



JRC SCIENCE FOR POLICY REPORT

SCIENTIFIC, TECHNICAL AND
ECONOMIC COMMITTEE FOR
FISHERIES –
62nd PLENARY MEETING REPORT
(PLEN-19-03)

Edited by Clara Ulrich & Hendrik Doerner

EUR 28359 EN

This publication is a Science for Policy report by the Joint Research Centre (JRC), the European Commission's science and knowledge service. It aims to provide evidence-based scientific support to the European policymaking process. The scientific output expressed does not imply a policy position of the European Commission. Neither the European Commission nor any person acting on behalf of the Commission is responsible for the use that might be made of this publication. For information on the methodology and quality underlying the data used in this publication for which the source is neither Eurostat nor other Commission services, users should contact the referenced source. The designations employed and the presentation of material on the maps do not imply the expression of any opinion whatsoever on the part of the European Union concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

Contact information

Name: STECF secretariat

Address: Unit D.02 Water and Marine Resources, Via Enrico Fermi 2749, 21027 Ispra VA, Italy

E-mail: jrc-stecf-secretariat@ec.europa.eu

Tel.: +39 0332 789343

EU Science Hub

<https://ec.europa.eu/jrc>

JRC118961

EUR 28359 EN

PDF ISBN 978-92-76-14169-3 ISSN 1831-9424 doi:10.2760/1597

STECF ISSN 2467-0715

Luxembourg: Publications Office of the European Union, 2019

© European Union, 2019



The reuse policy of the European Commission is implemented by the Commission Decision 2011/833/EU of 12 December 2011 on the reuse of Commission documents (OJ L 330, 14.12.2011, p. 39). Except otherwise noted, the reuse of this document is authorised under the Creative Commons Attribution 4.0 International (CC BY 4.0) licence (<https://creativecommons.org/licenses/by/4.0/>). This means that reuse is allowed provided appropriate credit is given and any changes are indicated. For any use or reproduction of photos or other material that is not owned by the EU, permission must be sought directly from the copyright holders.

All content © European Union, 2019

How to cite this report: Scientific, Technical and Economic Committee for Fisheries (STECF) – 62nd Plenary Meeting Report (PLEN-19-03). Publications Office of the European Union, Luxembourg, 2019, ISBN 978-92-76-14169-3, doi:10.2760/1597, JRC118961

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 62nd plenary on 11-15 November 2019 at the Centre Borschette, Brussels.

TABLE OF CONTENTS

1.	INTRODUCTION	4
2.	LIST OF PARTICIPANTS	4
3.	INFORMATION TO THE PLENARY	4
4.	STECF INITIATIVES	4
5.	ASSESSMENT OF STECF EWG REPORTS	5
5.1	EWG 19-10 Stock assessments in the Mediterranean Sea 2019 - Part 1.....	5
5.2	EWG 19-11 Fisheries Dependent Information (FDI).....	10
5.3	EWG 19-12 Revision of the EU Multiannual Plan for data collection (EU-MAP) after 2020	21
5.4	EWG 19-13 Balance/Capacity	27
5.5	EWG 19-14 Fishing effort regime for demersal fisheries in West Med.....	38
5.6	EWG 19-16 Stock assessments in the Mediterranean Sea 2019 - Part 2.....	42
5.7	EWG 19-17 Review the implementation of the shark finning regulation and to assess the impact of the 2009 EU actions plan on sharks.....	47
5.8	EWG 19-18 Revision of Work Plans for data collection	53
6.	ADDITIONAL REQUESTS SUBMITTED TO THE STECF PLENARY BY THE COMMISSION.....	56
6.1.	Joint Recommendation from BALTFISH on plaice	56
6.2	Red Seabream (ICES 6-8) – additional conservation measures by France and Spain.....	73
6.3	Croatia request of scientific research in West coast of Istria	80
6.4	Closure areas under the multiannual plan for demersal fisheries in the western Mediterranean Sea	84
6.5	Management plan for boat seines in the Balearic Islands, Spain.....	92
6.6	Management plan for mechanised dredges in Andalusia, Spain.....	105
6.7	Derogation for 'gangui' trawlers in certain territorial waters of France	114
6.8	Advice on the International Manual of Procedures (IMP) to be used in the NAFO Regulatory Area	130
6.9	Derogation for 'Volantina' demersal otter trawls in the territorial waters of Slovenia.....	136
7.	ITEMS/DISCUSSION POINTS FOR PREPARATION OF EWGS AND OTHER STECF WORK	145
7.1	Organisation of the 2020 AER EWGs	145
7.2.	Information on the EWG 19-20 on CFP Monitoring	148
7.3.	STECF rules of procedures	149
8.	CONTACT DETAILS OF STECF MEMBERS AND OTHER PARTICIPANTS	150

**62nd PLENARY MEETING REPORT OF THE SCIENTIFIC,
TECHNICAL AND ECONOMIC COMMITTEE FOR FISHERIES
(PLEN-19-03)**

PLENARY MEETING

11-15 November 2019, Centre Borschette, Brussels

1. INTRODUCTION

The STECF plenary took place at the Centre Borschette, Brussels, from 11-15 November 2019. The plenary session was opened at 09:00h. The terms of reference for the meeting were reviewed and discussed 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 16:00h on 15 November 2019.

2. LIST OF PARTICIPANTS

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

The following STCF members were unable to attend the meeting:

1. Borges, Lisa
2. Damalas, Dimitrios
3. Sebastian Villasante

3. INFORMATION TO THE PLENARY

The committee was informed that the STECF bureau (DG MARE, STECF secretariat, STECF chair and vice-chairs) will meet 17-19 December 2019 and 22-24 January 2020 to discuss and plan the STECF work programme for 2020.

4. STECF INITIATIVES

No STECF initiatives were discussed during the meeting.

5. ASSESSMENT OF STECF EWG REPORTS

5.1 EWG 19-10 Stock assessments in the Mediterranean Sea 2019 - Part 1

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.

STECF observations

The working group was held in Arona, Italy, from 9 to 15 September 2019. The meeting was attended by 16 experts in total, including three STECF members and two JRC experts. One DG MARE representative and one observer also attended the meeting.

The objective of the EWG 19-10 was to carry out demersal stock assessments in the western Mediterranean as defined in the EWG ToRs.

STECF comments

STECF considers that the EWG addressed adequately all the ToRs. STECF notes that the EWG carefully reviewed the quality of the assessments produced. Some analyses were considered to be suitable for short term forecasts, others were only considered sufficiently reliable to estimate F-status, and for these no forecast was produced.

A total of 19 area/species combinations were evaluated (Tables 5.1.1 and 5.1.2). The EWG has carried out short term forecasts for 15 age-based assessments. Catch advice for four stocks was based on biomass index methods. The main results are summarized in the bullet point list below and in Table 5.1.2. Overall, the assessments indicate that all stocks but two are being significantly overfished, and that biomass is stable at low level or decreasing for the majority of the stocks:

- Hake in GSA 1_5_6_7: the biomass is low/stable. Catches should be reduced by at least 63% to reach F_{MSY} in 2020.
- Deep-water rose shrimp in GSA 1_5_6_7: the biomass is increasing. Catches should be reduced by at least 55% to reach F_{MSY} in 2020.
- Red Mullet in GSA 1: the biomass is declining. Catches should be reduced by at least 69% to reach F_{MSY} in 2020.
- Striped Red Mullet in GSA 5: the biomass is increasing. Catches should be reduced by at least 21% to reach F_{MSY} in 2020.
- Red Mullet in GSA 6: the biomass is low/stable. Catches should be reduced by at least 69% to reach F_{MSY} in 2020.
- Red Mullet in GSA 7: the biomass is stable. Catches may be increased by no more than 31% to reach F_{MSY} in 2020.
- Norway lobster in GSA 5: the biomass is fluctuating. Catches should be reduced by at least 47% to reach F_{MSY} in 2020.
- Norway lobster in GSA 6: the biomass is low/stable. Catches should be reduced by at least 71% to reach F_{MSY} in 2020.
- Hake in GSA 9_10_11: the biomass is declining. Catches should be reduced by at least 63% to reach F_{MSY} in 2020.
- Deep-water rose shrimp in GSA 9_10_11: the biomass is high/stable. Catches should be reduced by at least 9% to reach F_{MSY} in 2020.
- Red Mullet in GSA 9: the biomass has been increasing, though declining in the last year. Catches should be reduced by at least 63% to reach F_{MSY} in 2020.

- Red Mullet in GSA 10: the biomass is increasing. Catches should be reduced by at least 23% to reach F_{MSY} in 2020.
- Norway lobster in GSA 9: the biomass is increasing. Catches should be reduced by at least 34% to reach F_{MSY} in 2020.
- Norway lobster in GSA 11: the biomass is declining. Catches should be reduced by at least 55% to reach F_{MSY} in 2020.
- Blue and red shrimp in GSA 1: the biomass is stable. Catches should be reduced by at least 23% to reach F_{MSY} in 2020.
- Blue and red shrimp in GSA 5: the biomass is fluctuating. Catches should be reduced by at least 40% to reach F_{MSY} in 2020.
- Blue and red shrimp in GSA 6_7: the biomass is fluctuating. Catches should be reduced by at least 65% to reach F_{MSY} in 2020.
- Blue and red shrimp in GSA 9_10_11: the biomass is declining. Catches should be reduced by at least 81% to reach F_{MSY} in 2020.
- Giant red shrimp in GSA 9_10_11: the biomass is declining. Catches should be reduced by at least 71% to reach F_{MSY} in 2020.

STECF considers that for all of the 15 age-based assessments presented in the report, the assessments can be used to provide advice on stock status in terms of F relative to F_{MSY} , and to provide catch advice for 2019. STECF notes that the assessments are based on short data series and some degree of uncertainty therefore remain, but STECF considers overall that they provide a robust guidance on the magnitude of changes in F and catches required to reach F_{MSY} by 2020. The estimates of F_{low} and F_{MSY} are considered reasonable estimates that can be expected to be precautionary and STECF considers that they can be used directly. The values for F_{upper} are indicative only; they have not been evaluated as precautionary and should not be used to give catch advice without further evaluation.

For all the stocks with advice based on abundance index, a precautionary buffer of a -20% catch reduction has been applied. STECF notes that this approach is consistent with the procedures applied in the North East Atlantic (ICES stocks). For three of these stocks catch advice for 2020 was already provided in 2018 and is unchanged.

STECF notes that F_{MSY} values for red mullet stocks cover a large range (between 0.31 and 0.62) in the different GSAs. These differences come partly from the F_{bar} range which differs across the stocks, but could also be linked to differences in selection parameters, i.e. catch at age structure (particularly for GSA 7), as well as differences in the growth parameters and natural mortality across the different GSAs evaluated. Sensitivity analysis could be performed to fully understand the effect of using different growth parameters on the assessment results.

Norway lobster in GSA 9 is a new assessment with different growth and data treatment from last year. Catch data were improved and extended back to 1994 (against 2003 in previous assessment) in the RECFISH project, and this longer series stabilised the assessment. Catch reporting errors from last year were corrected. This stock has a consistent catch matrix, though the survey is showing poor fit. The estimation of historical exploitation appears more robust than in the most recent years of the assessment.

In contrast, the assessment of Norway lobster in GSA 5 in 2018 looked unstable, and a 2-years advice based on survey index was given.

STECF notes that for deep-water rose shrimp in GSA 1_5_6_7 the MEDITS biomass indices as well as catch are increasing at different rates in the four GSAs; the general trend is mostly driven by GSAs 5 and 6, though the species is showing a sharp increase in biomass also in GSAs 1 and 7, especially in the last year.

Following ToR 3, EWG 19-10 analysed effort data related to demersal fisheries in Western Mediterranean. Issues identified in previous years in the effort data were largely solved, and tables of effort by gear covering majority of fishery were provided. It was also pointed out that fishing effort data analysed at fishing gear level are related to multiple fisheries

and multispecies aspects, and not just to the one single species considered in a certain assessment.

STECF notes that data quality deficiencies have been comprehensively addressed by the EWG for each stock in the report. STECF notes that biological and effort data deficiencies have been also reported in the DTMT (Data Transmission Monitoring Tool) and should be addressed and corrected before the next submission.

Table 5.1.1. Summary of work was attempted and basis for any advice. a4a is an age based assessment methods STF is a standard short term projection with assumptions of status quo F and historic recruitment. Index refers to the ICES Category 3 approach to advice for stocks without analytic assessments.

Area	Species	Previous Analysis (2018)	Attempted analyses and basis of advice
1_5_6_7	Hake	a4a	a4a STF
1_5_6_7	Deep-water rose shrimp	Survey Index	Survey Index
1	Red Mullet	a4a	a4a STF
5	Striped Red Mullet	-	a4a STF
6	Red Mullet	a4a	a4a STF
7	Red Mullet	a4a	a4a STF
5	Norway lobster	a4a	Survey Index
6	Norway lobster	a4a	a4a STF
9_10_11	Hake	a4a	a4a STF
9_10_11	Deep-water rose shrimp	a4a	a4a STF
9	Red Mullet	a4a	a4a STF
10	Red Mullet	a4a	a4a STF
9	Norway lobster	Survey Index	a4a STF
11	Norway lobster	Survey Index	Survey Index
1	Blue and red shrimp	a4a	a4a STF
5	Blue and red shrimp	Survey Index	Survey Index
6_7	Blue and red shrimp	a4a (GSA 6 only)	a4a STF
9_10_11	Blue and red shrimp	-	a4a STF
9_10_11	Giant red shrimp	a4a	a4a STF

Table 5.1.2. Summary of advice from EWG 19-10 by area and species. F 2018 is estimated F in the assessment, and used in the short term forecast for 2019. Change in F is the difference (as a fraction) between target F (F_{MSY}) in 2020 and the estimated F for 2018. Change in catch is from catch 2018 to catch 2020. Biomass and catch 2016-2018 are given as an indication of trend over the last 3 years for stocks with time series analytical assessments or biomass indices. If the stock is considered to be in a low state or high state due to exploitation rate this is noted too. Biomass reference points are not available for any of these stocks.

Area	Species	Method/ basis	F_{bar} range	Biomass 2016- 2018	Catch 2016- 2018	F 2018	F 2020	Change in F	Catch 2018*	Catch 2020	Change in catch
1_5_6_7	Hake	a4a	1-3	low/stable	Stable	1.84	0.38	-79%	3444	1268	-63%
1_5_6_7	Deep-water rose shrimp	Survey Index		increasing	Increasing				1407	638	-55%
1	Red Mullet	a4a	1-3	declining	declining	2.1	0.54	-74%	169	53	-68%
5	Striped Red Mullet	a4a	1-2	increasing	increasing	0.39	0.42	8%	140	110	-21%
6	Red Mullet	a4a	1-3	low/stable	Increasing	1.46	0.31	-79%	1598	488	-69%
7	Red Mullet	a4a		stable	Declining	0.82	0.62	-23%	278	364	31%
5	Norway lobster	Survey Index		fluctuating	Increasing				83	44	-47%
6	Norway lobster	a4a	3-6	low/stable	Stable	0.71	0.11	-85%	265	77	-71%
9_10_11	Hake	a4a	1-3	declining	Slightly declining	0.74	0.22	-70%	2086	772	-63%
9_10_11	Deep-water rose shrimp	a4a	1-2	high/stable	Increasing	0.88	0.97	10%	1422	1301	-9%
9	Red Mullet	a4a	1-3	declining	stable	1.58	0.58	-63%	1393	512	-63%
10	Red Mullet	a4a	1-3	increasing	Stable	0.48	0.41	-16%	403	309	-23%
9	Norway lobster	a4a	2-6	increasing	Increasing	0.31	0.2	-55%	216	142	-34%
11	Norway lobster	Survey Index		declining	Increasing				38	17	-55%
1	Blue and red shrimp	a4a	1-2	stable	Stable	1.13	0.56	-50%	124	96	-23%
5	Blue and red shrimp	Survey Index		fluctuating	Stable				250	150	-40%
6_7	Blue and red shrimp	a4a	0-2	fluctuating	Stable	1.26	0.33	-74%	644	226	-65%
9_10_11	Blue and red shrimp	a4a	2-5	declining	Increasing	1.45	0.39	-73%	387	72	-81%
9_10_11	Giant red shrimp	a4a	1-3	declining	Increasing	1.37	0.45	-67%	681	199	-71%

*Estimated

STECF notes that the Western Mediterranean MAP has the objective of achieving F_{MSY} either by 2020 or at latest 2025. For a few stocks, F_{2018} is close to F_{MSY} , but for many stocks, such as European hake and red shrimps, F is substantially higher than F_{MSY} and it seems likely that these stocks will be considered under the objective for reaching F_{MSY} by 2025.

For such stocks, the MAP does not specify how it is expected that F should change over the 6 years from 2020 to 2025. Currently STECF reports the F_{MSY} and expected catch in the advice year based on EWG assessment and short term forecasts. However, if the approach is to attempt a reduction in F to achieve F_{MSY} by 2025, it may be helpful to give advice in relationship to such a transition. The Commission may consider if they need transition advice and if so, what transition is to be followed.

In 2010 and the following years, ICES provided advice following an MSY transition approach with a linear change in F from 2010 to achieve F_{MSY} in 2015. As an illustration, this approach is updated for transition from 2020 to 2025, and is shown below:

$$F_{MSY\text{-transition}}(2020) = \{0.833 \times F_{2019} + 0.167 \times F_{MSY}(2019)\}$$

whereas for the following years:

$$F_{MSY\text{-transition}}(2021) = \{0.667 \times F_{2019} + 0.333 \times F_{MSY}(2020)\}$$

$$F_{MSY\text{-transition}}(2022) = \{0.500 \times F_{2019} + 0.500 \times F_{MSY}(2021)\}$$

$$F_{MSY\text{-transition}}(2023) = \{0.333 \times F_{2019} + 0.667 \times F_{MSY}(2022)\}$$

$$F_{MSY\text{-transition}}(2024) = \{0.166 \times F_{2019} + 0.833 \times F_{MSY}(2023)\}$$

$$F_{MSY\text{-transition}}(2025) = \{0.000 \times F_{2019} + 1.000 \times F_{MSY}(2024)\}$$

Where for the first year $F_{2019} = F_{2018}$, for subsequent years F_{2019} is the F in 2019 estimated/updated in the subsequent annual assessments and $F_{MSY}(2019)$ is the estimate of F_{MSY} in 2019 and then updated as $F_{MSY}(2020, 2021, \text{etc.})$ in each subsequent estimation of reference points following annual assessments.

STECF conclusions

STECF concludes that the EWG addressed all the ToRs appropriately.

STECF endorses the assessments and evaluation of stock status produced by the EWG. STECF concludes that the results of the assessments accepted by EWG 19-10 provide reliable information on the status of the stocks and the trends in stock biomass and fishing mortality. One assessment was refused due to inconsistencies between catch and survey data leading to lack of robustness of the assessment. For this stock, advice was given using survey index trend. Survey trends were also used as the basis for advice for other three stocks, consistently with what was done last year.

STECF concludes that the errors reported in the DTMT should be addressed and corrected before the next data submission.

5.2 EWG 19-11 Fisheries Dependent Information (FDI)

STECF background

Background

The STECF EWG 19-11 met during 16 – 20 September 2019 at Ispra, Italy. 28 experts attended the meeting (4 STECF members), representing expertise from 17 countries to review the data transmitted by Member States under the 2019 New-FDI data call in order to judge:

- i) If data submitted is complete in terms of areas of fishing, types of fleet segment and gear operated and species identified.
- ii) If data submitted is complete in terms of type of data requested: capacity metrics, effort metrics, landings, unwanted catch and spatially disaggregated landings and effort.
- iii) The level of compatibility between the effort data in the FDI database and that submitted to the Mediterranean and Black Sea data call.
- iv) The level of compatibility between the landings data in the FDI database and that submitted to the Mediterranean and Black Sea data call for those species listed in the latter call.

Terms of Reference

1 – Review and document completeness of the data set and feedback from Member States on approaches used and problems encountered in responding to the data call.

1. As a matter of priority, the EWG is requested to ensure that all unresolved data transmission (DT) issues encountered prior to and during the EWG meeting are reported on line via the Data Transmission Monitoring Tool (DTMT) available at <https://datacollection.jrc.ec.europa.eu/web/dcf/dtmt>. Such issues should be reported in full within 2 weeks of the end of the EWG.
2. Review outputs of ad hoc contract that provides a methodology to partition data (number at length) from Tables C and D (aggregations according to sampling programs) to Table A (detailed catch table), discuss and agree future methodology to be applied.
3. Review outputs of ad hoc contract that provides the catches, landings and discards, at a level of aggregation corresponding to the fleet, area and gear type as specified in each exemption of each discard plan for 2020.
4. Review data quality checks and produce National methodological chapters.

2 – In the interests of establishing common best practices, identify any aspects to answering to the data call that still need a common approach to be established.

1. Propose and agree practice for use of confidential data records. This includes treatment and presentation of data on the data dissemination site.

2. Review MS methodology applied when deriving Table A from biological sampling programs.
3. Discuss other issues that are relevant to the FDI data call and where possible conclude on a common approach to be used.

3 – Test the compatibility between the data collected in the FDI database and the data collected in the Mediterranean and Black Sea database.

1. For data from 2017 and 2018 and FAO area 37, compare
 - a. Codes used in the FDI and Med&BS data calls (e.g. gear type, vessel length, metier, etc.).
 - b. Sums of effort (kWdays-at-sea, GTdays-at-sea, fishing days) at the level of country-year-GSA area-gear type. The comparison is to be made between data held in Table G 'Effort summary' of the FDI database and the Table D 'Fisheries effort data' of the Mediterranean and Black Sea database (as described in Annex 1, Appendix 2.4 of the Med&BS data call).
 - c. Sums of landings (tonnes) and sum of discards (tonnes) at the level of country-year-GSA area-gear type. The comparison is to be made between data held in Table A 'Catch summary' of the FDI database and the Tables B 'Fisheries landings at length data' and C 'Fisheries discards at length data' of the Mediterranean and Black Sea database (as described in Annex 1, Appendix 2.2 and 2.3 of the Med&BS data call). Comparison to be restricted to the species contained in Annex 1, Appendix 1.7 of the Med&BS data call.
 - d. Conditional on successful matching of the total landed weight and discards weight totals, compare numbers at length at the level of country-year-GSA area-gear type. The comparison is to be made between data held in Tables F MBS 'Landings length data' and D MBS 'Discards length data' of the FDI database and Tables B 'Fisheries landings at length data' and C 'Fisheries discards at length data' of the Mediterranean and Black Sea database (as described in Annex 1, Appendix 2.2 and 2.3 of the Med&BS data call). Comparison to be restricted to the species contained in Annex 1, Appendix 1.7 of the Med&BS data call.

4 - Produce maps of spatial effort and landings by c-squares

1. Discuss and agree possible format of dissemination tables based on FDI data collected (considering confidentiality issues).
2. Produce maps of effort and landings by c-square for the following regions (as defined in COM-2016-134 for areas other than 'distant waters') and major gear types (as defined in appendix 4 of the data call):
 - a. Baltic; North Sea; North Western Waters; South Western Waters; Mediterranean and Black Sea; Distant waters¹

¹ Defined here as waters not covered by the previously listed areas.

- b. Trawls (except beam trawls) with mesh < 100mm; trawls (except beam trawls) with mesh ≥ 100mm; beam trawls with mesh < 120mm; beam trawls with mesh ≥120mm; seine nets; gillnets and entangling nets; dredges; hooks and lines; surrounding nets; pots and traps.

5 –Provide catches, landings and discards data for exemptions in discard plans

STECF is asked to provide figures for landings and discards in 2018, at a level of aggregation corresponding to the fleet, area and gear type as specified in each exemption of each of the discard plans for 2020.

STECF is asked to assess and if possible, provide percentages of discards estimates below and above MCRS at a level of aggregation corresponding to the fleet, area and gear type as specified in each exemption of each of the discard plans for 2020.

Where there is insufficient discard data for the above task, the STECF is asked to provide estimated catches (landings + discards²) for 2018, if possible and enough data provided during data call.

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.

STECF observations

The EWG addressed all the Terms of Reference. Below the main observations from STECF, for each ToR.

ToR 1: Review and document completeness of the data set and feedback from Member States on approaches used and problems encountered in responding to the data call.

1. *As a matter of priority, the EWG is requested to ensure that all unresolved data transmission (DT) issues encountered prior to and during the EWG meeting are reported on line via the Data Transmission Monitoring Tool (DTMT) available at <https://datacollection.jrc.ec.europa.eu/web/DCF/dtmt>. Such issues should be reported in full within 2 weeks of the end of the EWG.*

STECF observes that the data provided by Member States in response to the 2019 FDI data call, and incorporated into the FDI database hosted by the JRC, represent the most comprehensive data set currently available, and a significant improvement compared to last year. All data transmission issues identified by the EWG were reviewed during the meeting. Numerous issues of technical nature were identified in the checking process. Many of the issues were adequately explained. In some cases they could be resolved and re-uploaded with correct data during the EWG meeting.

² Discards are defined here as the fish/crustaceans thrown overboard.

Yet, a variety of shortfalls remain, largely because Member States' agreed national work plans are not designed specifically to collect and provide data at the disaggregation level requested in the FDI data call.

STECF notes that all major unresolved data transmission issues requiring an explanatory comment from Member States have been recorded in the Data Transmission Monitoring Tool (DTMT) by EWG 19-11.

2. Review outputs of ad hoc contract that provides a methodology to partition data (number at length) from Tables C and D (aggregations according to sampling programs) to Table A (detailed catch table), discuss and agree future methodology to be applied.

STECF notes that the EWG19-11 reviewed the methodology and outputs of the *ad hoc* contract (1949) awarded to estimate the proportions of discards in number below and above MCRS aggregated corresponding to the metier level.

STECF notes that the methodology used in the *ad hoc* contract is appropriate, some checks were performed by the EWG. The output provides a valuable overview of the number of fish above and below the MCRS by country, year, area, metier, species and catch fraction. It meets the level of aggregation specified in discard plans and therefore adds value to the FDI data set by providing discard estimates which may be used to assess any potential impacts of the exemptions from landing obligation.

STECF also acknowledges that the JRC undertook extensive additional checks to the ones undertaken last year (e.g. domain names comparison between tables) on the data submitted by Member States in response to the 2019 FDI data call. The achievements made by the contractor would not have been possible without such extensive checks.

STECF notes that the results in terms of discards in numbers at length above and below MCRS were used to provide estimates of the weights of discards above and below MCRS by applying, in a first step, the length/weight parameters obtained from 'Fishbase' (www.fishbase.org). STECF notes that for the next year data call the EWG suggested to include a column MEAN_WEIGHT_AT_LENGTH in Tables D and F (landings and discards by length) that will improve the quality of the estimated fractions and allow estimation without using ICES database.

3. Review outputs of ad hoc contract that provides the catches, landings and discards, at a level of aggregation corresponding to the fleet, area and gear type as specified in each exemption of each discard plan for 2020.

STECF observes that the *ad hoc* contract (1948) was reviewed and the methodology used to provide catches, landings and discards (catch fractions), at a level of aggregation corresponding to the fleet, area and gear type as specified in anticipated exemptions of discard plans for 2020 is appropriate. Nevertheless, in some cases, the discards estimates for exemptions were based on only a small number of discard samples or in the absence of appropriate samples, were derived by extrapolation (so-called 'fill-ins') from samples obtained by other countries within the same fisheries definitions (as reported by the EWG).

STECF notes though that the EWG considered the estimates of catch fractions for all anticipated exemptions for 2020 to be sufficiently robust to be informative for DGMare.

STECF further observes that two sets of estimates were computed: i) estimates for exempted fleets for which discard estimates were provided by Member States and ii) estimates for exempted fleets for which data was not provided by Member States but estimated within the FDI database following the standardised routine developed in 2018 ("fill-ins"). In addition, a measure of coverage was computed for the discard estimates (as % of landings with discard information available divided by total landings within the same exemption and fleet).

STECF agrees with the EWG that in some cases due to low sampling effort, the results may at the best be imprecise or may not be representative of the true level of discards of the fleets fishing under each exemption.

STECF acknowledges the need for a similar *ad hoc* contract also in 2020. This contract should generate the FDI codes needed to extract the 2021 exemptions from Table A of the FDI data call and calculate the landings and discards, at a level of aggregation corresponding to the fleet, area and gear type as specified in each exemption of each discard plan for 2021 as requested by DGMARE.

4. Review data quality checks and produce National methodological chapters.

STECF observes that a detailed review of the data submitted and of the methodology used by Member States answering the data call, together with an overview of the quality of such data, is given in Annex 3 of the EWG 19-11 report.

STECF agrees with the EWG opinion that in general, the collection of data under the EU data Collection Framework DCF is in accordance with Member States' National work plans, which are not specifically designed to provide representative sample data at the level of aggregation requested under the FDI data call and specifically for the LO exemptions.

Consequently, the estimates of catch fractions at the fine level of disaggregation requested by the FDI data call, cannot be calculated in a scientifically robust way. STECF notes that while Member States are primarily responsible for providing checked and validated data, numerous issues and errors in transmission will inevitably arise for various reasons e.g. misinterpretation of what is being requested, coding misspecification between different databases in Member States and simple human error. Hence, there will always be a requirement for Expert checks to be undertaken. Therefore STECF supports the opinion of the EWG 19-11 that an additional dedicated Expert Group meeting to check the data provided by Member States in response to the FDI data call should be convened. STECF is of opinion that two Expert Working groups are convened in 2020. First, DATA EWG-FDI would be solely dedicated to compiling and checking the data submitted through the FDI data call and the second, Advice EWG-FDI, would respond to any advice requested by the Commission dependent on FDI data.

Such an EWG would permit a comprehensive review of the quality and completeness of the database and provide a platform to explore and develop methodologies used to estimate and disseminate scientifically robust information, e.g. discard and biological (age

and length) data. Any advice requested by the Commission dependent on FDI data, would be best provided during a second, separate EWG meeting (Advice EWG-FDI).

ToR 2: *In the interests of establishing common best practices, identify any aspects to answering to the data call that still need a common approach to be established.*

2.1 - Propose and agree practice for use of confidential data records. This includes treatment and presentation of data on the data dissemination site.

STECF observes that EWG 19-11 proposed the following approach regarding the dissemination of data marked as confidential:

- EU data that are aggregated across Member States can be published without removing the data marked as confidential as it will be impossible to isolate the confidential data.
- When publishing data at Member State level, data marked as confidential by the Member State in question are not displayed.
- Before disseminating data on the data dissemination site, it should be approved by the STECF plenary, and MS should be informed by DG MARE.

2.2 - MS methodologies applied when deriving Table A from biological sampling programs.

STECF observes that the methods used to estimate discards data from biological sampling to Table A vary between Member States. STECF agrees that in using different approaches there is the potential to generate biased estimates of catch fractions for different fleet components. STECF further observes that EWG 19-11 proposed the following approach, regarding the dissemination of such estimates:

- Dissemination Disclaimer: the EWG agreed that the discards data presented in Table A could be made publicly available in the dissemination tool. However, the group recommended adding a disclaimer at the top of the "EU Catches" tab in the dissemination tool highlighting the limitations of the data.
- Investment in quality control: the current level of complexity of the FDI database as a central repository for all European fishing effort requires dedicated expert time to ensure that intra- and inter-annual quality control is maintained, and quality is improved. Therefore, EWG 19-11 recommended to have two annual FDI meetings. The first meeting would be dedicated to the review of data quality and completeness. This first meeting would also provide a platform to explore and develop the methodologies used to estimate and disseminate scientifically robust information, e.g. discard and biological (age and length) data. Therefore, the second meeting would be convened to answer the ToRs set out by the Commission.

- Investment in data dissemination techniques: to increase efficiency and ensure that the data made available are disseminated properly, the EWG proposed an ad-hoc contract to develop a suite of methodologies for dissemination. These methodologies will provide a visual and numerical indication of estimated robustness and coverage. These methodologies can then be discussed and reviewed during the first FDI meeting in 2020. STECF notes that due to limited resources and time during the EWG 19-11, it was not possible to achieve this objective.

2.3 - Discuss other issues that are relevant to the FDI data call and where possible conclude on a common approach to be used.

STECF observes that several issues arose in responding the 2019 FDI data call described in EWG19-11 report. The main issues relate to:

- i) The reporting of discards in Table A;
- ii) Inconsistencies in domain³ definitions and hence how to link Tables C-F to Table A;
- iii) How to deal with zero landings with discards estimates.

STECF also observes that EWG 19-11 suggested 3 improvements in future data calls:

i) In order to improve the data provided for the *Nephrops* stocks, the data should distinguish the different Functional Units (FUs), in Tables A, C, D, E and F. To capture this information it is suggested to add an extra column called "NEP_SUB_REGION" to the Tables A, C, D, E and F. The statistical rectangles, which identify the FU's, are outlined in Section 3.2.3 of the EWG 19-11 report and should be made available for MS during the data call.

ii) To estimate the weight of discards and landings above and below Minimum Conservation Reference Size (MCRS), include a column in Tables D and F with MEAN_WEIGHT_AT_LENGTH and WEIGHT_UNIT (g = gram).

iii) It would be useful to add a table to the data call, with discards amounts by domain. The rationale for such a proposal is described in Table 3.2.3.1 of the EWG 19-11 report.

The STECF supports all EWG proposals as those are considered to improve the data quality and usefulness.

ToR 3. Test the compatibility between the data collected in the FDI database and the data collected in the Mediterranean and Black Sea database

³ A domain refers to the group of vessels used to calculate estimates (discards, numbers at age, number at length). A domain may or may not be equivalent to a métier. Domain labels used in Tables C, D, E and F need to be present also in Table A.

STECF observes that although the two data sets are still not fully matching, the level of homogeneity greatly increased in the 2018 data, submitted in response to the 2019 data calls.

STECF agrees that the two data sets require some of the same data. STECF acknowledges thus that requesting MSs to send the same information twice in the same period of the year in different formats for two different data calls is not an optimal situation, and a discussion on options to avoid this is needed. STECF notes, however, that although technically it is possible to transfer the data from one database to the other, it is not clear who would be tasked with performing this transfer and would take responsibility for the data quality.

STECF observes that EWG 19-11 highlighted a number of issues in potential switching from the Mediterranean and Black Sea data call to the FDI data call:

1. in order to run stock assessments at the beginning of September, the final dataset must be available by the end of August
2. STECF handling procedures (legal and operational deadlines) should be reviewed and revised accordingly.
3. If FDI data (including biological data) are to be published they will be treated as "official" and available to be used by any end user. However, during stock assessment EWGs the quality checks are performed at higher details (stock level) compared to FDI checks. This different approach in quality checks (FDI more global and stock assessment checks focusing on the particular stocks to be assessed) may result in mismatch in terms of data issues that are reported in the DTMT.
4. If the Mediterranean and Black Sea data call would not call for fishery dependent information, there is a need for another EWG to quality check the Mediterranean and Black Sea biological data. Should it be the FDI group? If yes, when does it have to be scheduled (see point 1)?
5. If the Mediterranean and Black Sea data call would not call for fishery dependent information, a lot of scripts and tools already developed in the framework of DGMare (funded) projects (e.g. STREAM, RECFISH) or at MS level to check Mediterranean and Black Sea data according to Mediterranean and Black Sea format could become redundant.
6. To avoid that experts have to deal with 2 different datasets during stock assessment EWGs, FDI data should be reshaped according to the Mediterranean and Black Sea format.
7. Currently the Mediterranean and Black Sea call asks data for the year before the data call. However, MSs can still re-upload previous years on the express authority of DGMARE. In such cases, should MSs re-upload using FDI or Mediterranean and Black Sea data call format?

In order to deal with these issues EWG proposed two alternative approaches:

Proposal 1 - drop from the FDI call the Mediterranean and Black Sea biological data (Table C, D, E, F in FDI data call). FDI should call for Table A, B, G, J and spatial data (tables H & I) while Mediterranean and Black Sea would be kept as it is, avoiding to call effort data (Table D from the Mediterranean and Black Sea).

Proposal 2: pending all the issues listed above, drop commercial data and effort from Mediterranean and Black Sea (it will call survey and biological parameters only). This proposal could only become effective if points listed above will be solved. In addition, the EWG suggests that, before deleting biological data from the Mediterranean and Black Sea data call, detailed checks at stock level (priority species) should be ensured, for example comparing length distributions at stock level.

These proposals may be discussed further between DG Mare, STECF and the relevant end-users. STECF suggests a specific ToR for the STECF 20-01 Plenary on this topic.

ToR 4. Produce maps of spatial effort and landings by c-squares.

4.1 - Discuss and agree possible format of dissemination tables based on FDI data collected (considering confidentiality issues):

STECF observes that the EWG 19-11 had thorough discussions on a possible format of FDI data for dissemination and provided respective data for publication on the JRC data dissemination site. STECF agrees with the opinion of the EWG that a second meeting earlier in the year (possibly July) or a workshop dedicated to develop and agree on a methodology on the best way to have the data provided to the FDI data call (effort, landings, discards and biological and capacity) publicly available in the dissemination tool. The aim of such a meeting would be to maintain the scientific robustness of the estimates, maintain confidentiality, but taking into account the utility of the data for the different end-users needs. STECF acknowledges that in order to have the best quality sampling data (discards and biological data) publicly available, extensive work needs to be done and agreement needs to be reached across the experts. STECF acknowledges that due to limited resources and time is not possible to achieve this having one meeting a year.

Therefore STECF stresses the need for *ad hoc* contract in 2020 to develop a suite of methodologies for the dissemination of FDI data. Such methodologies will provide a visual and numerical indication of estimate robustness and coverage (in particular for discards estimates). These methodologies can then be discussed and reviewed in the first FDI meeting and finalised during the second FDI meeting in 2020. STECF stresses that the output of this contract may also be useful in a broader context of data dissemination of scientific information.

4.2 - Produce maps of effort and landings by c-square for the following regions (as defined in COM-2016-134 for areas other than 'distant waters') and major gear types (as defined in appendix 4 of the data call):

STECF observes that maps of spatial effort and landings by c-squares were created for all main fishing regions and gear categories and available in the report. The EWG also developed the dissemination tool to make EU level data available for public.

ToR 5. Provide catches, landings and discards data for exemptions in discard plans as well as information on the percentage of fish below and above MCRS.

STECF observes that the EWG was able to deliver the best available estimates for the discards. However the discard estimates are sometimes unavailable, because discards are not sampled, and for those fleets where discards have been sampled, the achieved sampling rate is often much lower than required to provide a robust estimate of the true discard fractions for many fleets with exemptions. Additionally, discards registered in logbooks are also believed to be an unreliable source of information and therefore are not requested by the FDI data call. STECF observes that the EWG was able to compute the best possible discard estimates for un-sampled métiers using the standardised routine developed in 2018 to populate un-sampled discard cells ("fill-ins").

STECF observes that for the first time, the weight of fish above and below MCRS was estimated. This was carried out by converting numbers at length from data submitted by Member States to weight at length applying length/weight parameters obtained from 'Fishbase' (www.fishbase.org) for each species and then summing the weights at length above and below MCRS. However, STECF realizes that this approach could be improved by using average weight at length by species and fractions (landings and discards). Therefore STECF suggests that in the next data calls, Member States should be requested to provide mean weights at lengths by fractions in addition to the numbers at length in order to obtain better estimates of percentages below and above MCRS. STECF agrees that such information is potentially informative in the context of exemptions from the landing obligation.

STECF notes that the EWG 19-11 has adopted the same selection criteria set out by the EWG 18-11 to populate gaps in discard estimates ("fill-ins").

The criteria used to apply the "fill-ins" are as follows:

For all areas apart from the Mediterranean Sea (outside area 37)

year, quarter, species, sub_region, gear_type, mesh_size_range, target_assemblage, specon_tech

For the Mediterranean Sea (area 37)

year, quarter, species, sub_region, metier, specon_tech

Such "fill-ins" increased discards coverage from 22% to 30% of landed weight in 2018, or 2% in number of records provided by MSs for the same year and therefore discards are still missing for most of the landings provided for the FDI data call.

STECF conclusions

STECF concludes that the EWG 19-11 addressed all ToRs appropriately, although STECF notes that these were very comprehensive.

If the information provided by the Member States for the FDI data call 2019 is to be made publicly available, STECF supports the formats for tables and maps agreed and proposed by STECF EWG 19-11 which respect various constraints in terms of confidentiality, accuracy and transparency.

STECF concludes that the estimated discards in Table A are split in categories smaller than the ones used for sampling discards (including e.g. vessel size or mesh size). This implies assuming that discard rates are the same across sub-categories within a métier, which might not be the case in reality. As such, the accuracy of these estimates remain uncertain but they represent the best available estimates at that level of EU-wide coverage. STECF notes also that the general methodology used to estimate discards is consistent with what was used in the old FDI.

STECF concludes that the methodology used to calculate the percentages below and above MCRS of landings and discards is appropriate and useful to inform on trends in size composition in the context of the landing obligation. STECF suggests to include a column in Tables D and F (landings and discards by length respectively) with MEAN_WEIGHT_AT_LENGTH which will improve the estimates.

To ensure the best data quality and continue building a common methodology addressing the data call creating the EU level FDI database, STECF suggests that two Expert Working groups are convened in 2020. First, DATA EWG-FDI would be solely dedicated to compiling and checking the data submitted through the FDI data call and the second, Advice EWG-FDI, to respond to any advice dependent on FDI data requested by the Commission.

STECF also concludes that in order to i) increase efficiency, ii) improve the homogeneity of methodologies used by Member States to estimate discards for Table A using biological sampling results and iii) incorporate quality indicators of discard estimates provided in Table A when disseminating results, two *ad-hoc* contracts should be issued prior to the EWG-FDI meeting(s) in 2020:

Contract 1 to develop a suite of methodologies for dissemination of FDI data.

Contract 2 to generate the FDI codes needed to extract the 2021 exemptions from table A of the EWG and to calculate the landings and discards, at a level of aggregation corresponding to the fleet, area and gear type as specified in each exemption of each discard plan for 2021.

In addition STECF also proposes to add table to the 2020 data call, with discards amounts by domain and number of sampled trips as suggested in the EWG 19-11 report to collect information on sampling intensity to be used when disseminating results.

STECF agrees with the EWG proposal to add an extra column called "NEP_SUB_REGION" to tables A, C, D, E and F in order to distinguish the different *Nephrops* Functional Units (FUs).

Based on a comparison between the FDI and Mediterranean and Black Sea databases, STECF concludes that while the two data sets are still not fully compatible, the level of homogeneity has greatly improved due to the improvements made in the 2019 data call on the reference codes and on the variables requested. STECF acknowledges the issue of excess workload for Member States while responding to multiple data calls. In order to ease these issues STECF envisage harmonisation of FDI and Med&BS datacalls/data bases. STECF suggests a specific ToR for the STECF 20-01 Plenary on this topic, with preliminary analyses to be performed in advance of this discussion.

Similar investigations could be conducted regarding the compatibility of the FDI with the AER data call.

5.3 EWG 19-12 Revision of the EU Multiannual Plan for data collection (EU-MAP) after 2020

Background provided by the Commission to EWG 19-05 and EWG-19-12 ToR

Prior to the EWG 19-12 meeting, a compilation of comments from RCGs and data end-users on the EU-MAP revision had been carried out, containing a summary of main recommendations and a very first draft EU-MAP and WP template. As background for current work, the EWG 18-18 report was used, on the state of play of STECF and other relevant fora's recommendations for revision of the current EU-MAP.

The EWG 19-12 was asked to:

- with regard to the EU-MAP:
 - (i) critically assess if the basic principles of the DCF recast and the major recommendations by STECF have been taken into account in the draft EU-MAP and suggest amendments, where necessary;
 - (ii) produce a draft EU-MAP incorporating the revision recommendations of RCGs, end users, etc., validated by STECF experts. Where a recommendation has not been taken up, the EWG is requested to provide an explanation in the final report on the reasons why, while taking into account cost/benefit considerations, (future) data needs for the scientific support of the CFP, possibility to further define data collection at regional level, among others;
 - (iii) give advice on items which should not be in the future EU-MAP but still must be put into the WP or, for voluntary collection, elsewhere (e.g. Guidance document);
- with regard to the WP template:
 - (i) critically assess the draft WP template and guidelines stemming from the work of the dedicated contract and improve it where necessary. The assessment shall be done taking into account the need to align the new WP template with the draft revised EU-MAP as well as end-user needs;
 - (ii) produce a draft WP template (standard tables) and guidelines to be assessed by the STECF plenary;
 - (iii) produce complementary documents to further elaborate on the structure of the template, namely: description of possible links between the different tables of the template; an explanatory note justifying and explaining the inclusion/exclusion of tables in the WP template. The focus of the exercise should be on simplification, user-friendly formatting and standardisation.

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.

A number of issues were not finalised during the EWG. These are:

On EU-MAP: environmental impact of aquaculture, finalisation of Table 1D on sensitive species, further MS requests for clarification on the list of mandatory surveys at sea.

On Work Plan template: Table 5A on quality assurance framework for biological data, guidelines for the Work Plan template; Section on list of meetings, recommendations, data availability and bi-international agreements.

On Work Plan draft decision: a compilation of necessary substantial changes to the decision draft; a correlation table (annex II) relating new EU MAP draft decision sections and tables to new WP template sections and tables.

STECF is requested to finalise the pending issues listed above. Where STECF considers that the expertise available is not appropriate to address a request, a proposal for relevant expertise is needed.

STECF is also requested to reflect on the role conferred to the RCGs in the EU MAP and how to guarantee the EU data collection objectives are met should the regional coordination not deliver timely or suitable solutions. Additionally, the plenary is asked to verify if all Commission recommendations received in preliminary stages have been addressed in the final EWG 19-12 report.

STECF observations

EWG 19-12 met from 16-20 September 2019 in Brussels. The meeting was attended by 29 experts, 2 participants from JRC and 3 from DG MARE. In addition, several participants from DG MARE and DG ENV attended the meeting part-time.

STECF observes that the main input provided for the meeting was a very useful ad-hoc contract report from July 2019. The report included a summary of replies from several MS, end-users and Regional Coordination Groups (RCG) to the provided consultation questionnaire (developed during STECF EWG 18-18). It also included options for the EU-MAP revision, proposals for EU-MAP tables & text and for national Work Plan templates and guidance. For the meeting there was additional input from COM (DG MARE, DG ENV) summarized in a second ad-hoc contract for the EWG meeting.

STECF observes that EWG 19-12 was able to address all TORs regarding the revision of the EU-MAP. This included a draft of the Delegated Decision, the Draft Implementing Decision (Surveys & Thresholds) and Draft EU-MAP tables. EWG 19-12 did also finalise most of the Text Boxes and submission guidance for the Draft Work Plan templates. However, the EWG was not able to address all tables for the Draft Work Plan template and was only able to address a part of the Decision text on the Work Plan template due to lack of time.

STECF observes that EWG 19-12 followed the basic principles provided by DG MARE to draft the EU-MAP documents. STECF considers that the revised version has managed to keep the core requirements, to stabilise and simplify where possible, remain flexible to be able to adjust the data collection to end-user needs and to utilise fully the mandate of RCGs⁴. An example of such flexibility and simplification is the replacement of the tables with the list of species for RFMOs with a table of the legal documents (Table 1D) including the species. In the case a RFMO changes the species list in the legal document it becomes

⁴ The mandate (according to the DCF recast Reg. 2017/1004) includes that RCGs shall aim at developing and implementing procedures, methods, quality assurance and quality control for collecting and processing data. This includes a view to enabling the reliability of scientific advice to be further improved. For that purpose, RCGs shall aim to develop and implement regional databases. The RCGs shall include experts appointed by MS, including national correspondents, and the EU Commission. Regional coordination groups may prepare draft regional work plans, which shall be compatible with this Regulation and with the multiannual Union programme.

automatically valid for the EU-MAP without a necessity to also adjust a species list in the EU-MAP.

For the draft documents of the EU-MAP, the EWG took into account the DCF recast principles (2017), previous recommendations by STECF, end users, MS, RCGs/PGECON, background documents (e.g. project reports), the July contract work and COM inputs (DG MARE, DG ENV).

STECF observes that EWG 19-12 proposed the following changes to the EU-MAP:

- Chapter 1 Definitions: The EWG aligned the definitions to the CFP and DCF recast and updated the references.
- Chapter 2 Data collection methods: The EWG added a clause allowing data collection programmes to adapt to ongoing improvements in best practices in the sampling methodology.
- Chapter 3 Data requirements: The EWG added catch and effort data of eel in inland waters of commercial fisheries as required by Reg. 1100/20075.
- Chapter 3 Data sets: Biological data: Replacement of wording 'stocks' by 'exploited marine biological resources' because this is the official definition in the CFP Basic Regulation; and restructuring of the text to improve clarity.
- Chapter 3 Data sets: Ecosystem data: The EWG deleted the term 'pilot studies' from the text (as this term was open for interpretation and the data requirements on ecosystem data are already included now) and restructured the text related to a) incidental by-catch, b) marine habitats, c) other (e.g. predator-prey relationship, natural mortality).
- Chapter 3 Social and economic data: It was unclear to the EWG whether the DCF recast kept the data collection voluntary or made it mandatory again. DG MARE clarified that the data collection needs to be mandatory again and this is included in the revised version of the EU-MAP.
- Changes in Tables:
 - o The list of stocks was removed and only one list of management units is included
 - o For fishing activity kW/GT*days-at-sea, No. of FADs/buoys/support vessels were added
 - o In the tables on economic data, the variable 'full-time equivalent (FTE)' was added under 'Employment' and some minor amendments made
 - o In the tables on social data of the processing industry, FTE by gender was added
 - o For fleet segmentation and geographical stratification, a dominance criterion was added
 - o Environmental data on aquaculture was deleted as the end-user needs were not clear and this data has to be collected via other legislations, such as hygiene and animal health regulations. (see also Add.1 below)
 - o For Surveys-at-sea, the new list from EWG 19-05 on mandatory surveys was included
- For the implementing Decision the following changes were made:
 - o The text was amended for clarity
 - o The threshold for collecting data on recreational fisheries was removed
 - o A sentence clarifying that 'No threshold shall apply to sensitive species' was added
 - o The threshold for participation in surveys-at-sea was increased from 3% to 5% of the target species TAC/landings. This means that MS are requested to participate in surveys only in cases their quota/landings share is minimum 5%. The recent cost-

5 Council Regulation (EC) No 1100/2007 of 18 September 2007 establishing measures for the recovery of the stock of European eel. OJ L 248, 22.9.2007, p. 17–23

sharing exercise with the lower threshold of 3% raised concerns and proved hard to implement, so the EWG proposed to return to the 5% threshold successfully used before.

STECF observes that for the Work Plan template revision various amendments were issued for clarity and some tables were merged. There is, however, more work still needed regarding the biological data once the EU-MAP is finalised and also regarding the adjustment of the Work Plan template to the final contents of the revised version of the EU-MAP.

STECF observes that for economic data the EWG included a new geographical indicator for outermost regions and added the two possibilities - low and normal - for the activity indicator. A methodological report was added to give a comprehensive overview on methods. The EWG described the data quality assurance in text instead of in a specific table.

STECF observes that EWG 19-13 on the "Assessment of balance indicators for key fleet segments and review of national reports on Member States efforts to achieve balance between fishing opportunities and fleet capacity" (ToR 5.4 of this plenary report) proposed to include the indicator of Maximum days at sea (Maxseadays) as being mandatory instead of voluntary in the next EU-MAP. The reason for this is that in order to be meaningful the technical indicator (Vessel Utilisation Rate, VUR) requires that Member States provide an estimate of the Maximum days at sea (Maxseadays) for all fleet segments. At present, the provision of Maxseadays is voluntary and the absence of such information means the indicator value for many fleets is uninformative.

STECF observes that the EWG proposes a more automated process for compiling figures for Work Plans and Annual Reports, based on data calls.

STECF observes that although there is still a bit of uncertainty remaining about the role and responsibilities of the RCGs, the outcome of the RCG meetings in 2019 show an increasing coordination of activities between MS in a region and hence show the value of the RCGs. The main uncertainty is about the collection of ecosystem data. It is not fully clear what should be collected by Member States under their national work plans against a more coordinated approach by RCGs where a regional Work Plan would be issued (See also Add.5 below). STECF also notes that the number of RCGs was reduced due to the recent merging of the North Sea and North Atlantic regions.

STECF conclusions

STECF agrees with the EWG on the Drafts of the EU-MAP Delegated Decision and the Draft Implementing Decision as all comments on possible revisions from end-users have been taken into account. STECF concludes, however, that minor issues still need to be solved (e.g. Species list in Table 1). This can be done during the adoption process when a final check on all tables and lists will be performed by all parties (COM, MS, end-users).

STECF concludes that there are huge differences between areas regarding the usefulness/effectiveness of the collection of data on recreational fisheries. Some of the target species in the Baltic Sea, especially western Baltic cod and salmon, are targeted by both commercial and recreational fishers and, therefore, recreational catches can have a substantial influence on stock size. In the Mediterranean Sea, the target species are to a large extent different for recreational and commercial fishers. In particular, the most important stocks (e.g., priority species, stocks under Multi-Annual Plans) are not affected by recreational fisheries. Nonetheless, data on recreational data shall still be collected to investigate the interaction/competition between recreational fisheries and small-scale fisheries and assess their impact on coastal species, especially vulnerable species (e.g., groupers, brown meagre).

STECF concludes that the RCGs should issue regional case studies for the collection of data on recreational catches and provide at least a preliminary species list for important species which could be part of those studies.

STECF concludes that the next EWG on the evaluation of the DCF Annual Reports in 2020 should elaborate whether the Maxseadays indicator should be included as mandatory in the new EU-MAP.

Regarding the remaining pending issues from the TORs, STECF concludes the following:

Add.1. EU-MAP: Environmental impact of aquaculture, finalisation of Table 1D on sensitive species, further MS requests for clarification on the list of mandatory surveys at sea.

STECF agrees with the proposal of EWG 19-12 to delete the indicators for environmental impact of aquaculture from the EU-MAP as those data are currently not requested by any end-user. Operators have to store specific data on e.g. mortality rates in the cages and use of antibiotics, and provide it if requested under other regulations (hygiene and animal health) within the EU. However, these data may not be the most relevant for the actual evaluation of the environmental impact of aquaculture. STECF acknowledges that environmental sustainability is an important requirement for aquaculture and concludes that there is a need to further elaborate what the objectives of environmental sustainability should be, which variables need to be collected to assess the achievement of those objectives and where and how to collect the necessary data.

STECF supports the EWG view that the list of relevant legislation on species protection in Table 1D should be checked on completeness by the Commission (DG MARE and DG ENV).

Further clarification regarding mandatory surveys was provided during the plenary meeting:

Spain requested to include the *Nephrops* survey UWTV30 in the list of mandatory surveys, by shading the row for UWTV30 in the updated Table 7 of the EWG 19-05 report provided by EWG 19-12. EWG 19-12 recognised this to be an obvious omission of the EWG 19-05 since the output of the Decision Support Tool (DST) used by EWG 19-05 clearly identified the UWTV30 survey as candidate for mandatory surveys. This row was shaded in the final version of the EWG 19-12 report during the Plenary.

Bulgaria requested to limit the list of target species in the Bottom Trawl Survey in the Black Sea (BTSBS) to turbot, while Romania requested to keep the list of target species proposed by EWG 19-05 (turbot, whiting and picked dogfish). STECF notes that turbot, picked dogfish and whiting have been target species in historical bottom trawl surveys in the Black Sea since the 1980s, and keeping them in the BTSBS will assure the continuity of survey time series. Moreover, the data on biomass and density of those species are needed for the tuning of analytical stock assessments, as those are priority species. STECF is aware that in a recent exercise of standardisation of survey indices (within the RECFISH project), there was a lack of Bulgarian data, which caused incomplete coverage of EU waters. STECF notes that these three species were assessed by the GFCM in 2018. The fact that they occur rarely in the surveys can be linked to their status, the picked dogfish stock being assessed as depleted, while whiting is considered to be overexploited. Picked dogfish is listed in Annex II of the Convention on the Conservation of Migratory Species (CMS) of Wild Animals, and considered as endangered in the latest IUCN assessment. Any information on this species that could be gathered from both fishery-dependent and -independent sources of information should be considered as very valuable.

STECF concludes thus that the three species should remain target species of the BTSBS and should be collected by all countries participating in the survey, regardless of the number of individuals that are caught during the survey.

Add. 2: On Work Plan template: Table 5A on quality assurance framework for biological data, guidelines for the Work Plan template; Section on list of meetings, recommendations, data availability and bi-international agreements.

Add. 3: On Work Plan draft decision: a compilation of necessary substantial changes to the decision draft; a correlation table (annex II) relating new EU MAP draft decision sections and tables to new WP template sections and tables.

Add. 4: STECF is requested to finalise the pending issues listed above. Where STECF considers that the expertise available is not appropriate to address a request, a proposal for relevant expertise is needed.

STECF concludes that the outstanding revision of the Work Plan template tables that could not be fully assessed by the EWG 19-12 will need to be addressed in 2020. STECF suggests to add this exercise to the upcoming EWG on the evaluation of the DCF Annual Reports which takes place in June 2020 (see pending issues 2-3 above).

Add. 5. 1st part: STECF is also requested to reflect on the role conferred to the RCGs in the EU MAP and how to guarantee the EU data collection objectives are met should the regional coordination not deliver timely or suitable solutions.

STECF recognises that RCGs demonstrate an increasing role and responsibility in ensuring that all regional data requirements are met. STECF acknowledges the positive development of the RCGs and the increasing effort and commitment that participants of RCGs put into coordinating the regional activities. However, the RCGs are only a coordinating body and there is no legal obligation on the actual content and timeframe for the RCGs to deliver a regional Work Plan in case a coordinated regional data collection is considered preferable to coordinated national data collection efforts. In particular, STECF notes that there are uncertainties how the collection of ecosystem data will be included in the regional Work Plans across the various regions. For example, the RCG Mediterranean/Black Sea may apply the tools for regional data collection developed under the MARE/2016/22 Grant STREAM. The MS in the Mediterranean/Black Sea plan to issue pilot projects for 2020/2021 to have the results ready for the start of the new EU-MAP in 2022. This includes projects on data collection regarding stomach contents, monitoring of bycatch of vulnerable species and habitat impacts, and the monitoring of recreational fisheries. There is, however, a risk that those pilot projects will not be finalized or able to provide the expected results in due time, before the new EU-MAP is implemented. These risks are also relevant for the other RCGs, for example regarding the application of the tools developed in the FishPi² project.

STECF concludes that RCGs should develop a roadmap/plan of action in 2020 for a regional Work Plan which clarifies who in that region will collect the ecosystem data and how it should be done to fulfil end-user needs. Those regional workplans need to include clear responsibilities for each MS. In case the RCGs decide not to develop a regional workplan, the required data collection needs to be included in the national workplans. This would guarantee that the ecosystem data will be collected.

STECF further concludes that the RCG work should be further supported through EMFF direct management grants to ensure sufficient structural resources for efficient RCG work.

Add. 5, 2nd part: Additionally, the plenary is asked to verify if all Commission recommendations received in preliminary stages have been addressed in the final EWG 19-12 report.

STECF concludes that all Commission recommendations have been taken into account by the EWG.

5.4 EWG 19-13 Balance/Capacity

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.

STECF is requested to advise on whether the 2018 annual national reports and action plans submitted by the Member States by 31 May 2019 reflect an appropriate analysis of balance between fleet capacity and fishing opportunity of all EU fleet segments, based on DCF information and in line with the Commission guidelines COM(2014)545. To inform its advice, the STECF is requested to review the report of the STECF Expert Working Group meeting, evaluate the findings and also assess the extent to which the STECF Expert Working Group delivered on its Terms of Reference. The STECF is furthermore requested to provide recommendations on possible adjustments in the future work of STECF on Balance/Capacity to enhance the assessment of national fleet reports and action plans and the comparison of the findings of these reports and plans with those of the STECF Expert Working Group on balance/capacity.

STECF response

The Following response is structured in three parts, each addressing different requests as given in the Terms of Reference.

- 1. STECF is requested to review the report of the STECF Expert Working Group meeting, evaluate the findings and make any appropriate comments and recommendations. To inform its advice, the STECF is requested to review the report of the STECF Expert Working Group meeting, evaluate the findings and also assess the extent to which the STECF Expert Working Group delivered on its Terms of Reference.**

The STECF reviewed the report of the EWG 19-13 and notes that all terms of reference were successfully addressed to the extent possible. The Expert group has reviewed the fleet reports from Member States and any associated action plans provided in accordance with the criteria specified in the 2014 Balance Indicator Guidelines to Member States (COM (2014) 545 FINAL) and Article 22 of Regulation (EU) 1380/2013.

In previous reports, the STECF has provided a detailed critique of the application and utility of the indicators and criteria specified in the 2014 Balance Indicator Guidelines (COM (2014) 545 FINAL) for assessing the balance between capacity and fishing opportunities. Furthermore, numerous suggestions for modification and improvement have also been provided in previous reports and all such criticisms and suggestions have been endorsed by the STECF. The STECF wishes to stress that all previous criticisms and suggestions remain valid.

In general, the fleet reports from Member States provide pertinent information on the fleet composition and structure, together with accompanying action plans for those fleet segments deemed to be out of balance with fishing opportunities. However in the MS reports, in some cases, the rationale for concluding whether a fleet segment is deemed to be in or out of balance with fishing opportunities is not clear and in other cases such an assessment is on the basis of a single indicator value. STECF has stressed many times before that while it is the Member States that are best placed to provide an assessment of whether a fleet segment is in or out of balance with fishing opportunities, such an assessment cannot be made solely on the basis of a single indicator value.

In reviewing the fleet reports submitted by Member States, the EWG 19-13 has this year attempted to provide information on any observed discrepancies between the values of the sustainable harvest indicator (SHI) calculated by the EWG and those provided in the MS fleet reports. In many cases and for a variety of reasons, such estimates may not be directly comparable since the basis for calculating the indicator values (e.g. data from different years, different segmentation etc.) will be different. Nevertheless, such a comparison may indicate whether, according to the guidelines, the perceived status of a fleet segment has changed. A change in status may indicate that further scrutiny the fleet segment is warranted and whether there is a need for an accompanying action plan. Any such discrepancies are noted for each Member State in Section 4 of the EWG 19-13 report.

STECF conclusions on ToR 1

STECF concludes that the EWG 19-13 report successfully addressed all terms of reference to the extent possible and endorses the findings presented in the report.

- 2. STECF is requested to advise on whether the 2018 annual national reports and action plans submitted by the Member States by 31 May 2019 reflect an appropriate analysis of balance between fleet capacity and fishing opportunity of all EU fleet segments, based on DCF information and in line with the Commission guidelines COM(2014)545.**

STECF observations

To respond explicitly to the above request, an analysis comparing the data and information provided in Member States' fleet reports and action plans with the provisions in the guidelines (COM(2014)545 Final) would be required. In practice, the EWG was not requested to undertake such an analysis, so the information required was not readily available to the STECF plenary. To undertake such an exercise is clearly beyond the scope of a plenary meeting. Hence the STECF is unable to provide the advice requested.

Furthermore, the STECF considers that the Member State annual fleet reports and action plans do not necessarily reflect an appropriate analysis of the balance between fleet capacity and fishing opportunities even if the Commission guidelines are followed, because the rationale for the Member State assessments of whether particular fleet segments are in or out of balance with fishing opportunities is not always clear or is absent. In such cases it is impossible to judge whether the assessment is appropriate.

In some cases, it is explicitly stated that such an assessment was made on the basis of a single indicator value and STECF considers that such an approach is inappropriate for the variety of reasons that have been pointed out in previous STECF reports. Furthermore, STECF considers that application of the guidelines in COM (2014) 545 Final does not provide for a reliable assessment of the balance between fleet capacity and fishing opportunities.

STECF has previously commented extensively on the appropriateness and utility of the indicators prescribed in the Guidelines (COM(2014)545 Final) and none of the indicators used in isolation are reliable indicators of the balance between fleet capacity and fishing opportunities. Furthermore, for a particular fleet segment, the different indicator values may give conflicting signals e.g. some indicator values may be favourable, and others may be unfavourable. While each of the indicators are potentially useful to highlight certain aspects of a fleet segment, even if they are used collectively, other criteria need to be taken into account to arrive at an assessment of balance between fleet capacity and fishing

opportunities. Nevertheless, the indicators can potentially inform Member States on fleet management.

STECF conclusion on ToR 2

Since the EWG was not requested to undertake an analysis to permit the STECF to respond explicitly to the request, and to undertake such an exercise is clearly beyond the scope of a plenary meeting, the STECF is unable to provide the advice requested.

- 3. The STECF is furthermore requested to provide recommendations on possible adjustments in the future work of STECF on Balance/Capacity to enhance the assessment of national fleet reports and action plans and the comparison of the findings of these reports and plans with those of the STECF Expert Working Group on balance/capacity.**

STECF observations

The current process of reviewing Member States' fleet reports and action plans is linked both to the upcoming report of the functioning of the CFP and the next programming period of the EMFF. It is therefore timely to consider how the process associated with the assessment of the balance between capacity and fishing opportunities might be made more efficient and informative. At the same time, it is also appropriate to review the indicators and guidelines. The issues associated with the current suite of indicators to assess balance/capacity have been documented in this and numerous previous STECF reports notably:

- STECF report 15-02; sections 2.7, 2.8, 2.9;
- STECF report 15-15; 3.5.1, 3.6.1, 3.8, 3.9, 3.10, 3.11.
- STECF report 16-18; 4.2, 4.3, 4.4, 4.5.
- STECF report 17-18; 3.4 and ANNEX I.
- STECF report 18-14; 3.4 and ANNEX I.

Of particular importance is the summary of issues given in Annex I of the STECF 16-18 report, which is reproduced below.

STECF 16-18 Report ANNEX I - SUMMARY OF INDICATOR ISSUES AND ASSOCIATED COMMENTS AND PROPOSALS

<p>Sustainable harvest indicator (SHI)</p>	<p>1. The indicator guidelines state that an SHI value above one could be an indication of imbalance if it has occurred for three consecutive years. This criterion may be interpreted as not being in line with the CFP, where it is stated: <i>"The maximum sustainable yield exploitation rate shall be achieved by 2015 where possible and, on a progressive, incremental basis at the latest by 2020 for all stocks."</i> Therefore, before 2020 an SHI</p>	<p>1. Issue cannot be addressed without changing the guidelines. EWG 16-09 reaffirms the need for a dedicated EWG to revise indicator guidelines.</p>
---	--	---

	<p>indicator above 1 may reflect the outcome of political decisions to reach F_{MSY} not immediately, but by 2020.</p>	
	<p>2. Proposals for fishery management plans in the ICES area are currently taking into account F_{MSY} ranges; it is thus likely that F_{MSY} ranges which will serve as the basis for future management. SHI calculations are at present based on point estimates of F_{MSY}. SHI calculations could in future be revised to reflect the use of F_{MSY} ranges in management plans, a scenario for which the guidelines state: <i>'Where F_{msy} is defined as a range, exceeding the upper end of the range is interpreted as "overfishing"'</i>. It follows that if F_{MSY} ranges instead of point estimates are used, this will have a substantial impact on SHI values because the upper limit of the F_{MSY} range is often considerably higher than the F_{MSY} point estimate.</p>	<p>2. EWG 16-09 indicator preparatory meeting looked into this issue and concluded that F_{MSY} ranges had not been adopted as the basis for management for any stocks in the ICES area by the 30th June 2016 (the cut-off date for the inclusion of new data the EWG 16-09 indicator preparatory meeting worked with).</p>
	<p>3. The SHI may deliver a value of more than 1 for fleet segments which are not overcapacity with regards to their short term legally permitted harvest opportunities, i.e. fishing opportunities based on short term TACs.</p>	<p>3. Issue cannot be addressed without changing guidelines EWG 16-09 reaffirms the need for a dedicated EWG to revise indicator guidelines.</p>
	<p>4. The SHI, used in isolation to assess whether a particular fleet segment is in balance with its fishing opportunities could be misleading because it does not provide results about the extent to which a fleet segment relied on over-harvested stocks and secondly, does not provide any indication as to the overall contribution a fleet segment makes to the overall catch from an over-harvested stock.</p>	<p>4. Issue considered in STECF 15-15 (section 3.8 – 'Proposed Biological Indicators and Evaluation Tool'); STECF 15-15 proposal cannot be implemented without changing guidelines. EWG 16-09 reaffirms the need for a dedicated EWG to revise indicator guidelines.</p>
	<p>5. The SHI may deliver a value of less than 1 for fleet segments which partly rely on individual stocks harvested at rates above F_{MSY}.</p>	<p>5. Issue considered in STECF 15-15 (section 3.8 – 'Proposed Biological Indicators and Evaluation Tool'); STECF 15-15 proposal cannot be implemented without</p>

		changing guidelines. EWG 16-09 reaffirms the need for a dedicated EWG to revise indicator guidelines.
	6. The SHI may flag problems with a certain fleet segment despite the fact that the main problem lies with another fleet segment, which in turn may not necessarily be flagged.	6. Issue considered in STECF 15-15 (section 3.8 – ‘Proposed Biological Indicators and Evaluation Tool’); STECF 15-15 proposal cannot be implemented without changing guidelines. EWG 16-09 reaffirms the need for a dedicated EWG to revise indicator guidelines.
	7. SHI values calculated for different fleet segments may not be comparable. Small vessels in particular frequently harvest only a low number of stocks, leading to a high SHI when one of these stocks is overharvested. Fleet segments with larger vessels on the other hand generally fish more stocks in different areas. Therefore, their SHI is less sensitive to the overexploitation of particular stocks, and problems may be masked.	7. Issue considered in STECF 15-15 (section 3.8 – ‘Proposed Biological Indicators and Evaluation Tool’); STECF 15-15 proposal cannot be implemented without changing guidelines. EWG 16-09 reaffirms the need for a dedicated EWG to revise indicator guidelines.
Stocks at Risk (SAR)	1. According to the 2014 indicator guidelines (COM(2014) 545 final), ‘if a fleet segment takes more than 10% of its catches from a stock which is at risk, this could be treated as an indicator of imbalance’. The Expert Group considers that this is not necessarily true, but it can be used to indicate that a fleet segment may be worthy of further investigation to determine whether it is not in balance with its fishing opportunities.	1. Issue cannot be addressed without changing guidelines. EWG 16-09 reaffirms the need for a dedicated EWG to revise indicator guidelines.
	2. The indicator guidelines state that B_{lim} should be taken as threshold below which stocks are counted as stocks at risk. The definition in the CFP in Article 4 (18) for “inside safe biological limits” is: “ <i>Stock within safe biological limits' means a stock with a high probability that its estimated spawning biomass at the end of the previous year is higher than</i>	2. Issue cannot be addressed without changing guidelines. EWG 16-09 reaffirms the need for a dedicated EWG to revise indicator guidelines.

	<p><i>the limit biomass reference point (B_{lim})". However, to monitor the performance of the common fisheries policy (see Article 50 of 1380/2013) the Commission has defined "outside safe biological limits" as SSB less than B_{pa} (where B_{pa} is defined), OR F is greater than F_{pa} (where F_{pa} is defined). To take the deterministic or median assessment values for SSB and contrast them with the B_{lim} reference point may be inconsistent with the criteria of "high probability" and the definition used to monitor the CFP. B_{pa} could be seen as more appropriate threshold since B_{pa} is the SSB that gives a high probability to be above B_{lim} given the uncertainties in stock assessments in the terminal year.</i></p>	
	<p>3. The current 10% threshold is arbitrary and has not been tested. A sensitivity analysis, using different percentage thresholds as a cut-off point in order to investigate the impact of different thresholds needs to be undertaken. In addition, currently only landings from EU fleets are used to calculate whether the landings of a certain fleet segment comprise more than 10% of the overall landings. The impact of EU fleets on stocks that are shared with non-EU countries may therefore be overestimated.</p>	<p>3. The EWG 16-09 indicator preparatory meeting discussed the possibility of testing threshold using new R code, and providing EWG 16-09 SAR indicators based on e.g. 3 different thresholds. Ultimately this issue can only be addressed by changing the guidelines. EWG 16-09 supports the proposal for a database which contains all data and information required for calculation of biological indicators (including catch data from non-EU countries), and which is updated every year (see section 3.5.1.3, STECF 15-15).</p>
	<p>4. With the exception of stocks assessed as being below the B_{lim} biological level, identifying and categorizing 'stocks at risk' is subjective due to a range of terminology used in stock advice. The Expert Group suggests in future to provide two versions of the SAR; one based on B_{lim} values (criterion a) and a second based on criteria b-d given in the</p>	<p>4. EWG 16-09 indicator preparatory meeting discussed this issue, in particular with regards to the interpretation of criterion b for Mediterranean stocks. Ultimately this issue cannot be addressed without changing guidelines. EWG 16-09 reaffirms the need</p>

	<p>Guidelines (COM (2014) 545 FINAL).</p> <p>5. In order to consider IUCN data in future (criterion d), the precise IUCN categories to be included in the SAR indicator calculations need to be agreed with the Commission.</p> <p>6. In addition to the IUCN Red List and CITES, species lists from other conventions (e.g. OSPAR and CMS, Barcelona Convention, etc.) could in future be considered. A time consuming data gathering exercise would be necessary to include all these listings; such an exercise should be separated from the actual calculation of the indicator.</p>	<p>for a dedicated EWG to revise indicator guidelines.</p> <p>5. EWG 16-09 indicator preparatory meeting discussed the issue of IUCN categories. The EWG 16-09 Prep. Meeting agreed with the approach taken by the expert selecting SAR to only consider species with a Critically Endangered (CR) status. Ultimately this issue cannot be addressed without changing guidelines. EWG 16-09 reaffirms the need for a dedicated EWG to revise indicator guidelines.</p> <p>6. Issue cannot be addressed without changing guidelines. EWG 16-09 reaffirms the need for a dedicated EWG to revise indicator guidelines.</p>
<p>Economic technical indicators general</p>	<p>&</p> <p>-</p> <p>1. Inconsistent clustering of fleet segments over time makes the interpretation of economic indicators for such clusters problematic.</p>	<p>1. Probable cases of inconsistent clustering were flagged during AER 1 and the EWG 16-09 indicator preparatory meeting was informed that some MS were able to improve on this. EWG 16-09 indicator preparatory meeting considers that it may not always be possible to have consistent clusters, unless 'fake' or super clusters are used (which should not be encouraged). Moreover, the composition of fleet segments is always changing due to the 'dominance criteria' (listed in Commission Decision 2008/949/EC; Annex I, section A2.2), so there are inherent inconsistencies even when not considering clusters. EWG 16-09 is currently unable to propose</p>

		a solution to the issue of inconsistent clustering.
	2. Assessment of economic and technical indicators for small scale fleet segments is challenging. Economic indicators are generally calculated based on the assumption that fishing is the main economic activity of the fleet segments being assessed. This is often not the case for small-scale fishing fleets where fishing is often only a supplementary source of income.	2. EWG 16-09 considers that economic and technical indicators for small-scale fleet segments should always be interpreted with caution, and that local expert knowledge is generally required to accurately interpret indicator results/trends.
Return on Investment (ROI) and/or Return on Fixed Tangible Assets (RoFTA)	1. With regards to the application of the long term economic indicator ROI or RoFTA, the 2014 Balance Indicator Guidelines specify that the indicator is to be compared against the 'low risk long term interest rate'. The guidelines further suggest to use the ' <i>use the arithmetic average interest rate for the previous 5 years</i> '. Balance EWGs take this approach and e.g. the STECF 15-02 specifies that the ' <i>5-year average of the risk free long-term interest rate for each MS was used</i> '. On the other hand, the Annual Economic Report (AER) 2015 uses the 'real interest rate'.	1. EWG 16-09 indicator preparatory meeting notes that the lack of homogeneity in the methodology to estimate ROI and/or RoFTA by Balance EWGs (which use the approach given in the Commission guidelines) and the AER process was considered in detail by the 2016 AER meeting. It appears that the issue cannot be addressed without changing the Balance guidelines. EWG 16-09 reviewed the AER recommendations and reaffirms the suggestion for a dedicated EWG to revise indicator guidelines.
Ratio between current revenue and break-even revenue (CR/BER)	1. Presentation / interpretation of trends: due to the volatile nature of variable costs associated with fishing, the CR/BER indicator values may fluctuate considerably from one year to the next and commenting on trends which may be driven by the price of fuel for instance, does not necessarily help inform an assessment of fleet under- or over-capacity in relation to fishing opportunities.	2. EWG 16-09 indicator preparatory meeting considers that whilst short term volatility is informative, in the long-term it is not. Moreover, the long-term approach overlaps with ROI or RoFTA. The long-term approach suggested in the guidelines should thus not be used and the EWG 16-09 balance indicator tables will as a result only present the short-term approach. EWG 16-09 reaffirms the need for a dedicated EWG to revise indicator guidelines.

Inactive Fleet Indicators	1. In some MS (esp. in the Mediterranean) there is high 'inactivity' for various reasons: many small vessels only operate part time / on a seasonal basis; fishers may own several boats, some of which are used as stand-by vessels for various reasons (see Finland / Italy /Malta 2015 annual reports).	1. EWG 16-09 considers that technical indicators always be interpreted with caution, and that local expert knowledge is generally required to accurately interpret indicator results/trends. This is in particular the case for small-scale fleet segments.
Vessel Use Indicator	<p>1. Data on maximum days at sea (DAS) is not always submitted by MS, in which case a common theoretical maximum DAS of 220 days is used. The use of a theoretical DAS of 220 is not relevant for some fleet segments, in particular where fishing activities are seasonal.</p> <p>2. In some MS vessel use within fleet segments is not homogenous because only parts of the fleet are fishing full time for various reasons (e.g. fleet segments include a proportion of part-time fishers; older vessels being inactive during periods of maintenance or repair, breaks imposed on parts of fleet segments due to management measures with some vessels compensating by targeting other stocks and others remaining inactive).</p>	<p>1. STECF 15-15 considers that the use of a default value of 220 DAS to be used if no data on the maximum observed DAS is available should not be applied to vessels which measure less than 12 m in length. A clear methodology on how to calculate maximum DAS should be provide to MS to facilitate the calculation of correct values of maximum DAS. EWG 16-09 indicator preparatory meeting notes that an effort to standardise the calculation of DAS as well as fishing days was made by the second transversal variables workshop held in Nicosia in February 2016 (see Annex 5, Ribeiro et al., 2016). EWG 16-09 considers that this proposal should be reviewed at a dedicated EWG to revise indicator guidelines.</p> <p>2. EWG 16-09 considers that technical indicators always be interpreted with caution, and that local expert knowledge is generally required to accurately interpret indicator results/trends. This is in particular the case for small-scale fleet segments.</p>

STECF notes that the utility of the technical indicator (Vessel Utilisation Rate, VUR) requires that Member States provide an estimate of the Maximum days at sea (Maxseadays) for all fleet segments. At present, the provision of Maxseadays is voluntary and the absence of such information means the indicator value for many fleets is uninformative (see summary of indicator issues from STECF 16-18 reproduced above). STECF considers that this issue should be evaluated by the next EWG on the evaluation of the DCF Annual Reports in 2020, and has also discuss this in the context of the revision of the EU MAP (see TOR 5.3 of this plenary report).

STECF conclusions on ToR 3

In the light of previous comments and criticisms, STECF concludes that a review of the indicators used and proposed by the STECF should be undertaken in 2020. If appropriate, the current guidelines on balance indicators (COM (2014) 545 Final) should subsequently be revised. Moreover, the data currently used to compute the balance indicators should be reviewed since for instance the use of landings (and not catches) data to calculate indicators on stocks at risk is problematic.

The proposed review should thus aim to undertake the following:

- 1) Discuss, analyse and test existing and potential new indicators, in order to assess and compare the indicators currently used and newly proposed indicators towards given criteria e.g. robustness, sensitivity, easy and unambiguous calculation. A suitable approach could be to test the indicators through simulation as well as for typical situations in Area 27, Area 37, long distance fleets and outermost regions to ensure the robustness of the indicators in light of the data available. The indicators to be tested are:

- Number of overfished stocks (NOS)
- Economic dependency indicator (EDI)
- Number of stocks at risk (NSR)
- Sustainable harvest indicator (SHI)
- Restricted Sustainable harvest indicator (SHI^R)

In order to facilitate a possible future shift to the use of data from the FDI data call instead of from AER data as is the case now (for example with regards to catch data instead of landings), the calculation of indicators based on FDI data should be tested for at least one year of data.

The proposed review will require certain preparatory work and STECF suggests that such work be undertaken through an ad hoc contract. STECF suggests the following time-line:

- Before July 2020: ad hoc contract to be undertaken to address the above.
- July 2020: Results of ad hoc contract reviewed by the Preparatory WG on Balance indicators. Pending the outcome of that review, the preparatory WG calculates those indicators deemed appropriate in addition to those requested in the Commission guidelines.

- September 2020: Prepared indicator values used and evaluated by the 2020 EWG on balance / capacity.
- 2) Consideration is to be given to reviewing and, if appropriate, modifying the Terms of Reference of the 2020 EWG dealing with balance capacity so that the work of the EWG is focussed on the pertinent information required by DG MARE. To this end there is a need for DG MARE to reflect on the specific advice that is required from the STECF review of Member States' annual fleet reports and action plans and how such advice is to be reported.
 - 3) STECF concludes that without an estimate of Maxseadays for fleet segments, the Technical Indicator (Vessel Utility Rate, VUR) is uninformative and for some fleet segments, wholly misleading. STECF considers that the Commission should strive to ensure that reporting of Maxseadays becomes a mandatory variable to be reported at fleet segment level in the revised EUMAP.

5.5 EWG 19-14 Fishing effort regime for demersal fisheries in West Med

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.

STECF observations

EWG 19-14 was a follow-up of the EWG 18-09 held in June 2018, the EWG 18-13 held in October 2018 and the EWG 19-01 held in March 2019.

The EWG had the following TORs:

TOR 1. Progress on an operational mixed-fisheries model for Effort Management Unit 1 (i.e. GSAs 1-2-5-6-7) according to EWG 19-01 conclusions.

TOR 2. Update mixed fisheries models and F-E analyses with the most recent data and the most recent stock assessments.

TOR 3. Develop a draft mixed-fisheries advice including relevant scenarios and displays. To the extent possible, the following management scenarios should be tested in each Effort Management Unit (EMU)*:

- a) Baseline;
- b) 10% reduction in 2020 + 30% from 2021 to 2024;
- c) 10% reduction in 2020 + 30% from 2021 to 2024 + closures areas;
- d) F within the range of FMSY of the most vulnerable stock by 2024; and
- e) F within the optimal harvest by 2024.

* Linear reductions (in fishing days) and equally distributed by fleet segments.

TOR 4. Discuss future steps.

Regarding the TOR 1, STECF observes that EWG 19-01 in March 2019 had considered two possible avenues for future work:

- Extending the IAM to the GSAs along the Spanish coasts, with appropriate stocks and fleets data;
- Further developing the FLBEIA application with appropriate fleets data:

STECF observes that the first option was selected by the EWG 19-14. During the EWG the French and Spanish fleets were explicitly incorporated in a specific setting of the IAM model although still only one stock (hake) has been included. STECF agrees with EWG 19-14 that it will be straightforward to incorporate the dynamics of other assessed stocks such as red mullet, but notes that the EWG did not have the time to do this in the timeframe of the

meeting. STECF also notes that some economic variables for the Spanish fleets were not updated in the EWG 19-14, although they are available through DCF economic transversal data and the Spanish Ministry of Fisheries.

Regarding the TOR 2, STECF observes that the EWG updated the landings, fishing mortality and fishing effort as requested by the TOR. The EWG also made a comparison between the three data sources (Annual Economic Report (AER), Fishery Dependent Information (FDI) and Mediterranean and Black Sea call (MBS)). STECF observes that there are still discrepancies between the three data sources for landings and effort; these discrepancies should be transmitted to the data providers to match the effort data used in the EWGs with the Member States baseline effort levels. STECF notes also that similar discussions took place in the FDI EWG 19-11, which formulated some suggestions on how to move forward (see section 5.2 of this plenary report).

STECF observes that most of the updated fishing mortality–fishing effort (F-E) relations are flat or have the slope in the opposite direction (so that larger effort have corresponded to lower fishing mortality in the historical time series) and differ from the regressions that are forced through the origin (assuming that zero effort implies zero fishing mortality). In other words, in most cases, in the ranges of effort realised in the past, fishing mortality has not been proportional to effort. This implies that future effort reductions cannot be expected to lead to equivalent reductions in fishing mortality (hyperstability). This is a well-known phenomenon and a well-known drawback of effort management, as documented in STECF EWG 18-09.

A number of simulations were presented in TOR 3, both for EMU 1 and EMU 2. As a general comment for this TOR, STECF notes that for all these simulations a constant catchability was assumed, implying proportional changes between effort and F, despite the outcomes of TOR 2 and the issue of hyperstability discussed above. The results of the scenarios presented in TOR 3 are thus “best case” outcomes. In reality, though, it is likely that F will decrease to a lesser extent and thus SSB and catch will increase to a lesser extent than they do in the simulations.

For EMU 1, different scenarios were tested using IAM. These scenarios were based on the reduction in fishing days (scenario b of TOR 3), in which only the global OTB (trawlers) effort is reduced by 10% in the first year (2020), and then incrementally reduced every year to reach an effort reduction of 40% in 2024. On top of this scenario, a spatial closure was also simulated (scenario c of TOR 3). Additionally, and also on top of scenario b, a “gear selectivity” scenario was simulated assuming that gear restrictions to improve juvenile selectivity and avoid fishing mortality at age 0 are implemented from 2020 onwards (without closure), without impacting other ages. STECF observes that from the results of the simulations performed by the EWG, all three scenarios lead to an increase in hake SSB, with scenario c of TOR 3 (effort reduction + closure) reaching the highest hake SSB. Overall, at the end of the projection period (year 2025), landings of hake, under the assumptions of the simulations, are likely to reach similar levels as prior to the management plan for trawlers (those affected by the plan), while long liners and gillnetters will benefit from higher landings than prior to the management plan. STECF observes that no conclusions can be drawn on the mean value of the landings of all the species, because the dynamics of other species than hake were not incorporated in the simulation. This also prevented the EWG from providing simulations of scenarios d and e (TOR 3).

For EMU 2 the EWG followed the suggestion made in the EWG 19-01, and BEMTOOL was used to perform simulations for all the scenarios defined by the TOR. Scenario e of the TOR (optimal harvest by 2024) has been interpreted by the EWG in two different ways: firstly by closing the nursery areas of European hake on top of scenario c to maximise the protection of the most overexploited stock, and secondly by searching for MEY (Maximum Economic Yield) i.e. obtaining the level of effort that maximizes the difference between total revenue and total cost. Prior to running the BEMTOOL model, the SMART model was run to simulate effort displacement owing to closures; the outcomes of SMART were input into the BEMTOOL model for the corresponding scenarios.

Regarding the hyperstability issue discussed above, STECF acknowledges that simulating the optimal spatial allocation of the fleet using SMART is a way to partially capture one of the mechanistic drivers of the hyperstability effect. Nevertheless, other sources of this hyperstability still remain, such as the elasticity of substitution between the three main inputs (capital, labour and fish stocks). STECF notes that owing to the lack of consideration of this elasticity of substitution, when optimizing the fishery using three different economic indicators (GVA, ROI and Profits), the results obtained are the same independently of the indicator used. STECF observes that with the type of bioeconomic models used, the hyperstability effect is not easy to parameterise and model. Modelling approaches mechanistically accommodating hyperstability, for example by assuming that under effort reduction the least profitable trips are removed first, exist in the literature as reviewed in EWG 18-09 (e.g. Kraak et al., 2008; Van Oostenbrugge et al., 2008), and some initial trials for modelling this were also explored in EWG 19-01. STECF agrees that further investigations should perhaps be tried.

STECF observes that from the simulations performed in EMU 2, scenarios based on a reduction of F for the most vulnerable stocks (scenario d) and overall effort reduction (scenarios b and c), meet the F objectives for all the species except for hake where additional measures will be required to bring the fishing mortality to F_{MSY} . STECF observes that for scenarios e (optimal harvest) results for maximizing the economic indicators (ROI, GVA and Profits) provide the result that the optimal MEY effort level is around 60% of the baseline effort, which is close to the actual effort reduction foreseen in the MAP. STECF notes that this MEY is calculated as the highest value of the three indicators in the year 2024, without considering the transition phase (2020-2023), and keeping the number of vessels constant.

STECF observes that the attempt to have a MEY reference point is a step forward in the economic evaluation of the effort regime in the Mediterranean. However, they are still preliminary and should be further analysed and discussed in future EWGs. Not least, the main outcome is that F_{MEY} in a mixed fishery model could imply lower optimal biomass levels than those using F_{MSY} as a reference point. They also highlight that using F_{MSY} reference levels for the most vulnerable stocks, could cause the underutilization of other stocks according to the F_{MSY} individual stock targets.

STECF observes that the EWG also provides some further steps that should be considered in future EWGs of this suite (TOR 4), including the further analysis of the hyperstability phenomenon, further developing the modelling in EMU 1, the issue of different estimations of fishing effort in different databases and the definition of mixed-metiers vs. deep water metiers in the MAP.

STECF conclusions

STECF concludes that the EWG 19-14 as the most recent EWG of a suite of previous EWGs dedicated to the same issue is clearly progressing towards closing the gap to have an assessment of the consequences of the effort regime in the Mediterranean Sea.

STECF concludes that, for EMU 1, the model is not yet fully operational to have an overview of the consequences of the effort management and that it has to be further developed including other species, updating the economic parameters of the Spanish fleet and including uncertainty estimates.

STECF concludes that in the draft advice sheet example provided under TOR 1, the hyperstability effect and therefore the likely overestimation of the recovery of the stock should be highlighted more strongly, and that the results should be treated as the maximum recovery level foreseen.

STECF concludes that for EMU 2 the assessment of the hyperstability phenomenon should be explored further and that the assumptions and methods used under EMU 2 can help on refining the work done in EMU 1.

STECF concludes that the reasons of the differences of the effort and landings data of the three data sources, identified by the EWG should continue to be monitored in future EWGs and that these discrepancies should be to be transmitted to the data providers to match the effort data used in the EWGs with the Member States baseline effort levels.

References

- Kraak SBM, Buisman EF, Dickey-Collas M, Poos JJ, Pastoors MA, Smit JPG, Oostenbrugge HJ van, Daan N (2008) The effect of management choices on the sustainability and economic performance of a mixed fishery: a simulation study. *ICES J Mar Sci* 65(4):697-712, DOI:10.1093/icesjms/fsn045
- Oostenbrugge HJ van, Powell JP, Smit JPG, Poos JJ, Kraak SBM, Buisman EF (2008) Linking catchability and fisher behaviour under effort management. *Aquatic Liv Res* 21(3):265-273, DOI:10.1051/alr:2008035

5.6 EWG 19-16 Stock assessments in the Mediterranean Sea 2019 - 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.

STECF observations

The working group was held in Rome, Italy, from 14th to 20th October 2019. The meeting was attended by 16 experts, including three STECF members and two JRC experts. One DG MARE representative and one observer also attended. The objective of the EWG 19-16 was to carry out assessments of demersal fish stocks in the Adriatic Sea.

STECF acknowledges that the EWG addressed adequately all ToRs. STECF notes that the EWG carefully reviewed the quality of the assessments produced. All analyses, except one, were considered to be suitable for short term forecasts.

A total of 10 area/species combinations were evaluated (Tables 5.6.1 and 5.6.2), two using surplus production methods and the rest as age-structured assessments. Deep-water rose shrimp was evaluated at both combined and individual GSA level. The EWG has carried out short term forecasts for five the age-based assessments and one surplus production assessment.

The main results are summarized in the bullets points below. Overall, the assessments indicate that five of the seven stocks are being significantly overfished, and in the case of Norway lobster, the biomass has been estimated to be below B_{pa} and advice is therefore for a reduction of F below F_{MSY} in order to return the stock to biomass levels above B_{pa} .

- Hake in GSA 17-18: the biomass is increasing. Catches should be reduced by at least 58% to reach F_{MSY} in 2020.
- Sole in GSA 17: the biomass is decreasing. Catches should be reduced by at least 55% to reach F_{MSY} in 2020.
- Red mullet in GSA 17-18: the biomass is increasing. Catches should be reduced by at least 22% to reach F_{MSY} in 2020.
- Common cuttlefish in GSA 17-18: the biomass is increasing. Specific catch advice for 2020 is not available due to short life cycle of this species. In general, average catches may be increased by no more than 147% to reach F_{MSY} in the long term, but in year management is required for this species.
- Norway lobster in GSA 17-18: the biomass is low, stable. Catches should be reduced by at least 57% to reach F_{MSY} in 2020.
- Spottail mantis shrimp in GSA 17-18: the biomass is decreasing. Catches should be reduced by at least 54% to reach F_{MSY} in 2020.
- Deep-water rose shrimp in GSA 17-18-19: the biomass is high, fluctuating. Catches should be reduced by at least 67% to reach F_{MSY} in 2020.

Table 5.6.1 Summary of work and basis for advice. A4A is an age-based assessment method, CMSY and SPiCT are surplus production methods. STF is a standard short-term projection with assumptions of status quo F and historic recruitment.

Area	Common Species name	EWG 18-16	EWG 19-16
GSA 17-18	Hake	a4a	a4a, SS3, STF
GSA 17	Sole	SS3	a4a, STF
GSA17-18	Red mullet	a4a	a4a, STF
GSA 17-18	Common cuttlefish	CMSY	CMSY, SPiCT
GSA 17-18	Norway lobster	SPiCT	SPiCT, STF
GSA 17-18	Spottail mantis shrimp	a4a	a4a, STF
GSA 17-18-19	Deep-water rose shrimp	a4a	a4a , by separate GSAs (17, 18, 19) and 17-18-19 combined, STF

Table 5.6.2 Summary of advice from EWG 19-16 by area and species. Biomass and catch 2016-2018 are given as an indication of trend over the last three years for stocks with time series analytical assessments. F 2018 is terminal F in the assessment. Change in F is the difference (as a fraction) between target F (Fmsy) in 2020 and the estimated F for 2018. Change in catch is from catch 2018 to catch 2020.

Area	Species	Method/basis	Biomass 2016-2018	Catch 2016-2018	F 2018	F 2020	Change in F	Catch 2018*	Catch 2020	Change in catch
17-18	Hake	SS3	increasing	fluctuating	0.48	0.179	-63%	6154	2563	-58%
17	Sole	a4a	decreasing	fluctuating	0.68	0.23	-66%	1849	840	-55%
17-18	Red mullet	a4a	increasing	increasing	0.58	0.41	-29%	7828	6078	-22%
17-18	Common cuttlefish	CMSY	increasing	declining	0.149	0.34	131%	3169	7830	147%
17-18	Nephrops	SPiCT	low, stable	increasing	0.71	0.36	-49%	1839	785	-57%
17-18	Spottail mantis shrimp	a4a	decreasing	increasing	1.33	0.4	-70%	4774	2191	-54%

17-18-19	Deepwater rose shrimp	a4a	high, fluctuating	increasing	2.15	0.5	-77%	7011	2290	-67%
----------	-----------------------	-----	-------------------	------------	------	-----	------	------	------	------

In the assessment of hake, the application of SS3 and a4a methods produced similar results in terms of stock trajectory and exploitation status. Advice for hake in GSA 17-18 is based on the SS3 model benchmarked in January this year, though a modification to the MEDITS index was required: the original assessment had accidentally used a number density (abundance) index whereas a biomass index is intended. The correct index was used by EWG 19-16 and the results were slightly different from when using the (erroneous) benchmark settings but did not change the overall perception of the stock. For this stock it is noted that although biomass is rising, F is still very high and catches are dominated by juveniles, implying exploitation is far from MSY.

The assessment of sole in GSA 17 is based on age distribution obtained by slicing using growth parameters estimated by EWG 19-16 (by length frequency distribution analysis of survey data). Good coherence was found between year classes of ages 1-5 inclusive. In the absence of better validated age data, the presented assessment is judged to be the best available information for the provision of advice, however in the future some validation of age reading is needed (e.g. by tagging, reading of daily growth rings).

The assessment of red mullet in GSA 17-18 is rather unstable and some uncertainty remains regarding the most appropriate growth model to be used for slicing. Besides, the EWG 19-16 re-estimated the discard data in GSA 17 for 2018, since the raw data seemed too high (4 times higher) compared to previous years. STECF considers the assessment as robust enough to be used for the provision of advice.

The assessment of common cuttlefish in GSA 17-18 is based on surplus production methods. Efforts were made to fit SPiCT, but MEDITS survey is not considered a good index to represent this species. Consequently CMSY, which can be fitted without a survey index, was used again as in EWG 18-16. There was also some uncertainty in catch in some years, but the assessment was not sensitive to this. The results indicate that the stock has been underexploited relative to MSY in recent years. Due to the short live cycle of the species it is not possible to give a 2-year short term forecast for this stock, so catches are indicative for trends only. This stock needs to be managed by implementing an in-year management strategy to achieve exploitation at MSY, or precautionary management advice.

The assessment of Norway lobster is stable, giving consistent results from year to year. The model was tested for the impact of aggregation of different indices (depending on time coverage) to see if model stability is improving. The results indicated that the use of all indices in combination was the best approach. The stock is still found to be below B_{pa} but above B_{lim} , and there is a need to increase biomass above B_{pa} in the short term. Exploitation rates are still above F_{MSY} . Advice for 2020 is therefore to fish below F_{MSY} in order to recover the stock biomass to levels above B_{pa} .

In the assessment of spottail mantis shrimp, the sensitivity to area and growth parameters was investigated, and the best option was considered to be the assessment of GSAs 17 and 18 combined. The assessment of spottail mantis shrimp in GSA 17-18 is similar to last year. Overall the assessment is considered useful for advice.

Deep-water rose shrimp stocks in GSAs 17, 18 and 19 were explored in detail. Assessments were carried out in GSAs 17, 18 and 19 separately, as well as combined for 17-18-19. The assessment for GSA 19 had diagnostics typical for a partial stock (survey and catches followed different trends), showing the advantages of joining with GSA 18. The assessment in GSA 17 has shown considerable instability due to the short time series, suggesting that the stock may have considerably increased in this area in recent years, similarly to the situation in GSA 18. The combined assessment for GSAs 17-18-19 provides the best basis for advice. Consistent increasing trends of biomass are present across the whole area until 2017. STECF considers that the combined assessment is a good basis for advice for the three GSAs.

Fishing effort data have been compiled for the longest time series available including 2018, in terms of amount of vessels, time (days at sea) and fishing power by Member State/Country and fishing gear in GSAs 17, 18 and 19. Effort distribution is very irregular between countries and gears. The dominant effort by Italian bottom trawls had been continuously decreasing until 2016, but increased slightly again in 2017-2018. STECF notes that in its present format the fishing effort data cannot be efficiently used in single species stock assessment or formulation of advice for management. STECF also notes that inconsistencies in effort data occur across the different databases collecting this information (AER, FDI and MBS), as highlighted by STECF EWG 19-14 (ToR 5.5 of this plenary report). There is also an obvious redundancy in collecting this information repeatedly. STECF PLEN 19-03 discussed options for how to tackle this in the near future, as reported in EWG 19-11 report (ToR 5.2 of this plenary report).

STECF notes that GFCM agreed to adopt a Multi-Annual Plan (MAP) in the Adriatic, with the objective to achieve F_{MSY} either by 2020 or at latest 2026 (GFCM, 4-8 November 2019, Athens, Greece, <http://www.fao.org/gfcm/meetings/info/en/c/1200549>). For most stocks assessed, F_{2018} is substantially higher than F_{MSY} (Table 5.6.2), and it seems likely that these stocks will be considered under the objective for reaching F_{MSY} by 2026. For such stocks, the MAP does not specify how it is expected that F should change over the 7 years from 2020 to 2026. Currently STECF reports the F_{MSY} and expected catch in the advice year based on EWG assessment and short-term forecasts. However, if the approach is to attempt a reduction in F to achieve F_{MSY} by 2026, it may be helpful to give advice in relationship to such a transition. The EC should consider if they need transition advice and if so, what transition is to be followed.

In 2010 and the following years, ICES provided advice following an MSY transition approach with a linear change in F from 2010 to achieve F_{MSY} in 2015. As an illustration, this approach is updated for transition from 2020 to 2026, and is shown below:

$$F_{MSY\text{transition}}(2020) = \{0.857 \times F_{2019} + 0.143 \cdot F_{MSY}(2019)\}$$

whereas for the following years:

$$F_{MSY\text{-transition}}(2021) = \{0.714 \times F_{2019} + 0.286 \times F_{MSY}(2020)\}$$

$$F_{MSY\text{-transition}}(2022) = \{0.571 \times F_{2019} + 0.429 \times F_{MSY}(2021)\}$$

$$F_{MSY\text{-transition}}(2023) = \{0.429 \times F_{2019} + 0.571 \times F_{MSY}(2022)\}$$

$$F_{MSY\text{-transition}}(2024) = \{0.286 \times F_{2019} + 0.714 \times F_{MSY}(2023)\}$$

$$\text{FMSY-transition (2025)} = \{0.143 \times F_{2019} + 0.857 \times F_{\text{MSY}}(2024)\}$$

$$\text{FMSY-transition (2026)} = \{0.0 \times F_{2019} + 1.0 \times F_{\text{MSY}}(2025)\}$$

Where for the first year $F_{2019} = F_{2018}$, for subsequent years F_{2019} is the F in 2019 estimated/updated in the subsequent annual assessments, and $F_{\text{MSY}}(2019)$ is the estimate of F_{MSY} in 2019 and then updated as $F_{\text{MSY}}(2020, 2021, \text{etc.})$ in each subsequent estimation of reference points following annual assessments.

STECF conclusions

STECF concludes that the EWG addressed all ToRs appropriately.

While STECF recognises that insufficient specification of some key biological parameters such as growth could hamper scientific analyses, the present assessments are robust to several sources of uncertainty and the overall perception is that all assessed demersal stocks in the Adriatic are overexploited, except for cuttlefish.

STECF concludes that the results of the assessments performed by the EWG 19-16 provide reliable information on the status of the stocks and the trends in stock biomass and fishing mortality. STECF endorses the assessments and evaluation of stock status produced by the EWG.

5.7 EWG 19-17 Review the implementation of the shark finning regulation and to assess the impact of the 2009 EU actions plan on sharks

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.

STECF observations

EWG 19-17 was held in Ispra, Italy, from 7th to 11th of October, with the participation of eleven scientific experts and two members of the European Commission. The EWG was requested to provide the following.

TOR 1 related to the *Shark Finning Regulation*, whose main objective is to prohibit the practice of shark finning in EU waters and for all EU vessels, through a Fins Naturally Attached (FNA) policy. The EWG was asked "to review MS national reports submitted under the Regulation on Sharks Finning and to assess the overall quality of these reports". More generally, it was "requested to comment, to the extent possible, on any implementation issues of the Fins Naturally Attached Policy by Member States, both for vessels operating in the EU waters and outside of EU waters"

TOR 2 referred to the *European Community Action Plan for the Conservation and Management of sharks (CPOA)*, the objectives of which are as follows:

- To broaden the knowledge both on shark fisheries and on shark species and their role in the ecosystem;
- To ensure that directed fisheries for shark are sustainable and that by-catches of shark resulting from other fisheries are properly regulated;
- To encourage a coherent approach between the internal and external Community policy for sharks.

On the basis of the MS reports and other sources of information (2016 Commission report to the Parliament and the Council, relevant scientific literature, data collection programs, etc.), the EWG was "requested to advise on the impacts that EU fisheries have had on shark populations worldwide, particularly in relation to the objectives of the European Community Action Plan for the Conservation and Management of Sharks."

To respond to the above requests, the EWG organized its works into four main tasks:

1. Review and assess the overall quality of the Member States (MS) national reports and identify any reporting shortcomings;
2. Comment on any implementation issues of the Fins Naturally Attached Policy both for vessels operating in the EU waters and outside of EU waters;
3. Review how the CPOA has been implemented;
4. Advise on the impacts that EU fisheries have had on shark populations worldwide in relation to the objectives of CPOA

STECF comments

General observations

STECF notes that while the terminology *Shark* refers *sensu stricto* to 9 of the 13 taxonomic orders of *Elasmobranchii* (as opposed to 'batoids' which includes rays), the Shark Finning regulations and the Action plan (CPOA) are referring to a larger taxonomic group. The shark finning regulation considers all *Elasmobranchii* (noting however that 'shark fins' excludes the pectoral fins of rays), while the CPAO considers that 'shark' refers to all species in the class *Chondrichthyes* (i.e. the *Elasmobranchii* and the *Holocephali*). STECF notes however that these differences in definition do not seem to be problematic in the context of the shark finning regulation.

STECF notes that the EWG faced challenging TORs relating to both the Shark finning regulation and the CPOA and the absence of pertinent information in MS reports or other sources prevented a comprehensive response to the Terms of reference. Nevertheless, the EWG is to be commended for its efforts in producing an informative and high quality report.

Comments related to TOR1 (Review of MS national reports on the reporting and implementation of the Shark finning regulation)

Quality of the MS reporting

In order to assess the overall quality of the MS reports on the implementation of the shark finning regulation, the EWG developed an analysis grid where all the criteria used to assess the MS report are detailed (Table 4.4 in the EWG report). From that grid, the EWG derived a scoring system to assess the quality of the reporting. STECF notes that this scoring system clearly shows the poor quality of the reporting, which does not appear to be improving over time. Only seven MS – Belgium, Cyprus, Denmark, Germany, Lithuania, Romania and Spain - provided reports annually. Eleven MS – Bulgaria, Estonia, Finland, France, Greece, Ireland, Latvia, Netherlands, Portugal, Slovenia, Sweden and UK - provided reports for some years and/or for some of the requested information. Four MS - Croatia, Italy, Malta, Poland - did not report at all.

STECF suggests that the grid analysis (Table 4.4) could be used by DG-Mare to develop clearer guidelines for MS regarding what they are expected to report on the shark finning regulation. It might also help DG-Mare in reviewing annual MS finning report and to provide feedback to MS in order to incrementally improve their reporting.

Identification of the fleet segments of interest

STECF notes that using the current reporting template, it is not possible to identify those fleet segments most likely to catch sharks, and especially in the context of the finning regulation, those species which have marketable fins. Such information is fundamental to monitor the implementation of the regulation and should be a reporting requirement.

Based on an analysis of elasmobranch landings at the EU fleet segments level, using data from the Data Collection Framework (DCF), the EWG identified for the first time the most important areas and fleets where sharks are caught, especially highlighting the importance of EU fleets operating in the Eastern Central and Southwestern Atlantic (FAO 34 & 41). However, such an analysis also revealed that biological and fisheries data sets from the DCF are often insufficient to identify all fleets that catch sharks and especially shark species with marketable fins. In many instances, shark catches are not reported at the species level or are misidentified. There is thus a need to improve species identification in European data calls, and help identification of species classified as threatened or regulated

by CITES. STECF notes that the proposal of the EWG 19-12 for a revised EU-MAP (section 5.3 of this report) will support this, since it is proposed to change the data collection requirements for biological sampling of elasmobranchs from family/genus level to species level for all areas.

Enforcement of the regulation in EU waters

MS reports suggest a very high level of compliance with the Fins Naturally Attached policy (only 14 cases of fins-not-attached from a total of 24,591 inspections reported over the past 5 years). However, the inspection coverage per fleet segment is not provided. Furthermore, there is currently no specific requirement to organize inspections to ensure that those fleets that have a high risk of catching sharks, especially those with marketable fins, are inspected. Hence, at present it is not possible to reliably determine the degree of overall compliance with the finning regulation. STECF considers that MS should be requested to provide information on control by fleet segment, in data-base format (e.g. xls or csv) and using prescriptions provided by the EWG (see §4.5.1 of the report). STECF also endorses the suggestion that a future EWG or an ad-hoc contract should carry out a risk-assessment to identify fleet segments that have a high risk of catching sharks so that inspections can be targeted accordingly.

The EWG noted that no specific information relating to enforcement and compliance is currently available regarding non-EU vessels operating in EU waters. STECF considers that such information should be included in MS reports based on inspections carried out of such vessels. The European Fisheries Control Agency (EFCA) might be best placed to initiate and coordinate actions to ensure effective control and enforcement of the shark finning regulation by all vessels operating in EU waters.

Enforcement of the regulation outside EU waters

The Finning Regulation applies to vessels operating in maritime waters under the jurisdiction of Member States, as well as to vessels flying the flag of Member States and operating in other maritime waters. This means that EU vessels are subject to the Finning Regulation wherever they fish.

In order to assess control and enforcement of the regulation outside EU waters, information related to inspections performed by third parties on EU vessels should be available to DG-Mare (and to any EWG carrying out future assessments). STECF notes that this could be achieved both through MS reports since all cases of non-compliance have to be reported to the MS of the vessel flag, and through reporting of compliance by RFMOs.

Based on a review of reports from Tuna RFMOs, no instances of non-compliance with the finning regulation could be identified by the EWG regarding EU vessels. However, the EWG noted that each RFMO assessed compliance against the provisions of the finning regulation within its convention area. Such provisions could either be Fins Naturally attached or fins should represent less than 5% by weight of the total weight of shark carcasses on board. STECF notes that the EWG experienced difficulties to find on the RFMOs' websites the appropriate information on whether compliance with the finning regulation for EU vessels in the convention areas of RFMOs is being assessed against the EU Fins Naturally attached policy. Therefore, STECF is unable to assess whether EU vessels operating in the convention areas of tuna RFMOs are compliant with the EU finning regulation or to evaluate any changes in compliance with that regulation over time.

To better understand the how well the finning regulation is being implemented and complied with, STECF suggests the Commission should increase its efforts to obtain from RFMOs and non-EU States, information regarding mechanisms of surveillance, enforcement and prosecutions of EU vessels while outside of EU waters.

Although the issue of flag-hopping was not discussed by the EWG 19-17, STECF highlights that it remains a serious concern. Flag-hopping is the practice where a vessel temporarily re-registers under a flag of convenience to comply with certain regulations and avoid others. EU-owned vessels could switch from the EU flag to a flag of convenience to avoid complying with the EU finning regulation and then switch back again. Such practices undermine the objectives of the finning regulation and to achieve full implementation of EU regulations by EU vessels, they need to be eradicated.

STECF made additional suggestions to improve the reliability of the data collected, including e.g. an harmonization of the elasmobranch landings categories with the elasmobranch trade categories, the identification of protected elasmobranch species that would lead to confiscations of illegal landings and the establishment of regulatory traceability programs (with onboard observers) against mislabeling. Also, training of professional fishers on the identification of protected elasmobranch species for performing in situ release, as foreseen by the current legislation, could be envisaged.

More generally, the EU has adopted regulations to prevent, deter and eliminate all illegal, unreported and unregulated fishing (IUU) (Council Regulations n° 1005/2008 and n° 1010/2009). IUU fishing is known to account for a large proportion of shark finning worldwide and measures that prevent IUU fishing will also help reduce the practice of shark finning.

Comments related to ToR2 (impacts of EU fisheries on shark populations in relation to CPOA)

Of the 16 European MS concerned with the EU Action Plan for the Conservation and Management of Sharks, only the UK has developed a National Plan of Action. Some of the other 15 MS have developed national policy plans or specific conservation measures related to sharks, but the information available to the EWG was insufficient to conduct a comprehensive synthesis of actions at the European level. In addition, the EWG noted that assessing the actions laid out in the CPOA was hampered by the absence of specific targets and indicators.

Therefore, in order to assess the overall effectiveness of the CPOA in reaching its objectives, the EWG relied on expert judgment. Based on a review of all actions mentioned in the CPOA, the EWG assessed the development, limitations and progress made into nine areas of related actions and suggested future developments. According to the results of the analysis, STECF agrees that significant progress has been made on all actions in the Fins Naturally Attached policy and the Finning Regulation has now become EU legislation. The future considerations provided in the EWG Report are aimed at improving transfer of knowledge and information between organisations (e.g. RFMOs, CITES, CMS, OSPAR...). However, the EWG did not have time to provide specific suggestions regarding how on such improvements might best be achieved.

STECF notes that certain elements of the CPOA are now obsolete (e.g. on fins naturally attached) and it would be desirable to revise the CPOA and incorporate clear, measurable and time-bound targets, mechanisms for linking the main objectives of the plan (for instance regarding data and research objectives, or legislation and management objectives) and to provide guidance to Member States on implementation. STECF further proposes that coordination with relevant bodies in which EU MS are Party (including ICCAT, NEAFC and CECAF) is continued to support regional cooperation under the IPOA-Sharks model.

Regarding the broader question of the European impact on shark populations, the EWG underlined that EU fisheries continue to represent a major proportion of reported international landings. Spain have consistently been among the three main fishing nations in terms of reported landings over the past 20 years (55,937tons of 'fin marketable' sharks

declared in 2017), while the reported landings of all EU MS fleets combined have accounted for an average of about 120,000 tons representing 13% of the world's elasmobranch catches (FAO FishStatJ, 2019).

STECF notes the EWG report indicates progress in some aspects of the management and conservation over the past 10 years, as measured against the potential "objectively verifiable indicators" defined in the European Community Plan of Action for the Conservation and Management of Sharks Impact Assessment (CEC, 2009). In particular, more species are being identified in the reported landings and evidence of recovery of some species such as the depleted common skate (*Dipturus batis* & *Dipturus intermedius*) complex in the North Sea. The STECF also notes that the EWG report also indicates intensification in international and regional cooperation in conservation and management of sharks. Nevertheless, many shark populations remain threatened. The most recent published European Red List of Marine Fishes from IUCN includes 42 species of Elasmobranchs, of which eight shark species *sensu stricto* (i.e. not including rays) are classified as critically endangered. At the regional level, further progress in management and conservation of sharks is still required in several regional seas. STECF notes that in the Mediterranean Sea in particular, the status of the elasmobranchs is of particular concern since many sharks populations are considered to be severely depleted.

STECF conclusions

STECF concludes that based on the information provided in the EWG report, non-compliance with the finning regulation is low. However, it is not possible to know whether the information provided is derived from inspections carried out on the main shark-catching fleets. Hence there is currently no guarantee that the shark finning regulation, which is now part of the EU legislation, is sufficiently and appropriately implemented and complied with in EU waters.

To assess overall implementation and compliance with the shark finning regulation by all vessels operating in EU waters, STECF advises that MS should be requested to provide information from inspections by both EU and non-EU fleet segments. STECF suggests that the European Fisheries Control Agency (EFCA) could be tasked with encouraging and coordinating actions set up by MS, with the objective to assess and ensure compliance with the regulation.

STECF concludes it is of key importance to understand which fleet segments are the main ones catching sharks. This could be provided in MS Reports, so STECF suggests they are requested to do so. The information required is which fleet segments catch which species of shark. It could also be reported via an appropriate DCF data call.

More generally, STECF suggests that new guidance be provided to MS on the appropriate reporting requirements of the shark finning regulation. In this context, STECF agrees with the proposal of the EWG 19-12 (section 5.3 of this Plenary Report) to amend the EU MAP data collection requirements for biological sampling of elasmobranchs from family/genus level to species.

STECF concludes that the EU should increase its efforts to obtain from RFMOs and non-EU States, information regarding mechanisms of surveillance, enforcement and prosecutions to allow an overall assessment of compliance of EU vessels fishing outside of EU waters.

Based on the information in the EWG 19-17 report, STECF concludes that certain elements of the CPOA are obsolete and recommends a revision of the CPOA to identify clear, measurable and time-bound targets, including guidance on how MS should implement it.

Finally, STECF acknowledges that there are observations which suggest that progress in the management and conservation of sharks has been made in the past 10 years. However, STECF stresses that the status of many shark populations remains a concern. STECF concludes that new efforts are required for shark conservation, especially in areas such as the Mediterranean Sea where the status of many elasmobranch populations is of particular concern. STECF also stresses that the prevention of any flag hopping by EU vessels, and more generally the full implementation, control and enforcement of EU regulations to phase out IUU fishing, is of crucial importance in eliminating shark finning practices and improving sustainable management and conservation of shark populations.

5.8 EWG 19-18 Revision of Work Plans for data collection

EWG-19-18 ToR

The EWG 19-18 was asked to:

- evaluate the national work plans (WP) submitted by Member States and the regional work plans submitted by regional coordination groups (RCGs) by 31st October 2019, in terms of conformity, scientific relevance of the data and quality of the methods and procedures;
- assess the data transmission issues reported by end users through the Data Transmission Monitoring Tool during the first half of the year 2019 (January to June).

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.

Summary of the information provided to STECF

EWG 19-18 met in Bremerhaven 4-8 November 2019. Since the meeting took place the week before STECF PLEN 19-03, the final EWG report was not yet available to PLEN 19-03. The following STECF comments and suggestions are based on discussions among STECF members and (1) a presentation of outcomes from the EWG 19-18 meeting made by the chairperson, (2) a preliminary draft of the EWG 19-18 report and (3) the outcome of the evaluation of DT issues.

STECF comments

Evaluation of amended national DCF Work Plans 2020-2021

STECF observes that 27 Member States submitted amended national work plans to the Commission within the legal deadline (31 October 2019). During the EWG, some Member States were contacted to update or clarify issues. Nevertheless, all amended work plans were successfully evaluated at the end of the meeting and there are only few outstanding issues to be followed up bilaterally between a Member State and the EU Commission.

STECF notes that the submission of amended Work Plans by Member States were of high quality and that most Member States used the instructions from EWG 18-18 on how to amend the work plan correctly. However, there are still some ambiguities in the guidance for the submission of Work Plans, the submission template and the evaluation template for which the EWG proposed improvements. These will be taken up by STECF and the Commission during the revision of those documents.

STECF observes that due to the absence of an online reporting tool, the EWG had to perform tedious manual comparisons between tables as well as between original and amended work plans.

STECF observes that common issues across several Member States include:

- Recreational fisheries: Most Member States extended pilot studies into 2020-2021, while a few converted pilot studies into regular sampling.

- Diadromous species: Inconsistencies observed for a few Member States, referring to sampling in marine waters to be included in Tables 1A-1C (stocks in commercial fisheries) and sampling in freshwater in Table 1E, were clarified with those Member States during the EWG.
- Surveys: 15 Member States submitted small updates. Some minor issues were solved during EWG.
- Social data (pilot studies): There were slightly different approaches in Member States, with some referring to extension and others commencing regular data collection. The EWG requested missing information from a few Member States during the EWG.
- Aquaculture: It was not clear how some Member States applied thresholds and the reasons for not collecting data is unclear for some Member States. The EWG requested missing information from a few Member States during the EWG.
- Processing industry: Some Member States excluded certain variables from data collection and inconsistencies with the WP template/guidelines were observed for a few MS.

Evaluation of Data Transmission (DT) Issues

STECF notes that new procedures, where DT issues from the first half of a calendar year are assessed by the EWG on Work Plans in November of that year, and DT issues from the second half of the calendar year are assessed by the EWG on Annual Reports in June of the following year, have been implemented in 2019. STECF notes that this procedure is an improvement from previous years since it reduces the time between the identification of DT issues by Experts Working Groups using data and their assessment by the dedicated EWGs.

During PLEN 19-01, a stand-alone DTMT guidance document for end-users on how to report DT issues in the DTMT tool and to guide the assessment of DT issues during EWGs was produced. The EWG 19-09 on Annual Reports updated the document in June 2019, and applied it in its assessment of DT issues reported in 2018. During PLEN 19-02, it was however agreed to treat 2019 as a pilot year and formally adopt changes to the DTMT guidance only next year during PLEN 20-01. Hence, the assessment of DT issues reported in 2018 and assessed by EWG 19-09 is not fully consistent with the EWG 19-18 assessment of DT issues reported in the first half of 2019.

STECF observes that 51 Data Transmission (DT) issues (from 16 Member States) from the EWG on the Annual Economic Report were reported in the Data Transmission Monitoring Tool (DTMT). Out of the 51 DT issues reported from the first 6 months of 2019, 7 were assessed as satisfactory, 5 as follow-up needed, 2 not assessed and 37 as unsatisfactory. Apart from the DT issues assessed as satisfactory, STECF advises DG MARE to follow-up on the DT issues with the corresponding Member States.

STECF conclusions

STECF endorses the outcomes of EWG 19-18 presented by the chairperson during the STECF PLEN 19-03. The final EWG report was not yet available at the time of writing.

With regard to the evaluation of amended Work Plans, STECF considers that the Work Plan guidance for the submission, template and evaluation sheet need to be updated, following the proposals from the EWGs on the evaluation of Work Plans and Annual Reports. This revision should occur before the submission of Work Plans 2021, to ensure a more efficient submission and evaluation of Work Plans in the future.

As in previous advice (STECF PLEN 14-02, 14-03, 15-02, 16-02, 17-02, 17-03, 18-02, 19-02), STECF reiterates that regional databases coupled with an online reporting tool would be a more efficient way to monitor the execution of Member States' Work Plans and Annual Reports, and to assess DT issues raised by end-users. A regional database would also allow for a more effective assessment of DCF data quality.

With regard to DT issues, STECF concludes that the overall quality of the end-user feedback, and correspondingly, the quality of the STECF assessment of DT issues, has been improved through the DTMT guidance.

STECF concludes that dividing the assessment of DT issues in two EWGs allows for a timelier assessment of DT issues. STECF further concludes that in order to ensure a consistent evaluation of DT issues, a separate session at each spring plenary should be dedicated to assess and adopt proposed changes to the DTMT guidance.

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

6.1. Joint Recommendation from BALTFISH on plaice

Background provided by the Commission

In the framework of the Landing Obligation and in accordance with article 15 of regulation (EU) No 1380/2013 and article 7 of regulation (EU) No 2016/1139⁶, the Baltfish Member States Group⁷ proposes an addition to the existing high survivability exemption for plaice as defined in Commission Delegated Regulation (EU) 2018/306⁸.

Regulation (EU) 2018/306 covers the specification for the implementation of the landing obligation as regards cod and plaice in Baltic Sea fisheries and establishes an exemption for the landing obligation for cod and plaice caught with trap-nets, creels/pots, fyke-nets and pound nets in the fisheries for herring, sprat and cod.

The Commission received a Joint Recommendation from Baltfish on 28 June 2019 requesting an additional derogation from the landing obligation for plaice caught with other gear types. The STECF is requested to assess the supporting information underpinning this derogation in the STECF plenary of November 2019.

According to Art 5(1) of Regulation (EU) 2018/306, the Member States having a direct management interest were to provide the Commission by 1 March 2019 with relevant information allowing to assess the representativeness and quality of the discard survival estimate, but as to date such information has not been received. The Commission intends to follow up on this, also in view of the upcoming revision of the Delegated Regulation due in 2020 according to Article 6 of Delegated Regulation (EU) 2018/306 'Revision of survivability exemption'. The Commission shall, on the basis of advice from STECF, evaluate the impact of the survivability exemption on the stocks concerned and on the fisheries exploiting those stocks in the third year of application of this Regulation (2020).

Background documents are published on the meeting's web site on: <https://stecf.jrc.ec.europa.eu/plen1903>

6 REGULATION (EU) 2016/1139 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 6 July 2016 establishing a multiannual plan for the stocks of cod, herring and sprat in the Baltic Sea and the fisheries exploiting those stocks, amending Council Regulation (EC) No 2187/2005 and repealing Council Regulation (EC) No 1098/2007

7 Denmark, Germany, Estonia, Latvia, Lithuania, Poland, Finland and Sweden

8 COMMISSION DELEGATED REGULATION (EU) 2018/306 of 18 December 2017 laying down specifications for the implementation of the landing obligation as regards cod and plaice in Baltic Sea fisheries

Request to the STECF

Based on the previous evaluations of the Joint Recommendations covering details of the implementation of the landing obligation⁹, where information and data were identified to facilitate the STECF in carrying out the assessments:

The STECF is requested to review the supporting documentation underpinning the additional exemption requested by BaltFish on the basis of high survivability¹⁰. This new requested exemption concerns plaice in the Baltic Sea caught by trawl, Danish Seine and gillnet, including trammel net.

In case of data poor situations, STECF is asked to assess what further supporting information may be available and how this can be supplied in the future (e.g. survival studies, tagging experiments).

STECF observations

STECF response is given as follows:

- 1) Description of the supporting documentation
- 2) Review of the scientific evidence on discard survival provided
- 3) Review of information provided describing the relevant fisheries
- 4) Observations on the representativeness of the survival evidence in the context of the proposed exemption, with an assessment of further supporting information
- 5) Observations on the proposed exemption in the context of the effected plaice stocks

1) Description of the supporting documentation

STECF reviewed the Joint Recommendation submitted by the Baltfish Group: *Derogation from the landing obligation in the Baltic Sea for plaice ICES Subdivisions 22-32*, under Articles 15(4) and Article 18 of Regulation (EU) No 1380/2013¹¹ and Article 7(1) of Regulation (EU) 2016/1139¹. This JR was supported by a "Background note on the Joint Recommendation for exempting plaice from the landing obligation in the Baltic Sea", dated April 2019 as well as five Annexes as follows:

- Annex I - Discard survival of plaice and cod from trammel net and Danish seine fisheries in the Baltic Sea, provided by Aalborg University. This report describes trials using trammel net and Danish seine when fishing for plaice in ICES Subdivisions 22 and 23. The survival rate was reported to be 100% when using trammel nets. When using Danish seine, the survival rate obtained was 87%.

⁹ For example, STECF 19-02 covering the North Sea, Atlantic and Mediterranean, or STECF 17-08 covering the Baltic.

¹⁰ E.g. the scientific rigor and robustness of the underpinning information

¹¹ Regulation (EU) No 1380/2013 of the European Parliament and of the Council of 11 December 2013 on the Common Fisheries Policy, amending Council Regulations (EC) No 1954/2003 and (EC) No 1224/2009 and repealing Council Regulations (EC) No 2371/2002 and (EC) No 639/2004 and Council Decision 2004/585/EC. OJ L 354, 28.12.2013, p. 22.

- Annex II - Discard survival and vitality of plaice (*Pleuronectes platessa*) caught in the Danish anchor seine (SDN) fisheries in Skagerrak during summer 2017, provided by DTU Aqua. This report presents the results obtained from discard survival and vitality trials of plaice collected in Danish seine fisheries in the Skagerrak. The mean survival rate for undersized plaice was recorded as 78% (67-87%) and survival rate was found to be affected by air exposure.
- Annex III - Discard survival of plaice (*Pleuronectes platessa*) caught in the bottom otter trawl (OTB) demersal mixed fishery in Skagerrak during summer 2017 and winter 2018, provided by DTU Aqua. This report presents results from discard survival trials carried out during Aug-Oct 2017 and Mar-Apr 2018 in the Skagerrak. The mean survival rate for undersized plaice was higher in the winter 75% (95%-confidence interval including variability from the captivity experiment, haul and fish uncertainty: 67-83%) than in the summer, 44% (37-52%). The mean survival rate for undersized plaice commercially caught when targeting *Nephrops* during winter was 41% (28-57%)
- Annex IV - On the use of discard survival data collected for plaice (*Pleuronectes platessa*) in the bottom otter trawl (OTB) and Danish seine (SDN) demersal mixed fisheries in Skagerrak to estimate survival of plaice caught in the Baltic Sea fisheries, provided by DTU Aqua. This report presents some elements and reflections on whether data and results obtained from trials in other waters to a certain extent can serve as scientific evidence for granting derogations from the landing obligation for plaice in the Baltic Sea. Several variables affecting discard survival should be identical or equivalent to qualify for being applied in other waters than the one where the trials were carried out.
- Annex V - Survival of discarded plaice (*Pleuronectes platessa*) from Norway lobster (*Nephrops norvegicus*) otter-trawl fishery, Eskelund et al., 2018. This peer-reviewed paper presents observations from a survival study for plaice at or below the MCRS, discarded from a trawler targeting *Nephrops* in Skagerrak. The average short-term survival of plaice was 15% at haul level, ranging from 0% to 39%, after 10 days of captive observation. Survival significantly decreased with time on deck and the retention of debris in the cod end.

In addition, correspondence between the Baltfish regional group and the Baltic Sea Advisory Council, several NGOs and industry groups were provided as follows:

- Letter from Baltfish Chair to Baltic Sea Advisory Council (BSAC) on consultation JR Plaice seeking the views of the BSAC on the proposed exemption.
- Danish Fish Producers Organisation (DFPO) response JR Plaice E mail 19th June 2019, describing the backing from the DFPO for the proposed exemption.
- World Wildlife Fund (WWF) comment on Draft JR on plaice derogation from LO supported by the European Association of Anglers (EEA). This document raises several concerns regarding the extrapolation of individual studies to entire regions or fisheries as proposed.
- Clean Coalition Baltic (CCB) comments to proposal of introducing derogation from the landing obligation for plaice. This document also raises concerns about the proposal and highlights that it is poorly supported with relevant science in the Baltic Sea.
- The Fisheries Secretariat (Fishsec) response to BSAC and to Baltfish regarding: The Draft Joint Recommendation of the BALTFISH High Level Group for a Derogation from the landing obligation in the Baltic Sea for plaice ICES

Subdivisions 22-32. This document highlights the short consultation period which prevents the FishSec making any assessment of the proposal.

- The Association of Fisheries Protection Schleswig-Holstein (FSVA) comments on the exemption for live plaice and cod onboard from the landing obligation in the Baltic Sea. This document describes the backing from the FSVA for the exemption for passive gears but not for towed gears.

2) Review of the scientific evidence on discard survival provided

Four scientific reports on discard survival of plaice were provided (Ern et al., 2019; Anon., 2018a; Anon., 2018b; Eskelund et al., 2019). STECF also identified an additional relevant peer-reviewed study which had not been provided, assessing plaice survival in the Baltic Sea subdivision 22 otter trawl fishery (Kraak et al., 2018). Of these 5 studies, three provide estimates from the Skagerrak, two from the Baltic Sea.

The five references provided several relevant area-season-gear-target assemblage estimates of plaice discard survival. A summary of the technical descriptors of the vessels and fishing operations studied are given in Table 6.1.1. For each survival estimate, information was extracted including the season, area, gear, depth, fishing duration, water temperature and catch sorting time. The method applied to estimate discard survival, the number of hauls studied, plaice sample numbers, length range of assessed plaice and estimated discard survival for each study is presented in Table 6.1.2. Also presented is a quality score based on a critical review of the method applied in each study. The review method was developed by the ICES Workshop on Methods to Estimated Discards Survival (ICES, 2015) and was previously applied by STECF (e.g. STECF 17-03, EWG 17-08, STECF 18-02, EWG 18-06).

For the studies conducted in the Baltic Sea fisheries, STECF observes that the estimated plaice discard survival under studied conditions was 100% in a trammel net fishery, 87% (range: 76-100%) in a Danish seine fishery and ranged across the year from 5-100% in an otter trawl fishery. Estimates for fisheries in the Skagerrak, the neighbouring sea area, were also provided and showed 78% (CI: 67-87%) survival for a Danish seine fishery, 75% (CI: 63-87%) for a winter otter trawl fishery and 44% (CI: 37-52%) in a summer otter trawl fishery. There were also two estimates for plaice survival from otter trawl fisheries targeting *Nephrops*, which indicated much lower survival, at 41% (CI: 28-57%) during winter and 15% (range: 0-39%) during summer (see Table 6.1.2). STECF notes that, due to evidence indicating that plaice caught along with *Nephrops* have a lower survival (also noted by STECF 19-01), and the absence of a *Nephrops* trawl fishery in the Baltic, these estimates are not considered relevant to this proposal.

Critical review

The quality scores based on the ICES critical review process range from 38% to 91% Table 6.1XX2.2. The score for Ern et al. (2019) was affected by insufficient evidence demonstrating the fishing operations were representative of the wider fishery; no evidence to demonstrate the monitoring period was sufficient to observe all mortalities; and the absence of a control to inform on experimental induced mortalities. STECF notes that, for these last two points, the effect on the final survival estimates is possibly redundant because all the fish survived for a monitoring period that is consistent with other robust studies on plaice survivability (e.g. Methling et al., 2017; Morfin et al., 2017; van der Reijden et al., 2017).

STECF observes that while there are other estimates of plaice discard survival from trammel nets (e.g. Smith et al., 2015; Catchpole et al., 2015), there are no known estimates from gill net fisheries. The capture process in trammel nets is different to gill nets, the influence this has on survival rates of gill and trammel nets is unknown. Furthermore, Ern et al. (2019) state the 100% survival estimate is derived from a sorting process whereby individual fish were untangled and released as the net was hauled aboard

(the average time for a fish to be out of the water was around 15 seconds). The report states that the survival of plaice discarded after the entire net has been hauled aboard the vessel would be expected to be substantially lower. STECF observes that there is no information on how fish are extracted from the net in the wider Baltic fishery and therefore, cannot determine if the trammel net survival estimates are representative. It is also noted that the 100% survival estimate was derived from mostly short soak times (~24 hrs), in shallow water (7-18m), and cold conditions (2-7C), when survival would be expected to be at its highest. Soak times in the commercial fishery are not reported.

In the study of Anon., (2018b), the lower quality score reflects the absence of detailed methods description rather than identified weaknesses in the method. STECF observes that full scientific reports should be provided, including all details of the methods, to support future proposals.

In the case of Kraak et al. (2018), the lower score reflects a bias in the selection of fish for monitoring, whereby the survival estimates were derived from fish 'clearly alive and without visible injuries' at the point of sorting the catch. STECF notes that, without accounting for dead and moribund fish in the estimate of survival, this will have overestimated discard survival.

Factors effecting discard survival

The factors identified to have influenced discard survival in the reviewed studies are summarised in Table 6.1.2. The period of air exposure during catch sorting (Anon. (2018a; Eskelund et al., 2019) and a seasonal effect (Anon., 2018b; Kraak et al., 2018) were factors identified to influence plaice discard survival. Survival was lower with increasing sorting time, whereby survival was 20% (4-62%) when sorting times exceeded 30 minutes in the Danish seine study (Ern et al., 2019).

Two studies demonstrated higher discard survival in winter and lower survival in summer (Anon., 2018b; Kraak et al., 2018). Observed survival was above 50% only in January to March (Kraak et al., 2018) in the Baltic Sea otter trawl fishery. STECF observes that, while the mechanism for the seasonal effect on survival is unknown, evidence indicates that survival is substantially higher in winter compared with summer months.

STECF notes that the sorting time and seasonal effect were identified in a previous evaluation of the proposed survivability exemption for plaice caught by vessels using Danish seine in the North Sea and Skagerrak. STECF 18-02 stated that discard survival estimated during summer months was likely to represent the lowest survival rates expected during the year. STECF 18-02 also stated that if sorting times are on average longer than 30 minutes in the North Sea Danish seine fishery, as indicated by average catch rates, then the survival rates provided were not representative.

STECF observes that information on average sorting times in the Baltic Sea trawl fisheries would assist in determining the representativeness of the discard survival estimates provided. STECF observes that survivability exemptions have been awarded in the North Sea for plaice caught with set nets (GNS, GTR, GTN, GEN), Danish seines and with bottom trawls (OTB, PTB) with a mesh size of at least 120 mm when targeting flatfish or roundfish in winter months (from 1 November to 30 April)(COM, 2018).

Table 6.1.1. Characteristics of the trials

Reference	Ern et al. (2019)	Ern et al. (2019)	Anon. (2018a)	Anon. (2018b)	Eskelund et al. (2019)	Kraak et al. (2018)
Area	Baltic Sea subarea 23, subarea 22	Baltic Sea subarea 23	Skagerrak	Skagerrak	Skagerrak	Baltic Sea subarea 22
Gear	Trammel net	Danish seine	Danish seine	Otter trawl	Nephrops trawl	Otter trawl
Vessel length m	9.76, 12.6	15.61	16.1	15.1	11.7	14.8
Mesh size mm	inner/wall 75-85 / 350-400	Cod end 125	Cod end 125	Cod end 90 (standard); dual cod end 120/60	Cod end 90	120 BACOMA cod end
Depth m	7-18	16-19	12-61	?	27-53	20-30
Season	Nov-Feb	May	Aug-Oct	Aug-Oct; Mar-Apr	Jun-Jul	Jan-Dec
Temp. (water) C	2-7	17-19	?	10-17 (summer); 6-7 (winter)	13	4-16
Hauls	10 (subarea 23), 3 (subarea 22)	3	16	12 summer, 6 winter (targeting plaice), 4 winter (targeting Nephrops)	9	13
Tow duration/soak time	11@~24hr, 2@~48hr	98-100 min	153-480 min	37-185min (targeting plaice); 180-239min (targeting Nephrops)	180 min	180 min
Catch weight kg	?	100-120	150-700	65-1509 (targeting plaice); 200-500 (targeting Nephrops)	?	~300-1600kg
Air exposure (mean)	~15 seconds	1-65 min (~30)	0-45 min	~60 min targeting plaice; ~150 min targeting Nephrops	0-69 min	~0-30 mins

Table 6.1.2 Critical review of the trials. Survival percentage is expressed as average with in bracket either the range or the confidence interval (CI), according to the results published in the study¹²

Reference	Ern et al. (2019)	Ern et al. (2019)	Anon. (2018a)	Anon. (2018b)	Eskelund et al. (2019)	Kraak et al. (2018)
Method	Captive observation (onshore tanks)	Captive observation (onshore tanks)	Captive observation (onshore tanks)	Captive observation (onshore tanks)	Captive observation (onshore tanks)	Captive observation (at-sea cages)
Fish length cm	22-40	14-32	13-28	17-26 (summer), 13-26 (winter) targeting plaice; 11-26 winter targeting Nephrops	16-29	16-37
Sample number	118	98	281	333 (summer), 279 (winter) targeting plaice; 274 in winter targeting Nephrops	133	738
Survival %	100	87 (range: 76-100)	78 (CI: 67-87); air exposure <30 min 86 (CI: 46-97); >30min 20 (CI: 4-62)	75 (CI: 63-87) 90mm cod end winter; 44 (CI: 37-52) summer; targeting Nephrops in winter 41 (CI: 28-57)	15 (range: 0-39)	Ranging from 5-100 across the year; seasonal pattern indicated >75% in January and March. Observed survival <50% in 9 months of the year
Identified influencing variables	-	-	Air exposure - higher survival with sorting time <30 min; 20% survival	Season - higher survival in winter; target catch - lower	Air exposure - survivors from sort times 0-49 min,	Season - higher survival in winter

¹² The range is the lowest and the highest values found among the trials. The "confidence interval" is an interval, computed from the statistics of the observed data that has a 95% probability that it contains the true average (and is therefore a measure for how reliable the average value is).

				survival Nephrops	targeting	dead from sort times of 4-69 min	
Critical review quality score %	46	46	76	57		91	38

3) Review of information provided describing the relevant fisheries

The information provided to STECF to supplement the joint recommendation constituted average monthly landings for the years 2016-2018 by gear and country. According to this information, Denmark dominates the landings of plaice in SD 22-32 (55% of landings) followed by Germany (32%). The remaining countries land significantly smaller amounts (Table 6.1.1). STECF further notes that landings of plaice peaked during November to January during 2016-2018 (Figure 6.1.1). Landings by other gears such as gillnets and Danish seine are less variable over the year as are the Swedish and Polish landings. STECF notes that closures in SD22-24 to protect cod during February and March 2016-2018 may influence the landing pattern for plaice.

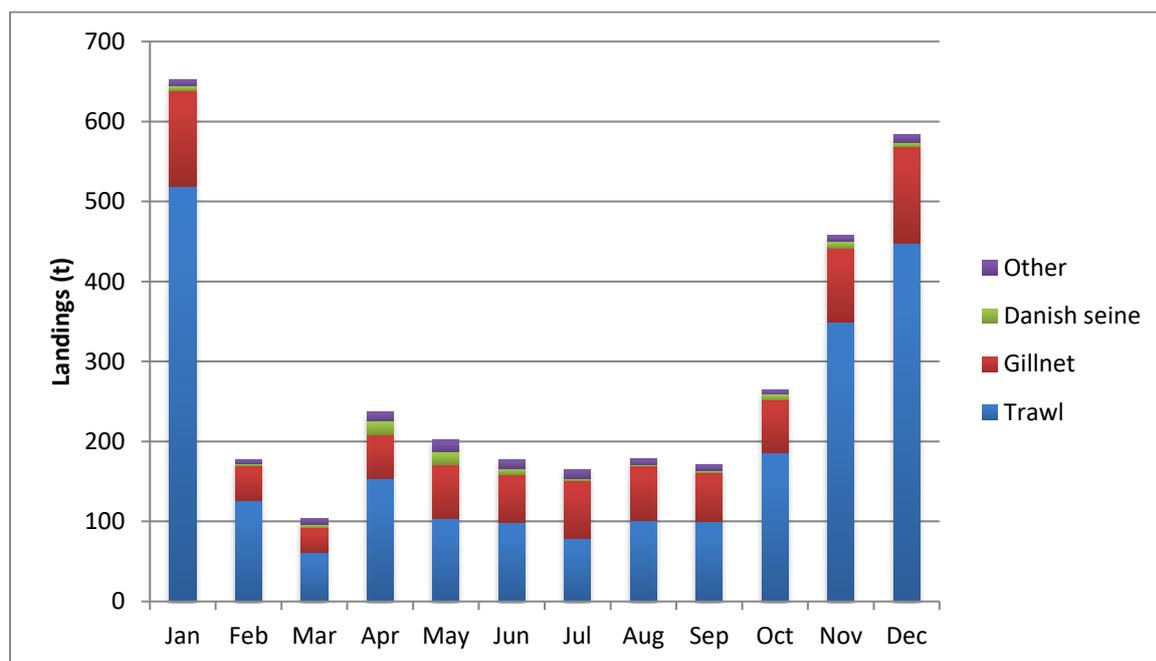


Figure 6.1.1. A summary of monthly plaice landings for all countries combined by gear category. Diagram reconstructed by STECF based on the information provided by the joint recommendation from Baltfish.

A summary of the fishery information provided in the joint recommendation is shown in Table 6.1.3. This information is compiled by STECF using the template developed by STECF EWG 16-06. STECF observes that future recommendations should present supporting information using the STECF template to facilitate the evaluation. The number of vessels and plaice landings data are presented by gear, area and vessels size range. STECF observes that no data on unwanted catches (discards) were provided in the supporting material to provide context for the proposed discard survival exemption.

Table 6.1.3 A summary of the fishery information provided in the joint recommendation. This information is provided using the template developed by STECF EWG 16-06.

Country	Exemption applied for (species, area, gear type)	Species as bycatch or target	Number of vessels > 12m and < 12m	Landings (average 2016-2018)
DK	Plaice, subdivisions 22-32, trawls with a mesh size of 90 mm or more in subdivision 22 and 23 and minimum 105 mm in subdivision 24-32	Target/Bycatch	250 vessels < 12m 80 vessels > 12m	1,203t (835t from targeted and 368t as bycatch)
	Plaice, subdivisions 22-32, gillnets with a mesh size of 90 mm or more	Target/Bycatch		455t (235t from targeted and 220t as bycatch)
	Plaice, subdivisions 22-32, Danish seine with a mesh size of 105 mm or more	Target/Bycatch		80t (66t from targeted and 14t as bycatch)
	Plaice, subdivisions 22-32, Other gears	Target/Bycatch		68t (64t from targeted and 4 t as bycatch)
SE	Plaice, subdivisions 22-32, trawls and gillnets	Bycatch	550 vessels < 12m 20 vessels > 12m	37t (split 50% trawls and 50% gillnets)
DE	Plaice, subdivisions 22-25, trawls and gillnets	Target/Bycatch	650 vessels < 12m 54 vessels > 12m	1,095t (of which 518t is caught in targeted fisheries)
PL	Plaice, subdivisions 24-26, trawls and gillnets	Bycatch	500 vessels < 12m 92 vessels > 12m	394t (42 % is caught in gillnets and 58 % in trawl)

4) *Observations on the representativeness of the survival evidence in the context of the proposed exemption, with an assessment of further supporting information*

STECF observes that the proposed exemption applies to two plaice stocks in the Baltic Sea, but survival evidence is available only for fisheries on the stock in subdivision 22-23. Furthermore, of the two studies providing evidence in subdivision 22-23, survival estimates are generated only under optimal conditions for the trammel net fishery, while the otter trawl estimates are limited by the methods applied and are considered to be overestimates of survival levels. The most robust estimates provided are for the Baltic Sea Danish seine fishery, which are considered to be representative of the fishery, showing survival levels of 87% (76-100%). STECF observes that for trammel and gill nets, the survivability estimate is unrepresentative and collected under favourable conditions that do not reflect the operation of the commercial fishery. For otter trawls, the justification for exemption is dependent on similarities in plaice survival with Skagerrak fisheries, which have not been clearly demonstrated.

Information on the applicability of Skagerrak data for the Baltic Sea fishery was described in the Annex IV document. The document states that trawl vessels and gear types used in the Baltic Sea are similar to those used in Skagerrak, but no quantitative information is provided. It is stated that while fishing practices and catch sizes may be expected to be similar, there are no data available on the catch handling practices on otter trawl and Danish seines to support this. Therefore, sorting times and air exposure times are not known. It is stated that fishing depths are comparable between the two areas, but salinity is generally lower in the Baltic, and differences in salinities and/or temperature between water layers can be more pronounced. The effect of these differences on discard survival are unknown. The plaice in Skagerrak and the Baltic Sea belongs to different biological populations (Ulrich et al. 2017), but the implications of this on discard survival are also unknown. STECF observes thus that there are some environmental and biological differences between the two areas, and differences in technical operations of the vessels may also influence how relevant discard survival estimates from Skagerrak are to fisheries in the Baltic.

STECF notes that information on technical and operational characteristics would assist in assessing how relevant Skagerrak discard survival estimates are to the Baltic Sea. These data should include vessel size, fishing depth, water temperature, gear characteristics, tow duration/soak times, catch size, sorting method and sorting time, and provided for the Skagerrak and Baltic Sea areas. Evidence supporting this proposed exemption would be strengthened further by direct discard survival investigations in the Baltic. Discards relevant to the proposed exemption are generated mostly by otter trawls catching from the area 24-32 plaice stock (see section 5); evidence from Kraak et al. (2018) indicates high variability in the discard survival from the otter trawlers. STECF observes that this should be the priority gear-area combination of any future discard survival studies. Beyond this, studies to determine the discard survival in gill nets, to compliment the trammel net studies, would be useful to determine differences between passive gear types and differences in sorting practices.

STECF observes that there is evidence of a seasonal effect in discard survival of plaice, whereby discard survival is higher in winter months. Based on the landings data, there is also a seasonal pattern in the fishery, with highest landings in the winter months November-January, driven principally by the trawl fishery. Therefore, if assuming that rates of unwanted catches are constant throughout the year, the highest volume of unwanted catches generated for the relevant stocks would overlap with the highest expected levels of survival of discarded plaice. STECF observes that seasonal plaice catch data should be provided illustrating seasonal trends in unwanted catches.

5) *Observations on the proposed exemption in the context of the affected plaice stocks*

STECF has previously emphasised the need to consider estimates of survivability in the context of the discard rate for the fishery seeking an exemption (STECF PLEN 17-02, 18-02 and 19-02), highlighting that medium survival rates in fisheries with high levels of unwanted catches still lead to high rates of dead discards. There are two plaice stocks affected by the proposed survival exemption: i) subdivisions 21–23 (Kattegat, Belt Seas, and the Sound), and ii) in subdivisions 24–32 (Baltic Sea, excluding the Sound and Belt Seas). Here STECF considers the exemptions in the context of these stocks, but in the case of i) only for the subdivisions 22–23 (Belt Seas, and the Sound), which are relevant to this request.

The estimated quantities of surviving and dead discards by fleet in the two stocks are given in Figure 6.1.2. Data were derived from ICES WGBFAS and ICES stock advice sheets to illustrate the indicative levels of survivors and dead discards under survivability exemptions for plaice in area 22-23, and in area 24-32. Most catches from both stocks are taken by active (towed) gears (81%, 73% respectively), with the remainder by passive (set net) gears. Most unwanted catches are generated by the active gears (67%, 73%, respectively). The overall discard rate for plaice caught in subdivisions 22-23 is 16% and from 24-32, 30%. STECF observes that while there is some evidence of plaice discard survival from the fisheries catching plaice from subdivision 22-23, there is none from subdivision 24-32, which has a higher discard rate.

Inferred discard survival estimates and projected levels of dead discards generated under the proposed exemption are shown in Table 6.1.4. STECF considers the 100% survival estimate for passive nets to be representative only of the conditions of the study, which are considered optimal. An estimate from a trammel net fishery in which plaice were picked from the net after it had been hauled aboard was used to provide a lower survival estimate (Smith et al., 2015). While this study was not conducted in the same region, STECF considers it provides a credible and more plausible estimate of minimum survival for trammel net caught plaice. Similarly, the 100% (Kraak et al. 2018) survival for active gears is assessed as an overestimate, therefore, the estimate of 75% from Anon. (2018b) is applied.

Table 6.1.4 Inferred minimum and maximum discard survival for plaice caught by passive and active gears, and projected dead discards as % of catch under proposed exemptions for two Baltic Sea plaice stocks. Inferred minimum survival for *passive gears based on Smith et al. (2015); ** active gear based on Anon. (2018b).

Stock	Gear	Inferred Min. discard survival	Inferred Max. discard survival
22-23	Active (towed trawl gear)	5%	75%**
	Passive (set nets)	37%*	100%
24-32	Active (towed trawl gear)	5%	75%**
	Passive (set nets)	37%*	100%

Table 6.1.5 Calculation of the dead discard rates by stock and gear presented in figure 6.1xx5.1. below. Based on total plaice catch from ICES WGBFAS and ICES stock advice sheets presented by wanted catch and estimated dead and surviving unwanted catch for stock 22-23 and 24-32. Inferred minimum survival for *passive gears based on Smith et al. (2015); ** active gear based on Anon. (2018b).

22-23		Wanted catch (dead)	Unwanted catch		% of dead discards in the total catch (assuming under exemption)
Gear			Dead	Survivors	
Active	max. survival	2460	89	266	3-13%
	min. survival	2460	336	18	
Passive	max. survival	453	0	208	
	min. survival	453	131	77	
24-32		Wanted catch (dead)	Unwanted catch		
Gear			Dead	Survivors	
Active	max. survival	1249	116	347	5-25%
	min. survival	1249	439	23	
Passive	max. survival	395	0	249	
	min. survival	395	157	92	

When put in the context of the stock, under the proposed exemption, dead discards would contribute 3-13% of the catch in the plaice stock in subdivision 22-23, and 5-25% in subdivision 24-32 (Table 6.1.5).

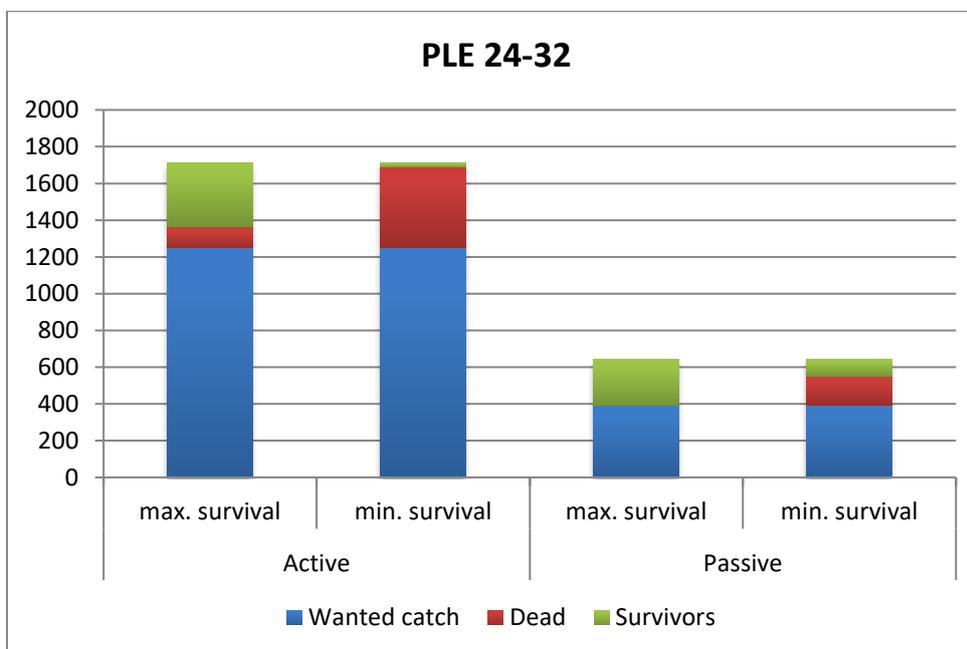
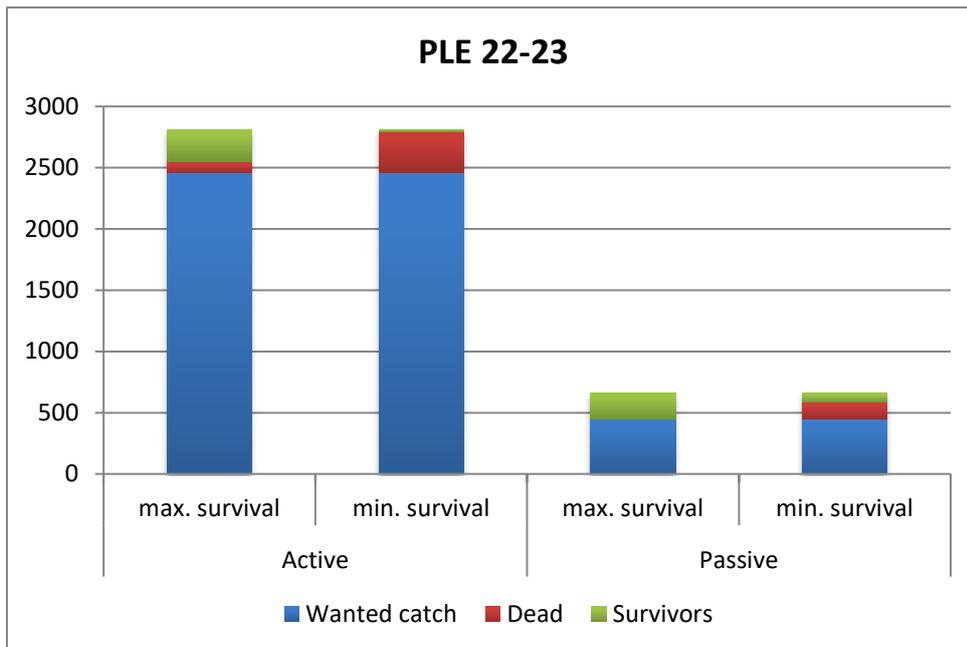


Figure 6.1.2. Estimated quantities (based on 2018 data) of surviving and dead discards by fleet and stock for plaice in subdivisions 22-23 (above) and 24-32 (below).

STECF conclusions

STECF reiterates that the avoidance of unwanted catch through improved selectivity or other means should be the primary focus in implementing the landing obligation.

STECF reiterates other relevant observations from previous evaluations of JRs for high survival exemptions:

- Survival experiments do not cover all complex “situations” and therefore many gaps in knowledge remain regarding differences in survival rates concerning different

areas, seasons & temperature, handling practices, habitat (discarding bottoms), experimental conditions vs commercial conditions, etc.;

- The subjective nature of the conditionalities for exemptions (high survival, disproportionate costs, *de minimis* & economic data) means that the observations and conclusions are based on many assumptions;
- Joint recommendations should present supporting information using the STECF template to facilitate the evaluation.

STECF concludes that the estimate of discard survival for plaice from the Baltic Sea Danish seine fishery in subdivision 22 of 87% (range: 76-100%) is robust, and this estimate is comparable with estimates from the Skagerrak Danish seine fishery (78% CI:67-87%).

STECF concludes that the estimate of discard survival for plaice from the Baltic Sea trammel net fishery in subdivision 22 of 100% reflects optimal conditions and is not representative of the wider passive net Baltic Sea fisheries. The shallow fishing depth, cold water temperature, short soak time, and immediate removal of fish from the net as they came aboard, produced high discard survival, but is unlikely to be consistent with fishing operations in the wider fishery, and therefore overestimates survival.

STECF concludes that the estimates of discard survival for plaice from the Baltic Sea otter trawl fishery varying between 5 and 100% demonstrate a high degree of variability in survival. The estimate of 100% is considered to be unreliable as it is calculated using only individual plaice that were alive and without injury at the point of sorting the catch and did not account for dead and damaged fish.

Due to the limitations in the discard survival evidence from the Baltic Sea, the justification for the plaice survival exemption is dependent on demonstrating equivalence with discard survival evidence from fisheries in the Skagerrak. However, on the basis of the information provided, STECF cannot fully assess whether the fisheries and the environmental conditions in which they are operated are sufficiently similar for the estimates of Skagerrak to be fully representative of the Baltic Sea.

STECF concludes there is evidence of a seasonal effect in discard survival of plaice, whereby discard survival is higher in winter months. If assuming that unwanted catch rates are constant, the highest amount of unwanted catches generated for the relevant stocks would overlap with the highest expected levels of survival of discarded plaice. STECF concludes that data of plaice unwanted catches by season should be provided to better determine dead discard amounts.

STECF concludes that catch sorting times (air exposure) and time of year influence discard survival. Plaice caught and discarded in winter months and sorted within 30 minutes have been demonstrated to have highest chance of survival. These effects should be considered when framing exemptions from the landing obligation, recognising that seasonal restrictions are easier to manage than conditions associated with catch sorting.

When applying relevant discard survival estimates to overall amounts of unwanted catches estimated for the two Baltic Sea plaice stocks, STECF concludes that, under the proposed exemption, dead discards would contribute 3-13% of the total catch in weight in the plaice

stock in subdivision 22-23, and 5-25% in subdivision 24-32. STECF also recalls the conclusions made by STECF PLEN 16-02 and 17-02 and reported in STECF 16-06 regarding the impact of the survival vs. *de minimis* exemptions in terms of discard mortality. STECF highlights that in the case of Baltic plaice, based on the estimates provided, it is highly likely the level of dead discards will exceed the 5% *de minimis* level established in Article 15 of the CFP.

STECF concludes that evidence supporting this proposed exemption would be strengthened by further direct discard survival investigations. Evidence from otter trawls catching from the area 24-32 plaice stock should be the priority for future discard survival studies. Beyond this, studies to determine the discard survival in gill nets, to complement the trammel net studies, would be useful to determine differences between passive gear types and differences in sorting practices.

References

- Anon. (2018a). Discard survival and vitality of plaice (*Pleuronectes platessa*) caught in the Danish anchor seine (SDN) fisheries in Skagerrak during summer 2017. DTU Aqua. Danish Fiskeripolitisk kontor, 09/03 2018, J.nr: 18/03363, Ref: JKA/THNO/ESAV/JD
- Anon. (2018b). Discard survival of plaice (*Pleuronectes platessa*) caught in the bottom otter trawl (OTB) demersal mixed fishery in Skagerrak during summer 2017 and winter 2018 UM, DTU Aqua, Danish Fiskeripolitisk kontor, 23/03 2018 J.nr: 18/05964, Ref: JKA/ESAV/THNO/JD
- Catchpole, T., Randall, P., Forster, R., Smith, S., Ribeiro Santos, A., Armstrong, F., Hetherington, S., Bendall, V., Maxwell, D. (2015). Estimating the discard survival rates of selected commercial fish species (plaice - *Pleuronectes platessa*) in four English fisheries (MF1234). Cefas report, pp108.
- COM (2018). COMMISSION DELEGATED REGULATION (EU) 2018/2035 of 18 October 2018 specifying details of implementation of the landing obligation for certain demersal fisheries in the North Sea for the period 2019-2021 Article 6.
- Ern, Rasmus, Katrine Molbo, Trine H. Jensen, Sergey V. Kucheryavskiy, Peter R. Møller, Niels Madsen (2019) Discard survival of plaice and cod from trammel net and Danish seine fisheries in the Baltic Sea. Aalborg University, Department of Chemistry and Bioscience, Note for the Ministry of Foreign affairs of Denmark, April 15th, 2019.
- Eskelund, Marc, Caroline Methling, Peter Vilhelm Skov, Niels Madsen (2019). Survival of discarded plaice (*Pleuronectes platessa*) from Norway lobster (*Nephrops norvegicus*) otter-trawl fishery. J Appl Ichthyol. 2019;1-10.
- ICES (2015). ICES. 2015. Report of the Workshop on Methods for Estimating Discard Survival 3 (WKMEDS 3), 20-24 April 2015, London, UK. ICES CM 2015\ACOM:39. 47 pp.
<http://www.ices.dk/sites/pub/Publication%20Reports/Expert%20Group%20Report/acom/2015/WKMEDS/01%20WKMEDS3%20report%20FINAL.pdf>.
- Kraak, S. B. M., A. Velasco, U. Froese, and U. Krumme (2018). Prediction of delayed mortality using vitality scores and reflexes, as well as catch, processing, and post-release conditions: evidence from discarded flatfish in the Western Baltic trawl fishery. ICES Journal of Marine Science, Volume 76, Issue 1, January-February 2019, Pages 330-341, <https://doi.org/10.1093/icesjms/fsy129>

- Methling, C., Skov, P.V., Madsen, N. (2017). Reflex impairment, physiological stress, and discard mortality of European plaice *Pleuronectes platessa* in an otter trawl fishery. *ICES Journal of Marine Science*, 74:1660–1667. doi: 10.1093/icesjms/fsx004.
- Morfin, M., Kopp, D., Benoît, H.P., Méhault, S., Randall, P., et al. (2017). Survival of European plaice discarded from coastal otter trawl fisheries in the English Channel. *Journal of Environmental Management*, 204, 404–412. doi: 10.1016/j.jenvman.2017.08.046.
- Smith, S., Elliot, S., & Catchpole, T. (2015). Estimating the discard survival rates of Common sole (*Solea solea*) and plaice (*Pleuronectes platessa*) in the Bristol Channel trammel net fishery and of plaice in the Bristol Channel otter trawl fishery. Lowestoft, UK. 64 pp.
- Ulrich C, Hemmer-Hansen J, Boje J, Christensen A, Hüsey K, Sun H, Clausen LW (2017) Variability and connectivity of plaice populations from the Eastern North Sea to the Baltic Sea, part II. Biological evidence of population mixing. *Journal of Sea Research* 120:13-23
- van der Reijden, K.J., Molenaar, P., Chen, C., Uhlmann, S. S., Goudswaard, P. C., and van Marlen, B.(2017). Survival of undersized plaice (*Pleuronectes platessa*), sole (*Solea solea*), and dab (*Limanda limanda*) in North Sea pulse-trawl fisheries. *ICES Journal of Marine Science*, 74:1672–1680. doi: 10.1093/icesjms/fsx019.

6.2 Red Seabream (ICES 6-8) – additional conservation measures by France and Spain

Background provided by the Commission

Further to the last STECF's assessment of national plans, established by France and Spain, both countries took additional conservation measures to protect red seabream (ICES division 6, 7 and 8). STECF is requested to assess the comprehensiveness and efficiency of the additional measures for conservation purposes.

The ICES scientific advice sets out that the stock of red seabream in areas 6-8 is seriously depleted and advises that there should be zero catches for this stock in 2019 and 2020. Since 2014 the ICES advice has been to reduce mortality by all means, to allow the stock to rebuild, and avoid a further collapse. ICES furthermore recommend that measures be put in place to protect juveniles.

By 1 March 2019, taking into account national specificities, France and Spain committed to implement coordinated national plans necessary for rebuilding the stock of red seabream in ICES subareas 6-8, in particular through measures such as:

- Closing for commercial and recreational fishing the areas where juveniles occur on the basis of scientific evidence, as identified by the Member States;
- Increasing minimum size to 35cm, to incentivize avoiding catching red seabream that has not reached the size of maturing into females;
- Fixing catch limits per vessel and per trip to ensure that red seabream is only fished as a by-catch species;
- Undertaking a scientific research project with the view to finding ways to avoid catching juvenile red seabream in the longline and otter trawl fleets that account for the main share of the catches. This project should, as recommended by STECF, include improving the biological knowledge on species reproduction and maturity stages and update the estimates of size/age at maturity as male and female, the size-as sex-change and the proportion of gonochoric individuals.

France adopted the following **additional measures**:

- **Increase Minimum size from 35 cm to 36 cm**
- Capping bycatches:
 - Pelagic trawlers: 200kg/year and **an extra 15kg per fishing trip**
 - Demersal trawlers: 200kg/year and **an extra 15kg per fishing trip**
 - Nets: 100 kg/tide **down to 15kg / fishing trip**

Spain adopted the following **additional measures**:

- Capping bycatches:
- Daily maximum catch limits of 150 and 50 kilos for unit 1 and 2 (March 2019)
- Reduced catch limits of unit 2 to 15 kg/vessel/day (May) and further to 5 kg/vessel/day (October), and in the course of the year to 120 and 5 kilos.
- Reduced catch limits of unit 1 to 120 kg/vessel/day (October)

- Extra limitation on recreational fisheries (one fish/year/licence) and mesh¹³ size of min 40 cm

Background documents are published on the meeting's web site on: <https://stecf.jrc.ec.europa.eu/plen1903>

Request to the STECF

The STECF is requested to review the additional measures proposed by France and by Spain, and assess their comprehensiveness and efficiency for conservation purposes as set by the November Council 2018.

Summary of information provided to STECF

STECF reviewed the following documents provided by the Commission:

- Resolution of the General Secretariat of Fisheries of 11 March 2019 in respect of the Spanish quotas for red seabream (*Pagellus bogaraveo*), SBR-678; Alfonsinos (*Beryx spp*), ALF/3X14; and black scabbardfish (*Aphanopus carbo*), BSF/8910, for the fleets in national waters (zones 8c and 9a) and the fleets in NEAFC waters, and establishment of fishery management measures.
- Resolution of the General Secretariat of Fisheries of 10 May 2019 amending the resolution of 11 March 2019, in respect of the Spanish quotas for red seabream (*Pagellus bogaraveo*), SBR-678; Alfonsinos (*Beryx spp*), ALF/3X14; and black scabbardfish (*Aphanopus carbo*), BSF/8910, for the fleets in national waters (zones 8c and 9a) and the fleets in NEAFC waters, and establishment of fishery management measures.
- Resolution of the General Secretariat of Fisheries of 2 October 2019 amending the resolution of 11 March 2019, in respect of the Spanish quotas for red seabream (*Pagellus bogaraveo*), SBR-678; Alfonsinos (*Beryx spp*), ALF/3X14; and black scabbardfish (*Aphanopus carbo*), BSF/8910, for the fleets in national waters (zones 8c and 9a) and the fleets in NEAFC waters, and establishment of fishery management measures.
- Order of the French Ministry of Agriculture and Food of 10 October 2019 that modifies the order of 16 January 2019 that limits the landings of red seabream (*Pagellus bogaraveo*) and prohibits the use of purse-seine to catch this species in ICES subareas 6,7 and 8.

In addition, STECF also reviewed section 6.10 (assessment of the national plans established by France and Spain for red seabream in subareas 6-8, to ensure that the plans

¹³ STECF understands this as being a typo error and that « minimum » size is meant, although this has not been confirmed.

are comprehensive and effective) of the STECF PLE 19-01 report and the documentation therein.

STECF notes that this information provided comprises purely legislative documents. No new scientific data has been presented.

The political agreement of the Council of the European Union¹⁴, besides setting the Red seabream TAC for 2019 and 2020, included a joint statement by France and Spain in which they committed to implementing coordinated national plans necessary for rebuilding the stock. According to this political agreement, the coordinated national plans should be communicated to the Commission by 1 March 2019, and subsequently assessed by the STECF to ensure they were comprehensive and effective.

At the end of March 2019, The STECF plenary (PLE 19-01) was requested to assess the content of the national plans. STECF concluded that the management measures contained in the plans were neither comprehensive nor effective. Further, STECF considered that the management measures proposed by each country were different and not well aligned. STECF highlighted that additional management measures were needed. These could include protection of spawning aggregations at breeding, more restrictive trip catch limits, changes in size selectivity and regulation of recreational fisheries targeting red seabream.

In the political agreement it was stated that *"Should the STECF assess that additional measures need to be taken to ensure an improvement in the state of the stock, then Member States commit to review this plan and the relevant national measures in light of the recommendations by the STECF. The above measures may, as appropriate, be included in the joint recommendations from the relevant Member States groups. Member states concerned will agree on necessary quota swaps to avoid "choke" situations."*

In October 2019, France amended the order of the 16 January 2019 regulating the fishing of red seabream by French vessels as follows:

- Red seabream landings were limited to 200 kg/year and 15 kg/trip for trawlers (namely, midwater otter trawl OTM, midwater pair trawl PTM, midwater otter twin trawls OTT, bottom otter trawl OTB, bottom pair trawl PTB, beam trawl TBB, shrimp trawl TBS, *Nephrops* trawls TBN).
- Red seabream landings were limited to 15 kg/trip for static nets (namely, trammel nets GTR, combined gillnets-trammel nets GTN, fixed gillnets GNF, drift gillnets GND, encircling gillnets GNC and gillnets and entangling nets GEN).
- Minimum conservation reference size (MCRS) for red seabream in ICES subareas 6-8 was set at 36 mm.

In comparison to the previous order, the new management measures consisted of adding trip catch limits of 15 kg/trip for trawlers and netters and increasing the minimum conservation reference size (MCRS) from 35 to 36 cm.

Spain has amended the resolution of the 11 March 2019 regulating the fishing of red seabream twice during 2019.

¹⁴ Proposal for a Council Regulation fixing for 2019 and 2020 the fishing opportunities for Union fishing vessels for certain deep-sea fish stocks, Ref, 12841/18 PECH 382 + ADD 1 – COM (2018) 676 final + 13518/18

- The resolution of 10 May 2019 reduced the daily catch limits per vessel from 50 to 15 kg/vessel/day in management unit 2 (fishing areas 6/7/8 excluding ICES divisions 8c).
- The resolution of 2 October 2019 further reduced the red seabream daily catch limits per vessel in management unit 2 to 5 kg/vessel/day, while the red seabream daily catch limits per vessel in management unit 1 (ICES division 8c) were reduced from 150 to 120 kg/vessel/day. The daily catch limits per vessel of alfonsino in management units 1 and 2 were modified from 80 to 20 kg/vessel/day. The resolution also established a quota swap of 6 tonnes of red seabream in management unit 1 for 6 tonnes of alfonsino in management unit 2 (1:1 ratio) based on the annual catch limits already set for seabream in management unit 2 and for alfonsino in unit 1.

STECF comments

According to ICES, red seabream in ICES subareas 6-8 is depleted with no recent indication of stock recovery. Current level of catches is around 1-2% of the historical levels of the 1960s and 1970s, when there was a directed fishery. The species is rarely seen in the three bottom trawl surveys that take place in the stock areas (EVHOE-WIBTS-Q4, SpGFS-WIBTS-Q4 and IGFS-WIBTS-Q4). ICES advised that when the precautionary approach is applied, there should be zero catch in 2019 and 2020 (ICES, 2019).

STECF recalls that the initial coordinated plans were thoroughly assessed by the STECF plenary PLEN 19-01. The additional management measures implemented in October 2019 by France consist of including trip catch limits for trawlers and nets and increasing the MCRS from 35 to 36 cm. In the case of Spain, the additional measures consist of reducing the daily catch limits and quota swaps between species and management areas to avoid “choke” situations, while no change in the MCRS was introduced. STECF notes that the additional measures proposed by France and Spain are still not well aligned.

Regarding the increase in the MCRS in France from 35 and 36 cm, STECF reiterates its previous comments. Red sea bream is a protandric species (i.e male-first changing sex). Even though the size at which ~ 50% of females are mature has been estimated at 36 cm (Lorance, 2011), at that size most of the individuals are still males. When considering the sex-ratio and the female maturity together, the size at which 50% of fish will be mature females is estimated to be 40 cm (total length) (Lorance 2011, ICES 2019). Further, STECF notes that the MCRS in Spain, which contributes to most of the catches (70% on average in the period 1988-2018), is still significantly lower (33 cm). Therefore, neither 33 cm nor 36 cm can be considered as appropriate MCRS from a biological point of view in ICES areas 6, 7 and 8.

Importantly though, as noted by STECF PLEN 19-01, increasing the MCRS could lead to an increase of unwanted catches unless additional measures to increase size selectivity are implemented, as a large number of fish caught are under size of 40 cm (around 50% or more in recent years—ICES 2019). Such additional selectivity measures have not been included in the current proposal.

Regarding the catch limits in France, the annual quotas for trawlers, nets and lines were initially set at 200 kg/year, 200 kg/year and 100 kg/year respectively. The additional trip catch limits of 15 kg/trip were established for trawlers and nets (not for lines). However, no information on catch by trip and metier have been provided, and STECF cannot assess whether these trip catch limits are restrictive or would reduce fishing mortality.

Regarding the additional Spanish management measures implemented during 2019 after the initial coordinated plan, STECF notes that all the measures were directed to avoid “choke” situations, (i.e. to avoid stopping the activity of the fleets because the bycatch TAC of red seabream was attained). As described in the report by IEO presented as background information for the STECF plenary PLEN 19-01 report, most of the Spanish seabream catches in 2017 occurred in Subarea 8 (81%), of which 69% occurred in subdivision 8c and were mostly caught by vessels fishing with lines (86%). This fleet catches around 3.9 kg/trip of red seabream. When considering the trips in which only red seabream was present, the average catch per trip was around 165.5kg/trip for vessels with 100 gross tonnage and around 220 kg/trip for vessels with 200 gross tonnage. The average duration of one trip of these vessels is 11 days, leading to average catches between 15kg/vessel/day and 20 kg/vessel/day. STECF PLEN 19-01 noted that these average daily catch rates were well below the daily catch limits established by the Spanish regulation of 150 kg per vessel and day in management unit 1 (ICES division 8c) and 50 kg per vessel and day in management unit 2 (rest of area excluding 8c). The more restrictive catch limits from 50 to 15 kg per vessel per day adopted in May 2019 in management unit 2 are around the average catch level per vessel and per day of the fleet operating with lines. These catch limits were further reduced to 5 kg per vessel per day in management unit 2 in the October resolution because the seabream quota in unit 2 for 2019 was already exceeded. The catch limits of 120 kg per vessel and per day adopted in October 2019 for management unit 1 (ICES division 8c) although lower than the initial plan, are still well above the average catch per vessel and per day.

The daily catch limits initially set in both management units 1 and 2 were thus not restrictive. The revised catch limits in management unit 2 are now more restrictive, but they were implemented after the quota was already exhausted, so their impact in 2019 is likely to be limited. Furthermore, while these catch restrictions may reduce the possibility of a directed red seabream fishery, they are unlikely to reduce the unintended capture of red seabream (as a bycatch) and will have little or no conservation impact.

Besides, STECF notes that using daily catch limits could also be construed as being contradictory to the Landing Obligation, which requires all catches of red seabream, as a species under catch limits, to be landed. Regardless of whether the catch limits are restrictive or not, fishermen would still have to land bycatch of red sea bream over and above these limits unless such catches can be discarded under a *de minimis* or high survivability exemption. Currently such exemptions are only in place for red seabream catches in division 9a and subarea 10. There is a *de minimis* exemption for beam trawl, bottom trawls and seines in 9a and for artisanal gear (“voracera”) in 9a and for red seabream caught with hooks and lines in subarea 10. No such exemptions apply in subareas 6-8.

Six tonnes of the Spanish seabream quota in management unit 1 were swapped with alfonsino in unit 2. STECF notes that this further reduces the seabream quota, but STECF cannot assess the conservation effect on red seabream as no information on the percentage of quota utilised in management unit 1 has been provided.

STECF PLEN 19-01 noted the likely importance of the recreational fishery on seabream and suggested recreational fisheries should be included in the management plans. Additional measures by Spain on recreational fisheries are mentioned in the background provided by the Commission in its request to STECF. However, such measures are still being prepared and have not been adopted yet. No documentation nor data have been submitted and therefore, STECF could not carry out an analysis of the impact of the management measures of recreational fisheries on red seabream.

Finally, STECF notes that France and Spain have committed to undertake a scientific research project to identify ways to avoid catching juvenile red seabream in the longline and otter trawl fleets that account for the main share of the catches. No results of such scientific projects have been made available and STECF are unaware as to whether such a project has commenced. As suggested by STECF PLEN 19-01, this project should also aim to improve the biological knowledge on species reproduction and maturity stages. Updating the estimates of size/age at maturity as male and female, the size-at sex-change and the proportion of gonochoric individuals would also be beneficial.

STECF conclusions

STECF concludes that the MCRSs adopted by France and Spain (36 and 33 cm respectively), cannot be considered as appropriate from a biological point of view. STECF reiterates its previous assessments that a higher MCRS of at least 40 cm, corresponding to the size at which 50% of fish will be mature females, should be considered.

STECF reiterates that increasing MCRS would not be sufficient for reducing catches of undersize fish unless additional size selectivity measures are implemented.

STECF cannot assess whether the trip catch limits established by France for trawlers and nets restrict the catch of red seabream in ICES subareas 6-8 because information on catch rates per day are not provided.

STECF concludes that the daily catch limits initially established by the Spanish authorities in management unit 1 (ICES division 8c) and in management unit 2 (excluding ICES division 8c) in March 2019 did not seem to constrain the activity of the fleet. The revised daily catch limits adopted in management unit 2 in October 2019 could restrict the activity of the fleet but were adopted late in the year, after the annual quotas in that area was already exhausted.

STECF notes furthermore that there is a perceived contradiction between the use of catch limits and the landing obligation, where fishermen must land all catches of red seabream unless an exemption to allow discarding is in place. No such exemptions are currently included in the relevant discard plan for Southwestern waters.

STECF concludes thus that the new additional measures implemented by France and Spain are not sufficient to help improve the state of the stock of *P. bogaraveo* in ICES areas 6, 7 and 8. Furthermore, STECF concludes that the measures proposed by each country are different and the management plans do not seem well aligned.

STECF concludes that no consideration has been given to other conservation measures suggested by STECF PLEN 19-01. These included protection of spawning aggregations during the breeding season and changes in the size selectivity of fishing gear.

STECF concludes that while measures to regulate recreational fisheries have been proposed by Spain these have not been implemented as yet.

STECF concludes that any scientific research carried out should aim to improve the biological knowledge on species reproduction and maturity stages as well as updating the estimates of size/age at maturity for males and females, the size-at sex-change and the proportion of gonochoric individuals.

References

- ICES. 2019. Working Group on the Biology and Assessment of Deep-sea Fisheries Resources (WGDEEP). ICES Scientific Reports. 1:21. 988 pp. <http://doi.org/10.17895/ices.pub.5262>
- Lorance, P. (2011) History and dynamics of the overexploitation of the blackspot sea bream (*Pagellus bogaraveo*) in the Bay of Biscay. *ICES Journal of Marine Science* 68 (2): 290-301
- STECF 2016. Reports of the Scientific, Technical and Economic Committee for Fisheries (STECF) - Minimum conservation size for Red Seabream (*Pagellus bogaraveo*) (STECF-16-09). 2016. Publications Office of the European Union, Luxembourg, EUR 27758 EN, JRC 101980, 16 pp.
- STECF 2019. Scientific, Technical and Economic Committee for Fisheries (STECF) – 60th Plenary Meeting Report (PLEN-19-01). Publications Office of the European Union, Luxembourg, 2019, ISBN 978-92-76-02904-5, doi:10.2760/56785, JRC116423

6.3 Croatia request of scientific research in West coast of Istria

Background provided by the Commission

Croatia requested a derogation for bottom otter trawlers fishing with “volantina” gear in Western Istria in 2016 (STECF PLEN 16-01). At time since STECF could not conclude on the impact of the derogation from distance from the coast, it outlined possible solutions. These include the launch of a trial fishery for a limited fishing effort.

Croatia intends to launch a scientific fishing by granting a scientific fishing licence for 35 trawlers below 15m. Such request is in line with this STECF suggestion, however, with the entry into force in August 2019 of the new Technical Measure regulation (TMR, EC 1241/2019), there are new procedure and conditions for such fisheries (Art 25 of the TMR). In substance scientific fishing can be carried out by maximum 6 vessels and, shall the request cover more than 6 vessels, STECF needs to evaluate the scientific justification.

Background documents are published on the meeting’s web site on: <https://stecf.jrc.ec.europa.eu/plen1903>

Request to the STECF

On the basis of the criteria established by Art 25 of EC 1241/2019 and on the basis of the information sent by Croatia, the STECF is requested to evaluate if the participation of 35 vessels is justified on the scientific grounds.

Summary of the information provided to STECF

STECF received a document entitled:

“FURTHER JUSTIFICATION OF THE PROPOSAL REGARDING THE TRIAL FISHERY OFF THE WESTERN COAST OF ISTRIA IN THE CONTEXT OF THE ARTICLE 25 OF THE TMR”

According to this document, six (6) vessels are not considered sufficient to conduct a representative trial fishery that would reflect the actual activity of the fleet and the overall impact on the resources, because:

- (a) The trial fishery involves small vessels (<15m) with low engine power and GT.
- (b) The area covered by the request is a relatively long stripe (between 1.5 and 3 nautical miles from the coast) compared to the operational range of the small vessels.
- (c) The trial fishery will be carried out for three months in winter, when sea conditions are often bad. The small vessels involved in the fishery have limited operational abilities with unfavourable weather conditions.

The document argues that, if the trial fishery involves a small number of vessels (6 vessels), there is a high probability that these vessels will concentrate their effort in only

a small fraction of the 1.5-3 NM zone, as close as possible to the western coast of Istria. This would potentially lead to misleading conclusions regarding catch volumes/catch compositions. Furthermore, the document states that it is considered unlikely that 6 vessels would operate for a sufficient number of days (due to bad weather conditions in winter) and the sample size (total number of fishing days) required to adequately assess the impact of the requested derogation is unlikely to be fulfilled. Instead of reducing the number of vessels, the authorities envisage to impose a limit on the total effort of the 35 vessels by allowing their operation for only three days per week.

STECF noted that the method for selecting 35 vessels as being required for the survey was not explained. STECF could not, therefore, comment on the validity of this proposal and asked for further explanations. Consequently, the Croatian authorities provided a further document, entitled:

“Proposal for scientific survey in the contexts of request for derogation for bottom trawl fishery in the area of western Istria”.

This document was submitted to STECF during the plenary meeting providing more details about the proposal for this trial fishery.

According to the new document, Croatia intends to revise the conditions for the derogation so that, if granted on the basis of the trial fishery discussed here, it will not apply to all vessels (140 vessels), as previously requested in 2016, but will only be granted to small vessels (i.e. those mostly limited in their operation by bad weather conditions and, consequently, mostly affected by the restrictions of the MEDREG). In contrast to the 2016 request, the future request for a derogation will also apply to a smaller area (the northern area of the western Istria coast only) and will be limited to the winter period only (three months between December and March) (i.e. the period when the local fleets suffer the most from bad weather conditions).

Justification for selecting the 35 vessels

According to the submitted document, all active vessels operating in the western area of Istria predominantly operate as bottom trawlers (more than 50% of their fishing time). Vessels below 15 meters can rarely operate outside of 3 NM during the winter period due to bad weather conditions. The 35 vessels proposed to be involved in the trial fishery inside the 3 NM are exactly those vessels for which a revised request for derogation will be submitted in the future. These vessels satisfy the following criteria:

- (a) they are smaller than 15 m
- (b) they have ‘sufficient number of fishing days’ (not specified) over the past 5 years
- (c) they are equipped with VMS, e-logbooks and winch sensors

It is argued in the document that using the entire fleet of vessels for which the revised request will be submitted is the most efficient way to assess the real impact of such a derogation in terms of biological and socioeconomic impacts.

STECF comments

Derogations from the MEDREG provisions are regularly evaluated by STECF for a number of coastal Mediterranean fisheries. Such evaluations involve among other aspects reviewing the average annual catch composition, including the proportion of Annex III species. In this sense, STECF recognises that the proposed trial fishery involving all vessels concerned will provide the most representative picture of catch volume and composition since this will essentially represent a full census of the fishery during one winter. In other words, that trial would almost correspond to granting the derogation for one year (to the difference that vessels would only be allowed to fish part time, not full time, in the area).

However, a trial fishery, in the sense of the TMR, is an experimental fishery aimed to collect a representative sample rather than to simulate the full fishery. STECF considers thus that the request from Croatia goes beyond the scope of what is meant to be a fishery conducted by commercial vessels for the purpose of scientific investigation. STECF notes further that, although it is argued that this is conducted by small vessels, the trial still corresponds to a substantial amount of fishing effort: 35 vessels operating for 3 days per week and for 3 months sums up to 1260 potential fishing days ($35 \times 3 \times 4 \times 3$).

Given the relatively small size of the area (STECF understands that the strip between 1.5 and 3 nautical miles along the northern area of the western Istria coast is around 20 NM long, i.e. a total area of 30 NM^2), STECF considers that this sampling effort is much likely significantly higher than what is necessary to collect a representative estimate of catch composition. As a matter of comparison, most scientific surveys in EU, like the IBTS, undertake 2 trawl stations per year per statistical rectangle, which each represents an area around 450 NM^2 . Such a level of scientific sampling effort is considered to be sufficiently representative of the catch composition.

As such, STECF considers that up to 6 vessels shall be a sufficient number of vessels for a trial fishery, provided that the trial is conducted following a statistical protocol ensuring a stratified deployment of vessels over the entire area and fishing season.

A simple statistical analysis could be conducted, investigating the variability in current catch composition per day of the vessels concerned (starting with the observed variability in the fishery currently occurring closest to the 3 NM border if no historical data from the fishery inside the 3 NM are available), and evaluating their likely distribution in the coastal area in relation to their homeport. Such an analysis would help build a statistically sound sampling scheme identifying sampling strata (sub-areas*time periods) across which catch composition is most likely to vary, and a minimum number of samples (number of vessels \times days) in each of these strata required for a given expected level of precision and confidence. These are the basic principles underlying the data collection in European fisheries, and STECF considers that these should also apply in the requests for fishing operations conducted for scientific investigations.

STECF conclusions

STECF acknowledges the effort made by Croatia to address its comments from PLEN 16-01. The proposed trial fishery is aimed to provide information to support the request for a

derogation for fishing with the "volantina" bottom trawl in the zone 1.5-3 NM from the west coast of Istria.

STECF notes that this is the first request that refers to the new specifications regarding scientific research (art 25) in the TMR. STECF considers that in order to evaluate whether an art 25 proposal is justified on scientific grounds some minimum information is required, such as:

- Scientific question/questions asked, i.e. aim of the study;
- Design of the study, i.e. how these scientific questions will be addressed;
- Analysis to define the number of participating vessels;
- Outline of new information required in order to translate a scientific trial fishery into a regular fishery fully managed.

STECF concludes that the proposal of using all concerned (35) vessels in the trial fishery lacks any statistical justification and deviates from the conditions of a maximum of 6 vessels in article 25 of the Regulation (EU) 2019/1241. STECF also notes that the proposal does not contain any scientific justification on the economic need to open new fishing grounds to the fleet of the 35 small vessels.

STECF concludes that given that the proposed fishing trials are to be restricted to an area of approximately 30 NM², the information that would be collected by up to 6 vessels deployed following a stratified protocol is likely to be sufficient to provide a robust estimate of the potential catch composition of a fleet of 35 vessels in total. Hence, on scientific grounds, the participation of all 35 vessels cannot be justified.

STECF concludes that the basic principles of a statistically sound sampling scheme as used in the EU data collection should be applied. A standard statistical analysis should be conducted on the current and expected variability in catch composition across vessels, area and time periods, which would allow identifying the required number of samples to be taken and a sampling protocol to be applied.

6.4 Closure areas under the multiannual plan for demersal fisheries in the western Mediterranean Sea

Background provided by the Commission

Under Article 11(1) of Regulation (EU) No 2019/1022 ("WMed MAP"), the use of trawls in the western Mediterranean Sea shall be prohibited within six nautical miles from the coast except in areas deeper than the 100 m isobath during three months each year and, where appropriate, consecutively, on the basis of the best available scientific advice. Those three months of annual closure shall be determined by each Member State and shall apply during the most relevant period determined on the basis of the best available scientific advice.

Provided that it is justified by particular geographical constraints, such as the limited size of the continental shelf or the long distances to fishing grounds, Member States may derogate from Article 11(1) and establish, on the basis of the best available scientific advice, other closure areas. Those closure areas shall account for a reduction of at least 20 % of catches of juvenile hake in each geographical subarea is achieved.

France, Italy and Spain were expected to provide scientific and technical documentation supporting the implementation of the closure area set in Article 11(1) or, where appropriate, requesting the derogation foreseen in Article 11(2).

Background documents are published on the meeting's web site on: <https://stecf.jrc.ec.europa.eu/plen1903>

Request to the STECF

- When the closure area set in Article 11, paragraph 1, applies: Review the supporting documentation provided to identify the most relevant period, taking into account the aim of protecting demersal resources, in particular juveniles, and sensitive habitats.
- When the derogation foreseen in Article 11, paragraph 2, is requested: Evaluate if the following conditions are fulfilled: (i) there are particular geographical constraints, such as the limited size of the continental shelf or the long distances to fishing grounds; and (ii) there are sound scientific basis indicating that the proposed closure areas would lead to a reduction of at least 20% of catches of juvenile hake in each GSA.

Summary of the information provided to STECF

STECF was provided with three supporting documents by the national administrations of France and Spain as follows:

1. A document from France ("*ToR 6.4_Closure areas under WMed MAP_FRANCE (GSA8)_FRENCH.pdf*") with a suggestion for a 3 months closed period of the 6 nm strip - 100 m isobath to apply in GSA 8 (in French and the equivalent text translated in English). This document was prepared by IFREMER on request of the France Ministry of Food and Agriculture. The document includes maps showing the monthly landings of hake, Norway lobster and rose shrimp (average values 2015-2017) within the proposed closed area and from outside the area. These landings are from 6 trawlers of ca. 15m LOA, all equipped with VMS. The document provides maps of fishing effort inside 3 by 3' grid cells applying

some filtering of the VMS data to elucidate the areas historically fished during the 2015-2017 period. The document provides the historical landings per month for all species landed during 2015-2017 together with the landings component that would have been impacted by the closure if implemented in that period, compared to those landings from outside the closure area.

2. A document from France with suggestions for closures in GSA 7 ("*ToR 6.4_Closure areas under WMed MAP_FRANCE(GSA7)_FRENCH.pdf*", in French and the equivalent text translated in English). The document supports a derogation to Art. 11.1 of Regulation (EU) No 2019/1022 based on a scientific study conducted by IFREMER designed to compare alternative closures. The study also assesses whether some of these settings would be able to reduce the juvenile hake catches in weight by 20%. The study defines juvenile hake as being < 28 cm Total length (TL) based on average L50 of maturity ogives described in GFCM-WGSAD 2018. The study is based on fisheries data related to OTB & OTM fishing vessels over the period 2015-2017. Data used were:

- 1) Effort & landings split over 5 commercial categories;
- 2) Harbour sampling of landings per commercial category to provide length-frequency data; and
- 3) Observer data to estimate discards (size and volume).

From data 1) and 2), the analysis maps the spatial origin of juvenile hake catches to develop landings-per-unit of effort (LPUEs) maps by assigning the landings of hake from the total landings to spatial effort, proportional to the historical effort deduced from VMS data. This is complemented with data 3) estimating a discard rate of up to 5% regardless of the season. The document compares closure scenarios as a combination of the following:

- i) Status quo including the 10% effort reduction i.e. no closure;
- ii) 3 (Jan-Mar) months for 6 nm strip;
- iii) (O1) 7 (mid Sep- mid Apr) months for 90-200 m zone ('O'-type scenarios suggested by the CRPMEM French producer organisation);
- iv) (O2) 4 months (Jan-Apr) for 90-100 m zone;
- v) (O3) 10 months (Sep-Jun) for 70-90m zone ;
- vi) (P1, 'P'-type scenarios proposed by the CRPMMS PACA French producer organisation) closure of a box in Jan-Apr;
- vii) (P2) closure of a box in Dec-Apr;
- viii) (P3) closure of a box in Nov-Apr.

The study then assumes the closures lead to effort displacement to the remaining area still open. This effort displacement would be proportional to the historical effort. Inferred catches (juveniles and adults) within the open area assuming constant averaged LPUEs and constant discard rate are derived.

Finally, the study looks at whether juvenile catches are likely to be reduced by more than 20% based on these assumptions. The study concludes that, among the scenarios tested, the 6 nm strip-3months (Jan-March) performs the least well due to effort displacement to areas beyond 6 nm. This is because the effort displacement might actually increase catches of juveniles by concentrating fishing effort on areas where the juveniles are more abundant. This assumes that the juveniles recorded in the catches reflect the underlying distribution of juveniles.

3. A document from Spain ("*ToR 6.4_Closure areas under WMed MAP_SPAIN (GSA1-2-5-6).pdf*") with suggestions for closures in GSAs 1, 2, 5, and 6. This document is intended to

support a derogation to Art. 11.1 and proposes alternative closed areas. The proposal is based on fishery independent data using a previous study that analyzed MEDITS survey data to map hotspots of juvenile hake (Tugores et al., 2019). Juveniles are defined as the individuals < 20 cm TL. This provides a basis to map persistent hotspots of juvenile hake. A study by Druon et al. (2015) is used with an assumption on juvenile hake growth to deduce the best periods to close. The document explains that, contrary to Regulation (EU) No 2019/1022, Spain does not expect juvenile hake to be mainly distributed on the continental shelf (< 100m) and refers to Tugores et al. (2019) to support this viewpoint. Spain concludes that temporal closures for bottom trawlers between 100 m and 200 m would be most beneficial and proposes on this basis some areas to close in GSA6.

STECF's interpretation of the terms of the Regulation (EU) No 2019/1022

The rationale for the 6 nm / 100 m protection is defined in the preamble (26) of Reg 2019/1022 as: *"In order to protect nursery areas and sensitive habitats, and safeguard small-scale fisheries, the coastal zone should be regularly reserved for more selective fisheries. Therefore, the plan should establish a closure for trawls operating within six nautical miles from the coast except in areas deeper than the 100 m isobath during three months each year. It should be possible for other closure areas to be established, where this can ensure at least a 20 % reduction of catches of juvenile hake."*

From the above, STECF infers that the primary objectives of the closure are focused towards i) nursery areas, ii) sensitive habitats and iii) small-scale fisheries, and the Member States' proposals should be evaluated according to these objectives.

Derogations from the 6 nm / 100 m closure should be based on geographical constraints, such as the limited size of the continental shelf or the long distance to fishing grounds. However, STECF notes that no clear criteria have been identified to define and evaluate these geographical constraints, and the justification of these remain open to interpretation. In addition, the definition of the "continental shelf" itself is not provided. STECF interprets that the "continental shelf" refers to the 100m isobaths.

STECF specific comments on each submitted case

France GSA 8

STECF notes that the request relates to the closure area defined in Article 11, paragraph 1, and therefore STECF reviewed the supporting documentation provided to identify the most relevant closure period, considering the aim of protecting demersal resources, in particular juveniles, and sensitive habitats.

STECF notes that the documentation submitted by France for GSA8 does not make use of MEDITS survey to map the distribution of exploited resources and particularly juvenile hake. The study considers that there are not enough MEDITS observations inside of 6 nm and with insufficient time coverage to be of value. The scientific evidence is therefore based on fisheries dependent data only. The supporting study suggests the June to August 3-month closure period is most appropriate based on these being the months with highest catches. However, the study argues that the impact of the Regulation (EU) No 2019/1022 closure will be limited regardless of the time period chosen, considering that the overall level of landings is low (ca. 86 tons a year) by the 6 vessels impacted, also being the only vessels operating in the area.

STECF observes that, despite the total landings being low as they are limited to 6 vessels, a substantial proportion of landings are caught inside the 6 nm area (up to 29% of the landings of three species considered in the regulation (hake, Norway lobster, deep-water

rose shrimp). This is based on the mapping of the origin of the landings provided in the supporting documentation.

STECF further notes that the study does not consider catches because discard data from on-board observers were not used. No length-frequency distribution of landings are available, and an assumption is made that the proportion juveniles/adults in catches are the same throughout the year and areas. Therefore, it is not clear where and when the juvenile catches actually occur, that could support the definition of nursery areas as stated in the Regulation.

STECF notes that no consideration on sensitive habitats is provided in the study.

In GSA 8, France concludes the most suitable 3-months closure period of the 6 nm strip from the coast unless the depth exceeds 100m should take place from June to August each year. These months have the highest total landings and also with the highest proportion of juveniles within the planned closure. Therefore, STECF concludes that the justification for choosing such a period is not based on protecting nursery areas or sensitive habitats as stated in the Regulation.

France GSA 7

STECF notes that the request relates to the closure of an area according to Article 11, paragraph 2, and therefore STECF evaluates whether the following conditions are fulfilled:

- *There are particular geographical constraints, such as the limited size of the continental shelf or the long distances to fishing grounds;*

No justification is provided (i.e., geographical constraints) for the request of a derogation to the 6 nm strip closure or 100 m isobaths.

- *There is sound scientific basis indicating that the proposed closure areas would lead to a reduction of at least 20% of catches of juvenile hake in each GSA.*

STECF notes that the study used only fisheries-dependent data to map commercial landings per unit effort data (LPUEs) supplemented with discard estimates to deduce catch per unit effort (CPUEs) maps. The supporting study is not based on trawl survey data (MEDITS) and/or alternative modelling work (e.g., spatial population distribution modelling etc.) that could have been used to map the underlying distribution of the exploited resource, including nursery grounds. STECF notes that commercial LPUE data are not fully appropriate to map the occurrences of hake nurseries areas given that smaller fish contribute the least to the total weight landed. The spatial distribution of landings of the smallest commercial category (EU50) used in the study may better reflect the spatial distribution of juvenile sub-adult hake than nurseries. Hence, juvenile hake defines as all fish below 29 cm TL (GFCM stock assessment forms 2015-2017 <http://www.fao.org/gfcm/data/safs>), while size-frequency distribution of EU50 shows that most individuals belong to the size range 10-28 cm TL, undersized fish being landed. Discards represents only a small fraction of the catch (<5%).

There are no considerations on sensitive habitats in the document.

The scenario used to evaluate the impacts of the Regulation (6nm area or <100 m isobaths) assumes an arbitrary time closure period (i.e. January-March), but alternative periods have not been evaluated. STECF notes however that this period of January-March is not pre-defined in the Regulation since the purpose of Art. 11.1 is exactly to identify the most relevant time periods for the 6nm area or <100 m isobaths closure. STECF considers that using this particular time period to compare with alternative scenarios may be misleading since the actual effort deployed in GSA 7 during January to March is at its highest level thus with a high risk of effort displacement.

STECF notes that the tested scenarios assume that effort will displace evenly into the remaining areas open and will not affect the catches rates. STECF considers this an overly optimistic assumption when the fishing pressure is going to concentrate on a smaller area remained open. The scenarios also assume that in response to the time closure the impacted effort will not redistribute to other seasons in an attempt to compensate for the possible losses in fishing opportunities resulting from the closures.

STECF notes that there are several scenarios for which the results presented meet the requirement of a reduction of a 20% decrease in juvenile hake catches by weight stated in the Regulation. The study puts forward one scenario that sets the closure for the strip 90 to 200m for 7 months (scenario iii). This is the only scenario that is likely to maintain the target of 20% reduction in juvenile catches even if fishing effort would unexpectedly increase by 20%.

Spain GSAs 1, 2, 5 and 6

STECF notes that the request relates to the closure area set in Article 11, paragraph 2, and therefore STECF evaluates whether the following conditions are fulfilled:

- *There are particular geographical constraints, such as the limited size of the continental shelf or the long distances to fishing grounds;*

The justification for the derogation is not clear. The "geographical constraints" criteria is argued on the basis that for GSAs 1, 5 and 6, a large part of the 6nm strip from the coast is in areas deeper than 100m area and therefore, not relevant to the protection of juveniles.

STECF notes that the closure within the 6nm should aim at protecting nursery areas for a number of species as well as protecting sensitive habitats. Further, STECF notes that there are only very limited areas with geographical constraints (i.e. if interpreted as a small proportion of area 0-100m depth included within the 6nm) in GSA 6, contrary to what is stated in the document. STECF understands that the geographical constraints there might be interpreted as the constraint created by a small proportion of the area of 0-100 m being left outside the 6nm strip.

- *There are sound scientific basis indicating that the proposed closure areas would lead to a reduction of at least 20% of catches of juvenile hake in each GSA.*

Based on the derogation to Art 11.1, Spain suggests alternative closures to protect hake. However, STECF observes that for all the GSAs the design of the suggested closures are not based on any evaluation of the 20% criteria for decrease of juvenile hake catches as required by Art 11.2.

Spain proposes several closure areas based on juvenile hake distributions. The studies by Druon et al. (2016) Tugores et al. (2019) referenced in the supporting document show hake juveniles are distributed in areas deeper than 100 m. STECF notes that these studies are based on MEDITS survey data, GAM modelling and persistence analysis to map hake recruits areas. The highest percentage are shown for the 100-200m strip. STECF notes that the year period used for inferring the persistence is not reported. On seasonal persistence analysis, STECF notes that the MEDITS survey takes place in Spring Druon et al. (2016) used MEDITS data to simulate the spatial-temporal distribution of juveniles during the year using a modelling approach.

STECF notes that the document considers that the best period for a time closure should be based on growth modelling to back track in time when spawning occurs. However, STECF notes that no information is provided to evidence that these closures will correspond to a 20% reduction in hake juveniles catches.

For GSA 1, 2 and 3 (Southern Alboran Sea), Spain suggested the closure should only be in GSA 3. STECF observes that the Regulation requires a closure to be defined individually in every GSA. In addition, STECF observes GSA 3 is not included in the Regulation.

For GSA 5, Spain proposes two different boxes to close for 3 months corresponding to hotspots identified in a study by IEO over the period 2003-2016. STECF notes that the reference to the IEO report is missing, and therefore cannot assess whether this is correct.

For GSA6, Spain suggests the best periods for the closure of several small boxes in areas deeper than 100m. Spain also suggests some boxes (e.g., suggested box in the Alicante area) that do not seem to correspond to any hotspot areas for juvenile hake (described in Annex II of the submitted document).

Italy GSAs 9, 10 and 11

No documentation from Italy has been received at the time of the evaluation.

STECF general comments

STECF notes that the various requests have been based on widely different justifications and supporting information. Considering these differences, STECF has suggested how these analyses could be performed in a more standardized manner, which would provide more robust results.

STECF suggests that a better definition of the term “geographical constraints” is needed, based on GIS isobaths studies overlaid with fleet distribution to show why fleets are constrained by the 6nm-100m closure.

In order to satisfy the two criteria to justify a derogation from the closure, STECF considers that geo-referenced catches of juvenile hake per GSA (such as the ones obtained from on-board observer data or scientific trawl survey data) would be needed in addition to commercial landings. This would allow mapping potential combinations of areas and seasons that would result in a reduction of 20% juvenile hake catches as required by the Regulation. The assessment of the best location and timing for closures should compare and overlay a) where the fisheries are taking place and the likely catch composition and b) where juveniles are most likely to be distributed, in order to assess the expected impact of the fisheries on the juvenile stock component. Juvenile hake habitats can be modelled using fishery-independent trawl surveys and applying persistency analyses of the juvenile hake distribution to document hotspots in time and space. Alternative methods for predicting juvenile distributions exist such as multicriteria analysis that could generate habitat suitability maps. STECF notes that the submitted evaluations used either fisheries data only (France), or research survey-based data only (Spain), but not both, making the justification incomplete.

STECF suggests that the definition of juvenile hake should be standardised, and that proven methods and updated scientific knowledge (e.g., Bartolino et al. 2008; Giannoulaki et al., 2013; Colloca et al., 2015) on the distribution of nurseries and sub-adult juveniles is used including knowledge on connectivity (dispersion, migration and spill-over effects). Updated knowledge could also include possible shifts in distribution due to external oceanographic drivers including climate change.

According to the information provided, STECF notes that small juvenile hake tend to aggregate at depths ranging from 100 to 200 m, while sub-adults tend to disperse in both shallower and deeper waters. In this case, (and notwithstanding the effort reallocation issues discussed below), the protection of the 6 nm from the coast would mainly protect

sub-adults, along with sensitive habitats (i.e. seagrass meadows and coralligenous). STECF acknowledges that it might be preferable to protect sub-adults (age 1) than age-0 hake in order to improve the status of the stock and reduce fishing mortality, because for very small fish, the natural mortality is greater than fishing mortality. STECF suggests thus that the expected effects of closures are better distinguished between the nurseries and the sub-adults areas, in order to fully assess whether the proposed closures could reduce fishing mortality or, conversely, lead to increases in fishing mortality on sub-adults and adults due to effort reallocation effects.

Indeed, STECF remarks that closures may have unintended consequences that could adversely affect the dynamics of the exploited stocks. Seasonal closures of part of the fished area (e.g. <6 nm strip) are not likely to reduce the overall effort but to displace effort instead. This may increase the mortality on juveniles as shown here, but is also likely to create concerns on other ecosystem components including other gears, other species and other habitats. Knowledge on the spatial distribution of effort would thus also be needed to anticipate the effect of the suggested closure on effort displacement.

Furthermore, if the closures are expected to have an effect by changing selectivity, then only a permanent closure (year-round) is likely to change selectivity. This is because if the closure is seasonal, the fish might just be caught later in the year, unless it is demonstrated that the temporally protected fish migrate offshore and become inaccessible.

Ultimately, STECF underlines that all these elements above would be best combined into a simulation model to fully evaluate the impact of fisheries closures in the short and medium-term. Such analyses have been performed for the West Mediterranean MAP by STECF EWG 19-14 (ToR 5.5 of this plenary report), supplementing the comments given here.

STECF conclusions

STECF concludes that all proposals submitted here have shortcomings and do not make the full use of standardised data and methods which could have been used. STECF has suggested ways for improving the analyses of fisheries closures involving both fisheries-dependent and fisheries-independent information in order to better assess the expected impact of the closures.

In GSA 8, France suggested a 3-months closure period during June to August for the 6 nm strip, based only on fisheries-dependent data. These are the months with the largest observed landings over the period 2015-2017 period, for all species combined. From the documentation provided, STECF can however not conclude whether the 3-months period suggested is also the period when the highest number of juvenile fish occur in the catches.

In GSA7, France requested a derogation to Art 11.1. However, the justification of this request in terms of geographical constraints is not clear. The methodology used indicates that the proposed closure is expected to fulfil the requirement of a 20% reduction in juvenile hake catches. STECF cannot however assess the persistence of this reduction since information is lacking on the distribution of juveniles from survey data. STECF concludes thus that further analyses would be needed to fully assess the alternative closures.

Regarding the suggested closures in GSA 1, 2, 5 and 6, STECF concludes that the derogation to Art 11.1 requested by Spain does not comply with the Regulation. The proposed closure areas do not apply per GSA and no information is provided demonstrating a 20% reduction of juvenile hake catches as stated in Art 11.2 regulation.

More generally, STECF observes that spatial and temporal closures may not contribute to achieving the objectives of the plan since they likely lead to effort displacement towards other components including other gears, other species and other habitats. This may actually lead to an increase of fishing pressure on hake sub-adults and adults.

Given the changes over time in resource distribution and fishing effort allocation, STECF concludes that fishing closures should be evaluated in an integrated manner and be re-assessed periodically to adapt to such changes.

References

- Bartolino, V., Ottavi, A., Colloca, F., Ardizzone, G. D., and Stefansson, G. 2008. Bathymetric preferences of juvenile European hake (*Merluccius merluccius*). – ICES Journal of Marine Science, 65.
- Colloca F., Garofalo G., Bitetto I., Facchini M. T., Grati F., Martiradonna A., Mastrantonio G., Nikolioudakis N., Ordinas F., Scarcella G., et al. 2015. The seascape of demersal fish nursery areas in the north mediterranean sea, a first step towards the implementation of spatial planning for trawl fisheries. PloS one 10 (3), e0119590.
- Druon J.N., F. Fiorentino, M. Murenu, L. Knittweis, F. Colloca, C. Osio, B. Mérigot, G. Garofalo, A. Mannini, A. Jadaud, M. Sbrana, G. Scarcella, G. Tserpes, P. Peristeraki, R. Carlucci, J. Hikkonen. 2015. Modelling of European hake nurseries in the Mediterranean Sea: An ecological niche approach. Progress in Oceanography 130: 188-204.
- Giannoulaki M., A. Belluscio, F. Colloca, S. Frascchetti, M. Scardi, C. Smith, P. Panayotidis, V. Valavanis M.T. Spedicato (edited by) (2013). Mediterranean Sensitive Habitats. DG MARE Specific Contract SI2.600741, Final Report, 557 p.
- Tugores M.P., F. Ordines, B. Guijarro, C. García-Ruiz, A. Esteban, E. Massutí. 2018. Essential fish habitats and hotspots of nekto-benthic diversity and density in the western Mediterranean. Aquatic Conservation Marine and Freshwater Ecosystems, 1-11.

6.5 Management plan for boat seines in the Balearic Islands, Spain

Background from the Commission

Under Article 19 of Council Regulation (EC) No 1967/20061 (hereafter "MEDREG"), Member States are expected to adopt management plans for fisheries conducted by trawl nets, boats seines, shore seines, surrounding nets and dredges within their territorial waters.

In 2013, the Common Fisheries Policy (CFP) introduced new elements for conservation such as the target of maximum sustainable yield (MSY) for all the stocks by 2020 at the latest, the landing obligation and the regionalisation approach.

In line with these two regulations, the plans shall be based on scientific, technical and economic advice, and shall contain conservation measures to restore and maintain fish stocks above levels capable of producing MSY. Where targets relating to the MSY (e.g. fishing mortality) cannot be determined, owing to insufficient data, the plans shall provide for measures based on the precautionary approach, ensuring at least a comparable degree of conservation of the relevant stocks.

The plans may contain specific conservation objectives and measures based on the ecosystem approach to achieve the objectives set. In particular, it may incorporate any measure included in the following list to limit fishing mortality and the environmental impact of fishing activities: limiting catches, fixing the number and type of fishing vessels authorized to fish, limiting fishing effort, adopting technical measures (structure of fishing gears, fishing practices, areas/period of fishing restriction, minimum size, reduction of impact of fishing activities on marine ecosystems and non-target species), establishing incentives to promote more selective fishing, conduct pilot projects on alternative types of fishing management techniques.

Moreover, with a view to exploit the target species of transparent goby (*Aphia minuta*), of Ferrer's goby (*Pseudaphya ferreri*) and crystal goby (*Crystallogobius linearis*), the boat seine fisheries concerned should be granted both derogations to the minimum mesh size of 40 mm square or 50 mm diamond and to the minimum distances and depths.

In order to benefit of such derogations, as stipulated by Article 9(7) and Article 13(5) and (9) respectively of the MEDREG, the fisheries concerned, in addition of being managed within an adequate management plan, shall be highly selective, in order to ensure that catches of species mentioned in Annex IX of Regulation (EU) No 2019/1241 are minimal, have a negligible effect on the marine environment and shall not be carried out above seagrass beds of *Posidonia oceanica* or other marine phanerogams. For the latter issue a derogation to operate in the water columns above seagrass beds is available (Article 4(1) second subparagraph) provided that the lead-line and/or the hauling ropes of boat seines do not touch the seagrass bed during the fishing operations.

In 2013, Spain adopted the first management plan for boat seines fisheries in the waters of the Balearic Islands¹⁵ and the European Commission adopted the respective delegated act establishing a derogation to the minimum distances and depths¹⁶. The technical basis of the plan and the derogation were assessed by the STECF at its plenary session of November 2012¹⁷. In 2016, Spain provided up-to-date information to extend the plan and its derogation, which was assessed by the STECF at its plenary session of October 2016¹⁸. In 2019, Spain published the second plan¹⁹ and the European Commission extended the derogation, on a retroactive basis from 2016 to 2019²⁰. Spain was expected to provide up-to-date scientific and technical justifications to renew the management plan and to extend the derogations.

Background documents are published on the meeting's web site on: <https://stecf.jrc.ec.europa.eu/plen1903>

Request to STECF

TOR 1. Assess whether the management plan contains adequate elements in terms of:

1.1. *The description of the fisheries:*

- Recent and historical data on catches (landings and discards) of the species concerned, fishing effort and abundance indices such as catch-per-unit-effort;
- Data on length-frequency distribution of the catches, with particular reference to the species subject to minimum sizes in accordance with Annex IX of Regulation (EU) No 2019/1241;
- An updated state of the exploited resources; and
- Information on economic indicators, including the profitability of the fisheries.

1.2. *Objectives, safeguards and conservation/technical measures:*

- Objectives consistent with Article 2 of the CFP and quantifiable targets, such as fishing mortality rates and total biomass;
- Measures proportionate to the objectives, the targets and the expected time frame;
- Safeguards to ensure that quantifiable targets are met, as well as remedial actions, where needed, including situations where the poor quality of data or non-availability places the sustainability of the main stocks of the fishery at risk; and

15 Decreto 44/2013, de 4 de octubre, por el que establece el Plan de Gestión Pluriinsular para la pesca con artes de tiro tradicionales en aguas de las Illes Balears. *Bulletí Oficial de les Illes Balears* No 137, 5.10.2013, pg. 47345.

16 Commission Implementing Regulation (EU) No 1233/2013 of 29 November 2013 establishing a derogation from Regulation (EC) No 1967/2006 as regards the minimum distance from coast and the minimum sea depth for boat seines fishing for transparent and Ferrer's gobies (*Aphia minuta* and *Pseudaphia ferreri*) and Lowbody picarel (*Spicara smaris*) in certain territorial waters of Spain (Balearic Islands).

17 41st Plenary Meeting Report of the Scientific, Technical and Economic Committee for Fisheries (PLEN-12-03).

18 53rd Plenary Meeting Report of the Scientific, Technical and Economic Committee for Fisheries (PLEN-16-03).

19 Decreto 19/2019, de 15 de marzo, por el que se establece el Plan de Gestión Pluriinsular para la Pesca con Artes de Tiro Tradicionales en aguas de las Illes Balears.

20 Commission Implementing Regulation (EU) 2019/662 of 25 April 2019 extending the derogation from Council Regulation (EC) No 1967/2006 as regards the minimum distance from coast and the minimum sea depth for boat seines fishing for transparent goby (*Aphia minuta*), Ferrer's goby (*Pseudaphia ferreri*) and Lowbody picarel (*Spicara smaris*) in certain territorial waters of Spain (Balearic Islands).

- Other conservation measures, in particular measures to fully monitor catches of the target species, to eliminate discards and to minimise the negative impact of fishing on the ecosystem.

1.3. Other aspects:

- Quantifiable indicators for periodic monitoring and assessment of progress in achieving the objectives of the plan.
- If deemed necessary, provide any recommendations and guidance on how to obtain improved scientific/technical supporting material for the plan. This could be done in terms of collection of data, evaluation of the status of the target stocks, evaluation of conservation measures, impact on the marine ecosystem and monitoring programme.

TOR 2. Evaluate whether the following conditions set by the MEDREG are fulfilled: 2.1. *Derogation to the minimum mesh size (Article 9, paragraph 7):*

- The fisheries are highly selective and have a negligible effect on the marine environment; and
- The fisheries do not touch seagrass beds, in particular, *Posidonia oceanica*.

2.2. *Derogation to the minimum distances and depths (Article 13, paragraphs 5, 9 and 10):*

- There are particular geographical constraints, such as the limited size of coastal platforms or limited fishing grounds;
- The fisheries have no significant impact on the marine environment;
- The fisheries involve a limited number of vessels, with a track record of more than 5 years, and do not contain any increase in the fishing effort;
- The fisheries cannot be undertaken with another gear;
- The fisheries are subject to a management plan and carry out a monitoring of catches as requested in Article 23;
- The fisheries do not interfere with the activities of vessels using gears other than trawls, seines or similar towed nets;
- The fisheries are regulated in order to ensure that catches of species mentioned in Annex IX of Regulation (EU) No 2019/1241 are minimal; and

The fisheries do not target cephalopods.

Summary of previous evaluations

The first management plan (MP) for boat seines in the Spanish waters of Balears (and of Murcia) was adopted in 2012 and a derogation regarding the minimum mesh size and distance from the coast and depth was granted. STECF in its review (PLEN 12-03) considered that: (a) implementing the plan as proposed, was unlikely to pose any serious threat to the stock in the short term, (b) appropriate monitoring would permit the collection of the data and information required to undertake the proposed annual review, (c) the boat seine fisheries are considered highly selective and have a negligible effect on the environment, and (d) the harvest rules proposed in the plan were expected to result in exploitation rates that are less than or equal to the average rate over the last decade. However, given the available information and the short life span of *Aphia minuta* it was not possible for STECF to determine the likely long-term effects on future recruitment and spawning stock biomass.

Spain was required to communicate a report to the Commission, within three years following the entry into force of the derogation, regarding the minimum mesh size of the net and distance from the coast and depth, in accordance with the monitoring plan established in the MP. In 2016 Spain collected information on the 2013-2016 fishing period to extend the MP and its derogation. STECF (PLEN 16-03) in its review concluded that:

-It is not possible to determine whether the new MP strictly ensures the sustainable exploitation of transparent gobies and Ferrer's gobies (*Aphia minuta* and *Pseudaphya ferreri*) and lowbody picarel (*Spicara smaris*) in accordance with the MSY objective of the EU Common Fishery Policy, due to a lack of knowledge on the status of the stocks. STECF noted however that the Balearic MP contained some elements that are capable of limiting the level of exploitation of these species in the Balearic Islands.

-STECF considered that most of the requested modifications were not in accordance with the precautionary approach and/or with the MEDREG. Some of them may lead to a direct increase of fishing effort, hence of fishing mortality of target and bycatch species, the consequences of which are unknown.

Summary of the information provided to STECF

STECF reviewed the following document provided by the Commission:

"MP for boat seines in the Balearic Islands (2019-2022)".

In the first version of the MP (2013-2016), the objectives were to ensure the long-term sustainability of the transparent goby and picarel fisheries and to reduce the catch weight of non-target species from 6% (the figure estimated at that time) to 3%. The objectives of the second MP (2016-2019) were essentially the same, though updated by new information acquired up until 2016. The objectives of this new MP (2019-2022) are similar, but they have been updated by knowledge gained over the previous three years of monitoring and by contributions from the sector. These new objectives are thus i) to maintain the current level of exploitation, which is within the limits of sustainable exploitation according to historical landing data, ii) to prevent the increase in effort that may result from a hypothetical increase in authorised vessels' registration and power and iii) to comply with good practices on board checking that daily quotas are not exceeded.

The new MP for Boat Seine Fisheries in the Balearic Islands includes the findings related to boat seine fishing trips in the Balearic Islands and scientific monitoring of them for 2017, 2018 and 2019. In addition, it justifies the request for derogation from Council Regulation (EC) No 1967/2006 (regarding mesh size, distance from coast and depth) for 2019-2022. This plan maintains the same management and technical measures as the previous one (for the period 2016-2019). It includes the following information:

-Inspections were carried out on boat seines between 2016 and 2019 for a total of 207 hauls observed.

-A list of vessels that are authorized to fish with traditional boat seine gears in the waters of the Balearic Islands and have a home port in the Balearic Islands.

-The number of active vessels in the two fisheries for the years 2016-2019.

-The target species for Jonquiller boat seines are transparent goby, Ferrer' goby and crystal goby. The target species for Gerretera boat seines are lowbody picarel and the Mediterranean sand eel (*Gymnammodites cicereus*), which appeared mainly in March.

-The contribution of by-catch to total catch weight for Gerretera boat seine was studied in 207 hauls during 2016-2019 and in any case does not exceed 5% of the total catch.

-Preliminary data on the degree of spatial overlap between the Jonquiller boat seine hauls and the areas of *Posidonia oceanica* beds were presented.

-Survival experiments was conducted in 2016-2017 period to test the effects of catch and release on the target species and some of the by-catch species of picarel fishery.

-Mean monthly CPUE estimates based on daily catch reports exhibited an increasing trend from 2013 (22.7 kg/day/vessel) to 2018 (32.3 kg/day/vessel), for transparent and Ferrer's goby, and from 2015 (84.1 kg/day/vessel) to 2018 (113.7 kg/day/vessel) for picarel.

-Mean catch per haul for transparent goby, estimated by observers on board, was 10.7 kg per haul. Data provided by various sources for the 2016-2017 indicated a stable trend of catches during December-March which ranged from 15 kg/vessel/day to 21.5 kg/vessel/day.

- The stock status has been evaluated in relation to the target species based on simplified stock assessment methods in order to identify some reference points for management.

-Through the currently applicable Decree 19/2019 of 15 March 2019 the boat seine fishery is managed by a Co-Management Committee, with the participation of the Administration and the fishing sector, and an environmental organization (IMEDEA). The functioning and responsibilities of the Co-management Committee are established by the above Decree.

-The report also includes detailed information on the administrative and scientific monitoring, at fleet and vessel level, as well as on the control measures.

STECF response in relation to each of the elements outlined in TOR 1

TOR 1. Assess whether the MP contains adequate elements in terms of:

1.1. The description of the fisheries

Recent and historical data on catches (landings and discards) of the species concerned, fishing effort and abundance indices such as catch-per-unit-effort;

Annual and monthly catch per haul (kg) and catch per day and vessel are presented for 2013-2018, based on catch reports of the vessel skippers.

For transparent and Ferrer's gobies, annual catches of both species have decreased from 13058 kg in 2013, to 5798 kg in 2017 and increased again to 12095 kg in 2018. Catch per day and vessel are generally low in December, increase in January and February and gradual decrease from February onwards. The mean (for the January to March period) catch per day and vessel show a slight increase from 30.91 kg/vessel in 2016/2017 fishing period, to 34.48 kg/vessel in 2018/2019 fishing period. However, STECF notes that at the same time, both for transparent and Ferrer's gobies data on catch per haul (in kg) showed that the mean (for the January to March period) catch per haul, day and vessel decreased

considerably between 2016/2017 and 2018/2019 fishing period, from 32.17 kg (2016) to 11.20 kg (2018). This difference in trends may be linked to an increase in fishing time or number of hauls per day. However, information on fishing hours or number of hauls per day is not available to verify this.

For picarel, annual catches are decreased from 29941 kg in 2013, to 16712 kg in 2017 and increased to 18767 kg in 2018. Catch per vessel and day are generally low in November, increase from December to February and decrease from March onwards. The mean (for the January to March fishing period) catch per day and vessel fluctuated during 2013-2018 (97.65 to 132.04 kg/vessel), reaching 124.21 kg/vessel in 2018. No information on catch per haul is provided.

Since the implementation of the first MP, the number of vessels that regularly participated in the transparent goby fishery decreased slightly from 41 in the beginning (2012-2013) to 37 in 2018. Likewise, the number of vessels participating in the picarel fishery decreased from 14 in 2012/2013 to 5 in 2018.

Monthly number of fishing trips are presented based from the catch reports by vessel skippers. The mean number of monthly fishing trips for the fishing period between 2013/2014 and 2018/2019 were decreased both for the transparent goby and picarel fishery; from 116 fishing trips per month (in 2013), to 70 fishing trips (2018), for the transparent goby and from 41 to 27 fishing trips for picarel for the same years.

Data on bycatches are presented for only one fishing season (Jonquiller: 2014/2015): The percentage of by-catches is approximately 10% (though may range up to 24% like in 2015), mostly including fish species with half of them being *Pagellus acarne* and *Coris julis*. For Gerretera boat seines the by-catch species category, which includes fish species of commercial value, does not exceed 5% of total catch. Main bycatch species are bogue (*Soops boops*) and sardinella (*Sardinella aurita*). Cephalopods bycatch is limited in this fishery, contributing less than 15% of total bycatch.

The only information about discards is a mentioning that once the cod-end is raised and the catch is separated, the non-target species are returned to the sea. Data from experiments in tanks are presented showing that the survival rates of the by catch species is high. STECF notes however that to fully and appropriately assess discard survivability requires following standard protocols as defined in the frame of the CFP landing obligation

Data on length-frequency distribution of the catches, with particular reference to the species subject to minimum sizes in accordance with Annex IX of Regulation (EU) No 2019/1241;

A single length frequency distribution of transparent goby is presented for the period 2015-2016. No length frequency is presented for picarel which is the target species of Gerretera, as well as for the bycatch species subject to minimum sizes in accordance with Annex III of the MedReg is presented.

An updated state of the exploited resources;

The new MP includes preliminary assessments on harvest rates (catches versus original biomass at the beginning of the fishing season, from a depletion model Leslie), for the gobids, suggesting that on average around 39% of the biomass is harvested (ranging from

8% up to 74% in concrete years). No reference points are given, so it cannot be assessed whether these harvest rates are sustainable or not. Furthermore these estimates are very preliminary as they merge several gobid species together and can only make use of the last 3 months of the fishing season. CPUE Analysis based on a production model by Quetglas et al. (2016) pointed out that transparent goby would be heavily overexploited. Therefore, the current status of exploitation is still uncertain.

For picarel, three different stock assessment methods were used based the average length assessment analysis, %spawning biomass ratio and Froese or sustainability indicator method suggesting that the fishing impacts could be sustainable.

Information on economic indicators, including the profitability of the fisheries

Annual prices of transparent and Ferrer's gobies for the period 2002-2013 rose steadily until 2012, when they stabilized and subsequently increased in the last months of the 2019 fishing season. For the period 2013-2019, monthly prices generally decreased towards the end of each fishing season. For transparent and Ferrer's gobies the first-sale mean monthly price for the period 2013-2019 decreased from 25.2 €/kg in 2014-2015 period to 15.1 €/kg in 2018-2019.

Total annual revenue from the boat seine fishery exhibited a variable trend during 2002-2018 reaching a peak of 400000 € in 2010 and 2013 and then decreased in 2018 reaching 2002 values (131000 €). For picarel, the first-sale price agreed in the last decade is 4.5 €/kg and the market price for final consumers varies between 8 and 10 €/kg.

STECF concludes that the document provides only limited information on economic indicators and no information on impacts on profitability. From these information STECF cannot draw any conclusion on economic impacts of the management measures.

1.2. Objectives consistent with Article 2 of the CFP and quantifiable targets, such as fishing mortality rates and total biomass;

The very short life span of transparent goby and the incorporation of new recruits during the fishing season prevents using stock assessment methods able to identify a maximum sustainable yield (MSY) for management. No fishing mortality estimates were presented for gobies and the assessment presented was too preliminary.

The MP includes fishing mortality estimates for picarel stock. During the most recent year (2017/2018), the fishing mortality rate (from a length assessment analysis L_{bar}) was reduced considerably with respect to previous fishing seasons (from 0.95 in 2015-2016 period to 0.58 in 2017-2018 period). Whether this is indicative of any trend is though premature to be said, because there was no trend observed between 2013 and 2017. Fishing mortality resulted to be slightly below M , assuming $M=0.87$ ($F/M \leq 1$), which suggests that the fishing mortality may be a sustainable (Zhou et al. 2012). Two other approaches were trialled based on %SBR and Froese or sustainability indicator method, which also suggested that the fishing impacts could be sustainable.

No measures are provided that are specifically identified or designed to reduce and avoid unwanted catches.

Measures proportionate to the objectives, the targets and the expected time frame;

Catch limits have been set (since 2009) by including daily catch quotas for the Jonquiller fishery (30 kg and 50 kg, for transparent goby and mixture of transparent and Ferrer' gobies, respectively), and weekly quotas for picarel (800 kg/week). STECF notes that these measures appear to be linked to market limitations rather than to fisheries management purposes.

Since the 1st MP minimum average monthly CPUE/day/vessel threshold limits have been also set for boat seine fisheries, estimated from the first quartile of the historical data for transparent goby and from the first quartile of the previous year's record for picarel.

In the 3rd version of MP (2019-2022), the currently applied Decree 19/2019 of 15 March 2019 sets maximum annual quotas for transparent and Ferrer's gobies at 40 000 kg and for picarel at 30 000 kg.

The established maximum annual quotas for both target species have not been exceeded since the implementation of the first management plan for the boat seine fishery in 2013. Therefore, these thresholds are not restrictive and their usefulness as a tool for the management of the fishery and conservation of the resource is questionable. Conversely, the minimum average monthly CPUE/day/vessel thresholds have been restrictive and have triggered reduction of fishing effort by one day per week in three occasions (January to March 2018). Nevertheless, given that these months marked the end of the fishing season, the fishery did not need to be closed as stipulated by the Decision of 15 March.,

A periodic revision of both the maximum annual quotas and the minimum average monthly CPUEs should be included in the MP.

Safeguards to ensure that quantifiable targets are met, as well as remedial actions, where needed, including situations where the poor quality of data or non-availability places the sustainability of the main stocks of the fishery at risk;

Closed periods are also set: for jonquillera boat seine runs from 1 May to 14 December and for gerretera boat seine from 1 May to 30 September. Boat seine fishing may only be practised from Monday to Friday.

The fishery is managed at monthly scale and measures regarding fishing effort reduction and closure of the fishery are taken when the minimum monthly limit reference points (CPUE) are not achieved.

In compliance with the terms set out in the MP, fishing effort was reduced by removing one fishing day per week and up to the end of the current fishing period (this was applied in 2018) and in the case when the monthly threshold is not reached with the effort reduction, the fishery should be closed.

Other conservation measures, in particular measures to fully monitor catches of the target species, to eliminate discards and to minimise the negative impact of fishing on the ecosystem.

Regular and routine inspections have been carried out by on-board observers, who also record data on catches per species, vessel position, effectiveness and selectivity and have conducted sampling on target and by-catch species.

Daily catch per species and fishing effort data were also reported through daily catch report forms compiled by the Federation of Fishermen's Associations.

The examination of the by-catch (commercial and non-commercial species) was done *in situ*. By-catch species are immediately released, alive, and survivability is assumed to be very high. Further observations from survival experiments are needed to provide reliable estimates of survival rates in the days following release.

In this version of MP, the management objective of reducing the catch weight of non-target species from 6% to 3% also remains. This objective has not been reached in previous MP.

No information on discard quantities was presented in the MP.

1.3. Other aspects:

Quantifiable indicators for periodic monitoring and assessment of progress in achieving the objectives of the plan.

The fishery is monitored on a monthly basis.

If deemed necessary, provide any recommendations and guidance on how to obtain improved scientific/technical supporting material for the plan. This could be done in terms of collection of data, evaluation of the status of the target stocks, evaluation of conservation measures, impact on the marine ecosystem and monitoring programme.

The MP should provide length frequencies of the target species for Gerretera boat seine fishery as well as for bycatch and discard species.

The time at sea (fishing hours) and/or number of hauls, information which is already available from the log-books, would be also needed in the CPUE analyses to provide more precise estimation of the fishing effort and explain the differences between recent trends in catch per day and catch per haul described above.

Globally, however and from a longer perspective, there are no clear trend since 2013/2014, neither in the total catches, nor in the daily CPUE per vessel and haul, except for a peak in the season 2016/2017 and a secondary peak in 2017/2018, while the most recent year is aligned with the initial values of the series.

Exploration of surplus production methods, such as ASPIC software, would be advisable. The ASPIC software (surplus production model fitted to catch-effort time series) has been used for the determination of the exploitation status of transparent goby in the Balearic Islands over the period 1990-2014 (Quetglas et al. 2016).

STECF response in relation to each of the elements outlined in TOR 2

TOR 2. Evaluate whether the following conditions set by the MEDREG are fulfilled:

2.1. Derogation to the minimum mesh size (Article 9, paragraph 7):

With regards to the description of the fisheries, although the minimum mesh size for the cod end of the Jonquillera gear are presented, information on the minimum mesh size used on Gerretera gear are not provided by the MP. STECF in previous evaluation (PLEN 16-03) has also requested the same issue which is critical to evaluate the request for derogation on minimum mesh size for that gear type.

The fisheries are highly selective and have a negligible effect on the marine environment;

The two different gears indicate a high dominance of the target species caught; approximately 89% in Janquiller boat seine and 95% in Gerretera boat seine. Transparent goby is the dominant species in the catch of Janquiller, and picarel in Gerretera boat seine.

The fisheries do not touch seagrass beds, in particular, Posidonia oceanica.

The MP confirmed that fishing activities for the two different types of boat seine gears are pursued over and on the sensitive habitats, particularly *Posidonia* beds.

Maps of the transparent goby fishery in the Balearic Islands were created by IMEDEA in order to display the overlap between the Jonquiller boat seines hauls and the areas of *Posidonia oceanica* beds. The maps show that most hauls in the Alcudia are deployed in grid cells in which the *Posidonia oceanica* beds habitat is present. However, there is no quantitative estimation on the effect of the fishing gear on benthic habitats, especially on the size of the *Posidonia* area impacted by this fishing activity as requested by Article 4(5) of the MEDREG. The studies referred in the MP could have been used to quantify this, as also requested in the previous STECF evaluation (PLEN 16-03).

For the Jonquiller boat seines, during the 2015/2016 sampling year of the MP, the number of rhizomes and *Posidonia oceanica* remains hoisted aboard during a haul were counted. These data are still being processed, but it has been verified that live rhizomes were found in 78% of the hauls, with an average of 11.95 rhizomes per haul (range: 0 to 66). Although the rhizomes in question were alive, MP mentioned that they are not uprooted by the gear, but these had already been deposited on the seabed and are collected by the fishing gear. STECF has no elements to verify the validity of this statement.

Concerning the Garretera boat seines, observation over *Posidonia oceanica* sea beds, made by scuba diving in Mallorca in the first MP, pointed out that the gear never snags the seagrass meadow, but rather glides smoothly over the shoots of *Posidonia oceanica*.

In conclusion STECF considers that the information provided is not sufficient to conclude whether boat seine fishery impact or not on the *Posidonia oceanica* sea beds. It would be necessary to better understand the origin of the live rhizomes encountered in the hauls of the Jonquiller boat seines.

2.2. Derogation to the minimum distances and depths (Article 13, paragraphs 5, 9 and 10):

There are particular geographical constraints, such as the limited size of coastal platforms or limited fishing grounds;

The resources live close to the shore and operations must be carried out on sandy grounds mainly at depths between 10 and 40m. The MP provided sufficient information to fulfil this condition.

The fisheries have no significant impact on the marine environment;

Besides the issue of *Posidonia* impact discussed above, STECF notes that the coastal area hosts most juvenile stages of many demersal species. However it is considered that they are little affected, because boat seine fishery is highly selective. In addition, fishermen are not incentivised to capture mixed-species catches because it reduces sales prices, given the difficulties involved in separating small species.

The fisheries involve a limited number of vessels, with a track record of more than 5 years, and do not contain any increase in the fishing effort;

The total number of vessels with permits both for the two different boat seine technique shall not exceed 55. Vessels were authorized to carry on such fisheries.

The fisheries cannot be undertaken with another gear;

Boat seine fishery is a unique hybrid between pelagic trawls and purse seines that is traditionally used in specific areas and seasons of the year for catching small pelagic gobies and picarel.

Although the trawler fleet in Ibiza does not target picarel, during certain seasons of the year, which do not overlap with the corresponding ones for boat seine fishery it does catch this fish in abundance. In contrast, during the overlapped period of trawl fishery on picarel and that of boat seine ones, both trawl catches and CPUE are the lowest on an annual base.

The fisheries are subject to a MP and carry out a monitoring of catches as requested in Article 23;

The boat seine fishery in Balearic Islands targeting transparent goby and picarel is regulated by MP, which was adopted for the first time in 2013, on the basis of the exceptions provided for Articles 9(7) and 13(5) of the Regulation No 1967/2006. The currently enforced Spanish Decree 19/2019 of 15 March 2019 is establishing the multi-island MP for traditional boat seine fisheries in the waters of the Balearic Islands for the period 2019-2022. According to that Decree the fishery is subject to scientific monitoring during the fishing season, which are carried out in order to monitor fishing operations, sample the catches and assess by-catch and the impact on marine environment. Also, all authorised vessels using boat seine gears are required to land all of the catches in authorised ports in line with Article 23 of the EU Reg 1967/2006.

The fisheries do not interfere with the activities of vessels using gears other than trawls, seines or similar towed nets;

There is no information regarding different gear overlap issue in the text of the MP, but the modality of operation of such gears makes it unlikely that interference with other fishing activities may exist.

The fisheries are regulated in order to ensure that catches of species mentioned in Annex IX of Regulation (EU) No 2019/1241 are minimal; and the fisheries do not target cephalopods.

Information on the presence of individuals of species included in *Annex IX of Regulation (EU) No 2019/1241* (MEDREG) is very limited and is restricted to one year. The frequency of occurrence of the bycatch species in the boat seine catches was reported at the species level. The species included in Annex IX of the MEDREG and they most contributed to by-catch of boat seine fishery in terms of weight were: *Pagellus acarne* (25%), *Mullus surmuletus* (15%) and *Diplodus annularis* (4%), for Jonquiller boat seine fishery and *Trachurus mediterraneus* (15.59%) and *Scomber colias* (2.38%), for Gerretera boat seine fishery. Although the proportion of by-catch species in boat seine fishery varied between Gerretera boat seine (not exceed 5%) and Jonquiller boat seine (10.4%-24%), most of the individuals show, in experimental conditions, high survival rates (> 80%), with the exception of *Trachurus mediterraneus*, which survival rate was minimal.

However, the catch in weight for the bycatch species was not reported at the level of species but aggregated for all by-catch species, which prevents estimating exactly the caught tonnage of species mentioned in Annex III of the MEDREG. Considering the small quantity of by-catch obtained by the boat seine fishery, it can be assumed that catches of the species mentioned in Annex III of the MEDREG are kept to a minimum. However, to facilitate the analysis of the amount of by-catch by species, it would be necessary to report also the total weight of each species caught by boat seines and not only its frequency of occurrence.

Catches of cephalopods are limited to *Loligo* spp and *Sepia officinalis*. Considering the limited frequency of occurrence of cephalopods species and the general small quantity of by-catch caught with boat seines, it can be concluded that this fishery do not target cephalopods. However, to facilitate the analysis of the by-catch, it would be necessary to report also the total weight of each species of cephalopods caught and not only its frequency of occurrence.

STECF conclusions

The implementation of the boat seine management plan in the Balearic Islands in the period 2016-2019 has followed the management plan, and the conditions upon which the derogation regarding minimum distance from the coast and depth have been fulfilled.

The management thresholds (minimum daily catch quotas and maximum annual catches) set by the MP for the 2016-2019 fishing period were not reached. Accordingly, their usefulness as a tool for the management of the fishery and conservation of the resource is questionable. These measures were however not changed in the revised MP.

STECF concludes that the MP contains many of the elements required, but that some conditions are still not fulfilled. In particular, the Jonquiller fishery targeting gobies interact with *Posidonia* beds and the information provided in the MP is not sufficient to conclude that it has no significant impact on these.

The MP does not provide any quantitative evidence to ensure that catches of species mentioned in Annex IX of the MEDREG are minimal.

The MP did not provide any information on discard quantities.

This MP did not provide any information on the minimum mesh size used on Gerretera gear, which is critical to for the derogation on minimum mesh size for that gear type.

References

- Commission Implementing Regulation (EU) No 1233/2013 of 29 November 2013 establishing a derogation from Regulation (EC) No 1967/2006 as regards the minimum distance from coast and the minimum sea depth for boat seines fishing for transparent and Ferrer's gobies (*Aphia minuta* and *Pseudaphia ferreri*) and Lowbody picarel (*Spicara smaris*) in certain territorial waters of Spain (Balearic Islands).
- Commission Implementing Regulation (EU) 2019/662 of 25 April 2019 extending the derogation from Council Regulation (EC) No 1967/2006 as regards the minimum distance from coast and the minimum sea depth for boat seines fishing for transparent goby (*Aphia minuta*), Ferrer's goby (*Pseudaphia ferreri*) and Lowbody picarel (*Spicara smaris*) in certain territorial waters of Spain (Balearic Islands).
- Quetglas A, Merino G, Ordines F, Guijarro B, Garau A, Grau A, Oliver P, Massutí E. 2016. Assessment and management of western Mediterranean small-scale fisheries. *Ocean & Coastal Management* 133: 95-104.
- Scientific, Technical and Economic Committee for Fisheries (STECF) – Management plan for boat seines in the Balearic Islands, Spain (STECF-16-03); Publications Office of the European Union, Luxembourg; EUR 28359 EN; doi:10.2788/638914.
- Scientific, Technical and Economic Committee for Fisheries (STECF) – Request for an STECF opinion on the management plans for boat seines fisheries in the Spanish waters of Murcia Region and Balears (STECF-12-03); Publications Office of the European Union, Luxembourg; EUR 25579 EN; doi:10.2788/63585.
- Zhou S, Yin S, Thorson JT, Smith ADM, Fuller M. 2012. Linking fishing mortality reference points to life history traits: an empirical study. *Canadian Journal of Fisheries and Aquatic Sciences* 69: 1292–1301, doi:10.1139/F2012-060.

6.6 Management plan for mechanised dredges in Andalusia, Spain

Background provided by the Commission

Under Article 19 of Council Regulation (EC) No 1967/20061 (hereafter "MEDREG"), Member States are expected to adopt management plans for fisheries conducted by trawl nets, boats seines, shore seines, surrounding nets and dredges within their territorial waters.

In 2013, the Common Fisheries Policy (CFP) introduced new elements for conservation such as the target of maximum sustainable yield (MSY) for all the stocks by 2020 at the latest, the landing obligation and the regionalisation approach.

In line with these two regulations, the plans shall be based on scientific, technical and economic advice, and shall contain conservation measures to restore and maintain fish stocks above levels capable of producing MSY. Where targets relating to the MSY (e.g. fishing mortality) cannot be determined, owing to insufficient data, the plans shall provide for measures based on the precautionary approach, ensuring at least a comparable degree of conservation of the relevant stocks.

The plans may contain specific conservation objectives and measures based on the ecosystem approach to achieve the objectives set. In particular, it may incorporate any measure included in the following list to limit fishing mortality and the environmental impact of fishing activities: limiting catches, fixing the number and type of fishing vessels authorized to fish, limiting fishing effort, adopting technical measures (structure of fishing gears, fishing practices, areas/period of fishing restriction, minimum size, reduction of impact of fishing activities on marine ecosystems and non-target species), establishing incentives to promote more selective fishing, conduct pilot projects on alternative types of fishing management techniques.

Background documents are published on the meeting's web site on: <https://stecf.jrc.ec.europa.eu/plen1903>

Request to the STECF

TOR 1. Assess whether the management plan contains adequate elements in terms of:

1.1. The description of the fisheries:

- Recent and historical data on catches (landings and discards) of the species concerned, fishing effort and abundance indices such as catch-per-unit-effort;
- Data on length-frequency distribution of the catches, with particular reference to the species subject to minimum sizes in accordance with Annex IX of Regulation (EU) No 2019/1241;
- An updated state of the exploited resources; and
- Information on economic indicators, including the profitability of the fisheries.

1.2. Objectives, safeguards and conservation/technical measures:

- Objectives consistent with Article 2 of the CFP and quantifiable targets, such as fishing mortality rates and total biomass;
- Measures proportionate to the objectives, the targets and the expected time frame. In particular, advice whether the proposed modifications in terms of total annual catches would ensure a sustainable exploitation of the target stocks (i.e. *Donax trunculus*, *Callista chione*, *Acanthocardia tuberculata* and *Chamelea gallina*);

- Safeguards to ensure that quantifiable targets are met, as well as remedial actions, where needed, including situations where the poor quality of data or non-availability places the sustainability of the main stocks of the fishery at risk; and
- Other conservation measures, in particular measures to fully monitor catches of the target species, to eliminate discards and to minimise the negative impact of fishing on the ecosystem.

1.3. Other aspects:

- Quantifiable indicators for periodic monitoring and assessment of progress in achieving the objectives of the plan.
- If deemed necessary, provide any recommendations and guidance on how to obtain improved scientific/technical supporting material for the plan. This could be done in terms of collection of data, evaluation of the status of the target stocks, evaluation of conservation measures, impact on the marine ecosystem and monitoring programme.

Summary of the information provided to STECF

Summary of previous evaluations of the Management Plans

The last management plan (MP) for mechanised dredges fishing off the Mediterranean coast of Andalusia was implemented in 2017 and will remain in force until 31 December 2019. STECF has previously reviewed earlier versions of the MP in 2010 (STECF PLEN 10-03), 2013 (STECF PLEN-13-03) and 2017 (PLEN 17-01)

STECF PLEN 17-01 listed a number of observations and requests for collecting additional data. STECF stressed that historical data on discards of the species concerned were not presented even though discard survival is assumed to be substantial. There was also no information on absolute fishing effort (e.g. number of vessels and fishing days) presented that could be used to assess changes in fishing effort since the MP was implemented. Finally, STECF noted that the spatial information on fishing effort allocation by species was of poor quality and with low spatial resolution, making it difficult to draw conclusions regarding changes over time. Additional summary metrics on the effective effort were identified as necessary to allow assessment. STECF expressed doubts on whether catch and effort data can be assessed at the level of the Autonomous Region of Andalusia or by meta-populations. STECF considered that stock identities should be investigated further to validate or better define the stock units of the species included in the MP. STECF observed that the information on economic indicators, including the profitability of the fisheries were not presented in the management plan.

Regarding the objectives, safeguards and conservation/technical measures, STECF PLEN 17-01 observed that management measures potentially useful for eliminating discards and minimising the negative impact on the ecosystem were not described. STECF further noted that other aspects on the level of dependency of the fleet on the target species were not included in the MP.

STECF PLEN 17-01 observed that the revision of some TACs and limits on CPUE for some species were based on updated analyses of surplus production models fitted to landings and CPUE time series, tested using both ASPIC and BioDyn software and in one case with CMSY. STECF considered at this time that the adjustments, proposed as amendments to Article 4 of the Order of 24 March 2014, seemed reasonable in light of the trends in CPUE observed during the period 2014-2016. STECF considered nevertheless that the reliability of the stock assessment would be greatly improved by collecting fisheries-independent density estimates. STECF suggested that further investigations including some environmental explanatory variables could be performed, as can be done with e.g. BioDyn.

Information provided regarding the new Management Plan

The new MP submitted to STECF supplies further information that helps answering some of the gaps in information identified in previous evaluations of the Plan. The MP also introduces some amendments based on both old information and new scientific evidence.

An evaluation and monitoring report on the Control plan for mechanised trials of mechanised dredges for the Mediterranean coast of Andalusia was also provided. This report was prepared by the Spanish Institute of Oceanography, Malaga Oceanographic Centre; the Department of Fisheries Inspection Subdirectorato-General for Agri-food Resources and Infrastructure. Andalusian Agricultural and Fisheries Management Agency (AGAPA); and the Servicio de Ordenación de Recursos Pesqueros y Acuícolas. Directorate-General for Fisheries and Aquaculture (DGPA). This report aims to assess compliance with the biological and conservation reference points set out in the management plan for mechanised trials fisheries on the Mediterranean coast of Andalusia. It also details the scientific monitoring of the fisheries carried out between 2017-2019, and proposes extension and amendments to the management plan.

STECF considers that the new version of the MP constitutes an improvement compared to previous MPs. The annual monitoring of the status of exploited stocks has been carried out using different indicators: catches, efforts, CPUEs, analysis of the size distribution of the portion retained and discarded, and the temporary evolution of the average size of the total and retained portions of the catch.

STECF response to the elements of the ToRs

TOR 1.1 - *The description of the fisheries:*

- *Recent and historical data on catches (landings and discards) of the species concerned, fishing effort and abundance indices such as catch-per-unit-effort;*

The new MP includes both recent and historical data on catches by species as well as on the amount of fishing effort by each fleet operating in the area and targeting the main stocks. New Abundance indices derived from surveys at sea for the evaluation of stocks size (fishery independent source) are also presented. STECF notes that the spatial information of the fishing effort by species is of better quality and with a higher spatial resolution than previously supplied.

Fishing effort in general has not shown any significant changes since 2000. This can be summarised by species as follows:

- *Chamelea gallina* a small increase in effort in recent years is observed, followed by a decrease since 2018 due to a voluntary reduction of the fleet's fishing days.
- *Acanthocardia tuberculata* a small increase in effort is observed.
- *Caliste chione* higher effort is observed at the beginning of the monitoring period, which stabilized after 2004.
- *Donax trunculus* no significant changes are observed.

The MP contains a detailed description of the fishery, especially regarding the annual spatial distribution of fishing effort targeting each single species. Historical data on size structure of catches by month and discard fractions of the species concerned are also presented.

- *Data on length-frequency distribution of the catches, with particular reference to the species subject to minimum sizes in accordance with Annex IX of Regulation (EU) No 2019/1241;*

Minimum landings size for the main species exploited by mechanised dredges on the Mediterranean fishing grounds of the Andalusia (*Acanthocardia tuberculata*, *Callista chione*, *Chamelea gallina*, and *Donax trunculus*) have been defined. A detailed description of the landing fractions, size distribution of the retained and discarded fraction per month and by fishing area for the 4 more relevant species targeted by the mechanised dredges is included.

An analysis of the evolution in mean size of the population structure over time is provided. It shows that no noticeable changes in the size structure of the populations have occurred, at least within the period 2013-2018 for which information is available. Only in *Chamelea gallina* a small decrease (about 1 mm) of mean size is observed. As detailed below, this is the species that has shown signals of overexploitation in some years and also recently.

- *An updated state of the exploited resources;*

The MP includes an updated analysis of the state of the exploited resources. B/BMSY and F/FMSY are used as indicators of status of stocks and for showing the evolution of the stocks status over time.

The MP includes new assessments of the status of the stocks using fishery dependent data. Estimates of biomass and numbers at sea derived from fishery-independent surveys were also estimated in the most recent years.

The table shows the results of the assessments by stock and method used (primarily ASPIC and POPDYN). For most stocks the estimates are robust to the method used, except for *Chamelea gallina* for which important discrepancies appear between the analyses of current values of B/BMSY and F/FMSY derived from different methods. Nevertheless, the trends of both F and B relative to those corresponding to MSY and of the abundance indices are consistent, showing a decreasing trend in biomass and increasing trend in F. In the table below the most recent estimates of B/BMSY and FMSY by stock using alternative methods are shown and also the trends for the two mentioned rates and for the abundance index (CPUE) for the period 2001-2018.

	B/BMSY	F/FMSY	method	B/BMSY trend	F/FMSY trend	CPUE trend
<u>A. tuberculata</u>	1.54	0.10	ASPIC	↑	↓	↑
	1.60	0.10	BIODYN	↑	↓	↑
<u>C. gallina</u>	0.52	1.96	ASPIC	↓	↑	↓
	1.7	0.37	BIODYN	↓	↑	↓
<u>D. trunculus</u>	1.8	0.23	ASPIC	↑	—	—
	1.7	0.30	BIODYN	↑	—	—
<u>C. chione</u>	1.32	0.63	ASPIC	—	—↑	—
	1.5	0.5	CMSY	↑	—	—

stable — increasing ↑ decreasing ↓ stable with recent increase —↑

Information on economic indicators, including the profitability of the fisheries.

STECF notes that new information on economic indicators, including the profitability of the fisheries are not presented in the new management plan. Some economic information had been included in previous MPs.

TOR 1.2. Objectives, safeguards and conservation/technical measures:

- Objectives consistent with Article 2 of the CFP and quantifiable targets, such as fishing mortality rates and total biomass;

The objectives of the MP are defined as to regulate the fishery to ensure sustainable yields. Relative values for current fishing mortality and current Biomass related to the level corresponding to MSY are estimated ($F_{\text{current}}/F_{\text{MSY}}$ and $B_{\text{current}}/B_{\text{MSY}}$) and used as indicators of exploitation level and biomass status.

The values of TACs have been fixed based on the results of production models carried out in the past. Only in recent years a new trawl survey have been conducted and the results of estimates of the exploitable biomass and abundance at sea can now be compared with the production models estimates. The following table shows the estimates of MSY and BMSY for the last assessment conducted in 2019 using data of 2001-2018. The proposals of some changes which are included in the last MP are based on these recent results.

STOCK	METHOD	MSY (tons)	BMSY (tons)
<i>A. tuberculata</i>	ASPIC	1450	7680
	BIODYN	1360	5440
<i>C. gallina</i>	ASPIC	24	239
	BIODYN	32	85
<i>D. trunculus</i>	ASPIC	72	180
	BIODYN	45	181
<i>C. chione</i>	ASPIC	201	530
	CMSY	-	-

TACs have been set for each one of the 4 main species exploited by the fishery and CPUEs thresholds considered to reflect acceptable levels of biomass are used for triggering management measures. These management measures were also presented in previous MPs. Such measures consist of cessation of the fishery when the catch limits are reached (TACs) or a reduction of effort when minimum catch rates (CPUEs) are not reached. Effort reductions are implemented only after confirmation that such reduction of catch rates are due to an actual reduction of biomass and not due to other factors like market limitations. STECF notes that this clause was not described in earlier versions of the MP.

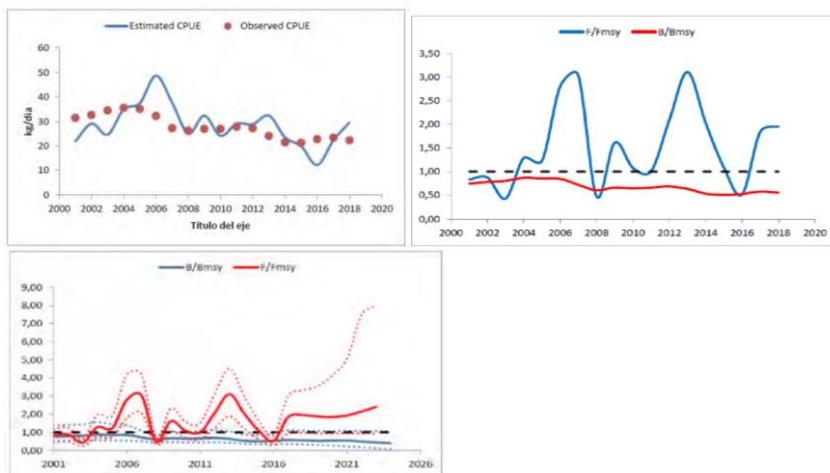
Changes in environmental conditions that may influence abundance are not known nor predictable and are not considered.

STECF notes that a general concern on the use of CPUEs thresholds since CPUEs may not always be a reliable index of abundance and their changes in time may lead to overly optimistic impressions of stock status (there are risks of hyperstability).

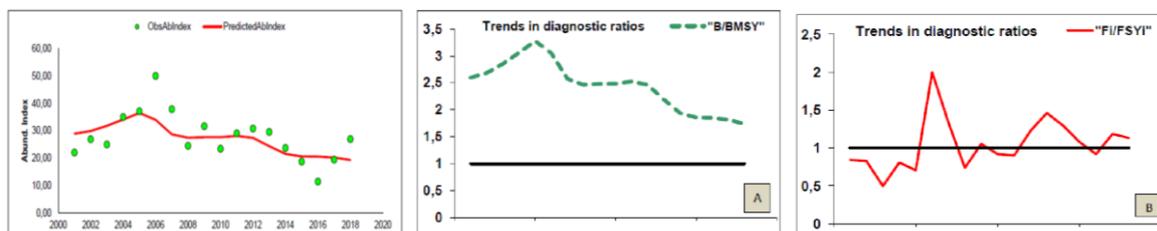
- Measures proportionate to the objectives, the targets and the expected time frame. In particular, advice whether the proposed modifications in terms of total annual catches would ensure a sustainable exploitation of the target stocks (i.e. *Donax trunculus*, *Callista chione*, *Acanthocardia tuberculata* and *Chamelea gallina*);

The assessments of stock status and trends allow assessing whether the management measures are proportionate to the objectives to ensure that quantifiable targets will be met, as well as remedial actions whenever needed. Based on these, projections to assess time frames needed for recovering stocks to sustainable levels are provided. STECF considers the TACs and minimum CPUE thresholds are sustainable for three out of four species and in these cases the measures needed for keeping stocks to sustainable levels consistent with the defined reference points appear reasonable.

The main concern regards *Chamelea gallina* for which the MP proposes an increase of TAC from 22 to 32 tons/year. The proposal is exclusively based on BIODYN results of 2018 that estimates a good status of the stock. STECF considers however that this increase is not precautionary because this assessment is not robust enough, and other signals do not show that the stock is in good health. Both stock assessments suggest decreasing trend in CPUEs (figures to the left). ASPIC shows a poor exploitation status of the stock also in the most recent assessment. A continuous decrease in biomass along the time series is predicted up to 2022 by both models ASPIC and BIODYN.



ASPIC results



BIODYN main results

- Safeguards to ensure that quantifiable targets are met, as well as remedial actions, where needed, including situations where the poor quality of data or non-availability places the sustainability of the main stocks of the fishery at risk;

When TACs for some species are reached before the end of the fishing season, the MP states that the fishery will automatically be stopped. The MP prescribes remedial actions consisting of an effort reduction from 5 to 4 days when the average CPUE of catch per boat per year fall below the reference threshold signalling a significant biomass reduction. However, it is still not clear to STECF whether such reductions of the effort are sufficient to recover the stock to a biologically safe status. Moreover, the MP does not clearly specify what actions would be taken if after one year of implementation of such effort reductions, the current CPUE remains below the CPUE annual threshold defined in the MP.

Regarding the catches from recent years compared with the defined TACs, in general, catches have been much lower than the TACs for all the species, which means that the TACs restrictive to the fishery in most of the cases and did not contribute to regulate it. Only in the case of *C.gallina* the catches are slightly higher than the TAC. In this case, the management authorities closed the fishery before the end of the fishing season in 2018 and 2019. The new proposal of 32 tons would mean that the TAC would become non-restrictive for that species as well.

	Catches (in tons)			TAC	New Proposal
	2017	2018	2019		
<i>Acanthocardia tuberculata</i>	219*	49*	-*	1290	1450
<i>Chamelea gallina</i>	25.4	25.8**	24.2**	22	32
<i>Donax trunculus</i>	17.9	31.4	23.1	35	36
<i>Callista chione</i>	175	188	179	216	216

*The stock was not exploited in recent years due to the presence of biotoxines PSP

** The fishery stopped activities before the end of the fishing season due to a premature reaching of the TAC.

	Minimum threshold for annual average catch /vessel /day (in kg)				New proposal
	2017	2018	2019	threshold	
<i>Acanthocardia tuberculata</i>	2.9*	4.9*	-*	341	341
<i>Chamelea gallina</i>	21.9	30.2	40.2	23.8	23.6
<i>Donax trunculus</i>	14.4	21.9	17.3	17.5	17.5
<i>Callista chione</i>	70	92	92.8	92	92

In 2018 and 2019 CPUEs have remained above the minimum thresholds defined, but not in 2017. In the MP it is stated that CPUEs lower than the thresholds may not necessarily

occur due to a real reduction of abundance at sea but also because of market or operational constraints.

- *Other conservation measures, in particular measures to fully monitor catches of the target species, to eliminate discards and to minimise the negative impact of fishing on the ecosystem.*

Measures to fully monitor catches of the target species are included in the new MP. There is new information on discards of undersized individuals but not for non-commercial species (finfish, echinoderms).

STECF notes that no new information on the impact of the fishing gear on the benthic community of sandy bottoms is provided. A recent study (Urrea et al, 2018) shows a strong negative impact of dredge fisheries on echinoderms, but negligible on the commercial species exploited by the fishery. STECF observes that the technical characteristics of the gears in use, depth, period of the year, composition of the bottom (granulometry) may condition the importance of the damages on bottom living organisms.

TOR 1.3 Other aspects:

- *Quantifiable indicators for periodic monitoring and assessment of progress in achieving the objectives of the plan.*

- *If deemed necessary, provide any recommendations and guidance on how to obtain improved scientific/technical supporting material for the plan. This could be done in terms of collection of data, evaluation of the status of the target stocks, evaluation of conservation measures, impact on the marine ecosystem and monitoring programme.*

The MP states that monitoring will continue with both fisheries dependent and fisheries independent data being collected. It includes collection of catch and effort data as well as on size distributions. The indicators based in biomass and fishing mortality will continue to be regularly estimated and their consistency checked against the safe indicators assumed to ensure a future sustainable status of the stocks.

The better spatial resolution that is now provided shows the effort allocation for each stock in each sub-area and possible changes along the fishing season or among years. STECF considers that further investigation on the stock structure of the different species should be carried out to understand whether stock assessments at the level of the whole Autonomous Region of Andalusia are appropriate or larger/smaller areas should be considered.

STECF notes that biological minimum size limits are defined in the area for all the stocks in question. Results of data collected on board show a relatively high number of undersized individuals are retained and landed. No specific measures are defined to try and avoid or reduce these catches of undersized individuals.

STECF conclusions

STECF concludes that the revised MP is an improvement compared to previous MPs as it includes new elements, supported by scientific data (e.g. estimates of biomass with fisheries independent methodology, more detailed information on effort allocation and on discards) that are considered important for the management of the fishery.

For *Acanthocardia tuberculata*, *Caliste chione* and *Donax trunculus*, STECF concludes that the stocks appear to be exploited at or below sustainable levels and the biomass of the stocks appear stable or increasing. The TACs have not been restrictive in the recent years

but CPUE limits proposed in the new MP appear consistent with the results of the new stock assessments. The proposed changes in catch limits and CPUE thresholds are modest and appear in line with the current stock status and the recent evolution of the resources in the area.

For *Chamelea gallina* STECF considers that the proposed increase in the TAC is not precautionary because the assessment on which the justification is based is not robust enough. Furthermore, while there are conflicting signals on the actual status of the stock in relation to the MSY objective, the two assessment models available consistently show decreasing trends in biomass and CPUEs and increasing trends in fishing mortality. STECF concludes that further analyses are needed to improve the robustness of the assessment of the stock, and the abundance should continue to be closely monitored through CPUEs analyses and fisheries independent surveys.

STECF also concludes that the economic indicators, including the economic viability of the fisheries, should be updated.

6.7 Derogation for 'gangui' trawlers in certain territorial waters of France

Background provided by the Commission

In accordance with Article 13(1) of Regulation (EC) No 1967/2006 (hereafter the MedReg), the use of towed gears is prohibited within 3 nautical miles of the coast or within the 50m isobath where that depth is reached at a shorter distance from the coast. In addition, Article 13(2) prohibits the use of trawl nets within 1.5 nautical miles from the coast. At a request of a Member State, derogation from Article 13(1) and (2) may be granted, provided that the conditions set in Article 13(5) and (9) are fulfilled.

Furthermore, Article 4(1) of MedReg prohibits fishing with trawl nets, dredges, purse seines, boat seines, shore seines or similar nets above seagrass beds of, in particular, *Posidonia oceanica* or other marine phanerogams. Derogation from this article may be granted, provided that the conditions stipulated in Article 4(5) are fulfilled. If a fishery benefits from derogation under Article 4(5), then a derogation to the minimum distance from the coast and depth shall be allowed.

Finally, a general condition for all derogations is that the fishing activities concerned are regulated by a management plan provided for under Article 19 of the MedReg. According to paragraph 5 of Article 19, the measures to be included in the management plan shall be proportionate to the objectives, the targets and the expected time frame and shall have regard to:

- a) the conservation status of the stock or stocks;
- b) the biological characteristics of the stock or stocks;
- c) the characteristics of the fisheries in which the stocks are caught;
- d) the economic impact of the measures on the fisheries concerned.

This traditional fishery is in a phasing-out process and in 2019, a fishing authorisation was granted to only 10 vessels. The vessels are eligible only if they comply with the requirements above and if they have '*a track record in the fishery of more than five years and not involving any future increase in the fishing effort deployed*'. The specific '*bouilleur de cru*' regime will mechanically result in this fishery disappearing in the medium term because the fishing authorisation is withdrawn and annulled if either the vessel authorised is sold or the fisher owning the authorisation retires.

Commission Implementing Regulation (EU) 2018/693 granted derogation from Articles 4(1), 13(1) and 13(2) of the MedReg in territorial waters of France adjacent to the coast of the Provence-Alpes-Côte d'Azur region to '*gangui*' trawlers. This derogation applies until 11 May 2020.

In application to their commitments, the French authorities published on 16 March 2018 an '*arrêté ministériel*' reinforcing the management framework for this fishery. Those provisions exceed the requirements of the relevant EU fisheries regulations:

- a) conditioning the granting of a fishing authorisation for '*gangui*' to the fitting of a VMS transponder, irrespective of the size of the vessel;
- b) reinforcing substantially the control objectives for this fishery;
- c) reinforcing substantially the control of the landings;
- d) mandating the landing of the catches only in designated ports;
- e) mandating the declaration of all catches, irrespective of the weight of the catch and the length of the vessel.

Finally, the French authorities committed to improving the mapping of the *Posidonia oceanica* seabeds in the French Mediterranean waters.

Supporting documents

The original documents in French were transmitted, together with machine-translated versions. Where maps are poorly legible, please refer to the original document in French. The documents transmitted are described in document '978-19' (French request to the European Commission for the prolongation of the derogation).

Background documents are published on the meeting's web site on: <https://stecf.jrc.ec.europa.eu/plen1903>

Request to the STECF

The STECF is requested to review the implementation report of the '*gangui*' fisheries and the additional documents provided to support the French request to renew the derogation. The STECF is also requested to present its findings and make appropriate comments with respect to the conservation and management requirements/objectives stipulated by Council Regulation (EC) No 1967/2006 ("MedReg") and by the Regulation (EU) No 1380/2013.

More specifically, STECF is requested to advise and comment on whether the documents provided contain adequate and up-to date scientific and technical justifications ensuring that:

1) the conditions set by the MedReg are still fulfilled:

- the fishing vessels concerned have an overall length of less than or equal to 12 meters of overall length and engine power of less than or equal to 85 kW, in accordance with the first subparagraph of Article 4(5) of MedReg.
- the fishing activities concerned affect not more than 33% of the area covered by seagrass beds of *Posidonia oceanica* within the area covered by the management plan and not more than 10% of seagrass beds in the territorial waters of France, in line with requirements of points (ii) and (iii) of the first subparagraph of Article 4(5) of MedReg.
- catches of species subject to minimum conservation size as mentioned in Annex III are minimal, in line with Article 13(9) of MedReg.
- the mesh size comply with the requirement of at least a square-meshed net of 40mm or a diamond meshed net of 50mm and panels of netting smaller than 40mm mesh size are not used for fishing or kept on board, in line with Article 9 of MedReg.

- appropriate steps have been undertaken to ensure the collection of scientific information with a view to the identification and mapping of *Posidonia* habitat, in line with Article 4(6) of MedReg.

2) the current management measures would continue ensuring a sustainable exploitation of species targeted by 'gangui' trawler without jeopardizing the socio-economic sustainability of the overall fishing fleets involved in exploiting those resources in the coastal area.

Summary of previous evaluations of the derogations for "gangui" trawlers

On 16 June 2017 France submitted a request to renew the derogations that had been granted in 2014 (Commission Implementing Regulation (EU) No 586/2014²¹). STECF reviewed this request in July 2017 (STECF PLEN-17-02). STECF concluded that based on the evidence provided, not all the conditions which need to be fulfilled in order for a derogation to be granted were met. In particular STECF raised concerns on the evidence to support the condition that the "gangui" fishing affects no more than 33 % of the area covered by seagrass beds of *Posidonia oceanica* within the area covered by the management plan, and 10 % of seagrass beds in the territorial waters of France. France provided some calculations on the swept area. STECF reviewed the calculations and discussed the validity of some of the parameters used. STECF thus provided new estimates of swept area with alternative plausible parameters values, which gave much higher percentage of *Posidonia* beds affected by the "gangui" fishery. STECF noted also that detailed information on species composition and sizes of catches was unknown, and no information on discards was provided. No information had been provided to document that the current management plan would ensure the sustainable exploitation of the species targeted in the "gangui" fishery.

On 26 October 2017, the French authorities submitted new information responding to the concerns raised by STECF. STECF reviewed this information in its plenary meeting in November 2017 (STECF PLEN-17-03).

In relation to the methodology used for estimating the *Posidonia oceanica* surface affected by the "gangui", STECF considered that the maximum theoretical impact should be calculated based on the maximum theoretical effort (i.e. the maximum theoretical number of fishing days and the maximum theoretical number of vessels allowed by the management plan). STECF also noted that the other conclusions raised in in STECF PLEN 17-02 still applied (i.e. absence of information on discards, selectivity, length frequencies, mesh size, sustainability of the target species, socio-economic sustainability of the fleet).

21 Commission Implementing Regulation (EU) No 586/2014 of 2 June 2014 derogating from Council Regulation (EC) No 1967/2006 as regards the prohibition to fish above protected habitats and the minimum distance from the coast and depth for the 'gangui' trawlers fishing in certain territorial waters of France (Provence-Alpes-Côte d'Azur). OJ L 164, 3.6.2014, p. 10–12.

In May 2018, the derogations regarding the prohibition to fish above protected habitats, the minimum distance from the coast and the minimum sea depth were renewed (Commission Implementing Regulation (EU) 2018/69322). These derogations apply until 11 May 2020.

Summary of the information provided to STECF

9 documents were provided to STECF, which are summarized below.

- *Executive summary on the monitoring of the "gangui" derogation (June 2019) (Resumé analytique. Rapport de la France auprès de la Commission Européenne sur le suivi de la dérogation concernant la pêche au chalut de type "gangui" transmis le 11 juin 2019).*

The main elements reported in this executive summary are:

- The aim is the gradual cessation of the activity of the "gangui" fishermen, not the continuation of the "gangui fishery".
- The number of vessels decreased from 36 in 2014 to 17 in 2019.
- No infringements were detected in 16 inspections in 2018 and 20 inspections in 2019.
- The *Posidonia oceanica* surface that could be potentially impacted by the "gangui" would be largely below the threshold laid down in the Mediterranean Regulation (EC) No 1967/2006.
- The mapping of *Posidonia* beds in the "gangui" fishing grounds has been updated.
- Annex III species and cephalopods are not targeted by "gangui" and are minimal.

- *Report on the monitoring of the "gangui" derogation, June 2019 (Rapport de la France auprès de la Commission Européenne sur le suivi de la dérogation concernant la pêche au chalut de type "gangui").*

This report informs on the control and monitoring mechanisms put in place in the "gangui" fishery. The measures described are:

- A plan for the reduction of number of authorizations;
- Measures for control and monitoring of landings; and
- Scientific monitoring of the activity and its impact on the marine environment.

According to this report, "gangui" means a fishing gear which consists of bottom trawl towed by vessels of 12 metres overall length or less, equipped with an engine with a power less than or equal to 85 kW at a maximum speed of 2,5 knots, and targeting a set of demersal species in a coastal strip. Two "gangui" types are considered, depending on

22 Commission Implementing Regulation (EU) 2018/693 of 7 May 2018 establishing the derogation from Council Regulation (EC) No 1967/2006 as regards the prohibition to fish above protected habitats, the minimum distance from the coast and the minimum sea depth for the 'gangui' trawlers fishing in certain territorial waters of France (Provence-Alpes-Côte d'Azur). OJ L 117, 8.5.2018, p. 13–16.

whether they use nets rigged to otter boards ("gangui à panneaux" or "grand gangui") or a fixed frame ("petit gangui").

The fleet consists of 9 "grand gangui" and 8 "petit gangui". In 2019, 10 authorizations were granted (9 "grand gangui" and 1 "petit gangui"); the other 7 "small gangui" have no authorization at present but remain eligible subject to compliance with the requirements of the control plan, and in particular fitting a VMS transponder. When a fisherman retires or sells the vessel, the transfer of authorization is prohibited and thus, the number of "gangui" vessels decreases.

"Petit gangui" is used from November to March and "grand gangui" is used all year round. The number of fishing days per year is limited to 50 and 200 days for the "petit" and "grand gangui" respectively.

Fishing activity is spread across a wide area from the Prud'hommie de la Ciotat (Bouches-du-Rhône) to Prud'hommie of Golfe-Juan Antibes (Department of Alpes-Maritimes) and is mainly concentrated in the department of Var, in particular in the Bruscat and Seyne-sur-Mer — Saint-Mandrier sectors.

The fishery is regulated by: 1) Decree of 13 May 2014 adopting the fisheries management plan Gangui fishing in the Mediterranean Sea by vessels flying French flag; 2) European derogation from Regulation (EC) No 1967/2006 (Regulation (EC) No) Mediterranean' for 'gangui' fisheries; 3) National control plan; and 4) Marine Strategy Framework Directive (MSFD).

The first three documents are provided as supporting information. Concerning the MSFD, one of its environmental objectives (EO) is to prevent the physical disturbance of Mediterranean seagrass beds and coralligenous communities (by means of anchoring, diving in the water and bottom fishing gears). The reduction in the number of authorizations is in line with this objective. The report states that the EOs were expected to be adopted at the end of September 2019. One indicator is proposed to measure the decrease of the seagrass beds affected by the "gangui" fishing. No details are provided in the supporting documentation regarding the definition of this indicator.

Monitoring includes the control of the compliance with fishing zones, closed periods, fishing effort, technical provisions, catch size and reporting obligations. Fishing effort in 2018 was well below the limits set in the management plan (on average, 16% and 49% of the 50 and 200 fishing days per vessel for the "petit" and "grand gangui" respectively).

The mapping of the *Posidonia oceanica* beds has been updated.

CPUE values are provided by year and trip. According to the report, the overall threshold CPUE value that had been set as a minimum reference for applying measures of effort reduction (73.5 kg/trip, reference 2007-2012) were not attained, in the period 2015-2017 either by "petit" or "grand gangui". These measures are detailed in the Order adopting management plans for small-scale fishing of 13 May 2014 (in case the target is not met,

the number of fishing days would be reduced by 10% year-on-year). The number of fishing days at present remains the same as in the Order of 2014.

- Estimation of the CPUE of the vessels/métiers involved in the fishing authorization (CAPs) of the Mediterranean management plans (PGM), IFREMER, March 2019 (Estimation des CPUE des navires/métiers concernés par les autorisations de pêche (AEP) des plans de gestion Méditerranée (PGM)).

This report indicates that the reference CPUE is based on reported data contained in the SACROIS database. The coherence of the data series is compromised because the species in the category "soupe" were not specified until 2014. The target species that make up the category "soupe" have not been assessed. No information is available by species. No information is provided for 2017 and 2018.

Some economic information can be found in this report, such as the total income for the "petit" and "grand gangui", for the whole fleets (2016 the most recent year). No other socio-economic data is provided.

Since the target species have not been assessed and no MSY reference point is available, CPUE reference values were established for management purposes. "Petit gangui" reference CPUEs (kg/trip; 2008-2012) were set to 75.4 (mean) and 79.5 (median). STECF notes that the CPUE reference value in this report is slightly different from that provided in the monitoring report.

Over the period 2009-2016, CPUE remained stable around 70 kg/trip, with the highest values in 2016 (88 kg/trip). For "Grand gangui", reference CPUE (kg/trip); 2007-2012) are 97.2 (mean) and 104.1 (median). Values are lower in the most recent years presented, (2015 and 2016), below the reference values (71.1 and 67.0 kg/trip, respectively). No information was provided on whether the 10 % reduction in the fishing days was applied in 2016 or 2017.

- The selectivity of otter board "gangui" in the Var coast. Comparative analysis of the application of the 40 mm square mesh. IFREMER 2010 (La sélectivité du gangui à panneaux des côtes varoises. Analyse comparative de l'application de la maille carrée de 40 mm).

This is an old study which was already used in the preparation of the 2014 management plan and was cited in the report on the "gangui" fishery submitted to STECF in 2017. The aim of this 2010 report was to demonstrate that the adoption of the 40 mm square mesh would significantly reduce the landings of "soupe" and "bouillabaisse" and would not be appropriate for the economic viability of this fishery. This report describes some technical features of the fishery and some analyses of the catch composition. The gear used for the 2010 selectivity study was the "grand gangui" targeting "soupe". Clogging of dead *Posidonia oceanica* leaves was identified as the main factor affecting selectivity.

Five landings categories were considered: "bouillabaisse", "soupe", white fish, cephalopods and shrimps. A further category, discards, has been added. The "bouillabaisse" differed from "soupe" in the larger size and commercial value of the species targeted. It was noted that usually discards are made up of small-sized individuals or species with a low commercial value, and are normally returned to the sea immediately after capture. These categories are different from those used in the CPUE analysis.

Octopus vulgaris and *Sepia officinalis* were among the most frequent species in the hauls (second and fourth positions, respectively), and *Diplodus annularis*, Annex III species, was the third most frequently caught species (presence in around 90% of hauls). Other frequently caught Annex III species were *Diplodus vulgaris* (present in 60% of the hauls), *Mullus surmuletus* and *Diplodus sargus* (present in 40% of the hauls) and *Pagellus erythrinus* (present in 25% of the hauls).

In the "bouillabaisse" category, the most frequently caught species that represented 66% of the individuals, were *Scorpaena porcus*, *Diplodus vulgaris*, *Mullus surmuletus*, *Scorpaena scofra*, *Symphodus tinca*, *Dentex dentex* and *Serranus scriba*.

In the "soupe" category, the most frequently caught species that represented 61% of the individuals, were *Scorpaena porcus*, *Serranus scriba*, *Serranus cabrilla*, *Symphodus rostratus* and *Symphodus tinca*. Category "white fish" is made up mainly of *Spicara smaris* and *Spicara maena*, and some sparids (*Sarpa salpa*, *Diplodus annularis*). The most frequently discarded species were *Scorpaena porcus*, *Diplodus annularis*, *Conger conger* and *Chromis chromis*. Discarded species included some cephalopods (*Octopus vulgaris*, *Sepia officinalis*). This information on specific composition is presented qualitatively, as presence in the catch or relative abundance. Some percentage values are also provided but not the absolute quantities..

Length frequency distributions were presented for 10 species (*Serranus scriba*, *Scorpaena porcus*, *Symphodus rostratus*, *Symphodus tinca*, *Symphodus doderleini*, *Symphodus ocellatus*, *Symphodus mediterraneus*, *Serranus cabrilla*, *Mullus surmuletus*, *Coris julis*).

The daily activity in 2009 was 4-5 hauls, of a duration of one hour, at 1.5 knots. "Grand gangui" were used all year round in 2009, for around 125 days per year. At present the management plan limits fishing activity to 200 days. "Petit gangui" were used from November to March, between 50 and 100 per year in 2009. At present the activity is limited to 50 days by the plan.

- A report on *Posidonia* beds and dead matte location and surface. Agence Française pour la Biodiversité, February 2019 (Expertise géomatique 2018 sur l'herbier de posidonie et sa matte morte).

The surface of *Posidonia oceanica* beds in 2018 has been estimated at 872 km² (7% dead matte) at the level of the French Mediterranean; 311.7 km² (14% dead) in the Rhône-Var-Alpes Maritimes region (PACA); and 14.6 km² (13% dead) at the rade d'Hyères, where the "gangui" activity is concentrated. The maximum surface impacted in 2019 by the "grand

"gangui" has been estimated at 31.2 km², and 0.06 km² in the case of the "petit gangui". These values are used to assess whether the fishery fulfils the requirement of the MedReg regarding the maximum amount of *Posidonia oceanica* beds (i.e. 33%) that may be impacted in relation to the total *Posidonia* coverage in French waters and in the area where the fishery operates.

Regarding *Posidonia oceanica* coverage in the PACA area, the reports indicates that over the period 2013-2019 the coverage in Var, where the "ganqui" activity concentrates, has decreased by 5.1 % (-10.3 km² *Posidonia oceanica* and -2.24 km² dead mat, i.e. dead rhizomas and roots among which the sediment remains trapped). The most affected area is the Natura 2000 site "Rade h'Hyères" (124 km² of *Posidonia* meadows, 18.4 km² of dead mat; the area is characterized by a continuous meadow interspersed with numerous intermattes). This decrease could be explained, in addition to the "gangui" activity, to climate change (regression of the lower limit of the meadows), anchorage of recreational vessels, water body quality, etc. Improvements in the methodology might also explain some of the observed decrease (pixel size of aerial photographs, definition of lateral scanning sonar log, satellite positioning, digitisation technology and accuracy, software).

- *An assessment of conservation status, Habitats Directive, 2013-2018. UMS Patrimoine Naturel, Centre d'Expertise et de Données, AFB, CNRS, MNHN (September 2019) (Note synthèse. Biodiversité d'intérêt communautaire en France : un bilan qui reste préoccupant. Résultats de la troisième évaluation des habitats et espèces de la DHFF (2013-2018).*

This report summarizes the results of the third assessment of conservation status of Europe's most rare or threatened habitats and species carried out in the framework of implementation of the Habitats Directive during the period 2013-2018. Regarding *Posidonia oceanica* meadows in the Mediterranean the assessment shows the following:

MARIN MEDITERRANEEN						
Aire de répartition	Surface	Structure et fonctions	Perspectives futures	Etat de conservation	Tendance	
					(-)	

-  **FV** Favourable conservation status (for a parameter, or overall)
-  **U1** Unfavourable inadequate conservation status (for a parameter, or overall)
- (-)** — Trend of deterioration of the conservation status between the 2 reports

- *Order adopting management plans for small-scale fishing, 2014 (Arrêté du 13 mai 2014 portant adoption de plans de gestion pour les activités de pêche professionnelle à la senne*

tournante coulissante, à la drague, à la senne de plage et au gangui en mer Méditerranée par les navires battant pavillon français NOR : DEVM1407280A).

This document describes the management plan for the granting of the derogation in 2014. The management plan was built on the data collected during the period 2004-2008. Some elements were updated later in the preparation of the 2014 management plan, relating to the management measures. The main measures in 2014 aimed at preventing fishing effort increasing and reducing the impacts on the exploited ecosystems. The objective of reducing fishing effort has been achieved through the non-renewal of licenses when fishers retire.

The number of fishing days per year and authorized areas were defined for each type of "gangui". Harvest control rules were defined based on the CPUE. In case the CPUE is not met the plan foresaw that the number of fishing days would be reduced by 10% year-on-year.

The plan foresaw the assessment of the socio-economic impact of the implementation of the management plan, but this assessment has not been provided in the implementation report.

- Order establishing a plan for the control and monitoring of landings for the authorized "gangui" vessels, March 2018. (Arrêté du 16 mars 2018 définissant un plan de contrôle et de suivi des débarquements pour les navires titulaires d'une autorisation européenne de pêche au gangui NOR : AGRM1806546A).

This plan details the control and monitoring measures for the fishery. This includes that all "gangui" vessels are equipped with VMS; submit monthly landings report; the skipper of <10 m vessels reports on the landings within 48 hours after landing; all landing of catches must be made into designated ports; 100% verification of the number of days at sea; 100% control of compliance of the fishing gear.

- Commission Implementing Regulation (EU) 2018/693 of 7 May 2018 establishing the derogation from Council Regulation (EC) No 1967/2006 as regards the prohibition to fish above protected habitats, the minimum distance from the coast and the minimum sea depth for the 'gangui' trawlers fishing in certain territorial waters of France (Provence-Alpes-Côte d'Azur).

This Regulation establishes the derogation from Article 4(1) (fishing prohibited above *Posidonia oceanica* or other marine phanerogams) and Article 13(1) (the use of towed gears prohibited within 3 nm of the coast or within 50 m isobaths where that depth is reached at a shorter distance) of the MedReg. It also establishes a reporting requirement for France in accordance with the monitoring plan established in the management plan.

STECF response to the various elements in the ToRs

1) the conditions set by the MedReg are still fulfilled:

- the fishing vessels concerned have an overall length of less than or equal to 12 meters of overall length and engine power of less than or equal to 85 kW, in accordance with the first subparagraph of Article 4(5) of MedReg.

STECF concludes that this condition has been fulfilled. A table is provided in the monitoring report indicating for each vessel overall length, engine power and type of "gangui". The fleet consists of 17 "gangui", 8 "petit" and 9 "grand gangui". A total of 10 licences have been granted, 1 for "petit gangui" and 8 for "grand gangui". The remaining 7 vessels are eligible subject to compliance with requirements of the "gangui" authorization (i.e. fitting of VMS).

*- the fishing activities concerned affect not more than 33% of the area covered by seagrass beds of *Posidonia oceanica* within the area covered by the management plan and not more than 10% of seagrass beds in the territorial waters of France, in line with requirements of points (ii) and (iii) of the first subparagraph of Article 4(5) of MedReg.*

As described in the report on *Posidonia* beds, the maximum surface impacted in 2019 by the "grand gangui" has been estimated by the French administration as 31.2 km², and 0.06 km² in the case of the "petit gangui". The impacted surface has been estimated based on the activity of the most active vessels. This calculation was made based on a horizontal opening of 10 m and 2.5 m, and haul duration of 1 h 15 min and 30 min, respectively for "petit" and "grand gangui". The number of vessels considered is 17. The number of fishing days used were 150 for "grand gangui", not the 200 fishing days allowed, and 50 days for small gangui, the maximum fishing days allowed to this category. Towing speed was 1 knot.

According to these estimations, the fishery impacts 10.2 % of the area covered by the management plan and 3.6 % of seagrass beds in the territorial waters of France. These values fulfil the requirements of MedReg.

STECF concluded in PLEN-17-02 and PLEN-17-03 that the maximum theoretical impact should be calculated based on the maximum theoretical effort. (i.e. the maximum theoretical number of fishing days and the maximum theoretical number of vessels allowed by the management plan). Alternative swept area calculations were also presented by STECF in 2017, considering a larger horizontal spread for the "grand gangui". This standard calculation of swept area considers that several parts of bottom gears are in contact and impact the seabed, not just the trawl itself. These include the warps in front of the trawls doors, the trawl doors and the door to net warps/sweeps (Nielsen et al., 2014). In this respect, using the swept area of only the trawl as per the calculations provided by the French administration is an underestimate of the actual swept area of all of the components of the gear which impact on the *Posidonia* beds. Therefore a nominal door spread of 20m following from STECF PLEN 17-02 and a towing speed of 2 knots, given that in the report

it is explained that the gear is towed at a speed between 1.5 and 3 knots were used by STECF to calculate the impacted *Posidonia* surface.

Table 6.7.1. to 6.7.2 below shows calculations made under a range of scenarios

Table 6.7.1 Impacted *Posidonia oceanica* surface calculated with the same input values as in the French Monitoring Report.

		Otter	Small	
Horizontal opening	w(m)	10	2.5	
Towing time	h(s)	4500	1800	
Towing speed	t(m/s)	0.514	0.514	
No. hauls	n	5	5	
No. days	d	150	50	
No. vessels	v	9	8	
Annual tow repetition rate	r	0.2	0.2	
TSA/haul	m ²	23130	2313	
TSA/day	m ²	115650	11565	
TSA/year	m ²	3469500	115650	
TSA (all vessels)	m ²	31225500	925200	
Total impacted surface	km ²	31.23	0.93	32.15
<i>Posidonia</i> beds	km ²			Ratio
3 Departments	311.68			10.3
French waters	872			3.7

Table 6.7.2 Based on towing speed of 2 knots and the total allowed fishing days, 200 and 50 for "grand" and "petit gangui", the requirements of the MedReg would still be met.

		Otter	Small	
Towing speed	t(m/s)	1.029	1.029	
No. days	d	200	50	
Total impacted surface	km ²	83.35	1.85	85.20
<i>Posidonia</i> beds	km ²			Ratio
3 Departments	311.68			27.3
French waters	872			9.8

However, when considering the maximum theoretical impact based on towing speed of 2 knots, the maximum fishing days allowed of 200 and 50 for "grand" and "petit gangui", and a horizontal opening of 20 m (STECF parameters) the conditions would not be met,

		Otter	Small	
Horizontal opening	w(m)	20	2.5	
Towing speed	t(m/s)	1.029	1.029	
No. days	d	200	50	
Total impacted area	km ²	166.70	1.85	168.55
<i>Posidonia</i> beds	km ²			Ratio
3 Departments	311.68			54.1
French waters	872			19.3

Even when considering the value of 150 and 50 fishing days for "grand" and "petit gangui", and the ten vessels with authorisation instead of 17, but a horizontal opening of 20 m, these conditions would not be met.

		Otter	Small	
Horizontal opening	w(m)	20	2.5	
Towing speed	t(m/s)	1.029	1.029	
No. days	d	150	50	
No. vessels	v	9	1	
Total impacted area	km ²	125.02	0.23	125.26
<i>Posidonia</i> beds	km ²			Ratio
3 Departments	311.68			40.2
French waters	872			14.4

Ultimately, considering whether the condition is fulfilled or not using such calculations depends mainly whether only the impact of the trawl itself is considered or if all the elements of the gear in contact with the bottom are included.

Beside, regardless of whether the MedReg conditions are met or not, STECF notes that *Posidonia oceanica* beds are impacted and are in regression in the area that concentrates the "gangui" activity, the Natura 2000 site "Rade de Hyères".

- catches of species subject to minimum conservation size as mentioned in Annex III are minimal, in line with Article 13(9) of MedReg.

No updated information submitted. STECF raised the absence of information in PLEN 17-02 and 17-03.

The only information available comes from the 2010 selectivity report. The "gangui" target is the category "soupe" that represented 67% of the catches in 2010, and included 37 species. None of these species has an established minimum conservation reference size. The specific catch composition was provided in the selectivity report (2010).

The selectivity report (2010) provides information on one Annex III species, *Mullus surmuletus*. All individuals were larger than MCRS and only 3% were below the size at first maturity. In this report, the specific composition of catches is presented qualitatively, as presence in hauls and relative importance in numbers (percentage). *Diplodus annularis*, an Annex III species, was the third most frequently caught species (presence in around 90% of hauls). Other frequently caught Annex III species were *Diplodus vulgaris* (present in 60% of the hauls), *Mullus surmuletus* and *Diplodus sargus* (present in 40% of the hauls) and *Pagellus erythrinus* (present in 25% of the hauls). Annex III species, undersized individuals would be $\leq 1\%$ of the catch expressed in number.

- *the mesh size comply with the requirement of at least a square-meshed net of 40mm or a diamond meshed net of 50mm and panels of netting smaller than 40mm mesh size are not used for fishing or kept on board, in line with Article 9 of MedReg.*

Direct information on the compliance with the mesh size regulations has not been supplied.

Nevertheless the report mentions that only 10 authorizations were granted for 17 eligible vessels. The remaining 7, all "small gangui", would be authorized when all requirements contained in the plan are met. This means among others that the 10 authorised vessels are assumed to comply with mesh size requirements. It is also mentioned that no infringements were detected based on 16 inspections in 2018 and 20 inspections in 2019.

- *appropriate steps have been undertaken to ensure the collection of scientific information with a view to the identification and mapping of Posidonia habitat, in line with Article 4(6) of MedReg.*

Updated information has been provided on the *Posidonia oceanica* meadows coverage.

As described above, the report on *Posidonia oceanica* meadows and its dead mat includes updated cartography and informs on its conservation status in the French Mediterranean. The results of the assessment of most rare or threatened habitats and species carried out in the framework of implementation of the Habitats Directive in the period 2013-2018 detected a deteriorating trend of the conservation status of *Posidonia oceanica* in the French Mediterranean compared to the previous assessment 2007-2012.

By far, the largest surface of *Posidonia* meadows corresponds to Var where the "gangui" activity concentrates, and Alpes Maritimes. In Var the decreasing trend of *Posidonia* bed is particularly marked (-12.8 km²).

The area with the largest loss is in the Natura 2000 site "Rade d'Hyères", where the "gangui" activity concentrates. This area is characterized by a continuous meadow interspersed with numerous intermattes. The report highlights that other areas show a decrease in the coverage has been observed, even where no "gangui" operate. STECF acknowledges thus that other factors than "gangui" also threaten *Posidonia* (e.g. moorings effects, hydrodynamic changes, pollutants). STECF notes, however, that little is known about the cumulative impact of these threats together, so the impact of the "gangui" fishing activity may not be considered in isolation alone.

In the frame of the MSFD, an indicator is proposed to measure the decrease of the seagrass beds impacted by the "gangui" fishing. No details on the definition of this indicator are provided. It was expected to be first used in September 2019.

2) *the current management measures would continue ensuring a sustainable exploitation of species targeted by 'gangui' trawler without jeopardizing the socio-economic sustainability of the overall fishing fleets involved in exploiting those resources in the coastal area.*

The information provided does not allow assessment of whether the management measures ensure the sustainable exploitation of the species targeted in the "gangui" fishery, since no stock assessment has been carried out.

The fishing effort reduces with the number of vessels but the maximum number of days per vessel has not been changed.

No socio-economic information was provided.

As described in the 2010 selectivity report, the adoption of the 40 mm square mesh codend size was expected to represent a decrease by 58% of landings by trawling hour and the value of landings would be 2.5 times lower than those obtained with the traditional gear. However, STECF notes that the fishery has continued after the application of the 40 mm square mesh codend size in 2011, suggesting that the fishery is still economically viable.

STECF conclusions

Most of the conclusions of the previous STECF plenaries PLEN-17-02 and PLEN-17-03 remain valid. No updated information has been submitted on species composition or on levels of catches and discards. The CPUE threshold that was set as a reference value was not reached in the period 2015-17, but it is indicated that the reference value should be revised. No further details are provided..

STECF concludes that the effort reduction proposed in case the reference values are not reached are not precautionary. In practice the activity of the fleet is well below the allowed fishing days, therefore applying a 10% decrease in the number of allowed fishing days would still mean the reference value would be above the effective fishing activity

undertaken by the fleet. It would be more appropriate to apply the effort reduction based on the actual level of fishing activity. .

STECF still has concerns on the evidence to support the condition that the "gangui" fishery impacts on not more than 33 % of the area covered by seagrass beds of *Posidonia oceanica* within the area covered by the management plan, and 10 % of seagrass beds in the territorial waters of France. STECF considers that the value provided represents an underestimate of the potential swept area. STECF concludes that considering whether the condition is fulfilled or not depends mainly whether only the impact of the trawl itself is considered or if all the elements of the gear in contact with the bottom are included, indicating that the fulfilment assessment is sensitive to the choice of parameters value among plausible options.

STECF notes that *Posidonia* beds where the "gangui" fishery operates are in regression, acknowledging nevertheless that fishery is not the only factor impacting them.

STECF acknowledges the gradual decrease of fishing effort in the "gangui" fishery, because of the withdrawal of the "gangui" authorization when a vessel is sold or the fisher retires. This will ultimately lead to the permanent cessation of the fishery over time. At present, 10 vessels are authorized, compared to 36 in 2014 indicating this measure is working effectively.

6.8 Advice on the International Manual of Procedures (IMP) to be used in the NAFO Regulatory Area

Background provided by the Commission

During long fishing trips carried out in high seas or distant fishing grounds, catches are often processed on-board to conserve space and reduce onshore processing time. As a result, when landed, this harvested fish has lost its morphological features making it harder to identify and compromising the accuracy of landing declarations. The Northwest Atlantic Fisheries Organisation (NAFO), in its 2019 edition of the *Control and Enforcement Measures* (CEM), has included the provisions for DNA analysis in an effort to develop a solid approach to combat issues related with species misidentification. In doing so, NAFO has clarified the capacity of inspectors to take samples for DNA analysis as an additional tool in combating Illegal, unreported and unregulated fishing (IUU) and fishing fraud by vessels operating in NAFO Regulatory Area (RA). However, thus far, a protocol to guide the collection and the chain of custody process of the samples to ensure the integrity of the results is not yet in place.

Amongst the EU Member States (MS) operating in the NAFO RA there is already considerable experience in carrying out this type of sample collection, analysis and reporting. The EU control regulation (Reg. (CE) 1224/2009) fosters the use of these new technologies as they lead to an improved compliance with rules of the common fisheries policy, in a cost effective way. Indeed, prices for these techniques have decreased considerably making its use increasingly interesting for a growing number of practical applications.

However, the processes currently in place are tailored to MS fishing activity and have shown specific weaknesses in what relates to sample representativeness (pers. communication). Despite these weaknesses, the EU experience with DNA analysis is at the forefront of the experiences of other contracting parties. As such, as a NAFO contracting party, the EU has decided to build on the MS experience and put forward an International Manual of Procedures (IMP) for the collection of samples for DNA analysis in the NAFO RA.

The EU has commissioned the development of the International Manual of Procedures via the FRAMEWORK CONTRACT (EASME/EMFF/2016/008 "Scientific advice for fisheries beyond EU waters), namely under the SPECIFIC CONTRACT No. 15: "Study to produce an International Manual of Procedures (IMP) to be used in the NAFO Regulatory Area to guide the collection of samples from fisheries products for genetic analysis". Given the relevant scientific component when developing such a protocol, the EU prior to presenting the finalised version to NAFO, has decided to seek for its scientific revision from STECF as detailed below.

Background documents are published on the meeting's web site on: <https://stecf.jrc.ec.europa.eu/plen1903>

Request to the STECF

Considering that, the IMP should be seen as an additional enforcement tool²³ that ultimately will lead to enforcement process in prosecuting serious illegal activities, the STECF is requested to provide its advice on:

- 1) the technical considerations about the suitability of the IMP to be applied to the European fishing fleet and fishing products from NAFO fisheries;
- 2) scientific advice about the sampling plan underlying the sampling collection on board the fishing vessels, its robustness and power to allow for appropriate quantifiable results; relevant measures of uncertainty, ability to enable the evaluation of multiple hypothesis.

Complimentary to the STECF consultation, the COM will seek for ICES advice on what regards the laboratory analysis, the reference databases and the overall process of chain of custody. Documents for STECF analysis: the International Manual of Procedures (Version 1, 26.10.2019) and the Specific Contract Draft Final Report (Version 1, 26.10.2019).

Summary of the information provided to STECF

Four documents were provided to STECF:

1. the Interim Report of the Specific Contract
2. the International Manual of Procedures (Version 1, 28.10.2019)
3. the International Manual of Procedures (Updated version, 08.11.2019)
4. the framework of the related contract

The Interim Report of the Specific Contract starts by presenting the framework of the contract and the objective of the report in regards to the elaboration of an international manual of procedure (IMP) for NAFO fisheries products sampling and identification. The report presents a state of the art of methodologies in molecular analysis to produce secured identification of fish products. A wide range of methods using genomic, lipidomic or proteomic support are described and the main uses, advantages and caveats are presented. The choice of their use is linked to the question that needs to be addressed but also to technical parameters such as: the quality and quantity of material to be analysed, the sampling conditions (storage, multi-species, transport duration), the availability of primers / DNA sequences, the degree of transformation of the fishery product, etc.

The report also includes a descriptive analysis of the fishing fleet/fisheries in NAFO area. The fishing effort (number of days at sea) is presented per vessel category, main fishing area and target species and total retained catch in weight by species and division. A

23 Ogden, R. (2008), Fisheries forensics: the use of DNA tools for improving compliance, traceability and enforcement in the fishing industry. *Fish and Fisheries*, 9: 462-472. doi:10.1111/j.1467-2979.2008.00305.x

Jann Th. Martinsohn, Paul Raymond, Trey Knott, Kevin A. Glover, Einar Eg Nielsen, Lars Bonde Eriksen, Rob Ogden, John Casey and Jordi Guillen, DNA- analysis to monitor fisheries and aquaculture: Too costly?, *Fish and Fisheries*, 20, 2, (391-401), (2018).

description of the main fishing stocks, their management and the evolution of their historical landing is also given.

The International Manual of Procedures (IMP) is composed of a presentation of the framework of the fish fraud control within the NAFO Regulatory Area (RA). In order to prepare an International Manual of Procedures (IMP), the authors based their work on the description and analysis of the Portuguese Manual of Procedures that was translated and evaluated for improvement. The IMP consists of different paragraphs containing the following:

- The definition of the concepts used in the scope of the IMP
- The description of the type of relevant samples to be collected: the approach considers the muscle and fin samples for the 12 main landing species (10 fishes, 1 mollusc, 1 crustacean)
- The description of the kit for the collection of samples
- The procedures for sampling (including calculation of minimum sampling size), collection, registration, transport and delivery
- The laboratory analysis: description of the different existing methods and the condition to evaluate for their use and presentation of the choice of method per species according to the known parameter to meet the success of successful identification
- Some consideration on the cost of the analysis
- One form for sample collection and one form for sample transport and delivery
- Three case studies for sample dimensioning for Cod, American Plaice and Thorny skate.

STECF observations

In order to ensure an effective implementation of DNA-technique for fisheries control, STECF acknowledges the need for the development of a Manual of Procedures (IMP) for the collection of samples for the DNA analysis.

ToR 1. The technical considerations about the suitability of the IMP to be applied to the European fishing fleet and fishing products from NAFO fisheries

STECF observes that it would be the first time DNA-techniques are to be used to control compliance with labelling of species at the scale of the European fishing fleet. However, whether the IMP is technically suitable would require testing and assessment.

STECF was not able to gather enough information on how control and enforcement is carried out in the NAFO area to provide a detailed opinion on the suitability of the IMP. However, STECF observes the following:

1. Due to the risk of contamination of the DNA samples in the processing chain on-board (filleting knives, ice, etc...) a set of rules and procedures for fishermen on how to handle, separate and process fish on board the vessels may be necessary. These are not included in the suggested IMP.

2. At the moment the majority of fisheries control inspectors are not familiar with using DNA techniques and manipulating DNA samples. As also stated in the IMP, the implementation of the IMP would require dedicated training for inspectors in charge of the sampling. The European Fisheries Control Agency (EFCA) may be the appropriate body to coordinate and provide such training.

3. Regular sessions to share DNA Identification results and analyse their distribution will be required to review the probability of detecting fraudulent fish catches in each type of lots 24. Based on these results, the sampling scheme might be re-evaluated and adapted accordingly (see ToR 2 below).

4. STECF highlights the emerging use of new technologies for fast DNA identification of species, which can offer efficient and fast species identification within less than one hour with simple and portable equipment. These new methods are thus good candidates in the context of NAFO RA tracking of fish fraud. Some of them are already mentioned and discussed in the IMP, but STECF notes that this is an area of rapid development which needs to be followed up to keep the knowledge on these methods up-to-date.

For these reasons STECF suggests that the suitability of the IMP is tested during a pilot period. During the pilot period the efficiency of the DNA species identification methods and the IMP (including the practical implications related to it) could be tested. Also, the estimation of the probability for detection required for the sampling method described under ToR 2 below would be obtained during the pilot.

ToR 2. Scientific advice about the sampling plan underlying the sampling collection on board the fishing vessels, its robustness and power to allow for appropriate quantifiable results; relevant measures of uncertainty, ability to enable the evaluation of multiple hypothesis.

The IMP recommends establishing the sampling size for each lot as the minimum sampling size for estimating a proportion with a given confidence level and a required level of precision for large populations (> 10,000 units).

STECF notes that this first requires establishing the intended confidence level (e.g. 95%) and the level of precision (range in which the true population proportion is estimated to be, expressed as a percentage, e.g. 5%). The minimum sampling size also depends on the estimated value of the probability to detect mislabelling. This value could be based on results from a previous survey or a pilot study as suggested in ToR 1 above. In the examples provided in the IMP, initial estimates of the probability to detect mislabelling are obtained as the ratio between the catch of the species in the lot with respect to the overall catch of the species that could be mislabelled, under the assumption that the target species

24 A lot is defined in accordance with the Control Regulation EC (1224/2009) and refers to a quantity of fishery product of a given species having the same presentation and coming from the same relevant geographical area and from the same vessel or groups of fishing vessels.

is always mislabelled. In case no information is available, the most conservative approach corresponds to an initial probability to detect mislabelling of 0.5, which gives the largest sample size.

In the case the size of the population to be sampled is not large (< 10,000 units), STECF suggests adjusting the minimum sampling size (n_0) with the finite population correction as follows:

$$n_0 = \frac{N * n_0}{n_0 + N - 1}$$

where N denotes the population size (i.e. number of units in a lot). As explained in the IMP, the population size can be approximated as the ratio between the overall weight of the lot and the average weight of a unit per lot. The finite population correction results in smaller sampling sizes than with the approximation of Yamane (1967) described in the IMP.

When the minimum sampling size is estimated to be less than 3, STECF suggests taking a minimum sample of size 3.

STECF specifies that this methodology requires random sampling and that particular attention should be drawn to the selection of boxes while sampling on board.

STECF further notes that the sampling strategy described in the IMP only refers to the sampling in each lot. Therefore, STECF cannot evaluate if the proposed sampling method applied for each lot will provide robust results referring to all fishing products of NAFO RA. That will depend on the total number of lots sampled, number of fishing trips sampled, etc.

STECF notes that the proposed sampling design is based on previous knowledge of the probability to detect species mislabelling in a lot; which was estimated for the given case studies on the average landings from the past 5 years. However, it is not specified if these catch figures from NAFO RA have been verified by DNA analysis for species identification. If not, this could affect the minimum estimated sampling size and therefore the precision of the estimated probability of mislabelling. For this reason STECF suggests that the pilot period indicated in ToR 1 is implemented to estimate collect initial values for the probability of mislabelling. These estimates could be used to improve the sampling strategy for future applications.

STECF conclusions

STECF concludes that since it is the first time inspection using DNA techniques will be applied to the European fishing fleet on a broad scale, the technical suitability of the IMP (including the practical implication of it) should be tested and reviewed during a pilot period.

STECF concludes that the procedure for the determination of the minimum sampling size per lot according to Cochran (1977) is statistically adequate (Israel, 1992). Furthermore, STECF suggests that initial estimates of the proportion of mislabelling of each species should be obtained in the pilot period. The results from the pilot period could then be used to establish the most adequate sample size per lot to attain the required level of precision after the pilot period.

In case a pilot period is not introduced, STECF concludes that the conservative estimate of a probability of mislabelling of 0.5, as proposed in the IMP, is used at the initial stage.

References:

- Cochran W.G. (1977). Sampling Techniques 3rd Edition. John Wiley & Sons, New York.
- Israel G.D. (1992). Determining sample size. Fact Sheet PEOD-6. Program Evaluation and Organizational Development, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida.
- Yamane, T. (1967). Statistics, An Introductory Analysis, 2nd Ed. New York, USA: Harper and Row.

6.9 Derogation for 'Volantina' demersal otter trawls in the territorial waters of Slovenia

Background provided by the Commission

In accordance with Article 13(1) of Regulation (EC) No 1967/2006 (hereafter the MedReg), the use of towed gears is prohibited within 3 nautical miles of the coast or within the 50m isobath where that depth is reached at a shorter distance from the coast. At a request of a Member State, derogation from Article 13(1) may be granted, provided that the conditions set in Article 13(5) and (9) are fulfilled.

In addition, a general condition for all derogations is that the fishing activities concerned are regulated by a management plan provided for under Article 19 of the MedReg. Under this provision, Member States are expected to adopt management plans for fisheries conducted by trawl nets, boats seines, shore seines, surrounding nets and dredges within their territorial waters.

In 2013, the Common Fisheries Policy (CFP) introduced new elements for conservation such as the target of maximum sustainable yield (MSY) for all the stocks by 2020 at the latest, the landing obligation and the regionalisation approach.

In line with these two regulations, the plans shall be based on scientific, technical and economic advice, and shall contain conservation measures to restore and maintain fish stocks above levels capable of producing MSY. Where targets relating to the MSY (e.g. fishing mortality) cannot be determined, owing to insufficient data, the plans shall provide for measures based on the precautionary approach, ensuring at least a comparable degree of conservation of the relevant stocks.

The plans may contain specific conservation objectives and measures based on the ecosystem approach to achieve the objectives set. In particular, it may incorporate any measure included in the following list to limit fishing mortality and the environmental impact of fishing activities: limiting catches, fixing the number and type of fishing vessels authorized to fish, limiting fishing effort, adopting technical measures (structure of fishing gears, fishing practices, areas/period of fishing restriction, minimum size, reduction of impact of fishing activities on marine ecosystems and non-target species), establishing incentives to promote more selective fishing, conduct pilot projects on alternative types of fishing management techniques.

Commission Implementing Regulation (EU) 2017/2383 granted a derogation to Article 13(1) of the Mediterranean Regulation for 'volantina' demersal otter trawls in the territorial waters of Slovenia. This derogation applies until 27 March 2020.

Slovenia has submitted a request to prolong this derogation after its expiry on 27 March 2020.

Background documents are published on the meeting's web site on: <https://stecf.jrc.ec.europa.eu/plen1903>

Request to the STECF

TOR 1. Assess whether the management plan contains adequate elements in terms of:

1.1. The description of the fisheries:

- Recent and historical data on catches (landings and discards) of the species concerned, fishing effort and abundance indices such as catch-per-unit-effort;
- Data on length-frequency distribution of the catches, with particular reference to the species subject to minimum sizes in accordance with Annex IX of Regulation (EU) No 2019/1241;
- An updated state of the exploited resources; and
- Information on economic indicators, including the profitability of the fisheries.

1.2. Objectives, safeguards and conservation/technical measures:

- Objectives consistent with Article 2 of the CFP and quantifiable targets, such as fishing mortality rates and total biomass;
- Measures proportionate to the objectives, the targets and the expected time frame;
- Safeguards to ensure that quantifiable targets are met, as well as remedial actions, where needed, including situations where the poor quality of data or non-availability places the sustainability of the main stocks of the fishery at risk; and
- Other conservation measures, in particular measures to fully monitor catches of the target species, to eliminate discards and to minimise the negative impact of fishing on the ecosystem.

1.3. Other aspects:

- Quantifiable indicators for periodic monitoring and assessment of progress in achieving the objectives of the plan.
- If deemed necessary, provide any recommendations and guidance on how to obtain improved scientific/technical supporting material for the plan. This could be done in terms of collection of data, evaluation of the status of the target stocks, evaluation of conservation measures, impact on the marine ecosystem and monitoring programme.

TOR 2. Evaluate whether the following conditions concerning the derogation to the minimum distances and depths (Article 13, paragraphs 5 and 9) are fulfilled:

- There are particular geographical constraints, such as the limited size of coastal platforms or limited fishing grounds;
- The fisheries have no significant impact on the marine environment;
- The fisheries involve a limited number of vessels, with a track record of more than 5 years, and do not contain any increase in the fishing effort;
- The fisheries cannot be undertaken with another gear;
- The fisheries are subject to a management plan and carry out a monitoring of catches as requested in Article 23;
- The fisheries do not operate above seagrass beds of, in particular, *Posidonia oceanica* or other marine phanerogams;
- The fisheries do not interfere with the activities of vessels using gears other than trawls, seines or similar towed nets;
- The fisheries are regulated in order to ensure that catches of species mentioned in Annex IX of Regulation (EU) No 2019/1241 are minimal; and

- The fisheries do not target cephalopods.

TOR 3. Evaluate the implementation report of the current derogation and any additional documents provided to support the Slovenian request to renew the derogation.

STECF observations

The newly submitted Management Plan (MP) for commercial fishing in the territorial waters of Slovenia provides information on the Slovenian sea fishing area (including information on protected areas) and included a detailed presentation on the current fleets and fleet segments, spatial distribution of fishing activities, and seasonality various fishing gears. Information on landings in weight and value are also provided at fishing gear level.

The request submitted by Slovenia (described in the MP) includes a derogation regarding the size of the surrounding nets, and a derogation for bottom trawling gear called "Volantina" to be permitted in a stretch located between 1.5 and 3 nautical miles from the coast.

The following métiers are include in the MP: pots (FPO), fyke nets (FYK), drift nets (GND), bottom-set gillnets (GNS), trammel nets (GTR), hand-lines and pole-lines (LHP), set longlines (LLS), demersal otter trawls (OTB), pelagic otter trawls (OTM), purse seines (PS), pelagic trawls operated from two vessels (PTM) and gillnets and entangling nets (GTN).

Fleet and catch statistic data presented in the newly submitted MP cover the period until 2015; there is no new data except for OTB fisheries.

STECF considers that the newly submitted MP is very similar to the MP evaluated by the STECF during PLEN 2017-01 and notes that only the following updates have been made in the newly submitted MP:

- Changes in chapter 2.1.1.
 - New maps of the Slovenian marine fishing area.
- Updates in chapter 5.1.8. on the description of the métier 'Demersal otter trawl (OTB)'
 - An additional three years of information regarding fleet capacity, fishing effort and landings (weight and value) for the OTB métier for the period 2016-2018.
 - Seasonal activity of OTB trawlers regarding the number of fishing trips and corresponding landings (weight and value) for the period 2016-2018.
 - New data on capacity and vessel length classes of OTB for the reference year 2018.
 - Updated information on landing composition by species for the period 2016-2018.
- Change in chapter 7.3. on managements measures at the national level
 - Removal of one (of three previously defined) objectives - 'Objective 3: Issue of licenses for commercial fishing for a limited time'.
- Updates in chapter 8.2.1. on the description of the request for a derogation for demersal otter trawls.
 - More detailed description regarding the Slovenian statement that fishing with demersal trawling does not affect fishing with other fishing methods.
 - Updated information related to discards for the period 2016-2018.
 - Data on catch per unit effort for three cephalopods species (*Eledone moschata*, *Loligo vulgaris* and *Sepia officinalis*) for the period 2005-2018.
 - Data on activity (number of logbooks per year) for 12 vessels under derogation with track records for the period 2005-2018.

- Updated information on fishing effort in the area from 1.5 to 3 miles, as well as outside 3 miles for the period 2016-2018.

STECF comments in relation to each of the elements outlined in the ToRs

TOR 1. Assess whether the management plan contains adequate elements in terms of:

1.1 The description of the fisheries

- *Recent and historical data on catches (landings and discards) of the species concerned, fishing effort and abundance indices such as catch-per-unit-effort (or CPUE).*

In the period 2008-2015, the total number of fishing days increased by 28%, but there is no detailed information on the total landings trend by species, apart from one figure and statement that the weight of total landings in this period decreased by 72%. The average value of landings per fishing day dropped by more than 50% in the 2008-2015 period.

There are no details reported on recent total catch trends (landings and discards) of the species concerned, and no catch-per-unit-effort (CPUE) data is presented.

- *Data on length-frequency distribution of the catches, with particular reference to the species subject to minimum sizes in accordance with Annex III of the MedReg.*

STECF notes that there are no data on length-frequency distribution of the catches. No information on species subject to minimum sizes in accordance with Annex III of the MedReg is presented.

- *An updated state of the exploited resources.*

All main target species of the Slovenian fleet are all shared stocks, so the assessment refers to the evaluations performed in the frame of the GFCM until 2015. The management measures proposed in the MP are thus also those arising from the GFCM. The GFCM Scientific Advisory Committee (SAC) designated five species as priority species which were of relevance for Slovenia in 2015: European pilchard (*Sardina pilchardus*), gilt-head bream (*Sparus aurata*), European anchovy (*Engraulis encrasicolus*), common sole (*Solea solea*), and whiting (*Merlangius merlangus*). According to the assessments presented in this MP, the status of the sardine and anchovy stocks in GSA 17-18 in terms of current fishing mortality (F) was not within safe biological limits during the reference year 2015. The stock assessments of demersal species for the entire period analysed (2013-2015) also showed excessive exploitation or high overfishing of species. Thus, the objective proposed for all these priority species in the MP is to reduce fishing mortality.

STECF notes that in this MP Slovenia did not update information on the status of exploited stocks after 2015 despite the fact that GFCM and/or STECF provided stocks assessments for the most important pelagic and demersal stock in the Adriatic Sea in the years 2016, 2017 and 2018.

- *Information on economic indicators, including the profitability of the fisheries.*

Detailed information on the fishing fleet by segment until 2015 is given in the MP (tonnage, engine power, number of employees, days at sea, fuel consumption, total income, etc.), including information on economic indicators and profitability. The Slovenian fleet capacity in year 2015 was 675 GT and 8867 kW, which is a decrease by 382 GT (36.1%) and 2107 kW (19.2%) compared to the fleet capacity ceiling determined on 1 May 2004 (1057 GT and 10974 kW), and the result of the decommissioning of eight fishing vessels in 2012 and 2013. As of 1 January 2014, Slovenia could not exceed this capacity (Regulation (EU), No

1380/2013). The Slovenian fishing fleet consists mostly of small vessels that are considered "small scale" fisheries (<12 m length). There are no vessels that exceeds a length of 18 meters. In 2015, 82 vessels (48%) were shorter than six meters, 73 (42.7%) were in the length class from 6 to 12 meters and 16 (9.3%) in the length class from 12 to 18 meters. In 2014, 15% more people were employed in the Slovenian marine fisheries sector than in 2008.

The revenue of the Slovenian fishing fleet in 2014 was EUR 2.83 million (10% less than in 2013). In total, the value of landings was EUR 1.29 million, the value of state aid was EUR 0.07 million, and the value of other revenues was EUR 1.48 million. Most other revenue was generated by tourist activities, such as renting vessels for sport fishing, or transporting tourists in the summer season. The value of landings declined in 2008-2015, whilst other revenue increased by more than 130% in 2014 compared to 2008.

STECF notes that in this MP Slovenia did not update information on economic indicators for period 2016 -2018.

1.2 Objectives, safeguards and conservation/technical measures

- *Objectives consistent with article 2 of the CFP and quantifiable targets, such as fishing mortality rates and total biomass.*

The management measures proposed in the MP are based on the regional GFCM assessments and recommendations available in 2015. At a national level the MP states 2 main objectives that are focused on managing fishing effort: 1) Removal of non-active vessels from the fishing vessel register, and 2) Implementation of sustainable fisheries. There is no information on safeguards and conservation/technical measures in this MP, and no reference to article 2 of the CFP (MSY objective).

- *Measures proportionate to the objectives, the targets and the expected time frame.*

STECF notes that the national objectives included in the MP have no biological basis and lack target reference points since they are solely focused only on managing fishing effort without clearly specifying fishing effort reduction targets. Also, with regards to timeframes the plan states that measures will be implemented in 2017 and 2018. These timeframes have not been updated in the MP, and it is not clear whether any of the mentioned measures were actually implemented.

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

STECF notes that apart from quantifiable targets that are defined at regional (GFCM) level, no other targets or remedial actions have been provided.

- *Other conservation measures, in particular measures to fully monitor catches of the target species, to gradually eliminate discards and to minimize the negative impact of fishing on the ecosystem.*

STECF notes that in the MP there are no planned measures to eliminate discards and to minimise the negative impact of fishing on the ecosystem.

1.3 Other aspects

- *Quantifiable indicators for periodic monitoring and assessment of progress in achieving the objectives of the plan.*

STECF notes that quantifiable indicators for the periodic monitoring and assessment of progress in achieving the objectives of the plan are not provided in the MP.

- *If deemed necessary, provide any recommendations and guidance on how to obtain improved scientific/technical supporting material for the plan. This could be done in terms of collection of data, evaluation of the status of the target stocks, evaluation of conservation measures, impact on the marine ecosystem and monitoring programme.*

The MP should have clear objectives related to article 2 of the CFP, especially where these are not determined on a regional level, e.g. for demersal species. Moreover, a proper explanation and justification of actions to achieve such objectives are needed. The MP should provide data on total landing trends as well as CPUE trends at fishing gear level on a yearly basis as well as length frequencies of caught species and discard rates, especially for target species. The MP should also determine proper quantifiable trigger reference points and related remedial actions.

TOR 2. Evaluation of condition concerning the derogation to the minimum distances and depths

The request submitted by Slovenia includes both a derogation regarding the size of the surrounding nets, and a derogation for bottom trawling gear called "Volantina" to be permitted in a stretch located between 1.5 and 3 nautical miles from the coast.

However, the ToR 2 mentions only an evaluation of the conditions concerning the derogation on the minimum distances and depths for Slovenian demersal otter trawl fisheries, but not regarding the size of the surrounding nets. STECF has thus only commented on this derogation in its evaluation of whether the conditions are met on the basis of information provided in this MP and information provided in the previous STECF Reports (PLEN 13-01; PLEN 16-02 and PLEN 17-01).

- *There are particular geographical constraints, such as the limited size of coastal platforms or limited fishing grounds*

STECF notes that information provided in the previous STECF Reports (PLEN 13-01; PLEN 16-02 and PLEN 17-01) shows that Slovenia provided sufficient information to fulfill this condition.

- *The fisheries have no significant impact on the marine environment*

STECF notes that no new information regarding this has been provided. STECF notes thus that the information provided in the MP is not sufficient to conclude that demersal fisheries have no significant impact on the marine environment.

- *The fisheries involve a limited number of vessels, with a track record of more than 5 years, and do not contain any increase in the fishing effort*

STECF notes that in this newly submitted 2019 version of the MP Slovenia provides sufficient information on the fact that the 12 vessels that are under derogation have more than 5 years of track record.

- *The fisheries cannot be undertaken with another gear*

STECF notes that information provided in the previous STECF Reports shows that Slovenia provided sufficient information to fulfill this condition.

STECF reiterates detailed technical characteristics of "Volantina" and "Tartana" are needed, as well as catch comparisons throughout a whole fishing season for the different gears and fishing zone (1.5-3 NM vs >3 miles).

- *The fisheries are subject to a management plan and carry out a monitoring of catches as requested in Article 23;*

STECF notes that information provided in the previous STECF Reports shows that Slovenia provided sufficient information to fulfill this condition.

- *The fisheries do not operate above seagrass beds of, in particular, Posidonia oceanica or other marine phanerogams;*

STECF notes that information provided in the previous STECF Reports shows that Slovenia provided sufficient information to fulfill this condition.

- *The fisheries do not interfere with the activities of vessels using gears other than trawls, seines or similar towed nets;*

STECF notes that the information provided in this MP is sufficient to conclude that otter trawl fisheries in Slovenia do not interfere with the activities of vessels using gears other than trawls, seines or similar towed nets. It is explained that Slovenia has established a corridor within which a spatial and temporal schedule for fishing with demersal trawls and different types of bottom-set nets has been prescribed; fishing with towed fishing gears is only allowed during the night in the corridor.

- *The fisheries are regulated in order to ensure that catches of species mentioned in Annex IX of Regulation (EU) No 2019/1241 are minimal;*

According to the data provided the demersal fisheries in the Slovenian sea area are typical multispecies fisheries, and a large part of the catch is composed of cephalopods and species listed in Annex III of the MedReg. STECF also considers that discard rates of species from Annex III of MedReg in the catches are very high, and that a significant proportion of discarded catches are composed of juveniles of species listed in Annex III of the MedReg.

STECF notes thus that Slovenia did not fully fulfill this condition.

- *The fisheries do not target cephalopods.*

STECF noted in its previous evaluation that it cannot be considered that the fleet does not target cephalopods, implying that the condition 10 of Article 13 MedReg is not fully fulfilled.

TOR 3. Evaluate the implementation report of the current derogation and any additional documents provided to support the Slovenian request to renew the derogation

Slovenia provided a document entitled "Report on fishing activities with "volantina" trawls in strip between 1.5 and 3 miles from coast in year 2016, 2017 and 2018". This document contains two Annexes:

Annex I – List of vessels subjects to the derogation that were active in period 2016-2018

Annex II –Excel file with following sheets:

- Catch composition (Table 2);
- Data on retained/discarded length composition by species for the most frequently landed species (Table 3);
- The share and composition of juvenile organisms listed in Annex III of the MedReg (Table 4).

In Table 2 (Annex II) Slovenia provides catch composition expressed as landings per year per species for the period 2016-2018. A total of 76 different species were caught. The most abundant species are whiting (31,9%), musky octopus (21,21%), European squid (16,68%) and red mullet (5,86%). There are 17 species with a catch percentage higher than 1%, and these include 3 cephalopod species (35,62% of total catch) and 8 fish species listed in Annex III if the Med Reg (16,56% of total catch).

In Table 3 (Annex II) Slovenia provides data on retained/discarded length compositions for the 20 most frequent species (Annex III species). The data demonstrate the high discard rates for majority of the investigated species: *Trachurus mediterraneus* (63%), *Diplodus annularis* (29%); *Engraulis encrasicolus* (75%); *Pagellus acarne* (96%); *Pagellus erythrinus* (38%); *Sardina pilchardus* (36%); *Sparus aurata* (10%).

In Table 4 (Annex II) Slovenia provides information on the share and composition of juvenile organisms for some species from Annex III of the MedReg. It is clear that a large part of the catches is composed of juveniles: *Diplodus annularis* (15, 1%); *Merluccius merluccius* (9,7%); *Pagellus acarne* (95,5%); *Pagellus bogaraveo* (100%); *Pagellus erythrinus* (32,1%); *Pagrus pagrus* (40%); *Pecten jacobus* (41,7%), *Sparus aurata* (51,5%); *Trachurus mediterraneus* (47,6%), *Trachurus trachurus* (90%).

STECF considers that Slovenia did not clarify whether the data presented in the Annex II Excel came from "Volantina" fisheries only, or from landings of all otter bottom trawl fisheries. Moreover, it is not specified if this data came only from the area for which Slovenia is requesting a derogation extension (i.e. the strip between 1.5-3 NM), or from all Slovenian fishing grounds. The report also does not clarify if the data were collected through experimental fisheries or by onboard sampling of commercial fisheries.

STECF further considers that Slovenia needs to clarify during which part of the year sampling has been performed. From the MP it is evident that there are important differences in fishing activities, volumes of landings of certain species, and catch profiles in different parts of the year.

Previous STECF evaluations (PLEN 17-01; PLEN 16-02) requested that Slovenia should provide data separately for the "Volantina" net and other otter trawls. Similarly, STECF requested information regarding the area under derogation (the strip between 1.5-3 miles) and rest of the sea to be presented separately. STECF notes that this information has not been provided in the updated MP and the report on the current derogation.

STECF conclusions

STECF concludes that the newly submitted MP is very similar to the MP evaluated by STECF during PLEN 2017-01, and there are only some updates, mainly regarding the description of bottom trawl fisheries and the request for an extension of the derogation for bottom trawl "Volantina" fisheries. Information on catch, effort and the status of the exploited stocks have not been updated with the most recent years.

STECF concludes that in this MP Slovenia provided sufficient information supporting the condition that otter trawl fisheries do not interfere with the activities of vessels using gears other than trawls, seines or similar towed nets. Slovenia also provided sufficient information to show that the 12 vessels under derogation have more than 5 years of track record in the fishery.

STECF notes that Slovenia did not provide sufficient new information to fulfill the condition that there should be no significant impact of demersal fisheries on the marine environment, the condition that demersal fisheries are regulated in order to ensure that catches of species mentioned in Annex III MedReg are minimal, and the condition that the fishery does not target cephalopods.

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

7.1 Organisation of the 2020 AER EWGs

Background

STECF concluded in PLEN 19-02 that the two EWGs (AER I and AER II) should be more focused with specific objectives and different ToRs for each meeting. AER I should be dedicated to data check and the production of national chapters, while AER II should focus on developing applied economic analyses based on the data submitted in AER I. STECF acknowledged however that some data or database issues can only be detected when the analyses are performed; therefore STECF encouraged the increased automation of the production of standard chapters (for example the possibility of using R markdown for some chapters could be explored); that would free more time for additional data checks in AER I and would also allow for quick update if data still need to be corrected during AER II. STECF considered that such automation would lead to a substantial reduction of the time deployed during AER II on fixing these data issues, and would allow focusing more time on the objectives of the second EWG.

STECF concluded in PLEN 19-02 that it would be beneficial for the use and readability of the report to evaluate the process of producing the AER in terms of efficiency and effectiveness, including a discussion about the actual level of details needed in the text for each section. STECF suggested that for the meetings in 2020 the ToRs could be structured along the following lines: 1) Routine parts of the report, 2) Analyses that are done or could be done in some way systematic and routinely, and 3) Specific topics that need deeper analysis.

STECF considered that the possible use of FDI data for landings and effort should be considered when producing the economic performance of the fleet, as a step forward in the process of merging transversal and economic data calls. STECF suggested including a discussion ToR in the next STECF plenary (19-03) about the possible merging of the common variables of the two data calls. The comparability and the sources of discrepancies between the different data calls would need to be discussed with the JRC focal person and with the AER EWG chair, in order to adequately define this task for the next year's AER EWGs.

STECF suggestions

STECF discussed the following steps, suggestions and possible improvements for the AER in 2020.

- 1) The first AER meeting should be organized a few weeks later than last year (meeting was 8-12 April 2019). This would provide JRC a bit more time to check the data and produce the data and tables for the national chapters and regional overviews.
- 2) In the first AER meeting, the experts should check the data for the national chapters but also for the regional overviews to detect errors and correct those if possible during the meeting. The data for the regional analyses is not the same as the data for the national chapters since the data for the regional overview are aggregated in a different way. Therefore, in previous meetings data errors were detected and re-uploads were necessary during the second meeting. Having the data for the regional

analysis checked in the first meeting should give the experts during the second meeting more time for the analysis of them and for the special chapters.

- 3) The report template, the routine tables and text are not automatically created from the database. An automation of a draft report, which can be updated easily in case of data re-upload, would speed up the process substantially. STECF bureau is asked to discuss with DG MARE and JRC how the additional effort, necessary to set up the automated creation of the draft of the AER report, could be ensured. This could be done via an ad-hoc contract or a person working for some time at JRC.
- 4) The deadline for the re-uploading of data (two weeks after the first AER meeting) is currently not being strictly enforced. As mentioned, during the second meeting data re-uploads were necessary as data checks revealed errors in the data. If the data checks for the regional analyses would be performed during the first AER meeting, the likelihood of this happening should decrease. STECF concludes that DG MARE may include a sentence in the data call that the deadline for re-upload of the data will be more strictly enforced as all the data checks will be done at the first meeting and MS will receive a message well in advance of the deadline on possible errors in the data and necessities for data re-uploads.
- 5) Currently during the data call MS have to upload economic data on fleet segment level and national totals. The reason for this is that for some fleet segments, due to confidentiality issues, economic data cannot be reported and only data on e.g. total landings or total effort can be provided. However, there is sometimes a difference between the national totals and the aggregated total for all fleet segments. This leads to some extra effort to clarify the differences and it should be elaborated whether in the future, with some slight changes for the uploading of fleet segment data (to have not that much difference with the national totals in case of confidentiality issues), to only call for the national data on fleet segment level.
- 6) STECF proposes that the STECF Bureau and the AER chair prepare a restructured version of the AER TOR 2019 in advance of the two bureau meetings in December 2019 and January 2020 to discuss a split of the TOR into 1) Routine parts of the report, 2) Analyses that are done or could be done in some way systematic and routinely, and 3) Specific topics that need deeper analysis. The TOR should also refer to the meeting (AER I or AER II) where this TOR will have to be finalised.
- 7) The nowcast provides valuable information on the economic situation of the fishing fleet in the year the AER is produced and the methodology used in last year's report should be applied regularly now.
- 8) Investments are an important part of the business perspectives as this reflects the future expectations of a company. JRC published a scientific paper on an analysis of investment behavior using the DCF economic data²⁵. In the next AER this analysis could form a basis for a more specific analysis.
- 9) There are still transversal data (e.g. effort and landings) called under the AER data call although there is the FDI data call later in the year. Much of the data in the AER data call is preliminary data for year n-1 while in the FDI data call this is consolidated and, therefore, the two data sets differ sometime substantially. The aim should be to call the data only once per year and, therefore, a comparison of the two data sets should be done in 2020 to elaborate what is the best way forward. The first AER EWG in 2020 should elaborate how far the data of year n-1 is used

25 <https://www.sciencedirect.com/science/article/pii/S0165783619302516>

for the AER. As the n-1 transversal data is preliminary it may not be possible to call those data only once in February (instead to do it also in the FDI data call) but it may be possible to reduce the requested data in the AER data call. STECF concludes that the best place for this comparison would be the second meeting of the FDI EWG in case this meeting takes place in 2020.

7.2. Information on the EWG 19-20 on CFP Monitoring

STECF observations

DG MARE addressed the plenary meeting about the CFP monitoring for the coming year. He explained that DG MARE sees the "Protocol for the monitoring of the CFP" (Jardim et al.) as an excellent contribution to insuring transparency and supporting stability in the analyses produced annually. DG MARE was happy with the outcome of the CFP monitoring process and wishes to see this methodological stability maintained.

EUROSTAT would like to have an EU-wide indicator for the international reporting under UN SDG 14.4. STECF was invited to work on options and suggestions for such an indicator in 2020 with a view to this becoming operational in 2021. For DG MARE, however, it is key priority that this should not conflict with the existing indicators' time-series used by STECF. The indicator should thus be derived from the existing indicators for the Mediterranean and Northeast Atlantic and not be a new indicator.

STECF notes that in 2019 in several experts working groups new indicators were discussed and tested for a possible inclusion in the CFP monitoring (esp. social and economic indicators). JRC has also worked on the development of a selectivity indicator. For February/March 2020 an EWG on ecosystem indicators was planned. After that EWG, an overall EWG for all possible new indicators was foreseen to discuss which indicators at the end may become new indicators for the CFP Monitoring in 2021.

DG MARE explained that the ecological indicators should now be followed up under DG ENV leadership in ICES and a duplication of work between ICES and STECF shall be avoided. Therefore, the EWG on ecosystem indicators will not take place. The selectivity indicator should then be tested in a "technical measures EWG".

STECF notes that the ecosystem management needs of the CFP are different to, and wider than, the MSFD needs and it is necessary to ensure a common technical basis among the different indicators. Not taking the lead in the development of the indicators may mean being constrained to use possibly inappropriate indicators developed outside the fisheries context. Previous work especially in the first overall EWG on the CFP monitoring (EWG 18-15) should also not be wasted.

STECF notes that DG MARE and the STECF bureau will further discuss about the process during the two bureau meetings in December 2019 and January 2020.

7.3. 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 rules of procedure were discussed and updated by the STECF bureau during the November 2019 plenary meeting. The updated STECF rules of procedure was made available to the committee members and presented by the secretariat.

The STECF Rules of Procedure were adopted by the committee when finalizing the present plenary report and will subsequently be published on the STECF website (<https://stecf.jrc.ec.europa.eu/about-stecf>).

8. 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	Affiliation¹	Email
Abella, J. Alvaro (rapporteur)	Independent consultant	aabellafisheries@gmail.com
Bastardie, Francois (rapporteur)	Technical University of Denmark, National Institute of Aquatic Resources (DTU-AQUA), Kemitorvet, 2800 Kgs. Lyngby, Denmark	fba@aqua.dtu.dk
Borges, Lisa*	FishFix, Lisbon, Portugal	info@fishfix.eu
Casey, John (rapporteur)	Independent consultant	blindlemoncasey@gmail.com
Catchpole, Thomas (rapporteur)	CEFAS Lowestoft Laboratory, Pakefield Road, Lowestoft, Suffolk, UK, NR33 0HT	thomas.catchpole@cefas.co.uk
Damalas, Dimitrios*	Hellenic Centre for Marine Research, Institute of Marine Biological Resources & Inland Waters, 576 Vouliagmenis Avenue, Argypolis, 16452, Athens, Greece	shark@hcmr.gr
Daskalov, Georgi (rapporteur)	Laboratory of Marine Ecology, Institute of Biodiversity and Ecosystem Research, Bulgarian Academy of Sciences	Georgi.m.daskalov@gmail.com
Döring, Ralf (vice-chair, rapporteur)	Thünen Institute [TI-SF] Federal Research Institute for Rural Areas, Forestry and Fisheries, Institute of Sea Fisheries, Economic analyses Herwigstrasse 31, D-27572 Bremerhaven, Germany	ralf.doering@thuenen.de

Name	Affiliation¹	Email
Gascuel, Didier (rapporteur)	AGROCAMPUS OUEST, 65 Route de Saint Brieu, CS 84215, F-35042 RENNES Cedex, France	Didier.Gascuel@agrocampus-ouest.fr
Grati, Fabio	National Research Council (CNR) – Institute for Biological Resources and Marine Biotechnologies (IRBIM), L.go Fiera della Pesca, 2, 60125, Ancona, Italy	fabio.grati@cnr.it
Ibaibarriaga, Leire (rapporteur)	AZTI. Marine Research Unit. Txatxarramendi Ugarte z/g. E-48395 Sukarrieta, Bizkaia. Spain.	libaibarriaga@azti.es
Jung, Armelle (rapporteur)	DRDH, Techopôle Brest-Iroise, BLP 15 rue Dumont d'Urville, Plouzane, France	armelle.jung@desrequinsetdeshommes.org
Knittweis, Leyla (vice-chair)	Department of Biology, University of Malta, Msida, MSD 2080, Malta	Leyla.knittweis@um.edu.mt
Kraak, Sarah	Thünen Institute of Baltic Sea Fisheries, Alter Hafen Süd 2, 18069 Rostock, Germany.	sarah.kraak@thuenen.de
Ligas, Alessandro (rapporteur)	CIBM Consorzio per il Centro Interuniversitario di Biologia Marina ed Ecologia Applicata "G. Bacci", Viale N. Sauro 4, 57128 Livorno, Italy	ligas@cibm.it ; ale.ligas76@gmail.com
Martin, Paloma (rapporteur)	CSIC Instituto de Ciencias del Mar Passeig Marítim, 37-49, 08003 Barcelona, Spain	paloma@icm.csic.es
Motova, Arina	Sea Fish Industry Authority, 18 Logie Mill, Logie Green Road, Edinburgh EH7 4HS, U.K	arina.motova@seafish.co.uk
Moutopoulos, Dimitrios (rapporteur)	Department of Animal Production, Fisheries & Aquaculture, University of Patras, Rio-Patras, 26400, Greece	dmoutopo@teimes.gr
Nord, Jenny (rapporteur)	The Swedish Agency for Marine and Water Management (SwAM)	Jenny.nord@havochvatten.se
Prellezo, Raúl (rapporteur)	AZTI -Unidad de Investigación Marina, Txatxarramendi Ugarte z/g 48395 Sukarrieta (Bizkaia), Spain	rprellezo@azti.es

Name	Affiliation¹	Email
O'Neill, Barry	DTU Aqua, Willemoesvej 2, 9850 Hirtshals, Denmark	barone@aqu.dtu.dk
Raid, Tiit (rapporteur)	Estonian Marine Institute, University of Tartu, Mäealuse 14, Tallin, EE-126, Estonia	Tiit.raid@gmail.com
Rihan, Dominic	BIM, Ireland	rihan@bim.ie
Sampedro, Paz	Spanish Institute of Oceanography, Center of A Coruña, Paseo Alcalde Francisco Vázquez, 10, 15001 A Coruña, Spain	paz.sampedro@ieo.es
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	somarak@hcmr.gr
Stransky, Christoph	Thünen Institute [TI-SF] Federal Research Institute for Rural Areas, Forestry and Fisheries, Institute of Sea Fisheries, Herwigstrasse 31, D-27572 Bremerhaven, Germany	christoph.stransky@thuenen.de
Ulrich, Clara (chair)	IFREMER, France	Clara.Ulrich@ifremer.fr
Uriarte, Andres	AZTI. Gestión pesquera sostenible. Sustainable fisheries management. Arrantza kudeaketa jasangarria, Herrera Kaia - Portualdea z/g. E-20110 Pasaia - GIPUZKOA (Spain)	auriarte@azti.es
Valentinsson, Daniel	Swedish University of Agricultural Sciences (SLU), Department of Aquatic Resources, Turistgatan 5, SE-45330, Lysekil, Sweden	daniel.valentinsson@slu.se
van Hoof, Luc	Wageningen Marine Research Haringkade 1, IJmuiden, The Netherlands	Luc.vanhoof@wur.nl
Vanhee, Willy	Independent consultant	wvanhee@telenet.be

Name	Affiliation¹	Email
Villasante, Sebastian	University of Santiago de Compostela, Santiago de Compostela, A Coruña, Spain, Department of Applied Economics	sebastian.villasante@usc.es
Vrgoc, Nedo (rapporteur)	Institute of Oceanography and Fisheries, Split, Setaliste Ivana Mestrovica 63, 21000 Split, Croatia	vrgoc@izor.hr

STECF members marked with an asterix* did not attend the PLEN-19-03 meeting (see section 2 of this report).

JRC expert		
Name	Address	Email
Jardim, Ernesto	DG Joint Research Centre JRC	Ernesto.jardim@ec.europa.eu

External experts		
Simmonds, E. John	Private Consultant, Netherby - West End - Kirkbymoorside, YO62 6AD North Yorkshire, United Kingdom of Great Britain and Northern Ireland	e.j.simmonds1@gmail.com
Walker, Paddy	Tethys : aquatic ecosystem advice	walkerciteswa@gmail.com

European Commission		
Name	Address	Email
Calvo, Angel	DG MARE, A.4	angel-andres.calvo-santos@ec.europa.eu
CHEILARI Anna	DG ENV, C.2	Anna.CHEILARI@ec.europa.eu

Doerner, Hendrik	DG Joint Research Centre JRC, STECF secretariat	Stecf-secretariat@jrc.ec.europa.eu
GARCIA ALVAREZ Blanca	DG MARE, C.3	Blanca.GARCIA-ALVAREZ@ec.europa.eu
Graham, Norman	DG MARE, D.3	norman.graham@ec.europa.eu
JANIAK Katarzyna	DG MARE, D.3	Katarzyna.JANIAK@ec.europa.eu
Kostopoulou, Venetia	DG MARE, C3	venetia.kostopoulou@ec.europa.eu
MAES Raymond	DG MARE D3	Raymond.Meas@ec.europa.eu
MARKOVIC Laurent	DG MARE, D1	Laurent.MARKOVIC@ec.europa.eu
MARTINI Angela	DG MARE, B.2	Angela.MARTINI@ec.europa.eu
OSIO, Chato	DG MARE D.1	Chato.OSIO@ec.europa.eu
PAARDEKOOOPER, Joost	Head of Unit, DG MARE, C3	Joost.PAARDEKOOOPER@ec.europa.eu
SURDU Oana	DG MARE, C3	Oana.SURDU@ec.europa.eu
Patterson, Kenneth	DG MARE D3	Kenneth.Patterson@ec.europa.eu
SHRIVES Jonathan	DG MARE, C1	Jonathan.SHRIVES@ec.europa.eu

GETTING IN TOUCH WITH THE EU

In person

All over the European Union there are hundreds of Europe Direct information centres. You can find the address of the centre nearest you at: https://europa.eu/european-union/contact_en

On the phone or by email

Europe Direct is a service that answers your questions about the European Union. You can contact this service:

- by freephone: 00 800 6 7 8 9 10 11 (certain operators may charge for these calls),
- at the following standard number: +32 22999696, or
- by electronic mail via: https://europa.eu/european-union/contact_en

FINDING INFORMATION ABOUT THE EU

Online

Information about the European Union in all the official languages of the EU is available on the Europa website at: https://europa.eu/european-union/index_en

EU publications

You can download or order free and priced EU publications from EU Bookshop at: <https://publications.europa.eu/en/publications>. Multiple copies of free publications may be obtained by contacting Europe Direct or your local information centre (see https://europa.eu/european-union/contact_en).

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.

The European Commission's science and knowledge service

Joint Research Centre

JRC Mission

As the science and knowledge service of the European Commission, the Joint Research Centre's mission is to support EU policies with independent evidence throughout the whole policy cycle.



EU Science Hub

ec.europa.eu/jrc



@EU_ScienceHub



EU Science Hub - Joint Research Centre



Joint Research Centre



EU Science Hub

