock. It is important to incorporate information on such stocks in order to adequately assess the potential impacts on the resources that the fishery exploits and the economic performance of the fishery.

Evidently, points ii and iii above can only be attempted with appropriate fishery-dependent and fishery-independent data and information (point i). Fishery independent information for the Mediterranean is available through the MEDITS and MEDIAS survey time-series. However, fishery-dependent data has so far been made available for only those stocks for which assessments have already been attempted. In order to undertake additional assessments, the available data and information needs to be collated and reviewed on a stock by stock basis..

For 2016, there are currently three STECF Expert Working Group (EWG) meetings scheduled to address fisheries management issues for the Mediterranean although precise Terms of Reference are still to be decided. In recent years, two EWGs have been dedicated attempting stock

assessments for 30 stocks (15 stock assessments by each EWG). The third EWG scheduled for 2016 is intended to address data and methodological issues.

Given the requirements outlined above, STECF suggests that an alternative approach to the three EWGs scheduled for 2016 is worthy of consideration and proposes the following way forward for 2016

EWG 1

EWG 1 could be convened as a "data workshop" to undertake the following:

1. Collating time-series of fishery-dependent and fishery-independent data:
   - Catalogue data and information on stocks that have been assessed by the GFCM and the STECF or other sources.(time-series of catch/landings, age/length compositions, effort time series, biological parameters etc.)
   - Catalogue data and information on stocks and fisheries that have never been assessed (time-series of catch/landings, age/length compositions, effort time series, biological parameters etc.)
   - A major aim will be to identify the above information for those key stocks (including shared stocks) identified as driving the fisheries which are listed in the EWG report on the Landing Obligation - Part 6 (STECF 15-19) Information on such stocks is a priority for the provision of management advice.
   - Based on the report of STECF 15-19, list those key stocks for which no fishery-dependent information is currently available or for which there are major data deficiencies.
   - To process the data that is available to the extent possible that they can be used to undertake assessments using the relevant assessment methods.
   - to update time series for stocks that have been assessed in the recent past
   - An important aspect would be to catalogue the data and information that are available for years prior to the implementation of the data collection regulation (DCR; Commission Regulation 1639/2001).

2. A second aim of EWG 1 would be to assess the available data to determine the type of assessment that can be undertaken and the advice that can be provided by such assessment methods.

EWG 2

EWG could be convened as a "benchmark" assessment group where comprehensive analyses of data and information would be investigated and assessed with a view to identifying the most appropriate assessment model for a small number of stocks and to undertake the assessments. The same methodology could then be adopted for subsequent assessments of those stocks either annually or e.g. biennially, triennially etc., depending on the advice requirements, until there is a need to undertake another "benchmark". In subsequent years, EWG2 could be repeated with a different set of stocks.

EWG 3

EWG 3 could be convened with two main aims:

1. To update assessments for those stocks that have previously been assessed depending on the need for updated advice on those stocks.
2. To undertake relevant assessments for as many of those stocks identified by EWG 1 as it is possible to do so with the time, data and resources available to the EWG.
3.

The specific terms of reference for each of the above EWGs will obviously need to be elaborated by the STECF Bureau and to some extent, the policy priorities of DG MARE will influence whether such an approach is suitable. However, the proposal for EWG 1 is important as it will provide pertinent information on the information and advice that might be achievable.

STECF therefore requests that DG MARE consider the above proposal as a matter of urgency in order that the programme for 2016 and possibly 2017 can be planned accordingly.

7. STECF RECOMMENDATIONS FROM STECF-PLEN-16-01

No new recommendations arose during discussions at the 51st plenary meeting of the STECF.

8. BACKGROUND DOCUMENTS

Background documents are published on the meeting's web site on: https://stecf.jrc.ec.europa.eu/plen1601

9. CONTACT DETAILS OF STECF MEMBERS AND OTHER PARTICIPANTS

1 - Information on STECF members and invited experts' affiliations is displayed for information only. In any case, Members of the STECF, invited experts, and JRC experts shall act independently. 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 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: http://stecf.jrc.ec.europa.eu/adm-declarations

Name	Address[1]	Tel.	Email
STECF members			
Abella, J. Alvaro (rapporteur)	Independent consultant	Tel. 0039-3384989821	aabellafisheries@gmail.com
Andersen, Jesper Levring	Department of Food and Resource Economics (IFRO) Section for Environment and Natural Resources University of Copenhagen Rolighedsvej 25 1958 Frederiksberg Denmark	Tel.dir.: +45 35 33 68 92	jla@ifro.ku.dk
Arrizabalaga, Haritz	AZTI / Unidad de Investigación Marina, Herrera kaia portualdea z/g 20110 Pasaia (Gipuzkoa), Spain	Tel.: +34667174477	harri@azti.es
Bailey, Nicholas (rapporteur)	Marine Scotland Science, Marine Laboratory, P.O Box 101 375 Victoria Road, Torry Aberdeen AB11 9DB UK	Tel: +44 (0)1224 876544 Direct: +44 (0)1224 295398 Fax: +44 (0)1224 295511	baileyn@marlab.ac.uk n.bailey@marlab.ac.uk
Bertignac, Michel (rapporteur)	Laboratoire de Biologie Halieutique IFREMER Centre de Brest BP 70 - 29280 Plouzane, France	tel : +33 (0)2 98 22 45 25 - fax : +33 (0)2 98 22 46 53	michel.bertignac@ifremer.fr
Borges, Lisa	FishFix, Brussels, Belgium		info@fishfix.eu
*Cardinale, Massimiliano (vice-chair)	Föreningsgatan 45, 330 Lysekil, Sweden	Tel: +46 523 18750	massimiliano.cardinale@slu.se
*Catchpole, Thomas	CEFAS Lowestoft Laboratory, Pakefield Road, Lowestoft Suffolk, UK NR33 0HT		thomas.catchpole@cefas.co.uk

Name	Address[1]	Tel.	Email
STECF members			
Curtis, Hazel (rapporteur)	Sea Fish Industry Authority 18 Logie Mill Logie Green Road Edinburgh EH7 4HS, U.K.	Tel: +44 (0)131 524 8664 Fax: +44 (0)131 558 1442	Hazel.curtis@seafish.co.uk
Daskalov, Georgi	Laboratory of Marine Ecology, Institute of Biodiversity and Ecosystem Research, Bulgarian Academy of Sciences	Tel.: +359 52 646892	Georgi.daskalov@gmail.com
Döring, Ralf (vice-chair, rapporteur)	Thünen Bundesforschungsinstitut, für Ländliche Räume, Wald und Fischerei, Institut für Seefischerei - AG Fischereiökonomie, Palmaille 9, D-22767 Hamburg, Germany	Tel.: 040 38905-185 Fax.: 040 38905-263	ralf.doering@thuenen.de
Gascuel, Didier (rapporteur)	AGROCAMPUS OUEST 65 Route de Saint Brieuc, CS 84215, F-35042 RENNES Cedex France	Tel:+33(0)2.23.48.55.34 Fax: +33(0)2.23.48.55.35	Didier.Gascuel@agrocampus-ouest.fr
*Knittweis, Leyla	Department of Biology University of Malta Msida, MSD 2080 Malta		Leyla.knittweis@um.edu.mt
*Malvarosa, Loretta	NISEA S.c.a.r.l.		malvarosa@nisea.eu
Martin, Paloma (rapporteur)	CSIC Instituto de Ciencias del Mar Passeig Marítim, 37-49 08003 Barcelona Spain	Tel: 4.93.2309500 Fax: 34.93.2309555	paloma@icm.csic.es
Motova, Arina (rapporteur)	Sea Fish Industry Authority 18 Logie Mill Logie Green Road Edinburgh EH7 4HS, U.K	Tel.: +44 131 524 8662	arina.motova@seafish.co.uk

Name	Address[1]	Tel.	Email
STECF members			
Murua, Hilario	AZTI / Unidad de Investigación Marina, Herrera kaia portualdea z/g 20110 Pasaia (Gipuzkoa), Spain	Tel: 0034 667174433 Fax: 94 6572555	hmurua@azti.es
*Nord, Jenny	The Swedish Agency of Marine and Water Management (SwAM)	Tel. 0046 76 140 140 3	Jenny.nord@havochvatten.se
Pastoors, Martin (rapporteur)	Pelagic Freezer-trawler Association, Louis Braillelaan 80, 2719 EK Zoetermeer, The Netherlands		mpastoors@pelagicfish.eu
Paulrud, Anton	Swedish Agency of Marine and Water Management	Tel.: +46 106986292	Anton.paulrud@hochvatten.se
Prellezo, Raúl (rapporteur)	AZTI -Unidad de Investigación Marina Txatxarramendi Ugartea z/g 48395 Sukarrieta (Bizkaia), Spain	Tel: +34 667174368	rprellezo@azti.es
Raid, Tiit	Estonian Marine Institute, University of Tartu, Mäealuse 14, Tallin, EE-126, Estonia	Tel.: +372 58339340 Fax: +372 6718900	Tiit.raid@gmail.com
Sabatella, Evelina Carmen (rapporteur)	NISEA, Via Irno, 11, 84135 Salerno, Italy	TEL.: +39 089795775	e.sabatella@nisea.eu
Sala, Antonello	Italian National Research Council (CNR) Institute of Marine Sciences (ISMAR), Largo Fiera della Pesca, 1 60125 Ancona - Italy	Tel: +39 071 2078841 Fax: +39 071 55313 Mob.: +39 3283070446	a.sala@ismar.cnr.it

Name	Address[1]	Tel.	Email
STECF members			
Scarcella, Giuseppe (rapporteur)	1) Italian National Research Council (CNR), Institute of Marine Sciences (ISMAR) - Fisheries Section, Largo Fiera della Pesca, 1, 60125 Ancona – Italy 2) AP Marine Environmental Consultancy Ltd, 2, ACROPOLEOS ST. AGLANJIA, P.O.BOX 26728 1647 Nicosia, Cyprus	Tel: +39 071 2078846 Fax: +39 071 55313 Tel.: +357 99664694	g.scarcella@ismar.cnr.it gscarcella@apmarine.com.cy
Soldo, Alen	Department of Marine Studies, University of Split, Livanjska 5, 21000 Split, Croatia	Tel.: +385914433906	soldo@unist.hr
Somarakis, Stylianos (rapporteur)	Institute of Marine Biological Resources and Inland Waters (IMBRIW), Hellenic Centre of Marine Research (HCMR), Thalassocosmos Gournes, P.O. Box 2214, Heraklion 71003, Crete, Greece	Tel.: +30 2810 337832 Fax +30 6936566764	somarak@hcmr. gr
Stransky, Christoph	Thünen Institute [TI-SF] Federal Research Institute for Rural Areas, Forestry and Fisheries, Institute of Sea Fisheries, Palmaille 9, D-22767 Hamburg, Germany	Tel. +49 40 38905-228 Fax: +49 40 38905-263	christoph.stransky@thuenen.de
Ulrich, Clara (chair, rapporteur)	Technical University of Denmark, National Institute of Aquatic Resources, (DTU Aqua), Charlottenlund Slot, JægersborgAllé 1, 2920 Charlottenlund, Denmark		clu@aqua.dtu.dk
van Hoof, Luc	IMARES, Haringkade 1, Ijmuiden, The Netherlands	Tel.: +31 61061991	Luc.vanhoof@wur.nl
Vanhee, Willy (rapporteur)	Independent consultant		wvanhee@telenet.de
Vrgoc, Nedo	Institute of Oceanography and Fisheries, Split, Setaliste Ivana Mestrovica 63, 21000 Split, Croatia	Tel.: +385 21408002	vrgoc@izor.hr

STECF members marked with an asterix* did not attend the PLEN-16-01 meeting (see section 2 of this report).

JRC expert			
Name	Address	Telephone no.	Email
Casey, John	Joint Research Centre JRC		john.casey@jrc.ec.europa.eu
Jardim, Ernesto	Joint Research Centre JRC		Ernesto.jardim@jrc.ec.europa.eu
External expert			
Rihan, Dominic	CEFAS Lowestoft Laboratory, Pakefield Road, Lowestoft Suffolk, UK NR33 0HT		

European Commission			
Name	Address	Telephone no.	Email
Aguiar Machado, Joao	Director-General DG MARE		joao.aguiar-machado@ec.europa.eu
Penas Lado, Ernesto	Director DG MARE A		ernesto.penas-lado@ec.europa.eu
Roller, Elisa	Head of Unit DG MARE, A2		Elisa.ROLLER@ec.europa.eu
Nikolian, Frangiscos	Head of Unit DG MARE, A3		frangiscos.nikolian@ec.europa.eu
Ataide Dias, Rodrigo	DG MARE, C2		rodrigo.ataide-dias@ec.europa.eu

Biagi, Franca	DG MARE, D1		Franco.Biagi@ec.europa.eu
Calvo, Angel	DG MARE, A3		angel-andres.calvo-santos@ec.europa.eu
Doerner, Hendrik	Joint Research Centre JRC, STECF secretariat		Stecf-secretariat@jrc.ec.europa.eu
Drukker, Bas	DG MARE, C3		bas.drukker@ec.europa.eu
Graham, Norman	DG MARE, A2		norman.graham@ec.europa.eu
Griffin, Robert	DG MARE, C2		Robert.GRIFFIN@ec.europa.eu
König, Szuzsanna	DG MARE, A2		zsuzsanna.koenig@ec.europa.eu
Knapp, Amélie	DG MARE, D2		amelie.knapp@ec.europa.eu
Kostopoulou, Venetia	DG MARE, C3		venetia.kostopoulou@ec.europa.eu
Kruiderink, Simkje	DG MARE, A3		simkje.kruiderink@ec.europa.eu

Markolin, Mirco	DG MARE, D2		mirko.marcolin@ec.europa.eu
Markovic, Laurent	DG MARE, C2		Laurent.MARKOVIC@ec.europa.eu
Paardekooper, Joost	DG MARE, A2		joost.paardekooper@ec.europa.eu
Patterson, Kenneth	DG MARE A		Kenneth.Patterson@ec.europa.eu
Pena Castellot, Miguel	DG MARE, A3		miguel.pena-castellot@ec.europa.eu
Reeves, Jennifer Walker	DG MARE, A2		jennifer.reeves@ec.europa.eu
Reussner, Eckehard	DG MARE, E2		eckehard.reussner@ec.europa.eu
Schutyser, Frederik	DG MARE, C2		Frederik.SCHUTYSER@ec.europa.eu
Vazquez Alvarez, Francisco Javier	DG MARE, D2		francisco-javier.vazquez-alvarez@ec.europa.eu

European Commission

EUR 27917 EN – Joint Research Centre – Institute for the Protection and Security of the Citizen
Title: Reports of the Scientific, Technical and Economic Committee for Fisheries (STECF) – 51st Plenary Meeting Report (PLEN-16-01)

Authors:
STECF members:
Ulrich, C.., Abella, J. A., Andersen, J., Arrizabalaga, H., Bailey, N., Bertignac, M., Borges, L., Cardinale, M., Catchpole, T., Curtis, H., Daskalov, G., Döring, R., Gascuel, D., Knittweis, L., Malvarosa, L., Martin, P., Motova, A., Murua, H., Nord, J., Pastoors, M., Paulrud, A., Prellezo, R., Raid, T., Sabatella, E., Sala, A., Scarcella, G., Soldo, A., Somarakis, S., Stransky, C., van Hoof, L., Vanhee, W., Vrgoc, Nedo

JRC experts: Casey, J, Jardim, E.

Luxembourg: Publications Office of the European Union

2016 – 95 pp. – 21 x 29.7 cm

EUR – Scientific and Technical Research series – 1831-9424

ISSN 2467-0715 (online)

ISBN 978-92-79-58383-4

doi:10.2788/55727

LB-NA-27917-EN-N

STECF

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.

JRC Mission

As the Commission's in-house science service, the Joint Research Centre's mission is to provide EU policies with independent, evidence-based scientific and technical support throughout the whole policy cycle.

Working in close cooperation with policy Directorates-General, the JRC addresses key societal challenges while stimulating innovation through developing new methods, tools and standards, and sharing its know-how with the Member States, the scientific community and international partners.

Serving society
Stimulating innovation
Supporting legislation

doi: 10.2788/55727

Publications Office

ISBN 978-92-79-58383-4