JRC SCIENCE FOR POLICY REPORT

SCIENTIFIC, TECHNICAL AND ECONOMIC COMMITTEE FOR FISHERIES – 61ST PLENARY MEETING REPORT (PLEN-19-02)

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EUR 28359 EN

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JRC Science Hub
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JRC117461

EUR 28359 EN

PDF ISBN 978-92-76-09515-6 ISSN 1831-9424 doi:10.2760/31279

STECF ISSN 2467-0715

Luxembourg: Publications Office of the European Union, 2019

How to cite: Scientific, Technical and Economic Committee for Fisheries (STECF) – 61st Plenary Meeting Report (PLEN-19-02). Publications Office of the European Union, Luxembourg, 2019, ISBN 978-92-76-09515-6, doi:10.2760/31279, JRC117461

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 61st plenary on 1-5 July 2019 at the Centre Borschette, Brussels.

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PLENARY MEETING

1-5 July 2019, Centre Borschette, Brussels

1. INTRODUCTION

The STECF plenary took place at the Centre Borschette, Brussels, from 1-5 July 2019. This was the first plenary meeting of the newly appointed STECF. 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 5 July 2019.

2. LIST OF PARTICIPANTS

The meeting was attended by 31 members of the STECF, two invited experts and two JRC personnel. Several Directorate General Maritime Affairs and Fisheries (DG MARE) attended parts of the meeting. Section nine of this report provides a detailed participant list with contact details.

The following STCF members were unable to attend the meeting:

1. Daskalov, Georgi
2. Villasante, Sebastian

3. INFORMATION TO THE PLENARY

Welcome of the new STECF

Joost Paardekooper, Head of Unit for scientific advice and data collection in DG MARE, welcomed participants to the meeting and congratulated them for their appointment as STECF members by the DG MARE Director General. Mr Paardekooper recalled the criteria for the selection process, which were published in the call for applications and in the Commission decision on the setting up of the STECF (2016/C 74/05) referencing among others expertise, geographical coverage, gender balance etc. What was highlighted was that STECF members are appointed in their personal capacity, as independent experts, and that the STECF advice needs to continue to reflect this legal obligation. The Head of Unit reminded the peer reviewing role of STECF, which has been reflected, among others, through the attendance of 2 STECF members at each working group under this Committee. STECF members who attend expert working group meetings are therefore

well placed to report on the outcomes of these preparatory instances to the STECF Plenary. For its future work, the Committee has been asked to show even more flexibility than in the past. With increased regionalisation, recommendations which need to be adopted by the Commission within short delays can come up at any time and the written procedure may be used more often than in the past.

Presentation on STECF

The STECF secretariat gave a presentation explaining STECF rules, its work program and procedures, declarations of interest DOIs, report publishing, data issues, and reimbursement procedures.

Director General of DG MARE address to STECF

Mr João Aguiar Machado, Director General of DG MARE, intervened as well before the STECF Committee on the second day of the plenary meeting. The MARE Director General welcomed STECF and raised the role of STECF including responsibilities of the members and envisaged work agenda for the next mandate (3 years). STECF, like ICES, is key to credible and sound implementation and monitoring of the Common Fisheries Policy. STECF provides sound scientific advice, which forms the basis on which the Commission prepares its proposals for legislation, its own legislation (e.g. delegated acts), policy choices, monitoring of the implementation and evolution of the CFP. The MARE Director General underlined the independence of the STECF members, which express their points of view based on expertise, and are appointed in their personal capacity and act in the public interest. STECF remains our key advice provider for stock assessment and specific actions in the Mediterranean and Black seas, the implementation and evaluation of the data collection framework planning and reporting, the evaluation of Joint Recommendations on the landing obligation and social and economic aspects of fisheries management among others. However, the work agenda for the coming years will also face additional and emerging topics and challenges such as further proliferation of joint recommendations stemming from the regional level, the progressive uptake of mixed-fisheries work under multiannual plans, the review of the data collection multiannual programme after 2020, increasing needs for further scientific support in the field of aquaculture initiatives or research under Horizon 2020. From this perspective, the Director General of DG MARE called for the Committee to be flexible in its approach to the upcoming challenges and continue to provide the best available scientific advice.

New STECF – board elections:

Following the appointment of the new Committee for a three-year term, elections for the positions of chair and two vice-chairs of the STECF were held. Two nominations for the chair position and two nominations for the vice-chair positions were received by the secretariat. Before the election, the candidates presented themselves to the plenary in the morning of 2 July. STECF members present elected Clara Ulrich as chair. Ralf Döring and Leyla Knittweis were elected vice-chairs. Elections took place in the afternoon of 2 July and were chaired by the Commission/STECF secretariat.

4. STECF INITIATIVES

No STECF initiatives were discussed during the meeting.

5. ASSESSMENT OF STECF EWG REPORTS

5.1 EWG 19-03 Social data in the EU Fisheries Sector

Request to the STECF

STECF is requested to review the report of the STECF Expert Working Group meeting, evaluate the findings and assess the delivery by the STECF Expert Working Group on the terms of reference and make any appropriate comments and recommendations with a view to enhancing STECF support to the social dimension of fisheries. STECF is specifically requested to formulate recommendations on how the work by the next STECF Expert Working Group on Social data can be prepared and organised in an optimal manner, including as regards data availability, data verification and coherence with the work of other STECF activities, in particular in the economic area.

STECF observations

Introduction

The collection of social indicators for the EU fishing fleet, aquaculture- and fish processing industry was introduced by Regulation No 2017/1004 on the establishment of a Union framework for the collection, management and use of data in the fisheries sector and support for scientific advice regarding the CFP (EU-MAP). The social variables, to be collected every three years from 2018 onwards, are: Employment by gender; Full Time Employment (FTE) by gender; Unpaid labour by gender; Employment by age; Employment by education level; Employment by nationality; Employment by employment status; Total FTE National.

The STECF Expert Working Group (EWG) 19-03 met in the Joint Research Centre, Ispra, Italy, from 8 to 12 April 2019, to i) review social data in the EU fisheries sector collected under the Data Collection Framework (DCF / EU-MAP) in 2018, (ii) provide an EU level overview and national chapters describing the data, and (iii) discuss potential improvements and refinements in the collection of social data in EU fisheries. The work was conducted by 13 independent experts.

The EWG report on Social data in the EU fisheries sector is the first report of its kind, providing a comprehensive overview of the social data collected under the EU MAP for the EU fishing sector. The report provides information on the social and demographic characteristics of the labour force both at EU and Member States level over the year 2017.

Data call and coverage

The social data were requested from EU Member States as part of the economic data call in February 2019. The data call requested Member States to provide social data for the reference year 2017, estimated at the population level. STECF observes however that the EU-MAP requires the collection of data in 2018, but without any requirement related to a reference year; hence the reference year may vary among Member States, some collecting data in 2018 for 2017 some for 2018. STECF notes that in the future EU-MAP the reference year should be defined as the year over which data were collected instead of the year in which the data was collected.

STECF EWG 19-03 analysed the data provided during the data call and concluded that there has been a very good coverage of the data provided by Member States, especially considering that this was the first call for social data. All 23 coastal Member States reported employment by gender, age and nationality; all but two Member States reported employment by education level and employment by status (these two Member States reported all employment status as employees, i.e., no owners). All but three Member States reported FTE by gender while all but six Member States reported unpaid labour by gender.

STECF observes that data were often reported by Member States at a more disaggregated level than required, by fishing activity (20 Member States) and by fleet segment (12 Member States). This allowed the EWG to analyse the data in more detail, particularly for the small-scale fleet. Three Member States further disaggregated employment by status (distinguishing between full and part time employment) on a voluntary basis.

Findings

In 2017 there were around 150 thousand people employed in the EU fishing fleet, equivalent to some 99 thousand FTEs. The majority of workers in the EU fishing fleet were male at 96%, 4% were female.

STECF observes that there is a slight difference between the number of employees reported for 2017 in the Annual Economic Report AER (STECF EWG 19-06) and in the EWG 19-03 reports. The reason for the observed 3% difference between the two sources needs to be assessed and explained before the next data collection exercise.

Age data was reported in the following age categories: <=14, 15-24, 25-39, 40-64, >=65 and unknown. The 40-64 age class made up the largest proportion (58%) of people employed in the EU fishing fleet, followed by the 25-39 age class at 26%. A further 7% were over 65 years; followed by 5% in the 15-24 age class and 4% were unknown. There is a significant variation in age profiles across the Member States. For example in Estonia 31% of fishers are over 65 while in many other Member States the same category only makes up a very low proportion of the fishing population (1% in Belgium and Germany and 2% in Finland).

Nationality categories reported were: Nationals, EU, European Economic Area EEA, non-EU/EEA. The majority of people employed in the EU fishing fleet were nationals of their own country (86%), followed by non-EU/EEA nations (8%), unknown (3%), other EU countries (3%), and EEA (0.1%).The proportion of nationals working in different Member States fleets varied significantly. For example, 27% of people employed in the Irish fleet were non-Irish nationals and 36% of people employed in the Belgian fleet were non-Belgian nationals. In contrast, 94% of the Italian workers were Italian; 99% of the Portuguese workers were nationals and all the people employed in the Bulgarian fleet were Bulgarian nationals.

Education: all Member States were required to report education at a low, medium and high level. 52% of people employed in the EU fishing fleet were educated to a low level, followed by 24% up to a medium level and 4% up to a high level. The education level was unknown for a relatively high share of the fishing sector (20% of people), which may reflect that such a question can be experienced as being sensitive or personal. Education levels varied considerably across Member States with for example only 1% of Portuguese fishers having a high level of education while the corresponding figure in Sweden was 21%.

Employment Status: Member States reported data on employment status in the three main categories: Employee, Owner, and Unknown. The collection of this data varied between Members States, while some Member States reported data for the owners and employees, others reported full-time and part-time workers.

The data provided by the majority of Member States reported that 61% of people employed in the EU fishing fleet were employees and 36% were vessel owners. The employment status of 3% of the people employed in the EU fishing fleet was unknown. There was wide variation in the employment status variable across Member States with employees for example making up 100% in the Belgian dataset and only 28% in Sweden.

Unpaid labour by gender: in the EU fleet, women accounted for 6.6% of unpaid labour while the gender of 2% of the unpaid labour was unknown. The proportion of women represented in the unpaid labour category is thus almost double their proportion in the total employment (3.8%) and FTE (3.4%) categories.

STECF observes that the EWG proposed some changes in definitions of the social variables in the EU-MAP that would need to be considered by the Commission during revision of the EU MAP. The proposed changes refer to the definition of employment status (add self-employed / share fishers), age groups (split of 40-64 group, or further split in accordance to EUROSTAT sub-categories). The EWG 19-03 also proposed to change the definition of the small scale fishing fleet and large scale fleet used by the AER that excludes vessels <12 m using active gears from the small scale fleet. EWG 19-03 felt that the inclusion of all vessels using active gear into the Large Scale Fleet (LSF) category, regardless of their size, introduces a bias and distorts the analysis of proportions for variables such as gender, employment status and age profiles in the LSF. STECF observes that the definition of the small-scale fleet used in the AER is based on the official definition and cannot be changed. However, the importance of the active <12m segment included in LSF could be investigated using AER data set that includes number of vessels and employment information by fleet segment.

Furthermore, STECF observed that EWG 19-03 proposed a list of new indicators that may be considered by the Commission during the revision of EU-MAP. The list of possible new variables includes vocational / technical training; new entrants; representation and governance.

STECF acknowledges the difficulty to describe the social state of the fishing sector through such quantitative variables; therefore, EWG 19-03 proposed to compile National profiles, which would contain a brief description of some of the most salient social, institutional and legal elements for each Member State. National profiles would contribute to a better understanding of the fisheries management context of each individual country and would facilitate a more proper social analysis in the future.

STECF observes that EWG 19-03 also considered the development of fishing community profiles for selected fishing communities, which could for example be developed in collaboration with ICES WGSOCIAL. Those profiles might require data at a scale lower than the country (e.g. NUTS [Nomenclature of Territorial Unit for Statistics] 2 or 3 level) and further territorial analyses of fishing communities within Member States.

STECF notes that EWG 19-03 also discussed methods and definitions used in Community Profiling and Social Impact Assessments that could be a starting point for further

discussions and for the creation of a more permanent social data collection and analytical framework that would support policy decisions.

STECF observes that in order to correctly interpret the data, the indicators presented must be put in the appropriate context i.e. national, regional or even local. For example, the relative low educational level found in some countries may not be specific to fisheries but may reflect a national feature. This contextualisation of indicators and findings is required to assess specific developments of social aspects.

Furthermore, STECF observes and reiterates the recommendations of EWG 18-15 concerning the level of aggregation: when aggregated at the national level, or even at lower NUTS levels, the relative importance of the fisheries sector disappears within the total setting of other economic sectors, highlighting that the importance of fisheries is often very local.

STECF notes that sampling design and raising methodologies to provide estimations scaled up to the entire population should be further assessed to ensure comparability of the approaches used by Member States.

STECF observes that the TORs of EWG 19-03 requested an analysis of average wages per FTE that would require data analysed in the AER and provided in different economic data call tables. The final report of EWG 19-03 did not include this analysis. This issue has been also raised in the report of the EWG stating that the EWG needs closer integration with the economic group working on the AER. Such integration might ensure a more efficient and productive meeting and would also ensure that harmonised data for important figures such as overall employment will be achieved.

STECF conclusions

STECF concludes that the EWG answered the ToRs and acknowledges that the analysis produced is of substantial standard.

STECF concludes that the report provides a first overview of the social and demographic characteristics of the workforce of the EU fishing fleet. However, in line with the conclusions of EWG 19-03, the categories for employment should be extended to include the category 'share fishers'. In addition, it is suggested to include the shore-crew also in the analysis, especially since this very often represents unpaid labour with a higher representation of women. This of course will require a proper definition of whom to consider part of the fisheries work force.

STECF concludes that in order to be able to properly analyse and interpret the data collected, these data should be presented in the adequate national, regional and local context. STECF acknowledges that this specific context could be provided by preparing fisheries sector profiles at the national and local level.

STECF concludes that this may imply that data collection should be stratified by fleet and national division level rather than be provided at the overarching national level only.

STECF concludes that the discussions and the proposals of the EWG 19-03 should be taken into account when revising the EU-MAP. STECF also concludes that the use of the reference year in the EU MAP rather than the year of data collection, especially when requesting data collection every three years, should ensure that all Member States are collecting comparable data over the same period.

Based on EWG 18-15 and EWG 19-03 STECF concludes that in order to fully develop the basis for a social analysis of the fishing sector, there is a need to further develop and operationalise social impact assessment methods. This can be done in close collaboration with the ICES WGSOCIAL and with the EWG responsible for the AER. Such work could be conducted as a proof of concept study showing how social data and methods could inform

the Commission. Case studies created by previous projects, such as for example Hatchard et al., 2006; Delaney, 2007; Hatchard et al., 2007; van Hoof, 2009; Strehlow, 2010; Britton and Coulthard, 2013 and the EWG 19-03 results could be used as a starting point. In order to guide this process the EWG should invite policy makers to discuss the specific questions to be addressed in the social analysis of the EU fishing fleet and the social aspects of the CFP.

As mentioned above, STECF concludes that in order to secure coherence between the work on the AER and the collection of social data, the two groups should closely cooperate and compare data sets.

STECF suggestions for the future development of the work

In order to continue the work on the further development of the collection of social data and their analysis and interpretation, STECF suggests to reconvene an EWG on social data the next two years (in 2020-2021) and not await the next collection of social data, foreseen for 2021 (and reported in 2022).

STECF suggests that the 2020-2021 EWGa focus on further developing the methodologies for the collection and interpretation of social data. The EWG shall expand its scope, requesting a multi-disciplinary group of sociologists, economists and data collectors to both further develop the methodology of data collection and interpretation and to prepare the process for the next triennial Social Analysis Report.

STECF supports that a preparatory study be conducted prior to the next EWG meeting. This study would i) provide an overview of already available profiles of EU fishing communities and the methods used in these, and ii) based on this information, elaborate a proof of concept for the collection, analysis and presentation of social data that could form a basis for future reporting and advice.

Finally, regarding the availability of social data, STECF draws also the attention of the EWG on the existence of social data collected that might be requested from MS as part of the Aquaculture Sector Report (cf. STECF EWG 18-19) and the Processing Sector Report (cf. EWG 19-15), both requesting data from Member States on a biannual basis.

The ToR for the EWG on social data may include:

1. Assess and translate into an operational plan the results of the proof of concept study of collecting and interpreting social data and constructing fisheries sector profiles;
2. Based on the results of the 2018 social data collection and the preparatory study evaluate the current set of social indicators used, expand the current set of indicators where necessary and, based on the proof of concept study further detail a methodology to prepare profiles of fishing communities; this to include among others:
    a. operationalization of indicators for reliance and resilience of fishing communities (see EWG 18-15);
    b. development of the National profiles as proposed by STECF EWG 19-03;
    c. assessment of the coherence and comparability of the employment and FTE indicators reported as part of economic and social data sets and further improvement of definitions and methodologies;
3. Develop EU fishing communities profiles
4. Develop a methodology to describe changes over time of the fishing communities and social developments of these communities based on the community profiles.

5. Develop a methodology to implement an evaluation of impacts of policy on selected fishing communities, based on the community profiles and relevant indicators.

STECF suggests that ToR of the EWG on social data in 2020 should include points 1 and 2 above while points 3-5 should be addressed after the preparatory study is completed and assessed by the EWG 2020, hence be included in the ToR for EWG 2021.

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5.2 EWGs 19-04/06 Annual Economic Report on the EU Fishing Fleet

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 2019 Annual Economic Report on the EU Fishing fleet was not completed by the time of the plenary, although an almost final version was available to the STECF at the time of starting the plenary. STECF observations are based on this draft version.

STECF acknowledges the extensive work undertaken by all scientists involved in the two EWGs (EWG 19-04 and EWG 19-06). These two EWGs produced the 2019 Annual Economic Report on the EU Fishing fleet (AER).

The 2019 AER represents a comprehensive overview of the structure and economic performance of EU fishing fleets (at EU, regional and Member State level) in the year 2017 and provides valuable statistics and analyses for different end users, including the industry, managers and scientists.

The results of the AER 2019 draft report indicate that the profitability of the EU fleet slightly decreased in 2017 compared to 2016, registering net profits of EUR 1.3 billion, compared to the EUR 1.34 billion in 2016. EU fleet capacity has continued to decrease but at a lower rate than observed in previous years. Direct employment generated by the sector (around 150 000 fishers) has slightly decreased compared to 2016 (-0.7%). While overall the EU fleet was profitable, four out of the 22 Member States' fleets (excl. Greece which not delivered all variables to calculate profit) generated net losses in 2017. Results varied by scale of operation and fishing region.

Based on the AER draft report, STECF made a number of observations regarding the organisation of the work for these EWGs:

STECF observes that the two EWGs that produce the AER of EU fleets respond to the same ToRs but have different objectives. EWG 19-04 (AER I) has the objectives of data endorsement by the attending experts, detailed accounts of any data transmission issue and the drafting of concise national chapters. EWG 19-06 (AER II) aims to focus on developing applied economic analysis based on the data submitted. In particular, experts are requested to produce a synthesis on the trends and economic results of the EU fishing fleet by sea-basin and aggregate it at EU level and identify the main factors behind these trends. Currently however, the tasks between the two EWGs are in practice not that clearly divided and tasks of the AER I tend to be carried over to AER II, effectively reducing the capacity of AER II to meet their objectives. The need to correct data quality and/or transmission issues during AER II does not allow the EWG to dedicate more time for analysis and the specific topics. Apart from late delivery of data, also problems with the database sometimes occur. For example, bugs and incorrect data may be uncovered during the meeting all of which lead to additional updates.

STECF notes that additional requests by DG MARE to include certain data or specific analyses in the report can also lead to the necessary updating of figures and or tables. There is sometimes no clear distinction, well ahead of the meetings, between the routine

contents of the report and additional information/analyses required by DG MARE and where sometimes preparatory work by e.g. JRC would improve the processes.

STECF observes that over time the AER has evolved in terms of structure and content. One part of the report, consisting of the National, Regional and EU wide statistical reports and analyses of trends and developments, has evolved into a standardised document. STECF observes that the report provides context to the trends and developments noted and hence provides a useful overview of developments of European fisheries. STECF observes that the standard AER reporting on statistics of the economic performance of selected European fleets follows a fixed structure and process, which is comprehensive.

STECF observes that in addition to the National, Regional and EU wide statistical reports and analyses of trends and developments, the EWG was requested to produce specific sections on small scale coastal fleets, EU distant water fleets, EU outermost regions and on the links between economic growth and resource use.

In addition, the two EWGs were also requested to have a more in-depth look at two stand-alone issues addressing the different factors driving the economic performance of the EU fleets with a special focus on i) the economic benefits of MSY (such as an analysis of causality between stocks exploited sustainably and the improvement in the performance of the fleets) and ii) the recovery of stocks and implementation of management measures (such as an analysis of causality between the Landing obligation and economic performance).

STECF observes that for assessing the economic benefits of MSY, EWG 19-06 proposed two possible approaches. A forward-looking approach demonstrating the economic costs and benefits to EU fishing fleets of a long-term state of MSY while holding other factors constant, and/or a backward-looking approach to tease out any causality between MSY pathways for European fish stocks and the economic performance of the EU fishing fleets that exploit them. STECF notes however that the EWG did not have sufficient time to complete neither of the two approaches.

Regarding the economic consequences of the landing obligation, the EWG acknowledged that there are potential economic consequences on the application of the landing obligation although they could not perform any assessment because there is currently no quantifiable information on either the direct economic or wider social impact of the policy.

STECF observes that, as indicated by the EWG 18-15 report, EWG 19-06 was requested to assess the appropriate aggregation level and the applicability of the three proposed indicators by EWG 18-15 (Return on fixed tangible assets -RoFTA-, Net Value Added/Full Time Equivalent -NVA/FTE- and Net Profit Margin -NPM-) for a possible inclusion in the CFP monitoring. STECF observes however, that due to time constraints, the EWG could not test all possible aggregation levels and decided to provide information on aggregation levels which seemed good candidates for a possible inclusion in the CFP monitoring. ROFTA was provided at fleet segments in a regional sea, pelagic and demersal fleet segments and small and large-scale fleet segments, aggregation levels. For NPM and NVA/FTE, regional sea level and thereafter distinguishing by length classes and fishing gears, was provided. The EWG was also requested to assess the usefulness of the economic dependency indicator as a possible indicator for CFP monitoring. The EWG considered that this should be explored in the Balance between capacity and fishing possibilities EWG 19-13, as was also concluded in the EWG 18-15 report. STECF notes EWG 19-13 has indeed already made steps to achieve this.

Finally, STECF observes that the assessment of the accuracy of the projection of economic and transversal estimates for the current and previous years by comparing these projections with the actual observations in the following year, as requested by the

PLEN 18-02, was undertaken by the EWG 19-06, but the results were not yet available in the draft report at the time of the plenary and the STECF could not comment on that.

STECF conclusions

The 2019 Annual Economic Report (AER) on the European Union (EU) fishing fleet provides the most comprehensive overview of the structure and economic performance of EU Member States' fishing fleets.

STECF concludes that the inclusion of specific sections in which specific fleet segments are more deeply analysed (small scale coastal fleets, EU distant water fleets, EU outermost regions and on the links between economic growth and resource use) are an informative addition to the overall overview and national chapters.

STECF concludes that the analysis of specific topical issues (e.g. economic consequences of the landing obligation and the economic performance of the fleets at MSY levels) should not be included as a section of the AER. STECF recalls its conclusion from STECF 18-07 that these specific topical issues require a wider perspective than what can be obtained from the analysis of the economic data of the EU fishing fleet alone. These analyses would be more informative if considered as a dedicated, multidisciplinary study, perhaps as a part of a dedicated EWG.

STECF concludes 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 acknowledges however that some data or database issues can only be detected when the analyses are performed; therefore STECF encourages the increased automatisation 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 considers that such automatisation 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 concludes 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 suggests 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 more deeper analysis.

STECF considers 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 suggests 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 agrees with EWG 19-06 that further testing of potential economic CFP monitoring indicators is still required, among others to improve aspects of display and interpretation of the trends shown by the various indicators.

5.3 EWG 19-05 Evaluation of mandatory surveys under the DCF

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.

Background provided by the Commission to EWG 19-05

Member States (MS) regularly conduct research surveys of marine fish resources to provide fundamental data for assessing the condition of exploited fish stocks and for monitoring general conditions of the marine ecosystem. A number of these surveys are included in the Data Collection Framework (DCF). They have been consequently supported financially by direct management (2002-2013) and EMFF (2014-2020). The list of mandatory research surveys at sea (Appendix IX of the Multiannual Community Programme) was first reviewed in 2007 (Sub-Group of Research Needs (SGRN) 07-01). This meeting was followed by two other EWGs (SGRN 09-04 which developed the TORs and roadmap for SGRN 10-03). However, the resulting 2010 Scientific, Technical and Economic Committee for Fisheries (STECF) recommendations did not lead to modifications in the data collection legal framework of 2011, because the specific elements were incorporated in the National Programmes of MS. The ensuing legal revisions of the Data Collection Framework (DCF) (roll over 2014-2016 and current EU MAP) have kept the original list of surveys intact, as reviewed in 2007.

STECF recommended that surveys should be subject to frequent evaluation (at least once every 5 years). To prepare for a new evaluation of surveys, a scoping meeting was conducted (EWG 18-04) in order to develop and agree on the TORs and the methodology to be followed. The EWG 18-04 considered and developed a fundamentally different approach compared to the previous evaluations in 2007 and 2010, in line with the new legal DCF framework (Recast, EU MAP). This new approach, which is end-user driven, requested the input of MS and end users in a set of new tables ('Stock' and 'Survey') to inform the evaluation. The Regional Coordination Groups (RCGs), MS and main end users (Scientific, Technical and Economic Committee for Fisheries – STECF; International Council for the Exploration of the Sea – ICES; General Fisheries Commission for the Mediterranean – GFCM) engaged in a process for finalising the requested information on the proposed future surveys in preparation for EWG 19-05. This exercise was to be finalised prior to the EWG 19-05.

Tasks for the EWG

The EWG was tasked with the following terms of reference.

TOR #1. Evaluate the list of surveys.

a) to evaluate a list of candidate surveys at sea to be supported by the DCF based on the Stocks database, Surveys database, and Decision Support Tool (DST), which are described in the EWG 18-04 report (and below);

b) to provide quality assurance of the information contained in the Stocks database and Surveys database;

c) to produce a set of tables that summarize the DST results;

d) to produce a list of surveys proposed for inclusion on the list of mandatory surveys (a revision to Table 10 of the EU MAP) based on the application of the DST; and

e) to identify potential duplicate surveys that need evaluation.

TOR #2. Identify fishery management needs.

The EWG is requested to provide analyses of the Stocks database:

a) that identify stocks not covered by surveys and

b) that identifies duplicate surveys and compares this list of duplicates with the list of duplicates identified under TOR 1e.

The analyses for this TOR should be conducted after completing TOR 1b (to provide quality assurance of the two databases).

TOR #3. Identify survey information relating to an ecosystem-based approach to fishery management.

The surveys review EWG is requested to provide an analysis of the Surveys database that identifies contributions by the surveys of ecosystem data supporting Marine Strategy Framework Directive (MSFD) descriptors 1, 3, 4, 6, and 10.

The analyses for this TOR should be conducted after completing TOR 1b (provide quality assurance of the two databases).

The EWG should take into account relevant information from previous STECF meetings (e.g. SGRN 07-01, 09-04, 10-03, STECF Plenary 18-01, 18-02, 18-03, EWG 18-04), relevant end users (e.g. GFCM WGSAD/ WGSASP reports, ICES WGs) and steering committees of surveys (e.g., ICES WGs, Pan-Mediterranean Acoustic Survey (MEDIAS), International Bottom trawl survey in the Mediterranean(MEDITS)), RCM/RCG reports, MS DCF programs, CFP priorities, CFP and DCF Regulatory Framework (CFP, Recast, EU MAP, Work Plan template, Annual Report template), with particular reference to data requirements, survey implementation, data transmission failures linked to current surveys and any relevant scientific publications and meetings.

Main findings of the EWG

The Expert Working Group EWG 19-05 met during 13-17 May 2019 to evaluate research surveys of marine fish resources and propose surveys to be included on the list of mandatory surveys, as a revision to Table 10 of the EU Multiannual Programme for data collection (EU MAP). The EWG was able to fully address its Terms of Reference (TOR). The primary tasks were to evaluate a list of candidate surveys at sea to be supported by the DCF based on the Stocks database, Surveys database, and Decision Support Tool (DST) and to produce a list of surveys proposed for inclusion on the list of mandatory surveys (a revision to Table 10 of the EU MAP) based on the application of the DST. The list of surveys proposed for inclusion on the list of mandatory surveys is Table 5 in the report and is also appended to this Plenary meeting report (see below).

Two databases are needed for application of the DST and for use by the surveys review. The Stocks database provides general information about each fish stock and the research vessel surveys at sea that provide information to support the assessment or provision of management advice for the stock. The Stocks database, by design, contains information for all fish stocks of interest to the Commission, as listed in Tables 1A and 1C of the EU

MAP. The Surveys database provides detailed information about the characteristics of EU research vessel surveys at sea used to collect data needed for stock assessment or the provision of management advice, either with respect to fisheries or to the ecosystem; it contains information for all surveys at sea listed in Table 10 of the EU MAP and additional research vessel surveys at sea proposed by Member States and the RCGs.

The DST starts with a specific stock for which advice is needed and couples that stock with each relevant survey and follows a sequence of questions leading either to (a) a proposal to include the survey in the list of mandatory surveys or (b) a proposal to terminate data collection for that specific stock by the particular survey. Prior to ending up at either of these extremes, questions must be answered to address the following criteria for each stock and its associated surveys.

- Fishery management advice is provided for the stock.
- Indices from the survey are used in the assessment or TAC calculation for the stock.
- The survey is internationally coordinated and is harmonized.
- Data from the survey are accessible and available for scientific use.
- The survey provides the basis for the assessment or management advice for the stock.
- The survey provides adequate coverage for the stock.
- There is no duplication of this survey with another survey for this stock.

Embedded in the DST are various loops allowing for end-user input (through associated expert groups) and the possibility of improving and adjusting a survey before taking a "drastic" decision to terminate the data collection.

The EWG produced a set of cleaned up and harmonized Stocks and Surveys databases and the associated DST Output file derived from the information in the two databases. The DST Output file was the primary resource for completing the remaining tasks associated with TOR 1.

The EWG also produced an electronic annex to the EWG report with the completed Stocks and Surveys databases and the completed DST Output file. All the files are Excel workbooks and provide information that is likely to be useful to DG MARE, the RCGs, and the Member States[1].

When completing the DST Output file, the EWG members, working in regional teams, identified stocks for which there were two or more surveys and evaluated the corresponding information in the Surveys database to gauge whether the surveys were potential duplicate surveys. Four surveys associated with one particular stock (Cod in the Kattegat) were flagged as needing further expert evaluation to gauge the possibility of survey duplication. For all other stocks, the EWG determined that the surveys (if there were two or more) were not duplicates, because (in general) the surveys did not overlap in terms of spatial or seasonal coverage or gear used.

1 https://stecf.jrc.ec.europa.eu/reports/dcf-dcr

With regard to stocks not covered by surveys (TOR 2a), Table 3 in the report provides a summary by survey of the number of stocks for which the survey provide information used for assessment or advice (412 stocks) and the number of stocks for which the survey information is currently not used (430 stocks). This table also provides a summary by regional RCG of the number of stocks for which there are no surveys (208 stocks).

In the Mediterranean, the MEDITS survey represent the main tuning information used to perform stock assessment of the priority demersal stocks. MEDIAS is used for anchovy and sardine. Most of the stocks that are not covered by surveys are coastal and rocky bottom species, mostly exploited by coastal small-scale fisheries and recreational fisheries.

For TOR 3, the report provides a brief summary of the Surveys database that identifies contributions by the surveys of ecosystem data supporting Marine Strategy Framework Directive descriptors 1, 3, 4, 6, and 10. Information is provided in the database by survey for the five descriptors in simple Yes/No format.

The DST has primarily been developed to identify those surveys that are used for stock assessment purposes and the provision of advice on fisheries management, and identify which should be candidates for inclusion in the list of mandatory surveys in revisions to the EU MAP. By design, the output from the DST does not rank or prioritise the surveys in terms of importance to the advisory process.

STECF comments

STECF notes that the work done to map the European surveys at sea and populate the stocks and surveys databases took more than a year and involved inputs from end users (e.g. GFCM WGSAD/WGSASP, ICES WGs, STECF), the steering committees of surveys (e.g., ICES WGs, Pan-Mediterranean International Acoustic Survey (MEDIAS), International Bottom Trawl Survey in the Mediterranean (MEDITS)), the RCGs and the Member States. In addition to addressing the ToRs, the EWG made also considerable work in order to scrutinize, and produce a set of cleaned-up, quality-checked and harmonized Stocks and Surveys databases for transfer to the DST Output file. These inventories and the completed DST Output file are available in electronic form and will be very useful to DG MARE, the RCGs, and the Member States as a source of information regarding the surveys and the stocks that these surveys provide, or could provide information for the purposes of assessment and management.

STECF notes the specific challenges linked with the naming and the evaluation of the combined or internationally coordinated surveys. Prior to the evaluation of surveys using the DST, those surveys, the results of which are combined with those from other surveys for stock assessment purposes, were grouped together and labelled under a single heading. For example, Member State surveys carried out as part of the 1st quarter International Bottom Trawl Survey in the North Sea, were all labelled as IBTS_Q1 and treated as a single survey from the perspective of the DST. Similarly, Member State components of the MEDITS survey are all labelled as MEDITS and the same for MEDIAS. STECF notes that such an approach was adopted by the EWG because for most stocks, it is the combined results from all survey components that are used for stock assessments. A similar approach was adopted for Underwater TV surveys (UWTV) for *Nephrops*, in that the separate surveys undertaken for each functional unit were each labelled simply as UWTV. Finally, three surveys listed separately in the Stocks and Surveys databases (PELACUS_ESP, PELAGO_PRT, and SAHMAS_FRA) were all sub-surveys of the survey labelled as the "Sardine, Anchovy, Horse Mackerel Acoustic Survey" in the current EU MAP Table 10; database rows associated with these sub-surveys were reassigned with Survey_ID = "SAHMAS)".

STECF notes furthermore that there is currently no uniquely explicit way to list the individual surveys that are carried out under the label IBTS (International Bottom Trawl Survey) in the ICES area. Such a situation arises because in many cases different actors in the system (ICES Expert groups, National experts, STECF Expert Groups, individuals, etc.) have assigned non-unique identifiers to the same survey or in some cases two groups use the same identifier to refer to two different surveys. Additionally, the label IBTS is used in different ecoregions.

STECF notes that a corresponding Regional Coordination Group (RCG) was allocated by the EWG to each specific stock:survey combination. This allocation was mostly based on the spatial coverage of a survey or based on specific stocks in the case of the large pelagic species. This link was created in anticipation that the new EU-MAP Table 10 list of mandatory surveys will be based on the RCG regions. The DST output thus clarifies the RCG responsible for a specific survey, which will ensure continuity, quality, Member States involvement, and will set up cost-sharing agreements in line with DCF where and when applicable.

STECF notes that if a survey had been proposed for inclusion in the EU MAP Table 10 list of mandatory surveys but had never been conducted, it was included in the Surveys database but the information for this survey was not transferred to DST Output because there were no corresponding data available in the Stocks database for this survey since the survey had never been used in an assessment. Particularly in the Mediterranean, although EWG 19-05 could not use the DST to perform a quantitative evaluation of the extension of MEDIAS in GSAs 11 and 19, and of a second MEDITS survey in the 4th quarter (MEDITS_Q4), the EWG recognized the important contribution that these proposed surveys are expected to provide to improve data availability and quality for stock assessment purposes, as well as for environmental monitoring. These surveys will still be included in EU-MAP Table 10 but will only be evaluated in the next review.

The EWG report and electronic files provide data and summarized tables by RCG region on the stocks having no surveys as well as on the stocks that each survey provides data for. Stocks for which the information available from surveys is not used in stock assessments can also be identified (implying a potential for better utilization of the survey information in the future). STECF notes that the evaluation is only based on the binary criteria of whether the survey is used or not, but does not investigate the quality and consistency of the survey data themselves. Determining whether the survey actually provides usable information (or not) requires technical analysis and advice from experts familiar with the characteristics of the stock and the survey, and this must be performed during e.g. benchmark processes. The whole time series of data should be available to facilitate the use of survey information for assessment purposes.

STECF notes that the contribution of surveys to ecosystem data supporting the MSFD descriptors 1, 3, 4, 6 and 10 could not be fully evaluated by EWG 19-05 since the information requested was not sufficiently detailed. STECF considers that a detailed review of MSFD reporting deliverables by Member States (including in particular the initial assessments / determination of good environmental status of marine waters and the establishment and implementation of coordinated monitoring programmes) should be carried out separately, with the objective of identifying the contribution of specific surveys to ecosystem data in different Member States. Such work may require coordination with the Directorate-General for the Environment (DG-ENV). STECF further notes that survey data is required to report on the wider ecosystem objectives of the Common Fisheries Policy. In fact STECF EWG 18-15 on 'CFP Monitoring - Expansion of Indicators' shortlisted indicators which rely on survey data, including for example mean maximum length of fish and fishing litter. The current version of the DST does not consider the contribution of surveys to such ecosystem data.

The EWG report provides summary outputs in terms of number of stock assessments informed by a single survey (e.g., Table 3 in the EWG report). STECF agrees with the conclusion of the EWG that using the number of stock assessments informed by a single survey as the sole criterion to rank or prioritise the list of candidate surveys would be entirely misleading and should be discouraged.

Surveys proposed for the new list of mandatory surveys

The list of surveys proposed for inclusion in the new list of mandatory surveys is provided in Table 5a of the EWG report and reported here. The second column of the table includes the name in the current EU MAP Table 10 (if any) that corresponds to each given proposed survey. Any proposed surveys that are not in the current EU MAP Table 10 (i.e., new candidate surveys) have explanatory comments in the third column. The third column also indicates other changes relative to the current list of mandatory surveys in the current Table 10.

Region / *Survey ID* of proposed survey	Current EU MAP Table 10 name or acronym	Comments
Baltic (including Skagerrak and Kattegat)		
BIAS	BIAS	
BITS_Q1 <1>	BITS Q1	
BITS_Q4	BITS Q4	
CODS_Q4 <1>		**Not in current EU MAP Table 10.** Joint Danish/Swedish bottom trawl survey. The full name is "Kattegat Cod Survey".
FEJUCS		**Not in current EU MAP Table 10.** The full name is "Fehmarn Juvenile Cod Survey".
GRAHS	GRAHS	
IBTS_Q1 <1>	IBTS Q1	
IBTS_Q3 <1>	IBTS Q3	
NSSS	NSSS	
RHLS_DEU	RHLS	
SPRAS	SPRAS	
North Sea & Eastern Arctic		
ASH	International ecosystem	

Region / *Survey ID* of proposed survey	Current EU MAP Table 10 name or acronym	Comments
	surveys in the Nordic Seas	
BTS	North Sea beam trawl survey (BTS)	
DYFS	Demersal young fish survey (DYFS)	
FCGS	Flemish Cap groundfish survey (FCGS)	**Change in region.** Included in the current EU MAP Table 10 in the "North Atlantic" region, but allocated here to the "North Sea & Eastern Arctic" due to regional competence of the RCG NS&EA.
GGS	Greenland Groundfish survey (GGS)	
IBTS_Q1	International bottom trawl survey (IBTS Q1)	
IBTS_Q3	International bottom trawl survey (IBTS Q3)	
IBTS_Q4	IBTS Q4	**Change in region.** Included in the current EU MAP Table 10 in the "North Atlantic" region, but allocated here to the "North Sea & Eastern Arctic".
IHLS	International herring larvae survey (IHLS)	
NHAS	NHAS	
NSMEGS	Mackerel egg survey (triennial) (NSMEGS)	
NSSS	North Sea sandeels survey (NSSS)	
PLATUXA_ESP	3LNO groundfish survey (PLATUXA)	**Change in region.** Included in the current EU MAP Table 10 in the "North Atlantic" region, but allocated to the "North Sea & Eastern Arctic" due to regional competence of the RCG NS&EA. See report section *Change to an existing survey – Splitting the NAFO 3LNO Groundfish Survey*.

Region / *Survey ID* of proposed survey	Current EU MAP Table 10 name or acronym	Comments
REDTAS	International redfish trawl and acoustic survey (biennial) (REDTAS)	**Change in region.** Included in the current EU MAP Table 10 in the "North Atlantic" region, but allocated here to the "North Sea & Eastern Arctic" due to regional competence of the RCG NS&EA.
SNS_NLD	Sole net survey (SNS)	
UWTV	*Nephrops* TV survey (FU 3&4) (NTV3&4)	**Consolidation of surveys.** Included in current EU MAP Table 10 as separate surveys in various FUs.
	Nephrops TV survey (FU 6) (NTV6)	
	Nephrops TV survey (FU 7) (NTV7)	
	Nephrops TV Survey (FU 8) (NTV8)	
	Nephrops TV Survey (FU 9) (NTV9)	
	Redfish survey in the Norwegian Sea and adjacent waters (REDNOR)	**Current EU MAP Table 10 survey flagged for possible rejection.** [2] No EU Member State participation (see section 3.1.5 of the EWG report).
North Atlantic		
BIOMAN	Biomass of anchovy	
CSHAS_IRL		**Not in current EU MAP Table 10.** Full name is "Celtic Sea Herring Acoustic Survey".
ECOCADIZ_ESP		**Not in current EU MAP Table 10.** Acoustic survey (sardine and anchovy). Spanish survey.
IBTS_Q1	Scottish western IBTS	
IBTS_Q4	Western IBTS 4th quarter (including Porcupine survey)	
IBWSS	Blue whiting survey	

Region / *Survey ID* of proposed survey	Current EU MAP Table 10 name or acronym	Comments
IESSNS		**Not in current EU MAP Table 10.** Trawl survey for mackerel - swept area. Danish and Norwegian survey.
ISBCBTS	ISBCBTS September	
JUVENA_ESP		**Not in current EU MAP Table 10.** Acoustic survey for juvenile anchovy in the Bay of Biscay.
MEGS	International mackerel and horse mackerel egg survey (triennial)	
ORHAGO_Q4_FRA		**Not in current EU MAP Table 10.** Full name is "Observation des Resources Halieutiques benthiques du Golfe de Gascogne", Bay of Biscay Demersal Resources Survey.
PALPRO_ESP		**Not in current EU MAP Table 10.** Deep-water longline survey, Spain.
SAHMAS	Sardine, anchovy, horse mackerel acoustic survey	
SCO-IV-VI-AMISS-Q2		**Not in current EU MAP Table 10.** Dedicated industry–science survey index.
SDEPM	Sardine DEPM (Triennial)	
SIAMISS_GBS	Anglerfish surveys	
SWECOS_GBE	WCBTS, WCBTS Q1	**Change in name.** WCBTS in EU MAP Table 10 was discontinued in 2014 and replaced by the WCBTS Q1 (= SWECOS_GBE).
UWTV	*Nephrops* UWTV survey (offshore)	**Consolidation of surveys.** Included in current EU MAP Table 10 as separate surveys in various FUs.
	UWTV (FU 11-13)	
	Nephrops UWTV Irish Sea –	

Region / *Survey ID* of proposed survey	Current EU MAP Table 10 name or acronym	Comments
	UWTV (FU 15)	
	Nephrops UWTV survey Aran Grounds (FU 17)	
	Nephrops UWTV survey Celtic Seas (FU 20-22)	
	Nephrops UWTV survey Offshore Portugal Neps (FU28-29)	
WESPAS_IRL	Spawning/pre-spawning herring/boarfish acoustic survey	
Mediterranean & Black Sea		
BTSBS	BTSBS	
MEDIAS <3>	MEDIAS	
MEDITS <4>	MEDITS	
PTSBS	PTSBS	
SOLEMON		**Not in current EU MAP Table 10.**
Large pelagics		
TUNIBAL		**Not in current EU MAP Table 10.**

<1> Possible duplication with other surveys. Needs further review by WGBFAS.

<2> Needs further review by AFWG to gauge impact of stopping the time series and by ICES to gauge impact on management.

<3> Not including the proposed extension into GSAs 11 and 19.

<4> Not including the proposed extension into the 4th quarter (MEDITS_Q4).

The surveys with the following Survey ID values did not fully satisfy the criterion for no survey duplication (No_Survey_Dupl = "?"): BITS_Q1, CODS_Q4, IBTS_Q1, IBTS_Q3. The stocks associated with these possibly duplicate surveys are all in the Skagerrak and Kattegat region, which has complex geography that may require a number of smaller surveys to achieve adequate coverage of the stock. STECF suggests that the results of this evaluation be discussed by ICES and evaluated in future benchmarks for that region.

One survey from the current EU MAP Table 10 (Survey_ID="REDNOR") was considered to be outside the scope for evaluation by the DST as this survey is fully carried out by non-EU countries (Norway, Russia, Faroes Islands). The REDNOR survey provides information for stock assessments that are relevant for the EU, but since it is not operated by EU member states that survey should be removed from Table 10.

STECF conclusions

The EWG 19-05 cleaned up and harmonized the Stocks and Surveys Databases and successfully applied the DST to evaluate the candidate surveys at sea to be supported by the EU-MAP. The work was comprehensive and all ToRs have been addressed.

The STECF agrees with the EWG proposals for changes in the revision to EU-MAP Table 10 (e.g. RCG-based listing of surveys, relabelling) and endorses the suggested updated list of mandatory surveys.

It is anticipated that this surveys list shall be evaluated again before inclusion in future revisions of EU-MAP. On the assumption that the DCF criteria remain unchanged, the DST can provide a renewed insight in the stock/survey needs at that time. Considering the time-consuming process of compiling both the Surveys as well as the Stocks database experienced by the EWG 19-05, STECF supports that the data sets are updated prior to the next evaluation exercise. Standardized survey names and standardized application of these names throughout the advisory process would ease the process of reviewing the surveys based on their applicability in the process.

STECF suggests that a more detailed analysis be undertaken to identify the contribution of each survey to obtaining ecosystem data supporting the Marine Strategy Framework Directive (MSFD) descriptors 1, 3, 4, 6, and 10. Relevant ways to incorporate this aspect in the DST should be reconsidered.

5.4 EWG 19-07 Review the implementation of the EU regulation on the incidental catches of cetaceans

Background provided by the Commission

Under article 6 of REGULATION (EU) No 812/2004 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL, Member states are obliged to provide to the Commission a report on the implementation of the regulation. Under article 8 of the regulation, the Commission is also required to undertake an assessment of the effectiveness of the regulation and where appropriate submit an overarching proposal for ensuring the effective protection of cetaceans. ICES, through the Working Group on Bycatches of Protected Species (WGBYC) provides an analysis of the MS annual reports on an annual basis, however it is necessary to undertake an more in-depth and holistic analysis of the overall efficacy of the regulation. A new technical measures Regulation will shortly enter into force (see http://www.europarl.europa.eu/meetdocs/2014_2019/plmrep/COMMITTEES/PECH/AG/2019/03-07/1177957EN.pdf…) which carries over many of the technical provisions laid out in 812/2004 and makes provisions for the updating of the technical specifications to acoustic deterrent devices and the possible introduction of other mitigation measures. It also foresees the setting of maximum by-catch limits for marine mammals. STECF is asked to provide an overview where such maximum thresholds have been developed and applied.

Tasks for the EWG

- To provide a holistic review of the effectiveness of the current regulation based on ICES advice and other sources of information in terms of mitigating by-catches of cetaceans.
- To provide observations on potential shortcomings of the regulation and where appropriate, indicate possible revisions to the technical specifications laid out in the regulation.
- To provide a summary of candidate maximum by-catch thresholds for the species most typically caught as by-catch.

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 report of the EWG 19-07 represents a review and commentary on issues associated with current legislation and the work undertaken to provide cetacean population estimates. It also considers incidental bycatch estimates and the data and methods to provide such estimates, as well as bycatch mitigation methods. It draws heavily on the work of the ICES WGBYC, the ICES WKPETSAMP and the results of the FishPi project and on an extensive list of published papers and reports. The EWG report focuses on cetaceans, but other Protected, Endangered and Threatened (PET) like seabirds or turtles are also mentioned.

While much excellent work has been carried out on these issues and is well-summarised in the EWG report, significant knowledge gaps remain, notably in reliable cetacean population estimates for many species and sea areas and reliable estimates of incidental catches of cetaceans resulting from inadequate monitoring.

Consequently, to provide a comprehensive, informative and in relation to bycatch thresholds, quantitative response to each of the terms of reference has proven to be a challenge for STECF. Nevertheless, based on the report of the EWG 19-07, STECF has attempted to draw out the important issues identified and where possible, proposed a follow-up action. Such issues and proposals represent a synthesis of the conclusions and recommendations contained in the EWG 19-07 report and are given below in relation to each of the requests given in the terms of reference to the Expert Group.

STECF comments on the various points in the ToRs

To provide a holistic review of the effectiveness of the current regulation based on ICES advice and other sources of information in terms of mitigating by-catches of cetaceans.

The rationale for the following conclusions and proposed actions is given in Section 2 of the EWG 19-07 report.

- ***Issue:*** The specifications for the pingers/acoustic deterrent devices (ADDs) prescribed in Reg (EU) 812/2004 mainly mitigate the bycatch of harbour porpoise. For other species, results seem to be less conclusive.
    - ***Proposed action:*** The development of new pingers/ADDs should not be constrained by technical specifications; rather the Member States should be required to provide evidence that the devices to be used are effective at reducing bycatch.
- ***Issue:*** The implementation of pingers in Member States is low and enforcement is difficult.
    - ***Proposed action:*** Requirements to use pingers must be coupled with a requirement for Member States to enforce their use. The Commission should follow-up on perceived infringements as judged through the reporting process; Member States should also be required to provide evidence that mitigation measures are effective at reducing bycatch. To ensure efficient and harmonised control of the use of ADDs it is important that the use and functionality of these is regulated, perhaps at the EU level, through delegated or implementing acts of the Control Regulation. However, it should also be noted that control of such devices at sea is difficult (the decibel level is relatively low and difficult to detect due to engine noise and other interference.)
- ***Issue:*** The restrictiveness of Article 2 of 812/2004, in particular the areas, gears and regions set out in Annex I may lead to suboptimal use of pingers, with a high use in metiers with low bycatch and low use in metiers of high bycatch;
    - ***Proposed action:*** A region by region plan for pinger use, and complementary mitigation measures is needed and should be ground-truthed with in-field monitoring for effectiveness; (The proposed technical conservation measures (TCM) allows for this). The effect of new ADDs on species other than those intended to be deterred should be monitored and

assessed, distinguishing which other species would be repelled, attracted or otherwise damaged by ADDs. More flexibility is required to use a wider range of mitigation measures (such as closed areas and gear modifications) to mitigate bycatch for porpoise and other cetacean species, in the full range of fisheries, vessel sizes, metiers and regions where bycatch occurs. Member States should be required to provide evidence that such mitigation measures are effective at reducing bycatch; STECF suggests that Member States' regional groups are tasked with prescribing regional plans for pinger use and associated by-catch mitigation measures.

- ***Issue:*** In general, current monitoring and reporting of cetacean and other PET species bycatch is inadequate.
    - ***Proposed action:*** there is a need to increase monitoring in metiers with a high risk of protected species bycatch, e.g., static nets (i.e. gillnets, trammel nets and entangling nets) for cetaceans and longlines for seabirds. STECF notes that the EWG 19-07 suggested that in the absence of pertinent data and information, an initial sampling level of 5-10 % of the total, annual fleet effort is necessary in most fisheries to determine the approximate level of bycatch or detect bycatch events of rare species.
- ***Issue:*** Full implementation of monitoring on incidental catches through the EU Data Collection Framework (EU-MAP / DCF) will take some time.
    - ***Proposed action***: STECF considers that the Regional Coordination Groups (RCGs) set up a regional work plan under the DCF that foresees adequate coverage and monitoring of fisheries that have a high risk of incidental cetacean by-catches. Inputs to RCGs and Member States on how to implement monitoring programs under national and regional work plans were provided by the grants FishPi^2 and STREAM, funded under the Call for Proposals MARE/2016/22. Until this is resolved in the DCF frame, it is important to ensure that dedicated interim at-sea monitoring schemes (observers, remote electronic monitoring, validated self-sampling by means of dedicated logbooks) are implemented to maintain and improve by-catch monitoring. There is a need to increase monitoring of those metiers with a high risk of protected species bycatch, e.g., static nets for cetaceans and longlines for seabirds. In particular, gillnetters under 15m are currently not covered;

To provide observations on potential shortcomings of the regulation and where appropriate, indicate possible revisions to the technical specifications laid out in the regulation.

The rationale for the following conclusions and proposed actions is given in Section 3 of the EWG 19-07 report.

- ***Issue:*** The gears and fisheries prescribed for monitoring and reporting in Regulation (EU) 812/2004 relate to fisheries that do not pose the greatest risk to cetacean populations. There is a total lack of monitoring of any gears in the Black Sea and in the European Macaronesia, and a partial lack in the Mediterranean Sea for gillnets. This lack or scarce availability of data does not allow for a reliable risk assessment of the various gear types concerned, thereby preventing any potential

mitigation action in these Regional Seas. This is particularly true when considering the high number of vessels (most less than 12 m length) using entangling nets, trammel nets or gillnets of various types in those regions, which are currently outside the Regulation.

    - ***Proposed action:*** There is a need to implement and ensure adequate monitoring of those vessels, regardless of size for incidental bycatch of all protected species (i.e. to include seabird, turtle, seal, and certain elasmobranchs and protected species of fish) in all fisheries where there is a risk of bycatch in the Mediterranean Sea, Black Sea and European Macaronesia.

- ***Issue:*** There is no requirement in Regulation (EU) 812/2004 for certain high-risk fisheries to employ by-catch-mitigation measures for cetaceans and PET species.
    - ***Proposed action:*** Ensure adequate monitoring in fisheries by Member States where the risk of for incidental bycatch of cetaceans and PET species is high.

STECF notes that according to the results of the FishPi project (which covers the North-East Atlantic EU waters excluding the Baltic), gill and trammel net fisheries in Iberian Waters, Bay of Biscay and North Sea and Eastern Channel are the sea areas with highest catch risk for bycatch of PET species. The FishPi findings for each of the above highest-risk sea areas can be summarised as follows:

The FishPi risk classification ranges from 0 (no risk of being caught) to 15 (highest risk). The risk classifications of different species (excluding protected roundfish species) groups for each sea area are given below:

Bay of Biscay

Risk 12 - turtles, diving birds, seals and harbour porpoises;

Risk 8 - dolphins and large whales

Iberian Waters

Risk 15 - turtles, diving birds, seals and harbour porpoises;

Risk 10 - dolphins and large whales

North Sea and Eastern Channel

Risk 12 - diving birds, seals and harbour porpoises;

Risk 8 - dolphins and large whales

Within PET species, turtles have been identified as the species with highest catch risk in the Bay of Biscay and Iberian waters across all fisheries. For the North Sea and Eastern Channel seals are the species with the highest risk of being caught. Harbour porpoise is the cetacean species at greatest risk of being caught from gill and trammel nets in each of the above sea areas.

STECF notes that the risk of being caught described above is different to the risk that bycatch poses to populations, since higher catch rate may be related to either high mortality rates on limited populations or lower mortality rates on more abundant population. Bycatch rates and population abundance are discussed further below.

The 2018 report of the ICES WGBYC undertook a risk assessment for the Baltic Sea, where there is also high risk for bycatch of PET species associated with the use of gill and trammel nets. All species groups were assessed to be at high risk of being caught, except lampreys (low risk of capture by both gears), and surface-feeding birds (low risk of capture by trammel nets).

The ICES WKPETSAMP did not undertake any bycatch risk assessments but indicated that the ICES WGBYC do so for the Baltic, Mediterranean and Black Sea.

Based on the results of the FishPi and FishPi^2 projects, STECF considers that, to provide much-needed quantitative information on the extent and magnitude of cetacean and PET bycatches, in the NE Atlantic, priority should be given to introducing mandatory monitoring and associated bycatch mitigation measures for gill and trammel net fisheries in Iberian Waters, the Bay of Biscay, the North Sea and Eastern Channel.

Other priority EU fisheries in waters outside of the NE Atlantic will be identified if appropriate risk assessments are undertaken. Incorporation of mandatory monitoring of cetacean and PET species bycatch in such fisheries is also desirable. In this regard, the outputs of the regional grant STREAM (MARE/2016/22) will represent a fundamental support for identifying priority fisheries and implement by catch monitoring programs in the Mediterranean and Black Sea.

To provide a summary of candidate maximum by-catch thresholds for the species most typically caught as by-catch.

STECF notes that to set thresholds for cetacean populations clear conservation objectives and targets are required. A discussion on such objectives and targets is given in sections 4.1.1 and 4.1.2 of the EWG 19-07 report. The report also describes the methods currently available to estimate potential by-catch thresholds noting that there is no universally-agreed method to calculate thresholds for cetacean bycatch within EU waters (Section 4.2 of the report). Information on available data and gaps in the data required to estimate bycatch thresholds is listed in Section 4.3 of the EWG 19-07 report.

STECF notes that estimating maximum bycatch thresholds is not straightforward and estimates rely on several aspects including i) the conservation objectives and targets, ii) the timescale over which such objectives and targets are to be met and iii) available estimates of population size. Four different methods to estimate bycatch thresholds for harbour porpoise in the North Sea are given in Table 4 of the EWG 19-07 report, and the results may vary significantly among those. For example, depending on the conservation objectives, the temporal window and the method used, the available maximum potential bycatch threshold estimates for harbour porpoise in the North Sea range from 840 – 3679 individuals per year.

Available information on potential bycatch thresholds for a range of species and sea areas are given in Table 5 of the EWG 19-07 report. STECF notes that for most species, a range of values is given depending on the conservation objective, time-scale and the estimation method.

Furthermore, STECF notes the following:

- the calculation of any bycatch threshold implies specific simulations that are based on data related to a specific population;
- any change to even one factor of those considered in the modelling requires a new set of simulations;
- the most accurate models, including mortality, run for the North Sea population of harbour porpoises give a threshold of about 0.5 % of the total population, compared to the ASCOBANS 1 %, using the same conservation objectives;
- for North Sea harbour porpoise (Table 4 of the EWG 19-07 report), the value calculated with the PBR method (1246 individuals) is higher than that calculated

via CLA/RLA (840 individuals), but lower than the rule of thumb example of 1% of best available abundance (2164 individuals);

- abundance estimates are periodically updated producing different thresholds (the abundance estimates for porpoise were biased downward in 2005) therefore periodic reassessments are necessary.

STECF conclusion on maximum potential by-catch thresholds

The Scientific Committee of the International Whaling Commission (IWC) agreed that, in the absence of any detailed information on stock status, an estimated annual bycatch of 1% of the estimated population size would indicate that further research should be undertaken immediately to clarify the status of the stocks (Anon, 1996). They also agreed that an estimated annual bycatch of 2% may cause the population to decline and requires immediate action to reduce bycatch.

STECF notes that ASCOBANS recommended that, to be sustainable, the maximum annual anthropogenic induced mortality (incl. bycatch) for harbour porpoises should not exceed 1.7% of the population size (ASCOBANS, 2000; ANON, 2000). ASCOBANS Parties later agreed that a take of 1% of the population size should be used as an "intermediate precautionary objective" (European Parliament, 2008). Based on ASCOBANS recommendations, Government ministers of North Sea riparian states decided under the Bergen Declaration (2002) that an unacceptable bycatch limit for harbour porpoises [*in the North Sea*] was 1.7% of the best estimate of population size. They also agreed on a precautionary objective to reduce the bycatch of all marine mammals to less than 1% of the best available population estimate.

The STECF has no objective criteria to propose any alternative threshold to those indicated above and notes that applying the maximum limit of 1.7% of the population agreed by ASCOBANS to the abundance estimate for harbour porpoise in the Northern and Southern North Sea (189,191 individuals; (ASCOBANS website, 5 July 2019 - https://www.ascobans.org/en/species/phocoena-phocoena)), the maximum bycatch threshold for harbour porpoise in the North Sea would equate to 3216 individuals. Alternatively, applying a precautionary threshold based on 1% of the population estimate of 189,191 individuals would equate to 1892 individuals.

Population estimates and candidate bycatch threshold values for cetaceans in EU waters have been computed for different species and sea areas (Table 5 of the EWG 19-07 report). However, such estimates assume different conservation objectives and timescales and in addition, the population estimates are imprecise. Consequently, in the absence of stated conservation objectives, and uncertainty in current population size estimates, the STECF has no scientific basis to advise which, if any, of the bycatch thresholds for cetaceans in EU waters presented in Table 5 of the EWG 19-07 report are likely to be appropriate.

Furthermore, the precautionary objective to reduce the bycatch of all marine mammals to less than 1% of the best available population estimate agreed under the Bergen Declaration (2002), requires that current population estimates are available, which for many species and sea areas they are not, or at best, they are imprecise. Consequently, STECF concludes that in the absence of reliable population estimates, current conservation status and stated conservation objectives for cetacean populations in EU waters, there is no objective scientific basis to propose reliable estimates for maximum potential bycatch thresholds for all the cetacean species most typically bycaught (i.e. harbour porpoises, common, striped and bottlenose dolphins and humpback whales).

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5.5 EWG 19-08 Evaluation of Landing Obligation joint recommendations

Request to the STECF

Based on the previous evaluations, suggested structure of the next STECF evaluation, the ad-hoc contract 19-01 on temporary de minimis exemptions, the likely joint recommendations that will be submitted by MS regional groups, the following draft terms of reference are proposed, STECF is requested to:

1. Review the supporting documentation underpinning exemptions on the basis of high survivability in respect of:
a. Exemptions agreed for 2019 on the basis of high survivability where there was a requirement for further information to be supplied. In such cases, STECF should assess the quality of the information supplied and, where possible, provide a qualitative assessment of the ongoing efforts to address the needs for further information identified by STECF last year.
b. New exemptions based on high survivability. In data poor situations, assess what further supporting information may be available and how this could be supplied in the future (e.g. survival studies, tagging experiments).

2. Review the supporting documentation (biological, technical and/or economic) for de minimis exemptions on the basis that either increasing selectivity is very difficult to achieve, or to avoid handling unwanted catches would create disproportionate cost in respect of:
a. The combined (multi species) and single de minimis exemptions agreed for 2019 where there was a requirement for further information to be supplied. In such cases, STECF should assess the quality of the information supplied and, where possible, provide a qualitative assessment of the ongoing efforts to address the needs for further information identified by STECF last year.
b. New de minimis exemptions. In data poor situations, assess what further supporting information may be available and how this could be supplied in the future (e.g. discard data collection, selectivity studies).

3. Review whether there is sufficient information to support proposed minimum conservation reference size(s) that deviate from existing minimum landing sizes, and whether they are consistent with the objective of ensuring the protection of juveniles.

4. Review the supporting documentation provided for technical measures aimed at increasing gear selectivity for reducing or, as far as possible, eliminating unwanted catches. This should include, if relevant, an indication of where further selectivity is currently difficult to achieve in a specific fishery, where possible provide information on the possible causes and if research should explore potential solutions.

STECF response

Background of the EWG 19-08

The report of the Expert Working Group 19-08 (STECF EWG 19-08) represents the findings of the meeting convened to review the joint recommendations (JR) from Member States regional groups for the implementation of the landing obligation (LO) in 2020. Joint recommendations for discard plans represent the agreement among

Member States (MS) cooperating regionally on the elements for the preparation of Union law (Commission delegated act) in accordance with Article 15.6 of the Common Fisheries Policy. These elements are: definitions of fisheries and species; *de minimis* and high survivability exemptions; fixation of minimum conservation references sizes; additional technical measures to implement the landing obligation; and the documentation of catches. EWG 19-08 reviewed the new or amended joint recommendations from the North Sea, North Western waters (NWW), South Western waters (SWW) and Western Mediterranean.

The specific Terms of Reference for EWG 19-08 were as follows:

Based on the previous evaluations, suggested structure of the next STECF evaluation, the ad-hoc contract 19-01 on temporary de minimis exemptions, the likely joint recommendations that will be submitted by MS regional groups, the following draft terms of reference are proposed, STECF is requested to:

1. Review the supporting documentation underpinning exemptions on the basis of high survivability in respect of:

a) Exemptions agreed for 2019 on the basis of high survivability where there was a requirement for further information to be supplied. In such cases, STECF should assess the quality of the information supplied and, where possible, provide a qualitative assessment of the ongoing efforts to address the needs for further information identified by STECF last year.

b) New exemptions based on high survivability. In data poor situations, assess what further supporting information may be available and how this could be supplied in the future (e.g. survival studies, tagging experiments).

2. Review the supporting documentation (biological, technical and/or economic) for de minimis exemptions on the basis that either increasing selectivity is very difficult to achieve, or to avoid handling unwanted catches would create disproportionate cost in respect of:

a) The combined (multi species) and single de minimis exemptions agreed for 2019 where there was a requirement for further information to be supplied. In such cases, STECF should assess the quality of the information supplied and, where possible, provide a qualitative assessment of the ongoing efforts to address the needs for further information identified by STECF last year.

b) New de minimis exemptions. In data poor situations, assess what further supporting information may be available and how this could be supplied in the future (e.g. discard data collection, selectivity studies).

3. Review whether there is sufficient information to support proposed minimum conservation reference size(s) that deviate from existing minimum landing sizes, and whether they are consistent with the objective of ensuring the protection of juveniles.

4. Review the supporting documentation provided for technical measures aimed at increasing gear selectivity for reducing or, as far as possible, eliminating unwanted catches. This should include, if relevant, an indication of where further selectivity is currently difficult to achieve in a specific fishery, where possible provide information on the possible causes and if research should explore potential solutions.

STECF observations

The number of exemptions proposed in the JRs for evaluation by EWG 19-08 was comparable with the previous submissions in 2018 (EWG 18-06, STECF 18-02). The

number of individual exemptions proposed for introduction in 2020 was 67 compared with 70 for 2019. For the Mediterranean, in some cases the same recommendations were proposed by the different regional groups (SUDESTMED, PESCAMED and ADRIATICA); these groups submitted eight of the same exemptions. When duplicated proposals were combined across the Mediterranean groups, the total number of individual proposed and assessed exemptions across all regions (NS, NWW, SWW, MED) was 53 (Table xx.1). The number of proposed exemptions in the previous year was 58 (STECF 18-02).

Table 5.5.1 Number of recommendations by type and region evaluated by EWG 19-08.

	Recommendations evaluated		
Region	*de minimis*	high survivability	Total
North Sea	6	5	11
North Western Waters	7	6	13
South Western Waters	19	2	21
Mediterranean (consolidated)	4	4	8
Total	36	17	53

STECF notes that for some regions, existing exemptions are specified in the joint recommendations, while for other regions, information is given only for exemptions for which new evidence is provided. Therefore, the values in Table xx.1 do not provide the total number of exemptions that have been proposed during the period of the Landing Obligation in each region. EWG 19-08 reviewed only the new or temporary exemptions from each region.

To manage the large number of recommendations, the STECF response is structured as follows: general observations, followed by specific observations on the joint recommendations submitted from each of the region, North Sea (Table 5.5.2), North Western Waters (Table 5.5.3), South Western Waters (Table 5.5.4), and Mediterranean (Table 5.5.5). As part of this evaluation, EWG 19-08 identified new information provided, the justification for each exemption and specific data shortfalls in the material submitted to support the JRs. STECF comments took account of any information received after EWG 19-08.

STECF emphasises that the JRs, including supporting evidence based on the templates developed by STECF, should be submitted in a timely manner to allow for proper assessment by STECF and the EWG.

STECF acknowledges that the EWG 19-08 has addressed the Terms of Reference noting that as EWG 18-06 (the 2018 evaluation of Landing Obligation joint recommendations), the high number of recommendations meant that it was not possible for EWG 19-08 to apply the same level of scrutiny to each proposal as in earlier years.

STECF reiterates that the role of EWG 19-08 and STECF 19-02, and any future STECF meetings is to evaluate the scientific rigor and robustness of the underpinning information supplied by Member States to support the joint recommendations. STECF cannot adjudicate on whether exemptions should be accepted or not.

STECF agrees with EWG 19-08 in that it would be timely for the Member States Groups and the Commission to review the actual use and effectiveness of the exemptions currently in place and determine whether they need to be amended or are still required.

In line with STECF 17-01, 18-01, 18-02, EWG 18-06, 19-08, STECF highlights the "lack of [required] reporting by vessel operators of fish discarded under exemptions…". There was little included to address this in the latest JR's. Exceptions include provisions for CCTV linked to the plaice survivability exemption in the North Sea and specific monitoring measures included in the JR for Venus clams in the Adriatic (this JR is dealt specifically in ToR 6.4 of this plenary). STECF stresses again the need to improve the collection of catch documentation data. If the data situation does not improve and the true quantities being caught as reported do not reflect the actual removals, it will likely have a significant impact on the quality of scientific advice and may compromise the achievement of the MSY objective. As STECF 18-01 and 18-02 pointed out, innovative monitoring measures such as CCTV and Remote Electronic Monitoring (REM) have been applied in pilot studies and could be a more effective way to enforce the Landing Obligation (EWG 13-23).

STECF observations on proposed *de minimis* exemptions

STECF notes an increase in the number of proposed *de minimis* exemptions that are based on disproportionate costs. It is recognized that presenting information demonstrating disproportionate costs is challenging. STECF has proposed analytical frameworks that can assist in the submission of economic cases for *de minimis* (STECF, 2013 2016 & 2019). The purpose of supporting information is to understand the scale, or proportionality, of the costs of landing unwanted fish. The information should describe that the burden, in terms of time and operational costs, to deal with unwanted catches causes loss of income. However, STECF notes that for the 2019 *de minimis* proposals, these analytical frameworks have generally not been followed. In many cases the same generic information is used to support multiple exemptions making it difficult to make an evaluation.

STECF reiterates that there is no agreed method to objectively judge whether the estimates provided amount to disproportionate costs. "Disproportionate" is a subjective term which means that there is a large element of judgement required in deciding on whether to permit or reject a proposal. STECF consider that simply stating that handling, storing and landing unwanted catches has an associated cost, is not sufficient to demonstrate that those costs are disproportionate. Further, STECF also notes that the case for *de minimis* should not be strengthened by having high levels of unwanted catches and therefore inflated levels of handling costs. Improving selectivity in the relevant fisheries should be the priority as this will reduce the costs for handling unwanted catches.

STECF previously provided an interpretation that, based on the wording of Article 15 2(c), disproportionate costs are simply assumed to be already occurring. The key aspect of the Regulation is how to define when the unwanted catch is "below a certain percentage of the total catch of that gear", how to set the "the percentage unwanted" and how this should be implemented in a discard plan. The general expectation is that this would be relatively low (e.g. in line with the *de minimis* allowance itself, 5-7% discard rates). STECF suggests that the Commission review this interpretation and assess whether it may form a better basis for establishing exemptions based on disproportionate costs, while also potentially being easier to evaluate by STECF.

STECF notes that different methods have been used to calculate *de minimis* volumes. In most cases, a percentage (e.g. 5% or 7%) has been applied to the catches of the relevant species caught by the defined fishery. However, for some fisheries, where the intention is for the *de minimis* amount to cover 100% of the discards, a small percentage has been applied to the total catch of the stock to generate a *de minimis* volume that is higher than would have been the case if just the catches taken in the defined fishery were used. This is the case for plaice and whiting in the brown shrimp fishery in the NWW and industrial species bycatch in demersal fisheries the North Sea). For fisheries where it is not viable to sort and land any of the unwanted catches, this approach provides a mechanism to comply with the Landing Obligation, however, it also removes the incentive to further improve selectivity as 100% of the unwanted catches can be discarded.

STECF reiterates that *de minimis* exemptions can encourage some vessel operators to continue discarding unwanted catches beyond the permitted *de minimis* amounts. The estimated *de minimis* amount is deducted from the TAC; However, since *de minimis* amounts can be much less than the actual amount of unwanted catches, if discarding continues beyond the *de minimis* amount, fishing mortality will exceed the advised catches. STECF notes that, for survival exemptions, in 2018, deductions from TACs were made based on the estimated survival rate, whereby the estimate of exempted dead discards were deducted from the TAC to reduce the risk of increasing fishing mortality beyond the agreed TAC. Therefore, STECF notes that *de minimis* exemptions may pose a higher risk to overfishing than survival exemptions, and this reinforces the requirement for effective monitoring of the uptake of *de minimis* levels.

STECF observations on proposed high survivability exemptions

EWG 19-08 re-iterated that assessing what constitutes high survivability is complicated by the limited information available and the variability in survival estimates. There is a wide range of factors that can affect survival, however identifying and quantifying these is difficult due to the relatively limited species-specific information and differences between experiments including timing, season, gear handling, observation period. This means that assessing the representativeness of studies as an indicator of discard survival across an entire fishery is difficult, given the range of factors that can influence survival, and how they may vary in time, even within a fishery. STECF agrees with this observation and highlights the need to take this into account when evaluating proposals for survival exemptions.

STECF notes that this is particularly relevant for the three time-limited skate and ray survival exemptions covering many species and fisheries. STECF 18-02 observed that the scope of this exemption is not consistent with other survivability exemptions and highlighted the risks in extrapolating survival evidence between species, fisheries and seasons. STECF notes that the latest evidence suggest that skate and ray survival rates can be highly variable between species and fisheries. Studies indicate that smaller individuals and smaller species have lower survival, inshore static nets are associated with higher survival and shorter tow durations are associated with higher survival. It is indicated that for some fisheries and species combinations the survival may be close to zero.

STECF observe that vitality data is increasingly being used to support high survival proposals. Information on the health condition of fish at the point of release provides useful information on the survival potential of discards. However, the proportion of fish alive at the point of release does not constitute a valid survival estimate due to the mortalities that are known to occur post-release. The relationship between health condition and survival probability can be established by collecting survival estimates and vitality data in combination. Studies have demonstrated, within a fishery, fish assessed

at different vitalities have significantly different survival probabilities, and therefore vitality from a wider sample can be used as a proxy for survival. However, the relationship between assessed vitality and survival probability varies between fisheries and studies for the same species. At this time, there is insufficient evidence to use vitality as a proxy for survival, outside of the fisheries from which these relationships have been generated, to provide discard survival estimates with meaningful levels of confidence.

STECF notes that several survivability exemptions – plaice and rays and skates – are linked to a road map setting out work planned to develop survival estimates and accompanying measures to increase survivability. EWG 19-08 pointed out that there is no explicit reporting against the roadmap, which made it hard to assess progress with the work set out in the roadmap. STECF agrees that reporting against the different tasks set out in the roadmaps will facilitate future evaluations.

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 17-02). This highlighted that medium survival rates in high discarding fisheries still lead to high discard mortality rates. Examples of this were given in STECF 18-02. STECF notes that in 2018, deductions from TACs were made based whereby exempted dead discards were deducted from the TAC to reduce the risk of overfishing. However, STECF has previously noted (STECF PLEN 19-01) that unless surviving discards are accounted for in stock assessments and dead discards are accounted for in TAC setting when survivability exemptions are in place, the actual fishing mortality will not match the agreed catch level.

STECF notes that several existing exemptions for plaice and sole are linked to conditions such as restricting the exemption to fishing to certain depths, tow durations and to specific groups of vessels. While these factors undoubtedly influence survival, there is no evidence of them being applied by Member States. In practice controlling and enforcing such measures to any degree would be challenging.

STECF observations on data describing fisheries proposed for exemption

STECF notes that while progress has been made in supplying supporting information, it is also observed that for several exemptions there is still a lack of supporting information provided. EWG 19-08 observes that in many cases the supporting information relating to the fleets and fisheries is derived from the aggregated version of the STECF FDI database that is publicly available, which has not been updated since 2016, and as such may not represent the current situation. STECF notes that future exemptions should be supported with current catch data where available.

STECF observations on Selectivity

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 notes that the JRs received contained few measures to increase selectivity. Exceptions include the NWW and North Sea where attempts have been made to increase selectivity in the form of specific technical measures in certain areas and fisheries. STECF also notes the intentions provided by Member States in the Mediterranean to introduce Marine Protected Areas and Fish Recovery Areas, which is a positive step.

STECF recognizes that modifying selectivity or avoiding areas with concentrations of juveniles can result in some reduction in revenue. STECF reiterates these should be viewed in the broader context of medium-term gains in stocks and, in the absence of

improvements in selectivity, whether economic viability will be threatened due to choke effects or the utilization of quota from the requirement to land low-value catches.

The outputs of the EWG evaluations and STECF reviews are summarised in Tables 5.5.2-5, the number of recommendations means that the volume of information is substantial.

Table 5.5.2. Main findings of the STECF EWG 19-08 and summary of additional information received relating to exemptions presented: North Sea.

De minimis	
Recommendation	Ling caught by bottom trawls of with a mesh size between 100 and 119 mm catching ling in Union waters of ICES subarea 4
Main findings of EWG 19-08	This exemption has been withdrawn
Comments of STECF PLEN 19-02	No additional comments
Recommendation	Whiting caught by beam trawls with a mesh size of 80-119mm mesh size in ICES subarea 4
Main findings of EWG 19-08	Existing exemption for 3 years with a condition that Member States should provide additional information. A summary of an additional study to support the exemption based on disproportionate costs for the Dutch demersal fisheries has been supplied. This study includes an economic analysis of handling unwanted catches in the Dutch beam and pulse trawl fisheries for sole and plaice. The information provided is at a fleet rather than at individual vessel level. The information provided shows the cost of landing unwanted catches to be significant but not specific to unwanted catches of whiting. The study only covers the Dutch fleet and it is not clear whether it is representative of other fleets availing of this exemption.
Comments of STECF PLEN 19-02	There is evidence of increased costs associated with handling and storing unwanted catches in the relevant fisheries, but this is quantified at the fleet level and not specific to whiting. Evidence that landing unwanted catches has an associated cost, is not sufficient to demonstrate those costs are disproportionate. Improving selectivity in the relevant fisheries should be the priority as this will reduce the costs for handling unwanted catches.
Recommendation	Whiting & cod below MCRS in mixed demersal fisheries using bottom trawls or seines with a mesh size of 70-99 mm in ICES Divisions 4a & 4b
Main findings of EWG 19-08	Existing temporary exemptions granted until the end of 2019. New information on the fisheries has been supplied for the French, Dutch and

	German fleets to support the request. The JR refers to the same supporting information provided in 2017 and 2018. A summary of an additional study to support the exemption based on disproportionate costs for the Dutch demersal fisheries has also been supplied (same study as the previous exemption). This study explores the economic impacts of the Landing Obligation on different sectors of the Dutch fleet. The justification is based on difficulties to improve selectivity in the short-term period as well as the handling of unwanted catches on board leading to disproportionate costs. The information provided shows the impact to be significant but not specific to handling unwanted catches of cod and whiting and is specific to only the Dutch fleet. The representativeness of the costs presented to the other fleets relevant to this exemption request is unclear.
Comments STECF PLEN 19-02	There is evidence of increased costs associated with handling and storing unwanted catches in the relevant fisheries, but this is not specific to cod and whiting. Evidence that landing unwanted catches has an associated cost, is not sufficient to demonstrate those costs are disproportionate. Improving selectivity in the relevant fisheries should be the priority as this will reduce the costs for handling unwanted catches.
Recommendation	Horse mackerel & mackerel - bottom trawls, seines and beam trawls with a mesh size between 80 and 99 mm in ICES subarea 4
Main findings of EWG 19-08	Existing temporary exemptions granted until the end of 2019. Separate exemptions are proposed for horse mackerel and mackerel. The descriptions of the fleets and fisheries and justification for the exemptions is the same. Supporting documents provide reasonably detailed information on the fleets (trawl and seine) and fisheries from France but not for other Member States fishing in the area covered by the exemption. No information is provided for beam trawls. Catch data, the average discard rates and estimated *de minimis* volumes are provided. The data presented is taken mostly from the FDI database and is prior to 2017 so may not be representative of current catch patterns in the fisheries. The justification is based on disproportionate costs linked to difficulties in improving selectivity in a short-term period. The request is supported with a detailed economic analysis of costs associated with handling and storing unwanted catches. Estimates are given of the potential increase in workload are provided in terms of time and operational costs, which show the costs associated are significant. However, they relate only to the French fleet and are not specific to the handling of horse mackerel and mackerel. It is unclear whether the costs presented are representative of other fleets relevant to this exemption request. The supporting information also provides a review of selectivity trials carried out since 2010. The results presented while largely qualitative show reductions of unwanted catches including horse mackerel and mackerel but

	also corresponding losses of marketable catch associated with most of the gear modifications tested. Because of these losses, there seems a marked reluctance to use any of the gear options tested. Unwanted catches of horse mackerel are likely to be more than the de minimis volume requested, meaning some catches of horse mackerel will still have to be landed.
Comments STECF PLEN 19-02	There is evidence of increased costs associated with handling and storing unwanted catches in the relevant fisheries due to an estimated increase in sorting time of unwanted catches on board of 30-60% depending on vessel size. This is not specific to mackerel and horse mackerel. Evidence that landing unwanted catches has an associated cost, is not sufficient to demonstrate those costs are disproportionate. Improving selectivity in the relevant fisheries should be the priority as this will reduce the costs for handling unwanted catches.
Recommendation	Ling below MCRS caught using longlines in ICES subarea 4
Main findings of EWG 19-08	This is a new request for an exemption. A reasonably detailed description of the French fleet is provided, which identifies a fleet of 10 vessels that operate in the North Sea and the West of Scotland. No other Member State is involved. Only part of the information provided originates from the North Sea (division 4a) with most originating from observer trips from the West of Scotland waters. Catch data, the average discard rates and estimated de minimis volumes are provided. The justification is based on longlines being highly selective gears and to increase selectivity further is not possible without incurring high economic costs. The exemption is to cover small residual unwanted catches (~5 tonnes). No specific studies are provided. The arguments regarding difficulties in improving selectivity are credible given the nature of the fisheries. However, the information provided is purely qualitative. No attempt has been made to quantify the potential scale of the losses that would be incurred if the de minimis exemption was not granted. Additionally, it is noted that the supporting information indicates that only 14% of ling classified as unwanted catches are below MCRS. It is not clear the reasons for the other 86% being discarded. Such catches will still have to be landed in the future.
Comments STECF PLEN 19-02	STECF agrees with the EWG 19-08 assessment
Recommendation	Bycatch of industrial species caught using bottom trawls, seines and beam trawls in ICES subarea 4
Main findings of	This is a request for a new exemption.

EWG 19-08	Supporting information is provided on bycatch of industrial species (sprat, sandeel, Norway pout and blue whiting) in Danish demersal trawl fisheries and *Pandalus* fishery in the North Sea and Skagerrak/Kattegat. Additionally, landing and discard estimates and number of vessels involved in different fisheries of Sweden and UK are presented in the background document. Information on catch and discard rates for Denmark and Sweden is based on observer data from 2016-2018. Data for the UK has been obtained from the FDI database but refers to data prior to 2017 and may not be reflective of the current state of the fisheries. There is also a reference to beam trawl (BT2) fisheries in the request, but no specific information is provided on catches from beam trawl fleets impacted. The volumes of *de minimis* are calculated based on total catches in the relevant fisheries. While the volume of *de minimis* is small, the calculation method means that 100% of unwanted catches of industrial species will continue to be discarded. The justification for this exemption is that the volumes of unwanted catches are small (typically less than 5kg per haul), and the handling of unwanted catches are regarded as uneconomically disproportionate given the difficulties in sorting these species from the target species. Additionally, the assertion is made that options to improve selectivity have been exhausted. There is no quantitative evidence to support these assertions. Intuitively, achieving additional selectivity improvements would be difficult to achieve in such fisheries and the costs for sorting would be high given the nature of the species involved. The supporting information provides indications of some of the steps that have been taken in these fisheries to improve selectivity, but a more detailed description of these steps would be beneficial to demonstrate that selectivity cannot be improved further and the *de minimis* is needed to cover the residual unwanted catches.
Comments of STECF PLEN 19-02	STECF agrees with the EWG 19-08 assessment
High Survivability	
Recommendation	Plaice below MCRS caught with beam trawls with a mesh of 80-119mm in Union waters of ICES division 2a and ICES subarea 4
Main Findings of EWG 19-08	Extension of existing temporary exemption beyond 2019. The delegated act stipulates that a roadmap be developed and delivered (as evaluated by STECF 18-03). The roadmap details research plans which are anticipated to address uncertainties regarding discard survival for plaice. No new discard survival estimates are provided. New analyses of existing data show that haul duration influences survival. The effect of survival of

	gear modifications such as flip-up rope or benthos release panels, as specified in the Delegated Act, have not been demonstrated. Detailed information provided for Belgium and Dutch fleets and fisheries. Catch data shows a reported discard rate of 50-64%. It is questionable whether previous survival estimates generated from pulse trawling are representative of the exempted fishery, given that numbers of pulse trawlers are set to reduce. They may be replaced by beam trawlers. More research is committed by Belgium to directly observe the survival of discarded plaice caught by beam trawlers in the North Sea in a new project in 2019-2021. Outputs from this work are expected to enable a robust evaluation of this proposal.
Comments STECF PLEN 19-02	STECF agrees with the EWG-19-08 assessment and observes that the submission of future evidence to support this proposal should be presented in line with the relevant timelines in the roadmap.
Recommendation	Catch and by-catch of plaice by vessels using trawl (OTB, PTB) of mesh sizes 90-99mm equipped with SELTRA in area 3a and 80-99mm in area 4 (targeting flatfish or roundfish)
Main Findings of EWG 19-08	This is a proposed new exemption. The JR also notes that a similar exemption is requested by the NWW in areas 7a-c and 7f-k. One of the supporting survival studies is the same as that used to support the proposed exemption '*plaice caught with bottom trawls with a mesh size of at least 120mm in summer months in ICES subarea 4'*, and gave a survival estimate of 44% (summer) and 75% (winter). The most important factor influencing plaice survival was air exposure time with a reported drop in survival to 8% after 60 min (only in summer). Sorting times are reported to be typically around 1 hour. Therefore, survival is expected to be lower than the reported 44% in the studied fishery, which was based on a sorting time of around 20 minutes. The other supporting survival evidence is a short excerpt from a study in 4b on an otter trawl fishery targeting whiting using 90-99 mm. An estimated discard survival of 42% is given. However, as noted by the authors, the observation time was not sufficient, and a modelled survival probability was reported of 19-20%. It was not possible to assess the quality of the underpinning studies without the full reports. The JR references existing the survival exemptions granted for plaice caught with otter trawl in ICES area 7d, e, f, g, which have been supported with studies positively assessed by STECF. All relevant countries have provided fishery data. The proposed exemption is limited to TR2-vessels targeting flatfish and roundfish and not vessels targeting other species like *Nephrops* and squid. Discard rates are reported as 22-54%. It is noted that part of the fleet operates on the boundary between NWW and NS regions so there is utility in having consistency in these two regions.

	Provision of the full survival reports would enable an assessment of the quality of the reported estimates. Further information on similarities between the fleets covered by the proposal would inform on the representativeness of the underpinning studies, particularly on sorting time, haul duration, catch composition and targeted species. Also, fishery data are needed for UK in area 4 and DK in 3a.
Comments STECF PLEN 19-02	STECF received the full scientific report supporting this proposal and considered the method to generate survival estimates to be robust. STECF agrees with the EWG 19-08 assessment and observe that the estimates of survival are variable between relevant studies (fisheries) (18-75%), and note that smaller plaice, caught more frequently with smaller cod end meshes (e.g. TR2), are indicated to have lower survival levels. STECF also note that a definition of vessels targeting flatfish and roundfish would be needed to manage the implementation of this exemption.
Recommendation	Skates and rays (*Rajiformes*) caught with all gears in in Union waters of ICES divisions 2a, 3a and subarea 4) (for cuckoo ray see below)
Main Findings of EWG 19-08	Exemption granted for three years (2019-2021); the delegated act stipulates a roadmap be developed and applied to increase survivability. No new discard survival evidence provided (except for cuckoo ray, see below). It is assumed that all fisheries are concerned. New fishery information was provided by Sweden for ICES division 3a and the eastern part of area 4. Fisheries data should include number of vessels. The effects of different variables on discard survival is not well understood, and this introduces risks in extrapolating discard survival evidence between species, fisheries and seasons. The supporting information identifies significant data gaps to be addressed and lists projects that are ongoing to generate additional ray survival evidence. There was no explicit reporting against the roadmap, which is recommended in the future. Future submissions should report against the three main tasks in the roadmap. Evidence provided for the NWW is also relevant to the NS but was not included in the JR. This information specifically reports from UK fisheries in ICES area 4.
Comments STECF PLEN 19-02	STECF agrees with the EWG 19-08 assessment and notes that this wide-ranging exemption still has many evidence gaps. Continued work following the roadmap will potentially address these gaps in the coming years. The latest evidence indicates survival varies across species and fisheries,

	and larger individuals and species caught by inshore and static gears have the highest rates of survival. STECF notes that the outputs of the ICES Workshop on incorporating discards into the assessments and advice of elasmobranch stocks (WKSHARK5) will provide useful context for this exemption. STECF also agrees with EWG-19-08 that the submission of future evidence to support this exemption should be presented in line with the timelines in the roadmap.
Recommendation	Cuckoo ray to December 2019 – as part of Skates and rays (*Rajiformes*) caught with all gears in in Union waters of ICES divisions 2a, 3a and subarea 4)
Main Findings of EWG 19-08	Exemption granted for one year (2019) for cuckoo ray in ICES divisions 2a and 3a, and subarea 4. This is a request for an extension. Two new studies were provided. The studies showed most cuckoo rays were alive at the point of release (90-97%), and 41% (n=868) and 84% (n=37) were in excellent condition. Both studies were from the otter trawl fisheries in NWW region. Information to assess the relevance to North Sea fisheries was not provided. Vitality data do not constitute discard survival estimates but indicate survival potential. It is assumed that all fisheries are concerned. Only Sweden provided new fishery information. Cuckoo ray is rarely caught in Swedish fisheries (1 in 2340 observed hauls). Additional information on the fisheries operational and environmental conditions in the NS, and how they compare to those in NWW, would enable the relevance of the new vitality data to be determined. Directly observed discard survival estimates should be generated for relevant fisheries.
Comments STECF PLEN 19-02	STECF agrees with the EWG 19-08 assessment and observe that evidence from all regions indicates that cuckoo rays display lower survival than larger ray species and there could be zero survival in some fisheries. Further observations from survival experiments are needed to provide reliable estimates of survival rates for cuckoo ray before any definitive judgment can be made. New and ongoing studies (e.g. SUMARIS project), completed in the next 1-2 years across relevant fisheries, and following the ICES guidance, will generate necessary evidence on discard survival levels.
Recommendation	Plaice caught with bottom trawls with a mesh size of at least 120mm in summer months in ICES subarea 4
Main Findings of EWG 19-08	Extension to existing exemption to include summer months. New directly observed estimates show 44% discard survival for summer. Data were derived from otter trawls (90 mm) in 3a targeting plaice and *Nephrops*. Only a summary of the full report was provided, so an evidence quality assessment could not be conducted.

	Previously submitted evidence estimated discard survival rate during winter at 75%. The most important factor influencing plaice survival was air exposure time, with a reported drop in survival to 8% after 60 min (only in summer). Sorting times are reported to be typically around 1 hour. Therefore, survival is expected to be lower than the reported 44%, which was based on a sorting times of around 20 minutes. Fishery information was provided, but for DK it is unclear if the data represents all species or just plaice. The DK discard rates are inconsistently reported. The request is for North Sea only, but the evidence is provided from the Skagerrak. Clarification is needed on the intended area for the exemption. The relevance of the study to the wider North Sea area is also unknown. The presented survival rate was based on cod end mesh 90 mm, the cod end mesh in the proposal is at least 120 mm but presented survival levels are considered relevant. The full scientific report would enable an assessment of the quality of the summer survival estimate. Operational information on defined fleets in 3a and 4 would allow an assessment of the representativeness of the study.
Comments STECF PLEN 19-02	STECF received the full scientific report supporting this proposal and considered the method to generate survival estimates to be robust. STECF agrees with the EWG 19-08 assessment.
Recommendation	Plaice caught with Scottish seines in ICES subarea 4
Main Findings of EWG 19-08	The proposed exemption is an extension to cover Scottish seines. The proposal is motivated by an existing exemption for Danish seines on the basis that both fisheries have similar operational characteristics. Plaice discard survival rate was previously assessed at 78% for Danish seine, no new survival estimates were provided. The data provided demonstrate differences between the Scottish seine and Danish seine fisheries (vessel dimensions and engine power, haul durations and catch sizes). These differences are sufficient to question whether the survival rates from one fishery are representative of the other. For example, the substantially higher catch sizes in the Scottish seine fishery and the higher proportion of smaller discarded plaice may have a negative effect on survival levels. Moreover, it is not clear whether the two gears are comparable, as the North Sea survival estimate may be from a Danish anchor seine which operate differently to the Scottish seine gears. This

	should be clarified. A discard rate is given for the Dutch fleet (22-42% per year) only. It is not clear if any other Member State is involved. Directly observed survival rates from the Scottish seine fishery would enable a more robust evaluation of this proposed exemption. Vitality of discarded plaice may be sufficient to enable inferences on the likelihood of survival. More details on the fishery, including vessel numbers, specific fishing operating method and catch composition are also needed for a full evaluation.
Comments STECF PLEN 19-02	STECF agrees with the EWG 19-08 assessment.
Recommendation	Turbot caught by beam trawl with a cod end larger than 80mm in ICES area 4
Main Findings of EWG 19-08	This is a repeat request for a new exemption (STECF EWG 18-06). No new survival evidence was presented; previously submitted studies indicated a survival estimate of 30% but only for pulse trawls. New catch, landings and discards data are provided, but only vessel numbers for Belgium. A discard rate of 10% was reported. It is questionable whether previous survival estimates generated from pulse trawling are representative of the exempted fishery, given that numbers of pulse trawlers are set to reduce. They may be replaced by beam trawlers over the next few years. More research is committed by Belgium to directly observe the survival of discarded turbot caught by beam trawlers in the North Sea in a new project in 2019-2021. Outputs from this work are expected to provide more detailed information on the survival rates.
Comments STECF PLEN 19-02	STECF agrees with the EWG 19-08 and PLEN 18-02. There remain concerns regarding the estimated survival rates due to the considerable variability and how representative they are of the fishery. New estimates from beam trawlers are anticipated, which will provide a better assessment of survival levels.
Recommendation	High Survival exemption for *Nephrops* caught by demersal bottom trawls in ICES subareas 3a and 4.
Main Findings of EWG 19-08	There is an ongoing three-year exemption for *Nephrops* which requires additional scientific information to be submitted yearly for otter trawls. No new evidence was provided. The JR argues that no additional data was necessary. However, EWG 18-06 questioned whether survival evidence previously submitted was relevant to the UK east coast *Nephrops* fishery or

	the *Pandalus* fishery. Such information is still missing, and no further assessment can be made of *Nephrops* survival in these fisheries. Additional information on the Swedish and Danish fisheries for *Pandalus* fishery indicated that *Nephrops* is a low volume bycatch species (1.2t per year). Information on the operational and environmental characteristics of the different *Nephrops* fisheries would provide context to the survival estimates currently available. Additional *Nephrops* vitality data is believed to have been collected in an east Scottish fishery but was not provided.
Comments STECF PLEN 19-02	STECF agrees with the EWG 19-08 assessment

Table 5.5.3. Main findings of the STECF EWG 18-06 and summary of additional information received relating to exemptions presented: North Western Waters.

De minimis	
Recommendation	Haddock and cod - bottom trawls, seines and beam trawls with a mesh size equal to or greater than 80 mm in ICES divisions 7b-7c and 7e-7k
Main findings of EWG 19-08	Existing temporary exemption granted until the end of 2019. Separate exemptions are proposed for haddock and cod but the descriptions of the fleets and fisheries and justification for the exemptions is the same. The supporting information provide a relatively detailed description of the fisheries concerned. No information is provided for Belgium and UK beam trawl fisheries. The justification for the exemption is based principally on selectivity being difficult to achieve. Information is provided on French and Irish selectivity trials and indicates that improvements in selectivity for haddock are difficult to achieve without substantial short-term losses in marketable catches. An analysis providing comparative estimates of current revenue to break-even revenue (CR/BER) for the estimated catches from current (baseline) gears and the anticipated catches from selectivity trial gear configurations is included for the Irish fleets and fisheries involved. There are indications that this analysis is representative of other fleets operating in the area. The CR/BER for the current (baseline) gear configurations indicate that in the short-term the operational costs would be greater than the estimated revenue, i.e. in the short-term, the fishery would be operating at a loss. While the CR/BER estimates are likely to be rather imprecise, it seems reasonable to assume that the magnitude of change in CR/BER indicates

	that improvements in selectivity by adopting any of the gear configurations tested would result in significant losses in revenue in the short-term. Specific technical measures operating with bottom trawls or seines in the Celtic Sea protection zone are to become mandatory from 1 July 2019. The selectivity information provided indicates that introduction of such gears is expected to reduce unwanted catches of haddock and cod to a lesser extent, but it is too early to evaluate whether that will be achieved.
Comments of STECF PLEN 19-02	STECF agrees with the observations of EWG 19-08. STECF also notes that the cod stock in the Celtic Sea is heavily depleted and one of the stocks covered under the Bycatch reduction plan for stocks in NWW. Reducing fishing mortality on this stock should be a priority. Introducing a *de minimis* exemption to allow continued discarding, if not strictly monitored, may lead to increased fishing mortality due to unreported discarding.
Recommendation	Horse mackerel and mackerel caught using bottom trawls, seines and beam trawls in ICES subarea 6 and ICES divisions 7b-7k
Main findings of EWG 19-08	Existing temporary exemptions granted until the end of 2019. Separate exemptions are proposed for horse mackerel and mackerel. The descriptions of the fleets and fisheries and justification for the exemptions is the same. The supporting information provides an overview of the fisheries to which the exemptions are to apply, together with data on selectivity trials, estimates of landings and discards of horse mackerel and mackerel by the fleets concerned. The request is supported with a detailed economic analysis of costs associated with handling and storing unwanted catches. The information is principally for the French fleets operating in the eastern Channel and southern North Sea. Limited information is provided for other fleets. The justification for the exemption is selectivity improvements to reduce unwanted catches of horse mackerel and mackerel will be hard to achieve without severe economic impacts on the revenue of the boats concerned. Additionally, the costs for handling and storing small quantities of unwanted catches on board are disproportionate. The review of the selectivity trials while largely qualitative show reductions of unwanted catches including horse mackerel and mackerel but also corresponding losses of marketable catch associated with most of the gear modifications tested. Because of these losses, there seems a marked reluctance to use any of the gear options tested. This is the same as in the North Sea and SWW. An economic analysis to demonstrate the scale of these losses and how they would impact on the relevant fleets would be appropriate.

	The introduction of the specific technical measures for vessels operating with bottom trawls or seines in the Celtic Sea protection zone from 1 July 2019 may reduce the unwanted catch of horse mackerel, mackerel and other species. The effectiveness of these measures should be monitored. Estimates of the potential increase in workload are provided. The analysis shows the costs and time implications for crew in a generic sense rather than specifically for unwanted catches of horse mackerel and mackerel. Information is only provided for the French fleet and it is unclear whether this is representative of other fisheries covered by the exemption. Unwanted catches of horse mackerel are likely to be well in excess of the *de minimis* volume requested, meaning significant catches of horse mackerel will still have to be landed.
Comments of STECF PLEN 19-02	There is evidence of increased costs associated with handling and storing unwanted catches in the relevant fisheries. These costs result from an increase in handling and sorting times on board at 30-60% depending on vessel size. This is not specific to mackerel and horse mackerel. Evidence that landing unwanted catches has an associated cost, is not sufficient to demonstrate those costs are disproportionate. Improving selectivity in the relevant fisheries should be the priority as this will reduce the costs for handling unwanted catches.
Recommendation	Common sole caught using beam trawls with mesh size of 80-119mm with a large mesh panel in ICES divisions 7a, 7j and 7k
Main findings of EWG 19-08	Existing exemption but revised by increasing the scope to cover ICES divisions 7a, 7j and 7k. New information supplied is limited to a description of the numbers of Belgian and Irish beam trawls vessels involved in the fishery in VIIa, j, k in 2016-2018 and their associated catches. It is not clear whether other Member States have vessels operating in the fishery. The justification for the exemption is the same as the existing *de minimis* exemption for common sole for beam trawls in the Channel (7d, 7e) and the Celtic Sea (7f, 7g, 7h). It is based on selectivity having improved through the introduction of gear modifications. The *de minimis* is required to cover residual unwanted catches. It is assumed that the fisheries covered by the existing exemption are the same fisheries and that the selective gear will be as effective at reducing unwanted catches of sole in the areas proposed to be included. However, no information has been provided to this effect.

	STECF 15-01 noted the mesh size of the so-called Flemish panel specified in the Delated Act was 120mm compared to what was originally tested, i.e. a 150mm panel. As pointed out by STECF previously, this may reduce the effectiveness of the panel and not give the reductions in unwanted catches observed in the trials. Information to evidence this would be useful, accepting that the Flemish panel as currently used does improve selectivity for sole compared to standard 80mm beam trawls.
Comments of STECF Plen 19-02	STECF agrees with the EWG 19-08 assessment
Recommendation	Boarfish caught using bottom trawls in ICES divisions 7b-c and 7f-k
Main findings of EWG 19-08	This is a new request for an exemption. The supporting information provides an overview of the fisheries to which the exemption is to apply. Information is only provided for the French fleet. It is not clear whether the intention is for the exemption to apply to the fleets of other Member States. The justification for the exemption is that improvements in selectivity to avoid the catches of boarfish will be hard to achieve without severe economic impacts on the revenue of the boats concerned. A review of recent French selectivity experiments is provided. Additionally, an economic analysis shows the costs of handling and storing unwanted catches on board French demersal trawlers operating in the North Sea. The assertion that selectivity improvements will be hard to achieve without severe economic impacts on the revenue of the boats concerned is intuitive but not supported by quantitative information. Additionally, while estimates of the potential increase in workload are provided, these are based on a limited generic analysis which is not specific to unwanted catches of boarfish. This analysis relates to vessels operating in the North Sea and it is not clear whether the information provided is representative of the fleets involved in this exemption.
Comments from STECF PLEN 19-02	There is evidence of increased costs associated with handling and storing unwanted catches in the relevant fisheries. These costs result from an increase in handling and sorting times on board at 30-60% depending on vessel size. These are not specific to boarfish. Evidence that landing unwanted catches has an associated cost, is not sufficient to demonstrate those costs are disproportionate. Improving selectivity in the relevant fisheries should be the priority as this will reduce the costs for handling unwanted catches.
Recommendation	Greater silver smelt caught using bottom trawls with a mesh size greater or equal to 100mm in ICES division 5b (EU waters) and subarea 6

Main findings of EWG 19-08	This is a new request for an exemption. The supporting information provides an overview of the fisheries to which the exemption is to apply. Information is only provided for the French fleet. It is not clear whether the intention is for the exemption to apply to the fleets of other Member States. The justification for the exemption is the same as for the boarfish exemption above. The assertion that selectivity improvements will be hard to achieve without severe economic impacts on the revenue of the boats concerned is intuitive but not supported by quantitative information. Additionally, while estimates of the potential increase in workload are provided in terms of time, only a limited generic analysis is provided. This analysis relates to vessels operating in the North Sea and it is not clear whether the information provided is representative of the fleets involved in this exemption.
Main comments of STECF PLEN 19-02	There is evidence of increased costs associated with handling and storing unwanted catches in the relevant fisheries. These costs result from an increase in handling and sorting times on board at 30-60% depending on vessel size. These are not specific to Greater silver smelt. Evidence that landing unwanted catches has an associated cost, is not sufficient to demonstrate those costs are disproportionate. Improving selectivity in the relevant fisheries should be the priority as this will reduce the costs for handling unwanted catches.
Recommendation	Fish bycatch below MCRS in the Brown shrimp fishery caught using beam trawls of mesh size <31mm in ICES division 7a
Main findings of EWG 19-08	This is a new request for an exemption. Detailed information on the fishery in the Irish Sea is provided for the UK fleet. However, there are no recent estimates of fish discards from the brown shrimp fisheries, the estimates of discarding are based on a study that was undertaken in 1995. There is no way of assessing whether this reflects catches in the fishery currently. Further catch sampling would provide more reliable estimates of unwanted catches. The justification for the exemption are that significant increases in selectivity are very difficult to achieve and that the cost of handling the unwanted catch are disproportionate. Intuitively these assertions are reasonable. However, only limited qualitative information is provided to support them and this is principally based on the brown shrimp fishery in the North Sea. It is likely the North Sea fishery is representative of the Irish Sea fishery.

	Expressing the *de minimis* exemption as proposed would mean that the fisheries for brown shrimp would be able continue to discard all catches of fish. A similar approach has been proposed for industrial species bycatch in North Sea demersal trawl fisheries.
Main comments of STECF PLEN 19-02	Given the specificities of brown shrimp fisheries in the North Sea, which are well documented and show that the unwanted catches in this fishery are generally of very small fish. Provided the fisheries in the North Sea are considered representative of the Irish Sea fishery, it is safe to assume that both are valid assertions, noting there is no attempt to substantiate this claim.
Recommendations	Megrim below MCRS caught using bottom trawls with a mesh size of 70-99mm and beam trawls with a mesh size of 80-119mm in ICES subarea 7
Main findings of the EWG 19-08	This is a new request for an exemption. Very limited information is provided on the fisheries and fleets involved for Spain. Estimates of discards are also given for Spain. Limited catch information is provided for Belgium. The justification for the exemption is based on an economic analysis which show the costs of handling unwanted catches of megrim by the Spanish fleet operating in ICES subarea 7. The analysis presented estimates the additional crew costs associated with the handling of unwanted catches of megrim onboard. This is compared to the situation if the unwanted catches had to be landed. The analysis shows there to be costs associated with handling the unwanted costs, but it is not possible to assess whether these are disproportionate or not. Limited information is also provided for the Belgian beam-trawl fishery to justify the exemption based on improvements in selectivity being difficult to achieve. However, acknowledging this is linked to use of selective gears, there is no additional information or analysis provided in support of this assertion. There is no evaluation of the impact the selective beam trawl gear would have on catches of megrim. There is also reference to future selectivity work to be undertaken by the Spanish fleet. No detail is provided of these trials, but it is anticipated that there is scope for improvements in selectivity in this fishery as indicated by EWG 18-02.
Comments of STECF PLEN 19-02	The analysis provided is specific to unwanted catches of megrim and shows additional costs for handling unwanted catches of megrim and shows the additional time on board to handle unwanted catches of megrim is estimated to increase crew costs by approximately 40%. Evidence that landing unwanted catches has an associated cost, is not

	sufficient to demonstrate those costs are disproportionate. Improving selectivity in the relevant fisheries should be the priority as this will reduce the costs for handling unwanted catches.
Recommendation	Cod, haddock and whiting below MCRS caught using bottom trawls with a mesh size up to 119mm in the West of Scotland *Nephrops* fishery in ICES division 6a
Main findings of EWG 19-08	This is a new request for an exemption. Separate exemptions are proposed for cod, haddock and whiting but apply to the same fishery for *Nephrops* in the West of Scotland (ICES division 6a). Estimates of unwanted catches below MCRS are given and show for all three species the volume of *de minimis* requested will cover only a small proportion of the current unwanted catches. The justification for the exemption is largely based on an analysis of disproportionate cost of handling unwanted catches ashore which is estimated to equate to a net cost of approximately £100 per tonne. The costs seem reasonable, but there is no objective means to assess whether they are realistic or can be considered disproportionate. While not directly mentioned, the JR contains provisions to introduce selective gears into the *Nephrops* fishery. These gears will improve selectivity and should reduce unwanted catches. However, it would seem appropriate, given the current high levels of unwanted catches in this fishery to list the gears to be introduced through the existing discard plan into the Celtic Sea and the Irish Sea for *Nephrops* fisheries. The gear options listed in these areas include the SELTRA trawl and sorting grids which would be considered much more selective than the gear options proposed for the West of Scotland.
Comments of STECF PLEN 19-02	STECF agrees with the EWG 19-08 assessment. STECF notes that the cod and whiting stocks in the West of Scotland are heavily depleted and reducing fishing mortality on these stocks should be a priority. The West of Scotland cod stock is one of the stocks covered under the Bycatch reduction plan for stocks in NWW. Introducing a *de minimis* exemption to allow continued discarding will not lead to a reduction in fishing mortality and if not strictly monitored may lead to increased fishing mortality due to unreported discarding.
High Survivability	
Recommendation	Skates and ray species caught by any gear in ICES subareas VI and VII (for cuckoo ray see below)
Main Findings of EWG 19-08	Exemption granted for three years (2019-2021); the delegated act stipulates a roadmap be developed and applied to increase survivability. Two new studies were provided. A tagging study for undulate ray in ICES

	VIIe for the English inshore otter trawl fishery using 80 mm codend gave an estimated discard survival rate of 93%. This was based on only 10 returned tags and reported as preliminary results until more tags returned. The method of survival estimation is considered robust. The second study investigated factors effecting the health condition of discarded rays based on records of 13 skate and ray species caught by 3 gear types (trawl, gillnet, longline). The study concludes that smaller individuals and smaller species, (e.g. cuckoo and spotted ray), are likely to be released in poorer condition than larger individuals, (e.g., blonde and thornback ray), and would have a lower probability of survival. Health condition was higher for rays caught by static gears than for towed gears, this was associated with towed gears catching smaller rays. Longer tow duration was associated with lower health condition. The supporting information identifies significant data gaps to be addressed and lists projects that have been commissioned to generate additional ray survival evidence. There was no explicit reporting against the road map, which is recommended in the future. Future submissions should report against the three main tasks in the road map.
Comments STECF PLEN 19-02	STECF agrees with the EWG 19-08 assessment and notes that the wide-ranging exemption still has many evidence gaps. The latest evidence indicates survival varies across species and fisheries, and larger individuals and species caught by inshore and static gears have the highest rates of survival. STECF note that the outputs of the ICES Workshop on incorporating discards into the assessments and advice of elasmobranch stocks (WKSHARK5) will provide useful context for this exemption. STECF also agrees with EWG-19-08 that the submission of future evidence to support this exemption should be presented in line with the timelines in the roadmap.
Recommendation	Skates and ray species caught by any gear in ICES subareas VI and VII (cuckoo ray)
Main Findings of EWG 19-08	Exemption was granted for one year (2019) for cuckoo ray in ICES areas 6 and 7. This is a request for extension. A new study from an otter trawl fishery in VIIa showed most cuckoo rays were alive at the point of release (97%) and 84% (n=37) were in excellent condition. Vitality data do not constitute discard survival estimates but indicate survival potential. The second study investigated factors affecting the health condition of discarded different rays and concluded that smaller individuals and smaller species, such as cuckoo ray, are likely to be released in poorer condition than larger individuals. However, observations were based on a limited number of cuckoo rays (16 individuals), for which vitality categories were not explicitly reported.

	No new evidence was provided on discard rates for cuckoo ray. Further data and knowledge of discard survival and discard rates for different ray and skate species, including cuckoo ray, are anticipated in outputs from a road map.
Comments STECF PLEN 19-02	STECF agrees with the EWG 19-08 assessment and observe that evidence from all regions indicates that cuckoo rays display lower survival than larger ray species and there could be zero survival in some fisheries. Further observations from survival experiments are needed to provide reliable estimates of survival rates for cuckoo ray before any definitive judgment can be made. New and ongoing studies (e.g. SUMARIS project), completed in the next 1-2 years across relevant fisheries, and following the ICES guidance, will generate necessary evidence on discard survival levels.
Recommendation	Plaice caught with beam trawls by vessels of the >221kW segment fleet which use the flip-up rope or benthic release panel; or vessels, with an engine power of not more than 221kW; or less than 24m in length overall in ICES subarea 7
Main Findings of EWG 19-08	Extension of the existing temporary exemption beyond 2019. New vitality evidence was provided on plaice at the point of discarding in the English South West beam trawl fishery. Vitality data were collected from different vessels, working different gear designs, with differing catch handling processes, under a wide range of seasonal conditions and across three ICES subdivisions. The vitality data were used to generate inferred survival estimates based on established relationships between survival and vitality. Inferred survival estimates varied between trips; the overall estimate was 56%. Using vitality as a proxy for survival is a viable approach to estimate survival but is less robust than direct observation methods. An overview of fisheries only for the Belgium beam trawl fleet was provided. Equivalent data from other relevant countries were not provided. Belgium has developed a three-year (2019-2021) project to generate directly observed survival estimates for plaice in the North Sea 7d,f,g (not for 7hjk). This project will contribute to delivering the roadmap and the evidence needed to evaluate this proposal. Reporting against the roadmap so that new evidence is highlighted against the agreed tasks is encouraged.
Comments STECF PLEN 19-02	STECF agrees with the EWG 19-08 assessment and note that the regional group should describe how the proposed exemption links to the Bycatch Reduction Plan for the plaice stock in area 7h,j,k.
Recommendation	Plaice (*Pleuronectes platessa*) caught with otter trawls (OTT, OTB, TBS, TBN, TB, PTB, OT, PT, TX) in ICES divisions VIIa and VIIb to VIIk but excluding VIId, VIIe, VIIf, VIIg; in combination - for métiers targeting Norway lobster - with highly selective gears listed in Section 6 applying to *Nephrops* fisheries
Main Findings of	This is a new exemption. Based on the wording provided in JR, EWG 19-08

EWG 19-08	interpreted this proposal to apply only to *Nephrops* fisheries with highly selective gear. If the intention is to apply to whitefish demersal fisheries, then a further evaluation is required (see below Comments STECF PLEN 19-02). A new study on plaice survivability in the Irish fish-directed otter trawl fishery is provided (not *Nephrops* fishery). A critical review showed the method to be robust, but in agreement with PLEN 19-01, the estimate of survival presented in the JR is questionable, whereby the survival estimate generated is 37% (rather than 43%). The study also reported that hauls with *Nephrops* catches were excluded from the estimate, due to the substantially lower plaice survival observed for these hauls. Therefore, the reported plaice discard survival estimate is not considered representative of the *Nephrops* trawl fishery. Based on evidence that is available but was not provided (e.g. Noak, et al unpubl.; Elliott et al, 2017 (unpubl.); Randall et al, 2016), *Nephrops* fisheries are likely to have lower levels of plaice discard survival, due to the injuries sustained in the trawl and the increased sorting times when catching *Nephrops*. Detailed information on the fleets and fisheries from Ireland and UK was provided.
Comments STECF PLEN 19-02	Following EWG 19-08, PLEN 19-02 received clarification that this exemption was intended to include fish directed fisheries, as well as *Nephrops* targeting fisheries, where highly selective gears are used. STECF observes that the new survival estimate is comparable to, but lower than equivalent estimates from other fish directed otter trawl fisheries in NWW (Morfin et al., 2017; Catchpole et al., 2015). STECF agrees with the EWG 19-08 assessment and note that additional evidence indicating more limited survival of plaice in *Nephrops* trawl fisheries is available but has not been reported here (e.g. Noak, et al unpubl.; Elliott et al, 2017 (unpubl.); Randall et al, 2016). STECF also notes that the plaice stock in 7h,j,k is heavily depleted and reducing fishing mortality on this stocks should be a priority. This plaice stock is covered under the Bycatch reduction plan for stocks in NWW. Introducing a survival exemption to allow continued discarding with only partial survival likely for discarded plaice will not lead to a reduction in fishing mortality.
Recommendation	Plaice (*Pleuronectes platessa*) caught with seines (SSC, SDN) in ICES division VIId.
Main Findings of EWG 19-08	This is a new exemption, proposed to provide consistency with the North Sea Danish seine plaice exemption. The basis for the proposal is that both fisheries have similar operational characteristics. No survival evidence was presented for the defined fishery. Instead a study on plaice discard survival from Danish seines was provided. This was assessed by EWG 18-06 to give robust survival estimates for the fishery

	studied. Fishery data demonstrate differences in the characteristics of the Dutch flyshoot (Scottish seine) and Danish seine fisheries (vessel dimensions and engine power, haul durations and catch sizes). These differences are sufficient to question whether the survival rates from one fishery are representative of the other. For example, the substantially higher catch sizes in the Dutch flyshoot fishery and the higher proportion of smaller discarded plaice may have a negative effect on survival levels. Moreover, it is not clear whether the two gears are comparable, as the North Sea survival estimate may be from a Danish anchor seine which operate differently to the Dutch flyshoot (Scottish seine) gears used in 7d. This should be clarified. Directly observed survival rates from the Dutch flyshoot fishery would provide the most robust evaluation of this proposed exemption. Data on the vitality of discarded plaice could be sufficient to enable inferences on the likelihood of survival. More details on the fishery, including vessel numbers, specific fishing operating method and catch composition are also needed for a full evaluation.
Comments STECF PLEN 19-02	STECF agrees with the EWG 19-08 assessment
Recommendation	Common sole below MCRS caught with bottom trawls with mesh size 80-99mm in ICES division VIIe
Main Findings of EWG 19-08	This request is for a geographic extension of the existing exemptions in 7d and 4c (North Sea). Unlike these existing exemptions, there is no reference to nursery areas and the supporting information states there are no known spawning or juvenile concentrations in 7e. No new survival evidence was provided. Previously assessed studies that support existing exemptions estimated survival of <MCRS Common sole at 51% (IVc; EWG 16-10) and 89% (VIId; EWG 17-03). The method applied in these studies was robust. With no new survival evidence, it is assumed in the supporting information that any differences between the VIIe and VIId/IVc fisheries have no significant effect on survival. Existing exemptions apply to inshore Common sole directed fisheries, while the proposed exemption for VIIe is for a cuttlefish targeted fishery. Unlike the VIId and IVc fisheries, the catches of the VIIe fleet include a high proportion of rays, spider crab and cuttlefish. It is likely that the presence of these species will negatively influence the survival of discarded fish given their spikey or rough morphology which can harm other fish. A deviation from the existing exemptions is an increase in vessel size from a maximum length of 10 metres to 12 metres. However, the mean lengths of the fleets are similar (e.g. IVc 9.8m vs VIIe 10.8m), and this is unlikely to affect survival rates.

	Fishery information was provided for the French fleet (90 vessels under 12 m, with mean engine power of 130 kW; discard rate of <MCRS Common sole is given as 7% of Common sole catches). To enable a more robust evaluation of this exemption, information on other national fleets are needed. Also, due to the differences in catch composition, preferably directly observed survival estimates from this fishery should be generated, or alternatively, vitality information on discarded <MCRS Common sole.
Comments STECF PLEN 19-02	STECF agrees with the EWG 19-08 assessment
Technical Measures	
Recommendations	Additional selective gears for the Celtic Sea, Irish Sea and West of Scotland
Main findings of EWG 19-08	Last year's JR proposed a series of changes to minimum gear requirements of which PLEN 18-02 assessed that the majority represented improvements or equivalence in selectivity with the current legal gears. These new technical measures were implemented through art 9 (Celtic Sea Protection Zone) and art. 10 (Irish Sea) in the discard plan for North Western waters (2018/2035). The 2019 JR proposes some adjustments and additions to the current technical measures in the discard plan for the Celtic Sea Protection Zone and for the Irish Sea but also to introduce new minimum gear standards in the waters West of Scotland. Comments on the main changes proposed are provided below. There are also several technical amendments to the current discard plan for which no supporting information has been provided, so EWG 19-08 has been unable to assess the impacts of these changes. Celtic Sea Protection Zone Based on the supporting information supplied, adding 120 mm cod end to the list of gear options in the Celtic Sea is reasonable. This gear has equivalent selectivity to the current gears included in the NWW discard plan. Based on the supporting information provided, EWG 19-08 agrees that the principle of the dual codend to vertically separate catch into two codends where differential selection can take place has the potential to reduce bycatch of unwanted species while maintaining catches of target species. It is also important that the specifications (e.g. mesh size and twine thickness) of the dual codend arrangement are defined in the delegated act. Assessment of the overall selection performance of any proposed dual codend arrangement in relation to the available gear options. No supporting information has been provided to justify the introduction of a derogation to allow a codend mesh size of 80mm + 120mm square mesh

	panel (SMP) for vessels with catches of more than 10% of sole. Based on available information this gear is likely to lead to a reduction in selectivity for the vessels that use this gear. New scientific evidence is needed to justify this request before allowing it as a legal gear. The suggested definition of the SELTRA trawl included in the JR is reasonable and represents an increase in selectivity compared to the gear defined previously. Irish Sea As per the Celtic Sea, the introduction of a derogation to allow a cod end mesh size of 80mm + 120mm SMP for vessels with catches of 10% of sole would imply a reduction in selectivity for the vessels that choose this gear. New scientific evidence is needed to justify this request. The amendment included in the JR relating to the inclusion of a derogation for queen scallop fisheries is largely unsubstantiated. However, based on knowledge of this fishery the fish bycatches are expected to be modest and the impact of this fleet is therefore likely small overall. As with the Celtic Sea, the definition of the SELTRA is reasonable and represents an increase in selectivity compared to the gear defined previously. The exclusion of vessels <12 m is a new element compared to last year´s assessment. No supporting scientific information was provided with the JR but it is understood that the proposal to exclude vessels <12 m is related to differences in selectivity for small and large vessels. Supporting evidence is needed to clarify this to be the case. West of Scotland No supporting scientific information was provided with the proposed changes of minimum gear requirements in the JR for the West of Scotland *Nephrops* fishery. However, based on available information – 300mm SMP and 100mm cod end with 160mm SMP - the introduction of both gear alternatives proposed would imply an increase in selectivity provided their use is restricted to the *Nephrops* fishery and not to other fisheries in the area targeting demersal fish species.
Main comments of STECF PLEN 19-02	STECF agrees with the assessment of EWG 19-08.

Table 5.5.4. Main findings of the STECF EWG 18-06 and summary of additional information received relating to exemptions presented: South Western Waters.

De minimis	
Recommendation	Hake caught with trawls and seines in directed fisheries in ICES subareas 8 and 9
Main findings of EWG 19-08	Existing temporary exemption granted until the end of 2019. Detailed information on the Spanish fisheries and fleets involved are provided. Catch information as well as a breakdown of the Spanish fleets is presented. Limited information is provided for Portugal and no information is provided for France. The justification for the exemption is that improvements in selectivity are hard to achieve and the de minimis is needed as a temporary solution while selective gears are developed for the relevant fisheries. The supporting information includes a review of selectivity trials carried out by Spain over the period 2014-2018. This review is comprehensive and details the results from several different trials with different selectivity devices. An economic analysis of disproportionate costs resulting from the handling and storage of unwanted catches of hake on board is also provided. This is linked to the selectivity studies but relates only to the Spanish fleets. While showing improvements in selectivity lead to reductions in marketable catches, it is not possible to conclude definitively that further improvements in selectivity are very difficult to achieve. However, there are indications that further work on selectivity is planned, which may identify gear modifications that could be adopted in the fisheries in the future. Additionally, results from the SIBALO project are presented which show the increased costs associated with handling and storing unwanted catches of hake on board. The estimates of the potential increase in workload are presented and show the increase in costs associated with the handling of unwanted catches. The results show these costs to be significant. The representativeness of the analysis of other fisheries in the area to be covered by the exemption is unclear.
Comments of STECF PLEN 19-02	STECF agrees with the assessment of EWG 19-08. STECF also notes that an additional report has been provided which details planned work by Spain to assess the costs for handling unwanted catches on board vessels and ashore. Hake caught with trawls is included in this analysis. This report gives a detailed overview of the relevant Spanish fleets

	and the types of economic data that will be collected. It aims to provide a comparison of the costs for handling unwanted catches with and without a *de minimis* exemption in place. This study is expected to be completed by the end of 2019 and will provided further information to support this exemption. STECF stresses that improving selectivity for hake in the relevant fisheries should be the priority.
Recommendation	Horse mackerel and mackerel caught with bottom trawls, seines and beam trawls in ICES subareas 8 and 9
Main comments from EWG 19-08	Existing temporary exemptions granted until the end of 2019. Separate exemptions are proposed for horse mackerel and mackerel but the descriptions of the fleets and fisheries and justification for the exemptions is the same. Detailed descriptions on the fleets and fisheries is provided for Spain, and Portugal. This includes catch data and descriptions of the different fisheries with bycatch of mackerel and horse mackerel. Only limited information is provided for France. The volume of de minimis requested are estimated for horse mackerel and mackerel. Significant differences in discard rates between the different fleets under the exemption are observed and it is difficult to establish how the estimated de minimis volume relates to actual levels of unwanted catches. The supporting information contains a review of selectivity trials carried out by France in recent years with a range of selectivity devices (e.g. T90 codends and square mesh cylinders). The review indicates minimal reductions in unwanted catches of mackerel and horse mackerel with any of the devices tested. The supporting information provided is generic and contains only limited information relating to mackerel and horse mackerel. It does not demonstrate conclusively that improvements in selectivity in these fisheries are very difficult to achieve. There are indications that selectivity trials are continuing which will be completed at the end of 2019, which will test other gear modifications. A detailed economic analysis of disproportionate costs resulting from the additional time required for handling and sorting unwanted catches on board is also provided. This information is provided for several French fleets and is linked to the selectivity studies. The analysis provided of disproportionate costs is also generic and it is not possible to establish how representative of the fisheries covered by the exemption as it relates to French demersal trawlers operating in the North Sea. It is not clear how representative this analysis is of the Spanish and Portuguese fleets operating in area 8 and 9.
STECF	There is evidence of increased costs associated with handling and storing

Comments from PLEN 19-01	unwanted catches in the relevant fisheries. These costs result from an increase in handling and sorting times on board at 30-60% depending on vessel size. These are not specific to horse mackerel and mackerel. Improving selectivity in the relevant fisheries should be the priority as this will reduce the costs for handling unwanted catches. STECF also notes an additional report has been provided which details planned work by Spain to assess the costs for handling unwanted catches on board vessels and ashore. Mackerel and horse mackerel caught with trawls is included in this analysis. This report gives a detailed overview of the relevant Spanish fleets and the types of economic data that will be collected. It aims to provide a comparison of the costs for handling unwanted catches with and without a *de minimis* exemption in place. This information may provide additional evidence to support these exemptions but only for the Spanish fleets.
Recommendation	Megrim, plaice, anglerfish, whiting and pollack caught with bottom trawls, seines and beam trawls in ICES subareas 8 and 9
Main findings from EWG 19-08	Existing temporary exemptions granted until the end of 2019. Separate exemptions are proposed for megrim, plaice, anglerfish, whiting and pollack. The exemption for whiting only applies to subarea 8. The descriptions of the fleets and fisheries and justification for the exemptions is largely the same as for horse mackerel and mackerel. The catch data presented is incomplete and has been obtained from the FDI database but refers to data prior to 2017. This may not be reflective of the current state of the fisheries. Significant differences in discard rates between the different species covered under the exemption are observed. These vary from 1% for pollack to 58% for whiting. For megrim and whiting the unwanted catches will far exceed the estimated de minimis volumes. Therefore, considerable quantities of unwanted catches will still have to be landed. There is no indication in the supporting documents to suggest further work to test selective gears to reduce these unwanted catches are planned. The same review of the French selectivity trials provided for mackerel and horse mackerel is included in the supporting information for each of these species. The review is generic and does not provide any specific information for the species covered under these exemptions. Therefore, it does not demonstrate that improvements in selectivity in these fisheries and for these species are very difficult to achieve. The same economic analysis of disproportionate costs is also presented in support of these exemptions. As for horse mackerel and mackerel, the analysis does not provide specific information relating to these species and the concerns relating to representativeness to these fleets as for horse mackerel and mackerel similarly apply.

STECF comments from PLEN 19-01	There is evidence of increased costs associated with handling and storing unwanted catches in the relevant fisheries. These costs result from an increase in handling and sorting times on board at 30-60% depending on vessel size. These are not specific to the stocks covered under these exemptions. Improving selectivity in the relevant fisheries should be the priority as this will reduce the costs for handling unwanted catches. Anglerfish and megrim caught with trawls are included in the proposed Spanish study. This information may provide additional evidence to support the exemptions for anglerfish and megrim but only for the Spanish fleets.
Recommendation	Anchovy and boarfish caught with bottom trawls, seines and beam trawls in ICES subareas 8 and 9
Main findings from EWG 19-08	Existing temporary exemptions granted until the end of 2019. Separate exemptions are proposed for anchovy and boarfish. A limited description is provided of the Portuguese fleets and fisheries. No supporting information is provided, so no assessment can be made as to whether selectivity is difficult to improve in these fisheries or whether the costs of handling unwanted catches of boarfish and anchovy are disproportionate. No unwanted catches of these species are reported in the information supplied, and it is therefore unclear why the exemptions are required. It is suggested that a first step would be to establish the level of unwanted catch and then assess whether a de minimis exemption is needed.
Main comments of STECF Plen-02	STECF agrees with the assessment of EWG 19-08.
Recommendation	Red Sea Bream caught with bottom trawls, seines and beam trawls in ICES Division 9a
Main findings of EWG 19-08	Existing temporary exemptions granted until the end of 2019. Separate exemptions are proposed for Red sea bream and sole. A limited description is provided of the Portuguese fleets and fisheries. No supporting information is provided, so no assessment can be made as to whether selectivity is difficult to improve in these fisheries or whether the costs of handling unwanted catches of Red Sea Bream and sole are disproportionate. No level of unwanted catch is reported, and it is therefore unclear why the exemptions are required. Increased monitoring of the fisheries would increase the understanding of the level of unwanted catches and help to assess whether these exemptions are needed in the future.
Comments of STECF PLEN 19-02	STECF agrees with the assessment of EWG 19-08.
Recommendation	Horse mackerel and mackerel caught with gillnets in ICES subareas 8, 9, 10 & CECAF 34.1.1, 34.1.2, 34.2.0

Main findings of EWG 19-08	Existing temporary exemptions granted until the end of 2019. Separate exemptions are proposed for horse mackerel and mackerel but the description of the fleets and fisheries and supporting information is the same for all the exemptions. Information on the fleets and fisheries is provided for France and Portugal, but only limited information is provided for Spain. Information on the Spanish fisheries and fleets is needed to fully understand the extent to which the exemption would apply. The catch information presented is based on limited observations prior to 2017 but there is no indication of whether catch patterns have changed. According to the requests, the fleets involved are largely small-scale inshore vessels that are particularly vulnerable to the risk of losses of commercial catch that an improvement in selectivity would cause. The supporting information also provides a justification on the grounds of disproportionate costs. The arguments regarding difficulties in improving selectivity are credible given the nature of the fisheries. However, the qualitative nature of the information presented means evaluation is difficult. No attempt has been made to quantify the potential scale of these losses in the JR and it is not clear how this would vary across the different gillnet fisheries involved. The levels of *de minimis* volumes are quite low for both species. However, according to the supporting information many vessels (~3,000) would potentially avail of this exemption. Monitoring of uptake of small volumes of *de minimis* across many vessels would be challenging in practice.
Comments of STECF PLEN 19-02	STECF notes that these exemptions are only supported with qualitative arguments on disproportionate costs and selectivity with no attempt to differentiate between species and fisheries. Therefore, the arguments for these *de minimis* exemptions are not well founded, accepting though that improvements in selectivity are difficult to achieve in gillnet fisheries. Assessment of the disproportionate costs associated with Spanish gillnet fisheries are included under the new Spanish study highlighted previously. Mackerel and horse mackerel are specifically referred to in the description of this study.
Recommendation	Megrim, plaice, anglerfish, whiting and pollack caught with gillnets in ICES subareas 8 & 9
Main findings of EWG 19-08	Existing temporary exemptions granted until the end of 2019. Separate exemptions are proposed for megrim, plaice, anglerfish, whiting and pollack. The exemption for whiting only applies in subarea 8. The description of the fleets and fisheries and supporting information is the same for all the exemptions. The fleets and fisheries involved are the same as for the mackerel and horse mackerel exemptions and the justification to support the exemptions is also broadly similar. New supporting information has been provided. An overview of the fleets and fisheries is provided for the Member States involved, which are the same as those for the mackerel and horse mackerel *de minimis* exemptions. The justification used based on selectivity being difficult to achieve is the same as provided for the mackerel and horse mackerel exemptions. There is no reference to disproportionate costs. As with the mackerel and horse mackerel exemptions, the arguments regarding difficulties in improving selectivity are credible given the nature of

	the fisheries. However, the qualitative nature of the information presented means it is difficult to evaluate whether this assertion is correct or not for the different species involved. The potential scale of any marketable losses resulting from an increase in selectivity in these fisheries is not quantified in the JR and it is not clear how this would vary across the different gillnet fisheries involved. The JR does not provide any information as to why different levels of de minimis are required. There does not appear to be any relationship between the level requested and the levels of unwanted catch. As for mackerel and horse mackerel, monitoring discards of these species covered under this exemption will be challenging.
Comments of STECF PLEN 19-02	STECF notes that these exemptions are only supported with qualitative arguments on selectivity with no attempt to differentiate between species and fisheries. Therefore, the arguments for these *de minimis* exemptions are not well founded, accepting though that improvements in selectivity are difficult to achieve in gillnet fisheries.

High Survivability	
Recommendation	Red seabream (Blackspot) caught with hooks and lines in ICES subareas 8 and 9a
Main Findings of EWG 19-08	Extension of an existing exemption (to include hook-and-line fisheries in ICES areas 8 and 9a). A full report of a study was provided on the survival of discarded Blackspot seabream in the demersal longline fisheries in Portuguese Mainland waters (ICES sub-Division 9.a). 86% of 59 individuals survived a ≤36h monitoring period. The method was reviewed and identified limitations, particularly in the short monitoring period, which is likely to have overestimated survival. Further studies are needed to generate robust survival estimates. Fishery information was provided describing Portuguese mainland water vessels belonging to a polyvalent and a trawl fleet catching Blackspot seabream either as a target or valuable by-catch species. Landings are given for the Portuguese and Spanish fleets. The Spanish and Portuguese fleets use comparable fishing methods, including hook size, line design and soak time (~6 hours). The discard rate was given as negligible.
Comments STECF PLEN 19-02	STECF agree with the EWG 19-08 assessment
Recommendation	Skates and rays (*Rajiformes*) caught with all gears in ICES subareas 8 and 9 (for cuckoo ray see below)
Main Findings of EWG 19-08	Exemption granted for three years (2019-2021); the delegated act stipulates a roadmap be developed and applied to increase survivability. New vitality evidence was provided for four ray species caught by trammel net and trawl fleet. The sampling covered all year and main fishing areas

	around Portugal. Most rays were alive at the point of discarding, the percentage of rays assessed in Excellent and Good condition was 52-100% for *R. clavata,* 67-92% for *R. brachyura*; 67-100% for *R. montagui*; and 79% for *R. undulata*. Vitality data do not constitute discard survival estimates but indicate survival potential. Factors shown to affect vitality were fish length, mesh size and soak time. Vitality evidence was also presented from two scientific trawls surveys. Most of rays were found in Excellent or Good conditions (60-72%), however, these data are not representative of commercial fishing conditions due to the short tow duration of 30 mins. The JR described an acoustic tagging experiment on *R. undulata*. In this study, 144 specimens were tagged, and after 14 days, the survival rate was reported at 52%. The quality of this estimate could not be established without the full report. The exemption applies to all fisheries in areas 8 and 9. Information was provided for the Portuguese fleet including gear type, number of vessels and estimated landings and discards (except for net fisheries). The new vitality data appear to adequately cover the fishing activity, characteristics and conditions of the Portuguese trammel net and trawl fisheries. The supporting information identifies significant data gaps still need to be addressed. While new vitality information adds to the understanding of survival of rays, further discard survival studies are still needed. There was no explicit reporting against the road map, which is recommended in the future. Future submissions should report against the three main tasks in the road map.
Comments STECF PLEN 19-02	STECF agree with the EWG 19-08 assessment and note that the wide-ranging exemption still has many evidence gaps. The latest evidence indicates survival varies across species and fisheries, and larger individuals and species caught by inshore and static gears have the highest rates of survival. STECF note that the outputs of the ICES Workshop on incorporating discards into the assessments and advice of elasmobranch stocks (WKSHARK5) will provide useful context for this exemption.
Recommendation	Skates and rays (*Rajiformes*) caught with all gears in ICES subareas 8 and 9 (for cuckoo ray only)
Main Findings of EWG 19-08	Exemption was granted for one year (2019) for cuckoo ray in ICES subareas 8 and 9. This is a request for.an extension. New vitality evidence was provided for cuckoo ray caught by trammel net and trawl fleet. The sampling covered all year and main fishing areas around Portugal. 58% of specimens were assessed to be in Excellent condition, 21% in Good condition and 21% in Poor/Dead condition.

	Vitality evidence was also presented from two scientific trawl surveys. For the 5 specimens observed, most were found dead (n=4; 20% survival), however, these data are not representative of commercial fishing conditions due to the short tow duration of 30 mins, which is likely to have resulted in more rays in better health condition. New directly observed discard survival estimated of cuckoo ray were also provided. A total of 503 cuckoo rays caught with otter bottom trawl in ICES 9a were assessed for vitality, and 141 held for survival monitoring. 66.8% of cuckoo rays were alive at the point of release, 7.6% in excellent condition, 24% in good condition, 35% in poor condition and 33% were dead. All cuckoo rays died within 8 days of monitoring (survival was 0%) regardless of initial vitality. No controls were used to determine experimental induced mortality. This study indicates that the survival rate of discarded cuckoo ray could be zero in some fisheries. Information was provided on the Portuguese and Spanish fleets. Further details are needed on all fishery-gear-area combinations to which the exemption applies. Further data and knowledge of discard survival and discard rates for different ray and skate species, including cuckoo ray, are anticipated in outputs from a road map. Initiatives are planned to encourage fishermen to good use best practices in handling and release of discarded rays.
Comments STECF PLEN 19-02	STECF agree with the EWG 19-08 assessment and observe that evidence from all regions indicates that cuckoo rays display lower survival than larger ray species and there could be zero survival in some fisheries. Further observations from survival experiments are needed to provide reliable estimates of survival rates for cuckoo ray before any definitive judgment can be made. New and ongoing studies (e.g. SUMARIS project), completed in the next 1-2 years across relevant fisheries, and following the ICES guidance, will generate necessary evidence on discard survival levels.

Table 5.5.5. Main findings of the STECF EWG 18-06 and summary of additional information received relating to exemptions presented: Mediterranean.

De minimis	
Recommendation	Total catches of demersal finfish[2] under the Landing Obligation excluding hake, mullets and pelagic species caught with bottom trawls in all areas
Main findings of EWG 19-08	Extension of the existing temporary exemption beyond 2019. Biological and economic data has been submitted by Cyprus, Greece, Malta, Italy, France and Spain. Fleet descriptions are provided for all Member States, but not all present discard proportion estimates or discard rates for the relevant fisheries. Quantified data on catches below MCRS is lacking. Discard estimates vary markedly by Member States and species. For some species the total volume of discards is low but the proportions of the catch that is discarded is high. Justification is based on selectivity can be improved but an optimal solution has still to be developed and further research is needed to develop appropriate gear modifications or other avoidance measures. Gears tested indicate losses in marketable catches of around. The *de minimis* is needed as a temporary solution to offset some of the unwanted catches while research, testing selective gears is carried out. The JR indicates research that has been carried out and shows improvements are possible but result in losses of marketable catches. This has made introducing such gears as difficult. Further work is planned to test additional gear modifications. A simple analysis of the costs to convert trawl gear to gillnets is also provided, which shows significant costs and associated losses of marketable catch. The arguments presented regarding improvements in selectivity being difficult to achieve are reasonable but are rather generic and not specific to any fishery. It is not possible to assess the impacts on fisheries within the

2 Demersal finfish refers to European seabass (*Dicentrarchus labrax*), annular seabream (*Diplodus annularis*), sharpsnout seabream (*Diplodus puntazzo*), white seabream (*Diplodus sargus*), two-banded seabream (*Diplodus vulgaris*), groupers (*Epinephelus* spp.), stripped seabream (*Lithognathus mormyrus*), Spanish seabream (*Pagellus acarne*), red seabream (*Pagellus bogaraveo*), common pandora (*Pagellus erythrinus*), common seabream (*Pagrus pagrus*), wreckfish (*Polyprion americanus*), gilthead seabream (*Sparus aurata*) and deep-water rose shrimp (*Parapenaeus longirostris*)

	different areas of the Mediterranean. The justification is also supported by an analysis of disproportionate costs. This is based on economic analyses carried out under several projects (e.g. H2020 MINOUW and DISCARDLESS) which show costs of landing unwanted catches are expected to exceed the returns from sale of raw materials for silage or fishmeal. Additional fixed costs for the maintenance of equipment and facilities are also reported. Estimates of the potential increase in costs of handling unwanted catches ashore are also provided although these are generic, covering trawl, gillnets and hook and line fisheries across the three regions within the Mediterranean. A similar analysis has been used previously to justify *de minimis* exemptions in the Mediterranean. The planned introduction of Marine Protected Areas and Fish Recovery Areas as a measure to avoid unwanted catches of undersized fish is a positive move. Using the *de minimis* as a stop-gap while the network of MPAs and FRAs is being introduced seems reasonable provided the network of closed areas are introduced quickly.
Comments of STECF PLEN 19-02	STECF agrees with the observations of EWG 19-08. STECF notes that additional information on the fisheries covered by this exemption was supplied but does not alter the substance of the assessment of EWG 19-08. STECF notes there is evidence of increased costs associated with handling and storing unwanted catches in the relevant fisheries. These costs result from an increase in handling and sorting times on board at 30-40% depending on vessel size. STECF also notes the evidence put forward regarding the cost of handling unwanted catches ashore, which is difficult in the Mediterranean. Due to the small quantities and a very large number of landing places, even in the case that landed unwanted catches could be sold, the evidence indicates their costs for collection would be disproportional to the value. Accepting that the supporting evidence is credible, STECF stresses the need to put in place the MPAs and FRAs as quickly as possible and to continue efforts to improve selectivity in trawl fisheries.
Recommendation	Total catches of demersal finfish1 under the Landing Obligation excluding hake, mullets and pelagic species caught with gillnets and trammel nets in all areas
Main findings of EWG 19-08	Extension of the existing temporary exemption beyond 2019.

	Biological and economic data has been submitted by Cyprus, Greece, Malta and Italy, France and Spain. Fleet descriptions are provided for all Member States, but not all present discard proportion estimates or discard rates for the relevant fisheries. Quantified data on catches below MCRS is missing. Discard estimates vary markedly by Member States and species. Justification is based on selectivity can be improved but an optimal solution has still to be developed and further research is needed to develop appropriate gear modifications or other avoidance measures. The JR indicates research that has been carried out and improvements in selectivity can be achieved using modified gillnets. Such modifications results in losses of marketable catches amounting to about 15%. Further work is planned considering ways to increase the selectivity of gillnets. The justification is also supported by the same analysis of disproportionate costs of handling unwanted catches on board and ashore. As with the previous exemption, while estimates of the potential increase in costs are provided, the arguments are generic, and no attempt has been made to identify fisheries which are particularly impacted or species that are particularly problematic. Additionally, the introduction of Marine Protected Areas and Fish Recovery Areas as with the previous exemption seems a positive step.
Comments of STECF PLEN 19-02	STECF agrees with the observations of EWG 19-08. STECF notes that additional information on the fisheries covered by this exemption was supplied but does not alter the substance of the assessment of EWG 19-08. STECF notes there is evidence of increased costs associated with handling and storing unwanted catches in the relevant fisheries. These costs result from an increase in handling and sorting times on board at 30-40% depending on vessel size. STECF also notes the evidence put forward regarding the cost of handling unwanted catches ashore, which is difficult in the Mediterranean. Due to the small quantities and a very large number of landing places, even in the case that landed unwanted catches could be sold, the evidence indicates their costs for collection would be disproportional to the value. Accepting that the supporting evidence is credible, STECF stresses the need to put in place the MPAs and FRAs as quickly as possible and to continue to investigate gear modifications to reduce the level of unwanted catches in these fisheries.
Recommendation	Total catches of demersal finfish[1] under the Landing Obligation excluding hake, mullets and pelagic species caught with hooks and lines in all areas

Main findings of EWG 19-08	Extension of the existing temporary exemption beyond 2019. Biological and economic data has been submitted by Cyprus and Greece. Other Member States have not provided such data. Fleet descriptions are provided for all Member States, but not all present discard proportion estimates or discard rates for the relevant fisheries. Quantified data on catches below MCRS is missing. Discard estimates vary by MS and species, but mostly are less than 1%. The highest discard rates are around 10% but generally levels of unwanted catches are low in all cases where data is presented. Justification is based principally based on the analysis of disproportionate costs presented for trawls and gillnets. There is also reference to selectivity studies carried out by Spain showing that these gears are size selective, and selectivity can be influenced by hook size. No estimates of impacts on catch volume or economic performance of the gears is provided. As with the previous exemption, while estimates of the potential increase in costs are provided, the arguments are generic, and no attempt has been made to identify fisheries which are particularly impacted or species that are particularly problematic. The introduction of Marine Protected Areas and Fish Recovery Areas as with the previous exemption is also included and is considered positive.
Comments of STECF PLEN 19-02	STECF agrees with the observations of EWG 19-08. STECF notes that additional information on the fisheries covered by this exemption was supplied but does not alter the substance of the assessment of EWG 19-08. STECF notes there is evidence of increased costs associated with handling and storing unwanted catches in the relevant fisheries. These costs result from an increase in handling and sorting times on board at 30-40% depending on vessel size. However, STECF notes these costs may be less in hook and line fisheries given the level of unwanted catches in such fisheries are likely to be small. STECF notes the evidence put forward regarding the cost of handling unwanted catches ashore, which is difficult in the Mediterranean. Due to the small quantities and a very large number of landing places, even in the case that landed unwanted catches could be sold costs, the evidence indicates their costs for collection would be disproportional to the value. Accepting that the supporting evidence is credible, STECF stresses the need to put in place the MPAs and FRAs as quickly as possible. STECF notes improvements in selectivity are unlikely in hook and line fisheries.

Recommendation	Total annual bycatches of Anchovy, Sardine, Mackerel and Horse mackerel caught by bottom trawls in all areas
Main findings of EWG 19-08	Extension of the existing temporary exemption beyond 20192. Biological and economic data has been submitted by Cyprus and Greece. Other Member States have not provided such data. Fleet descriptions are provided for all Member States, but not all present discard proportion estimates or discard rates for the relevant fisheries. Quantified data on catches below MCRS is missing. Discard estimates vary by MS and species. Discard rates are generally higher according to the information presented and mostly above 5%. Rates of up to 30% and 50% for horse mackerel in Greece and Italy are reported This indicates the level of *de minimis* will not cover the levels of unwanted catches and further measures will be required to reduce such catches. The justification for the exemption is based on the analysis of disproportionate costs presented for trawls, gillnets and hooks and lines so the observations are the same.
Comments of STECF PLEN 19-02	STECF agrees with the observations of EWG 19-08. STECF notes that additional information on the fisheries covered by this exemption was supplied but does not alter the substance of the assessment of EWG 19-08. STECF notes there is evidence of increased costs associated with handling and storing unwanted catches in the relevant fisheries. These costs result from an increase in handling and sorting times on board at 30-40% depending on vessel size. STECF notes the evidence put forward regarding the cost of handling unwanted catches ashore, which is difficult in the Mediterranean. Due to the small quantities and a very large number of landing places, even in the case that landed unwanted catches could be sold, the evidence indicates their costs for collection would be disproportional to the value. Accepting that the supporting evidence is credible, STECF stresses the need to put in place the MPAs and FRAs as quickly as possible. STECF notes improvements in selectivity should also be investigated.
High survivability	
	Red Sea Bream (Blackspot) – hooks and lines, all areas
Main Findings EWG 19-08	This is a proposed extension of an existing exemption. Supporting evidence is based on a review with multiple references but no original reports, therefore the quality of the information could not be fully assessed. One reference was submitted previously, EWG 18-06 and PLEN 18-02 concluded it represented sound scientific evidence for the discard

	survival of red sea bream in the "voracera" fishery. Based on fish recovering their basal homeostatic levels, a survival rate of 91% was estimated. Data is provided for Italian, Spanish, Mediterranean, Greece and Slovenia hook-and-line fisheries. While there is little information provided, the operational characteristics of the defined fishery are likely to be different from the "voracera" fishery, and so the survival evidence referred to may not be representative. Further survival assessments would determine whether survival rates differ across the defined gear types, seasons and geographic areas.
Comments STECF PLEN 19-02	STECF agrees with the EWG 19-08 assessment.
Recommendation	Lobster & Crawfish – gillnets, pots and traps, all areas
Main Findings EWG 19-08	This is a proposed extension of an existing exemption beyond 2019. Supporting evidence is based on a review with multiple references but no original reports, therefore the quality of the information could not be fully assessed. One discard survival estimate is mentioned, from a study on crawfish in a trammel net fishery in the Balearic Islands indicating a survival rate of 54%–76% based on 16 individuals. In the absence of the full report, the quality of this estimate could not be determined. The representativeness of the estimate to the defined fleet could not be established. Survivability for these species is expected to be high in pots and traps (as in the northern Atlantic, where exemption from the landing obligation is not required). Additional studies would be preferable for nets as there remains uncertainty on discard survival. Limited catch data is provided for crawfish catches by Italian vessels. It is not clear to which fisheries the exemption applies other than the Italian fisheries. Discard rates were not provided.
Comments STECF PLEN 19-02	STECF 19-02 identified the full report of the survival study submitted in the JR. The study was assessed to have followed a robust method. From three vessels, representative of the small-scale Majorcan lobster fishing fleet, it was observed that 36% of 209 crawfish were dead at the point of release (crawfish; *Palinurus elephas;* Catanese et al., 2018). In a captive observation survival assessment, one out of 16 crawfish died, the overall survival rate presented was 64%. STECF note that if 64% are alive at the point of discarding, and 94% of those survive in the longer term, then the overall survival rate is 60%, but this remains within the presented range of 57-76%. STECF agrees with the EWG 19-08 assessment. Additional studies in a representative range of static net fisheries would improve certainty on discard survival (only one estimate, based on 16 individuals, from one fishery).
Recommendation	Common sole – Rapido, Adriatic and PESCAmed
Main Findings EWG 19-08	This is a proposed extension of an existing temporary exemption beyond 2019.

	An abstract from a study (to be reported in full later in 2019) is provided. The information provided indicates a survival of 21-51% (mean 36%). The study noted that depth and catch weight affected survival. A full report on the study would enable an evaluation of the scientific robustness of the survival estimate. A fishery description is provided
Comments STECF PLEN 19-02	A machine translated full report (from Italian to English) on the study was made available and reviewed by STECF 19-02. From catches taken under normal commercial practice, immediate mortality was reported at 66%. The sole alive at the point of release (34%) were mostly in poor condition. The survival of those individuals alive at point of release, using the captive observation method, was estimated at 21-51%. Mortality rates appear to have slowed by the end of the monitoring period of 120 hours, but STECF note that this time is shorter than comparable studies and may overestimate survival. This survival estimate is also based on a sample of sole that has a higher proportion of healthy fish than was seen in the commercial catch. STECF note that when accounting for individuals that were dead at the point of release, the overall discard survival rate is less than 7-17%.
Recommendation	*Nephrops* – Pots and Traps, Adriatic and PESCAMed
Main Findings EWG 19-08	Extension of the existing temporary exemption beyond 2019. No new survival evidence is provided. Survival rates of *Nephrops* caught by pots are high (> 80%) in the NWW and North Sea. It is not possible to make direct inference as to the applicability of these survival levels to the Mediterranean, particularly as it is warmer than the Atlantic regions. Some information on the Italian fleet was provided. The reported catches are very small <1 tonne per year. It is stated that *Nephrops* landings are sold alive. There is no information on levels of unwanted catch. Additional data could be provided indicating the scale of the fishery, discards and details of the live market.
Comments STECF PLEN 19-02	STECF agrees with the EWG 19-08 assessment.

STECF conclusions

STECF endorses the findings presented in the Report of the EWG 19-08 and makes the following conclusions:

- STECF concludes that the role of EWG 19-08 and any future STECF EWGs set up to evaluate joint recommendations remains to evaluate the scientific rigor and robustness of the underpinning information supplied by Member States to support the main elements of joint recommendations. STECF cannot adjudicate on whether exemptions should be accepted or not.
- STECF re-iterates that it is difficult to provide conclusive advice on whether the information presented is sufficient to accept or reject any individual application

based on the exemption provisions. The subjective nature of the conditionalities – "high survival", "very difficult to achieve" or "disproportionate costs" means that there is a large element of judgement required in deciding on whether to permit or reject a proposal that cannot be based solely on scientific option of the evidence presented.

- EWGs 19-08 and 18-06 noted that the quality of submissions to support the exemptions has generally improved since the first JR's were submitted in 2014. However, there were cases where the quality of submission is poor, making it very difficult to conduct an analysis at all. STECF continues to encourage Member State Regional Groups to use the templates developed by STECF in 2016 to supply fisheries and fleet descriptors and in case of *de minimis* exemptions provide economic data to support such proposals.
- STECF concludes that the number of *de minimis* exemptions continues to increase, and in particular those based on the conditionality of disproportionate costs. STECF observes that the same generic information on the costs of handling unwanted catches is used to support multiple exemptions making it is difficult to make an evaluation. Moreover, STECF concludes that simply stating that landing unwanted catches has an associated cost, is not sufficient to demonstrate that those costs are disproportionate. STECF concludes that the case for *de minimis* should not be improved by having high levels of unwanted catches, and therefore high handling costs, where the incentive to improve selectivity should be maintained. Further STECF stresses that improving selectivity or avoidance methods to reduce the catches of unwanted catches should be the priority.
- STECF suggests that the Commission review the interpretation of the conditionality relating to disproportionate costs included in Article 15. STECF consider this may form a better basis for establishing exemptions based on disproportionate costs, while also potentially being easier to evaluate by STECF.
- STECF reiterates that to fish at F_{MSY}, *de minimis* discard quantities need to be deducted from the agreed catch opportunity (TAC) arising from F_{MSY} based advice. If *de minimis* were operated as an addition to the F_{MSY}-advised catch, then mortality rates would exceed the F_{MSY} target. Consequently, fish being discarded under d*e minimis* provision require careful monitoring, and the need for enhanced monitoring for *de minimis* cases is imperative to avoid overfishing by exceeding the *de minimis* amounts; this risk is highest where the estimate of unwanted catch is much higher than the *de minimis* amount. STECF concludes that *de minimis* exemptions pose a higher risk to overfishing than survival exemptions when deductions from the TAC are based on the estimated level of exempted dead discards.
- STECF re-emphasises the need to consider survivability in the context of the discard rate for the fishery seeking an exemption (STECF 17-02), highlighting that medium survival rates in high discarding fisheries still lead to high discard mortality rates. STECF notes that in 2018, deductions from TACs were made, whereby exempted dead discards were deducted from the TAC to reduce the risk of overfishing. STECF has also previously concluded (STECF 19-02) that unless surviving discards are accounted for in stock assessments when dead discards are accounted for in TAC setting, where survivability exemptions are in place, the actual fishing mortality will not match the agreed catch level. This should be discussed in the assessment forums for stocks with survival exemptions.
- STECF re-iterates that assessing what constitutes high survivability is complicated by the limited evidence and the variability in the available

estimates. Many factors can affect survival, but these are not well understood. STECF states that for the skate and ray survival exemptions, the uncertainty in extrapolating survival evidence between species, fisheries and seasons is particularly high. STECF concludes that the latest evidence suggest that skate and ray survival rates can be highly variable between species and fisheries. Studies indicate that smaller individuals and smaller species have lower survival, inshore static nets are associated with higher survival and shorter tow durations are associated with higher survival. It is indicated that for some fisheries and species combinations the survival may be close to zero.

- STECF concludes that, while providing useful information on the survival potential of discards, vitality data in isolation, does not constitute evidence of discard survival. The relationship between health condition and survival probability can be established by collecting these data simultaneously. However, beyond the fisheries from which these relationships have been generated, there is currently insufficient evidence to use vitality as a proxy to estimate discard survival with meaningful levels of confidence.
- STECF concludes where survivability exemptions are linked to a roadmap setting out work planned to develop survival estimates and accompanying measures to increase survivability, the JRs should report against the different tasks set out in the roadmap to facilitate future evaluations.
- STECF concludes that several existing exemptions for plaice and sole are linked to conditions such as restricting the exemption to fishing to certain depths, tow durations and to specific groups of vessels. While these factors undoubtedly influence survival, STECF notes there is no evidence of them being applied by Member States. In practice controlling and enforcing such measures to any degree would be challenging.
- 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 notes that the JRs received contained few measures to increase selectivity. STECF recognize that modifying selectivity can result in some reduction in revenue, but these should be viewed in the broader context of medium-term gains in stocks and the risk of choke events and the utilization of quota to land low value catches.
- In accordance with STECF 19-01, the role of exemptions should be made explicit within the bycatch reduction plans required for all stocks with zero catch advice.
- STECF observe that in many cases the supporting information relating to the fleets and fisheries is derived from the STECF FDI database, which has not been updated since 2016, and as such may not represent the current situation. STECF concludes that future exemptions should be supported with current data.
- STECF observes that some of the existing exemptions were included under the discard plans for 2015-2017. STECF 18-02 also raised the question of whether the increasing number of exemptions is diminishing the overall objectives of the Landing Obligation.
- STECF observes that there has been little attempt to review these exemptions as to whether the fisheries have changed in terms of catch patterns, gears used, vessels involved and in the case of *de minimis* the uptake of the volume of catch allowed to be discarded. STECF conclude it would be timely for the Member States Groups and the Commission to review these exemptions and determine whether they need to be amended or are still required.

References

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Catchpole, T., Randall, P., Forster, R., Santos, A. R., Armstrong, F., Bendall, V., and Maxwell, D. (2015). Estimating the discard survival rates of selected commercial fish species (plaice- Pleuronectes platessa) in four English fisheries. Cefas report.

5.6 EWG 19-09 Evaluation of the 2018 Annual Reports for data collection and Data Transmission Failures of 2018 data calls

Background provided by the Commission

Article 11 of the Data Collection Framework (DCF) Regulation (EU) 1004/2017 (recast) prescribes that Member States shall submit to the Commission an annual report (AR) on the implementation of their national work plans (NWPs) and that STECF shall evaluate: (a) the execution of the NWPs; and (b) the quality of the data collected by the Member States. Therefore, the role of EWG 19-09 is: 1) to evaluate the Annual Reports submitted by Member States by 31st of May 2019, describing national data collection in 2018; and 2) to evaluate the apparent data transmission failures as reported by end users for the data obligations/ data calls launched during 2018, for the data collected by Member States until 2017.

A pre-screening exercise will take place to facilitate the work of the EWG. In that respect, the EWG evaluation should be developed as a second level assessment, focusing on topics where the pre-screeners have raised a problem/or where the pre-screeners final assessment of a particular point has revealed to be contentious. This type of assessment may take the form of specific questions addressed to the EWG, based on the outcomes of the pre-screening exercise.

The Commission may address additional requests to the EWG in relation to specific issues that arise from the pre-screening exercise.

The EWG should produce the following:

1. Overview of the assessment and overall evaluation of Annual Reports, including performance of Member States, major issues and recurring issues across many Member States

- Per Member State: (i) an evaluation of the annual report in the template provided by the Commission, which will already include the result of the pre-screening exercise (ii) Member State-specific issues relating to data collection.
- In their feedback, the EWG should identify the comments that require a reaction by the MS (resubmission of the Annual Report or clarification to the Commission) and those that are 'for information' only.

2. Overview of the assessment and overall evaluation of data transmission failures, including performance of Member States, main issues per end user and recurring issues across many Member States

- Per Member State: (i) an evaluation of the data transmission failures to end users, via the online IT platform, (ii) Member State-specific issues relating to data transmission.
- In their feedback, the EWG should identify the comments that require a reaction by the MS and those that are 'for information' only.

All produced files will be communicated to Member States in order to help them improve data collection, reporting and transmission for next year. The EWG should take into

consideration the relevant files from previous STECF EWGs (STECF EWG 15-15; STECF EWG 16-08, STECF EWG 17-10; STECF EWG 18-10; STECF EWG 18-18) and particular attention should be paid to the Evaluation guidelines and guidance for the submission of documents produced by EWG 17-17, EWG 17-13, EWG 18-10 and of the 7-8/02/2018 technical meeting on the AR template.

Request to the STECF

STECF is requested to review the report of the STECF Expert Working Group meeting (specifically, an overview of the assessment and overall evaluation of Annual Reports and Data Transmission failures, including a general outlook of MS' performance, major issues and recurring issues across many Member States), evaluate the findings and make any appropriate comments and recommendations. STECF is also requested to suggest any improvement action if needed.

Summary of the information provided to STECF

EWG 19-09 met in Gothenburg the 24-28 June 2019. Since the meeting took place the week before STECF PLEN 19-02, the final EWG report was not yet available to PLEN 19-02. The following STECF comments and suggestions are consequently based on discussions among STECF members based on: (1) a presentation of outcomes from the EWG 19-09 meeting made by the chairperson, (2) an preliminary draft of the EWG 19-09 report, (3) a proposal for the revised Annual Reports (AR) evaluation template with regional separation, (4) an Excel file with data transmission (DT) issues and access to the online DTMT including the outcome of the evaluations of DT issues done by EWG 19-09.

STECF comments

Evaluation of the 2018 AR reports

STECF 19-02 observes that the evaluation of the 2018 AR was based on the AR evaluation template updated by EWG 18-18, and the Guidance for the Submission and Evaluation of ARs (Commission Implementing Decision 2018/1283)3. As was the case in previous years, pre-screening of ARs prior to the beginning of the meeting was an important prerequisite for an efficient evaluation during the EWG. This year a total of 15 experts pre-screened all sections of the ARs. This was facilitated by the submission of complete ARs by all Member States (MS) within the deadline.

STECF notes that pre-screeners and experts at EWG 19-09 consider that some changes in the AR evaluation template and in the Guidance for the Submission and Evaluation of ARs are necessary in order to ensure that the evaluation is carried out more efficiently. The proposed changes are so far only preliminary, and STECF observes that further work is required to finalise the EWG proposals. STECF further notes that the need for further assessment criteria to ensure a more consistent and less subjective approach to

3 Commission Implementing Decision (EU) 2018/1283 of 24 August 2018 laying down the rules on the format and timetables for the submission of annual data collection reports in the fisheries and aquaculture sectors (notified under document C(2018) 5270)

evaluating ARs, originally flagged by EWG 18-10 and PLEN 18-02, has not yet been addressed. PLEN 19-02 considers that in addition to the existing AR evaluation criteria (Annex 2 of EWG 18-10), the preparation of a separate stand-alone document containing a comprehensive list of assessment rules and criteria should be compiled. The required revision of the AR evaluation template and the guidance for the evaluation of ARs should preferably be addressed by an ad-hoc contract in preparation for next year's EWG on the assessment of 2019 ARs.

MS are required to report relevant sections of their AR and Work Plan (WP) by regions. The regional dimension was included in the AR evaluation template until 2017. The meeting TORs requested EWG 19-09 to revise the evaluation template and reintroduce the regional separation per section, and to work on the basis of this finalised AR evaluation template. STECF observes that although EWG 19-09 re-introduced this regional dimension in the AR evaluation template, the EWG was not able to fully address TOR1; since an overall evaluation of the execution of data collection at regional level was not performed. This was because the pre-screeners had not been tasked to evaluate the ARs by regions. STECF considers that in principle it is useful to consider the regional dimension when evaluating ARs to help ensure an overview of the data collection across all the MSs with activity in a particular region. Such an overview is required so that any deficiencies in data collection in relation to end user needs at the regional level can be addressed in future WPs. STECF agrees with EWG 19-09 that next year's assessment of 2019 ARs should take into account the regional dimension. STECF however reiterates the advice of STECF PLEN 18-02 that the regional dimension and the related separation per region in the assessment should also be discussed by the Regional Coordination Groups (RCGs).

STECF observes that the evaluation of 2018 ARs showed that the overall scores of performance level by Member State were similar to previous years. A marked improvement in the AR of Romania meant that AR report sections receiving a poor compliance level score of <10% decreased from 6 for 2017 ARs to only 2 for 2018 ARs. The number of AR sections receiving a compliance level score of 10-50% remained the same as for 2017 ARs.

STECF observes that common recurring issues across several MSs included:

- The adopted national WPs in some cases include errors. Since Member states are not allowed to change the approved WP such errors cause issues when the execution of the WPs are assessed by EWGs. EWG 19-09 encountered cases where MSs were in compliance with their formally adopted WP, but not with the requirements of the DCF. STECF considers that these issues should be corrected by MSs when drafting WPs for the 2020-2021 period.

- In some MS ARs the text on the sampling intensity for biological variables (Box 1C) was not divided by region. This shortcoming should be addressed in order to facilitate the evaluation of the regional dimension in next year's assessment of the 2019 ARs.

- The rules on the format for the submission of national Work Plans (Decision 2016/1701) and Annual Reports (Decision 2018/1283) state that Table 5C (Geographical stratification for fleet economic data) of the EU-MAP should be followed for presenting biological sampling by regions. Regions defined in Table 5C, however, do not match those used for biological data. STECF suggests that the WP and AR guidelines be revised and refer to the geographical stratification in

Tables 1A-1C of the EU-MAP to provide the regions to be applied for biological sampling in the national WPs and ARs.

Data transmission issues

STECF observes that EWG 19-09 assessed data transmission issues using the modified Data Transmission Monitoring Tool (DTMT). In addition, the EWG used the DTMT guidance document recently drafted by STECF PLEN 19-01. STECF notes that overall the use of the DTMT and the DTMT guidance document worked well, facilitating a more consistent and objective evaluation of DT issues. STECF notes that a more effective assessment of DT issues was also facilitated by the fact that EWG 19-09 had fewer ToRs compared to previous EWGs.

In total 85 DT issues related to 10 data calls in 2018 and from 4 end-users were uploaded to the DTMT tool and evaluated by EWG 19-09. STECF observes that this was a significant decrease compared to the 292 issues from data calls in 2017. There were several reasons for this decrease: for 2018 there was no fish processing data call, the number of DT issues reported by the Mediterranean and Black Sea assessment group decreased substantially, and there were no DT issues reported from RCMs. Incidentally, STECF notes that in the DTMT guidance document end-users are encouraged to merge related issues into a single DT issue. The total number of DT issues is therefore not directly comparable between years.

As was the case in previous years the end-user which raised the most DT issues was the STECF EWG on the Mediterranean and Black Sea (40% of DT issues). STECF notes that one of the four grants funded under the EU Call for Proposals MARE/2016/22 "Strengthening regional cooperation in the area of fisheries data collection" is the STREAM project, which *inter alia* developed tools such a routines, R scripts, and methodological approaches to help improve data precision, completeness and accuracy in the Mediterranean and Black Sea. The project is close to completion and once available MS should be encouraged to use the tools developed to check data prior to submission in response to data calls. A reference to the existence of these tools could be added in the cover letter for the data call (cf ToR 6.6. of this PLEN 19-02 report).

STECF notes that EWG 19-09 suggested a number of improvements to the DTMT and to the DTMT guidance document in order to ensure assessments are consistent and not open to subjective interpretations. STECF agrees with EWG 19-09 that:

- The basis for the evaluation of the DT issues should be whether the MS has provided a response to the issue raised by the end-user that clearly justifies whether the requirements of the relevant data call were fulfilled or not.

- The response from the MS should be considered as *Unsatisfactory* in cases when the work of the end-user was affected, regardless of whether a MS states that data has been corrected and resubmitted after the deadline for the data call/the finalisation of the EWG.

- The introduction of a data call-specific ID would be useful to facilitate more effective DT issue assessments in future. This will also require a modification of the current version of the DTMT tool.

STECF notes that the DTMT guidance document asks end-users to group related DT issues, although sub-issues still need to be listed separately. This approach facilitates the

assessment of DT issues since related sub-issues can be assessed concurrently. However, it is currently not possible to give separate assessments for different sub-issues if the reason for each sub-issue differ, and as a result EWG 19-09 had to assign the category *Unknown* for several grouped DT issues. STECF agrees with EWG 19-09 that the current version of the DTMT tool should be modified slightly so that the results of DT assessments can in future be assigned at sub-issue level.

STECF considers that it is ultimately up to the Commission to assess whether a DT issue is a DT failure or not, and whether any follow up action is needed.

STECF considers that STECF EWGs working with data should continue working with the current version of the DTMT and the DTMT guidance document until the end of 2019. STECF PLEN 20-01 should be tasked with reviewing the changes to the DTMT guidance document suggested by EWG 19-09, as well as any additional changes suggested by other users of the tool. STECF PLEN 20-01 should finalise the DTMT guidance document and provide a list of required changes to the DTMT to the JRC.

Regional databases

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

STECF conclusions

STECF endorses the outcomes of EWG 19-09 presented by the chairperson during the STECF PLEN 19-02; the final EWG report was not yet available at the time of writing.

With regards to the AR evaluation STECF reiterates its conclusion from STECF PLEN 18-02 and PLEN 18-03 that there is a need to adopt a more consistent and less subjective approach to the evaluation of ARs. Besides the suggested changes to the AR evaluation template and to the Guidance for the Submission and Evaluation of ARs, a separate stand-alone document containing a list of assessment criteria should be prepared ahead of the evaluation of MS 2019 ARs in 2020. STECF considers that these tasks could best be addressed through ad hoc contracts prior to next year's assessment of 2019 ARs.

With regards to DT issues, STECF concludes that overall the use of the DTMT and the DTMT guidance document worked well, facilitating a more consistent and objective evaluation of DT issues. STECF reiterates its previous conclusion from STECF PLEN 18-02 and PLEN 18-03 that the most important element in evaluating MS performance is whether the data has been transmitted and is of sufficient use to end-users. STECF thus considers that reporting on DT issues should continue to be mentioned in the ToRs for all STECF EWGs making use of data.

STECF notes that EWG 19-09 is proposing some changes to both the DTMT and the DTMT guidance document. STECF nevertheless considers that STECF EWGs working with data should continue working with the current version of the DTMT and the DTMT guidance document until the end of 2019. STECF PLEN 20-01 should then be tasked with updating the DTMT guidance document with the changes suggested in 2019.

STECF notes that despite improvements to the current evaluation procedures, regional databases together with a web-based application would be a more efficient way to evaluate the execution of WPs by Member States and the DT issues. The use of regional databases could shift the focus from reporting and transmission aspects to the quality of the actual data collected by MS. STECF considers that the need for regional databases

should be considered by the upcoming STECF EWGs on the EU Multiannual Plan for data collection (EU-MAP) after 2020.

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

6.1. Consultation on the revision of the EU-MAP after 2021

Background provided by the Commission

European Member States have a long history of structuring and harmonizing their data collection in the fisheries and aquaculture sector through the European Data Collection Framework[4]. The successive EU Regulations since the early 2000 have helped build an ambitious framework based on National Work Programmes and coordination of sampling activities, formally driven by end-user needs as set out in the new Common Fisheries Policy[5], where end-users are defined as bodies with a scientific or management interest.

The coordination of sampling activities in the EU is based on six Regional Coordination Groups (Baltic Sea, North Sea and Eastern Arctic, North Atlantic, Mediterranean Sea and Black Sea, Large pelagics and Long Distance Fisheries) and two expert subgroups assisting the European Commission on data collection issues: a group dealing with socio-economic issues (PGECON) and a forum where issues that affect several marine regions are assessed and discussed, called the Liaison Meeting.

The timely delivery of data to end-users is paramount to the framework (EU Data Collection Framework Regulation, Articles 6 and 7) in close link with formalized end-users expectations. Since 2017, the Liaison Meeting dedicated a full day of discussion with end-users, emphasizing the need to improve the communication and feed-back on quality issues with the users of the fisheries data. It must be acknowledged that some end-users (mainly STECF and ICES) were initiators in the interaction on the quality of the data they receive through formal data calls. Other end-users (GFCM, IOTC, ICCAT, NAFO etc) detail their data expectations through binding resolutions and recommendations.

The quality of the data provided to end-users is central to the organization of the data collection within each of the European Member States. To address the challenge, the European framework for data collection is moving towards better coordinated sampling schemes, better transparency and efficiency in processing the data within regional data bases and to an improved dialogue with end-users.

4 Regulation (EU) 2017/1004 of the European Parliament and of the Council of 17 May 2017 on the establishment of a Union framework for the collection, management and use of data in the fisheries sector and support for scientific advice regarding the common fisheries policy and repealing Council Regulation (EC) No 199/2008.

5 Regulation (EU) No 1380/2013 of the European Parliament and of the Council of 11 December 2013 on the Common Fisheries Policy.

In the coming months, the EU with the assistance of Regional Coordination Groups and its scientific body STECF will prepare a revision of the EU Multiannual plan for data collection[6] (EU-MAP) for the period after 2021. It is therefore the moment to re-articulate the end-user needs and seek for improvement in the communication routes between data providers and end-users.

In this perspective, the Commission would like have a reply of STECF on the consultation document, prepared by experts on the basis of an inventory of possible issues signaled over time and which should be taken into account in the future EU-MAP for data collection. Your contribution and proposals for modifications to the current EU-MAP should be clearly underpinned with justification for these modifications in the attached document.

Consultation of end users on the potential revision of EU-MAP biological data and socio-economic data[7]

Biological data:

1. Should Table 1A contain species priority as given in 1C?

2. Should this prioritisation be done by the end user in the first instance and then revised by the RCG responsible for those stocks taking into account NWP & RWP resources to optimise data collection?

[*As regional work plans override national work plans, the Table could be revised as necessary (species list and priority) during the lifetime of EU MAP (and used by the relevant RCG) and the final updated Table – with amendments would become the Basis for use in the next revision of EU MAP.*]

3. Should the species prioritisation already be part of the revised EU-MAP corresponding Table 1A or can this prioritisation stay at regional level only? Please justify if recommendation is to make a revision in the EU-MAP and indicate an order of priority.

4. Should Tables 1A and 1C be combined in the EU-MAP revision?

[*Given that stocks in both tables have end-user defined sampling requirements is it necessary to separate them?*]

6 Commission Implementing Decision (EU) 2016/1251 of 12 July 2016 adopting a multiannual Union programme for the collection, management and use of data in the fisheries and aquaculture sectors for the period 2017-2019.

7 The data requirements referenced in this paper are those of Commission Implementing Decision (EU) 2016/1251 of 12 July 2016 adopting a multiannual Union programme for the collection, management and use of data in the fisheries and aquaculture sectors for the period 2017-2019 (OJ L 207, 1.8.2016, p. 113).

5. Should Table 1B be revised to cover only species in or EEZ not covered by ICCAT IOTC WECAF CECAF SIOFA?

[*Can RCG LDF to reply/contribute for the revision of the table (preferably at species level)?*]

6. Should Table 1D be updated and if so, what would be the concrete points to be changed (added / removed)? If Table 1D needs to be updated, could this be done at regional level or should it be at EU level? For recommendation of revision at EU level, please justify your reply.

7. What variable(s) can be included in the future EU-MAP to achieve the goal of estimating the level of fishing and the impact of fishing activities on marine biological resources and on marine ecosystems, such as effects on non-commercial species, predator-prey relationships and natural mortality of fish species in each marine region (chapter III, point 3 c) of the EU-MAP) for which currently MS have in place pilot studies?

8. Should diadromous species be removed from Table 1A and should Table 1E be revised to include marine Union waters? Are there major RCG concerns relating to moving diadromous species out of Table 1A? Are there any other concrete points for revision (to be added / removed)? Can this revision be done at regional level or does it need to be at EU level? For recommendation of revision at EU level, please justify your reply.

9. Should Table 3 be a subset of Table 1 (for instance as a new Table 1F?), in order to group all species list together? What are the concrete points for revision (to be added / removed)? Should the species list in the Table be revised at RCG or pan-RCG level to include all species where catches impact on assessments? For a recommendation of revision at EU level, please justify your reply.

10. Should the pilot study to evaluate the impact of recreational fisheries against commercial fisheries be converted into regular data collection at EU level? If so, variables should be collected and where should they be placed? Can this revision be done at regional level or does it need to be done at EU level? For recommendation of revision at EU level, please justify your reply.

11. Does Table 2 meet current needs or are there some groupings missing (i.e. currently no code for glass eel fishing (Level 4))? What are the concrete points for revision (to be added / removed)? Can this revision be done at regional level or does it need to be done at EU level? For recommendation of revision at EU level, please justify your reply.

12. In Table 4, should any of the variables be revised and if so, which ones?

[*What is included in this Table will depend on the revision of the Control Regulation and would need to be reviewed in light of this*.]

13. Will introducing small scale fisheries (SSF) as a separate grouping affect the fleet segmentation in Table 5B fleet economic data? What are the concrete points for revision (to be added)? Should a new section on SSF be included in the revised EU-MAP or can requirements be established at regional level only? For recommendation of revision at EU level, please justify your reply.

14. Is the current stratification in Table 5C suitable for use for both biological and economic data aggregation? Do we need a region header in the sets of Table 1?

15. Given that assessment data is usually given at the stock level (which does not always match the management unit) what is the most appropriate level for reporting biological data collection in the national work plan / annual report that the RCGs require?

16. What are the concrete points of revision for Table 10?

[*Revision in place under future STECF EWG on surveys. This has been covered by RCG comments on EWG 18-04 in preparation for a survey review in 2019.*]

Socio-economic data:

1. Should the any definitions be clarified in the future EU-MAP (i.e. population for economic data collection for the fleet, for the fish processing etc) or can these clarifications be done in PGECON recommendations and methodologies? For action at EU level, please justify.

2. Should the Fishing fleet segmentation in Table 5B be revised? What are the concrete points for revision (to be added / removed)?

3. Should the segmentation on aquaculture and processing, currently included in the Guidance documents, be included in the revised EU-MAP? What segmentation should apply?

4. Does the frequency for the social data collection appear appropriate (three years or more)?

5. How should the data collection on social variables indicated in Table 6 and Table 11 be presented in EU-MAP (instead of pilot study)?

6. Should the threshold on the social and economic data on aquaculture be kept or should it be revised?

7. Should the reference on Guidance documents on Definitions / Methodologies / Quality be integrated in the revised EU-MAP?

[*Currently there is no operational guidance on data validation and quality reporting except for the document on Quality of socio economic variables described in EU-MAP. PGECON should discuss the applicability of this document and possibilities to further improve the quality assurance framework for economic and transversal data, taking into account the Guidance document on Methodology of socio economic variables described in EU MAP 2018 consolidated and the Handbook on statistical procedures which will be available in 2019.*]

General comment

Please provide comments on the provisions of the EU-MAP and areas where requirements can be clarified / amended or any other concrete point for revision you may have, followed by proper justification of action at EU level.

Request to the STECF

STECF is requested to provide comments on the provisions of the EU-MAP and areas where requirements can be clarified / amended or any other concrete point for revision you may have, followed by proper justification of action at EU level.

STECF comments

STECF notes that the current legislation for the Data Collection Framework (DCF) was published recently (framework Regulation 2017/1004 and EU Multiannual Programme, EU-MAP, Decision 2016/1251) after a revision process that took 6 years. Considering the in-depth nature of the most recent revision, STECF considers that the revision of the EU-MAP should focus on specific parts that need adjustment, without opening the entire EU-MAP for discussion. STECF also notes that sampling programmes are negatively impacted by constant changes, potentially making time series not comparable.

STECF acknowledged and generally agreed with the work of the "Intersession Group on EU-MAP revision" of the Regional Coordination Groups (RCGs) (Gent, 6-8 May 2019) and preliminary considerations of the Planning Group on Economic Issues (PGECON, Ljubljana, 6-10 May 2019) addressing the consultation questionnaire above. Those two groups already incorporated input from major data end-users such as ICES, several Member States and RFMOs.

STECF is aware that the STECF EWGs using DCF data which have already met in the first half of the year 2019 were asked to provide answers to the listed questions. The EWGs, however, did not have specific comments in this respect. Nevertheless, these EWGs have raised a number of data issues in their comments and conclusions, and STECF PLEN 19-02 has tried to incorporate those in the comments below.

The other STECF EWGs meeting in the second half of the year shall be similarly asked

STECF would like to comment on the following detailed issues.

<u>Biological data:</u>

Questions 1-3: STECF reviewed the proposals of the Regional Co-ordination Group (RCG) for the Mediterranean & Black Sea with regard to the EU-MAP revision and noted that the RCG proposed that Table 1A of the EU-MAP be limited to GFCM Group 1 species (see GFCM Data Collection Reference Framework Appendix A - Priority species - A.1 - Group 1 species. Species that drive the fishery and for which assessment is regularly carried out). The RCG further proposes that the other stocks to be monitored through biological sampling can be agreed at regional level based on the needs of end-users.

Despite acknowledging that a change in the species list is required in order to make data collection more efficient, STECF notes that the current list of species included in the EU-MAP will decrease significantly according to that proposal of the RCG. This will hamper

the possibility of carrying out stock assessment and providing scientific advice on an increased number of stocks (even using models and methods suitable for data-limited stocks). STECF considers that it would be fundamental to clearly identify the other stocks (besides priority species and species under MAPs) to be monitored at regional level and to clearly list and explain the criteria used to agree those stocks with end-users. As a first approximation, a cut-off in weight and value of landings could e.g. be used, with a ranking based on the last 5 years of data. All species above a certain percentage in either weight or landings should be assessed and consequently biological sampling should be carried out.

STECF draws the attention to the work of Adhoc EWG 18-01 (Mannini et. al 2017, STECF 2018) on identifying priority stocks in the Mediterranean and the STECF reports on CFP monitoring with regard to the Mediterranean stocks.

Question 7: STECF stresses that revising the EU-MAP is a good opportunity to ensure synergies and coherence between data collection under the Common Fisheries Policy (CFP) and the Marine Strategy Framework Directive (MSFD). Explicit linkages to the MSFD could reinforce the importance of aligning data collection from various management needs for addressing the fishing impact on the ecosystems.

STECF considers that data requirements for the extended CFP monitoring indicators (cf. EWG 18-15) should be taken into account when revising the EU-MAP.

Question 10: STECF notes that the Regional Coordination Groups suggest continuing the pilot studies on recreational fisheries before converting those into regular data collection at EU level. Ongoing pilot studies follow different methodologies, and the preliminary results are providing new basic information, including lists of species which are important for both recreational and commercial sectors.

STECF is aware that the RCGs have suggested to task an STECF EWG with the "review of the outcomes from the pilot studies, compare impacts with commercial fisheries and make proposals for future data collection".

Question 12: To quantify the fishing effort deployed by passive fishing gears and corresponding effects of fishing on marine ecosystems, the soaking time (i.e. the period from the point of time when the fishing gear is first put in the water until the point of time when the fishing gear is fully recovered on board the fishing vessel) is a useful variable to record. Declaring soaking time in the logbooks is currently compulsory under the Control Regulation (Reg. 404/2011) for vessels having to report into logbooks. STECF suggests that soaking time is included in the list of effort variables in the EU-MAP (current Table 4).

In the Mediterranean Sea, effort monitoring for dolphinfish *(Coryphaena hippurus)* fisheries with fish aggregation devices (FADs) is an issue. Besides the number of fishing trips, it would be useful to have the following parameters: number of FADs deployed, number of FADs visited, number of FADs for which a net is deployed.

<u>Socio-economic data:</u>

Questions 4-6: STECF observes that the STECF EWG 19-03 reviewed definitions of social indicators and proposed additional indicators. The revision of the EU-MAP might also take those into account.

STECF suggests the use of the reference year in the EU-MAP rather than the year of data collection. It should be ensured that all Member States collect comparable data over the same time period.

References

Mannini A., Osio G.C., Jardim E., Mosqueira I., Scott F., Vasilakopoulos P., Casey J. - Sampling Frame for Mediterranean and Black Sea CFP Monitoring indicators. 2017. EUR 28568 EN. doi:10.2760/31047.

Scientific, Technical and Economic Committee for Fisheries (STECF) – Monitoring the performance of the Common Fisheries Policy (STECF-Adhoc-18-01). Publications Office of the European Union, Luxembourg, 2018, ISBN 978-92-79-85802-4, doi:10.2760/329345, JRC111761

6.2 Joint Recommendation concerning implementation of EU-Norway Agreement on Technical Measures in the Skagerrak

Background provided by the Commission

Regulation (EU) no. 2018/973 establishes a multiannual plan for the management of demersal stocks in the North Sea and the fisheries exploiting those stocks. Article 9 of Regulation (EU) no. 2018/973 empowers the Commission to adopt delegated acts in order to supplement this Regulation regarding technical measures in accordance with Article 16 of this Regulation. Such technical measures may entail specifications of characteristics of fishing gears and rules governing their use, as well as limitations or prohibitions on the use of certain fishing gears and on fishing activities, in certain areas or periods.

In accordance with Article 18 of the Regulation 1380/2013, where the Commission has been granted powers to adopt measures by means of delegated acts, Member States with a direct management interest may submit joint recommendations (JR) to achieve the objectives of the relevant Union conservation measures, the multiannual plans or the specific discard plans.

Against this background, the Scheveningen group adopted a Joint Recommendation with a view to implement measures consulted and agreed with Norway in 2018[8]. These measures result from the work in the EU-Norway working group on technical measures in the Skagerrak and were agreed upon in consultations between EU and Norway on the 5th and 6th of September 2018 in Goteborg, Sweden, and in line with art 3 and 4 in the EU-Norway Agreement on reciprocal access to fishing in the Skagerrak [9].

Once the joint recommendation is received, it is necessary to evaluate the various elements of the joint recommendation on the introduction of additional technical measures in the context of real time closures (RTCs) and the proposed reduction of mesh size from 120 mm to 105 mm for the Danish anchor seine fisheries in EU waters of Skagerrak. This calls for the review of the supporting scientific information provided.

This information has been reviewed and summarized in an ad hoc contract.

Request to the STECF

Based on:

- The report of the STECF ad hoc contract;
- The Joint Recommendations;
- Any other relevant sources of information

8 Agreed record of fisheries consultations between the European Union and Norway on technical measures in Skagerrak. Göteborg, 6 September 2018

9 Agreement between the European Union and the Kingdom of Norway on reciprocal access to fishing in the Skagerrak for vessels flying the flag of Denmark, Norway and Sweden

STECF is requested to:

1. To assess the details as provided in the Joint Recommendation for the introduction and implementation of a Real Time Closure (RTC) system for the Northern prawn (*Pandalus Borealis*). This RTC system was agreed with Norway during the consultations on 5-6 September 2018. The assessment should particularly assess whether the conditions outlined for the implementation of the RTC, and in particular the conditions set to exempt gears inside the RTC and the conditions for operating therein, meet the standards and requirements mentioned above in the introductory paragraph on the tasks under the ad-hoc contract.

2. To assess the Joint recommendation to reduce the current mesh size in Danish Seines fisheries, from 120mm to 105mm. To assess if this reduction is warranted against the standards and requirements mentioned above; this assessment needs to be based on the supporting scientific documentation, in particular if this provides sufficient evidence that the expected exploitation pattern of fisheries with 105mm for Danish Seines is at least as selective and/or reducing unwanted catches as of fisheries with a 120mm trawl. Comparisons with selectivity data from other experiments using similar gears for the key species concerned may be used. If the assessment is positive, to describe potential impacts on technical regulations expressed in definitions of gears and detailed rules governing the use of different mesh sizes.

3. To assess the Joint recommendation to supplement existing gear exemptions in Regulation (EU) No. 724/2010[10], in accordance with Article 9(1)(a) of Regulation (EU) 2018/973, with two additional gears to be exempted:

    - *Pandalus* trawls equipped with a Nordmøre grid without a collecting bag, and
    - *Nephrops* trawls equipped with a species selective grid.

In particular, assess whether the selectivity characteristics and operational conditions of these two gears to be exempted from moving-on or exclusion provisions are sufficient are consistent with the objectives of the RTC system and provide for improved selectivity, reduction of unwanted catches and protection of juveniles of marine organisms, as referred to in Article 9.1 of Regulation 2018/973.

Documents provided by the Commission and reviewed by STECF

STECF reviewed the Joint Recommendation submitted by the Scheveningen Group : Implementation of EU-Norway Agreement on Technical Measures in the Skagerrak, under Article 9 and 16 of the Regulation (EU) No. 2018/973, and Article 18 of the Regulation (EU) No 1380/2013, in the light of several documents:

10 Regulation (EU) No 724/2010 laying down detailed rules for the implementation of real-time closures of certain fisheries in the North Sea and Skagerrak

. Agreed record EU-Norway consultations on technical measures in Skagerrak 2018.09.06

. EU-Norway agreement wk09041.en18

. Annex III - Report of the Working Group on technical measures in Skagerrak

. Annex IV - Isaksen et al. Fish Res 1992

. Annex IX - Hornborg et al. ICES J Mar Sci 2016

. Annex V- Broadhurst Rev Fish Biol & Fisheries 2000

. Annex VI - Gullestad et al. Mar Pol 2015

. Annex VII - Valentinsson & Ulmestrand Fish Res 2008

. Annex VIII - Madsen & Valentinsson ICES J Mar Sci 2010

The Joint Recommendation and all the above mentioned documents were reviewed through an ad hoc contract, whose general comments are summarized in the current advice.

In addition to the documentation provided in support of the Joint Recommendation, the ad hoc contract report refers to supplementary literature which are also reported in the STECF comments and cited in the reference list below.

Background documents are published on the meeting's web site on: https://stecf.jrc.ec.europa.eu/plen1902

STECF comments

TOR 1 - The implementation of a joint Real Time Closure (RTC) system for the Northern prawn (*Pandalus borealis*) fishery in the Skagerrak.

The Joint Recommendation states that the main objective is to limit the capture of large concentrations of juvenile *Pandalus*.

The Joint Recommendation details the elements of the final RTC system agreed for *Pandalus,* which are summarised in the table below (Table 6.2.1).

Table 6.2.1 - Summary of the main elements of the proposed *Pandalus* RTC system

Specifications	Details
Source of Information	Inspections at sea on commercial fishing vessels conducted by control authorities.
Targeted Inspection resources	A risk-based strategy to identify areas and time periods where there is a risk of catching numbers of *Pandalus* below trigger length which exceed the threshold level. Inspections shall be carried out in areas to measure whether the percentage of small *Pandalus* exceeds the threshold level, including through Joint Deployment Plans
Trigger Length	14.8 mm carapace length (measured in accordance with Regulation (EC) 850/98,

	annex XIII, for Norway lobster)
Threshold level	More than 20% by number of *Pandalus* under the trigger length
Inspection and monitoring	Closures based on hauls with more than 100kg of *Pandalus* if the proportion of *Pandalus* below the RTC trigger length is more than 40%, a closure can be established based on one sample. Sampling from least 2 hauls in 96 hrs show that *Pandalus* below the trigger length is exceeding the threshold level except if the proportion of *Pandalus* below the RTC trigger length is more than 40%, then one sample is sufficient
Decision to close	Coastal Member State in consultation with neighbouring coastal states where applicable
Size and shape of the closed area	Shape of the area based on physical factors, inter alia depth contours, and other factors such as catch compositions, fishing activity etc. Upper area limit of 50 square nautical miles
Entry into force	Midnight UTC on the day of decision.
Duration and scope	Closure for 14 days Limited to demersal trawls within the mesh size range 35-69 mm targeting *Pandalus* Vessels fishing for *Pandalus* using a recognised size selective gear can continue to fish within the RTC

STECF notes that the RTC system proposed has been developed following extensive discussion involving experts and the industry. The supporting information provided in the Working Paper(Annex III) is detailed and the agreed procedure does not deviate from the recommendations of the Working Group (EU-Norway agreement wk09041.en18). It follows closely the existing RTCs in the Skagerrak and North Sea for the protection of juvenile cod, haddock, saithe and whiting. A comparison of the *Pandalus* and the gadoids RTCs systems is provided in Annex I. The *Pandalus* system contains all the same elements in the existing gadoid RTCs, a comprehensive control and monitoring regime as well as a review mechanism.

Several deviations are noted compared to the gadoid RTCs as follows:

1. Trigger length - The trigger length of 14.8mm carapace length proposed reflects the biology characteristics of *Pandalus* and seems appropriate to define juvenile *Pandalus* based on biological information contained in Sealifebase (2019) and

Shumway et al. (1985). The use of carapace length as a measurement is in line with current Regulations for species such as *Nephrops* and Rose shrimp.

2. Threshold level – The threshold level of more than 20% by number is based on multiple observations from controlled hauls from Danish, Swedish and Norwegian vessels over the period 2015-2017. This data provides estimates of the likely proportion of hauls with catches of small *Pandalus*, comparing different threshold levels based on different carapace lengths. The data presented validates the 20% threshold level proposed as a reasonable compromise, showing that on average less than 20% of observed hauls have levels of small *Pandalus* in excess of the threshold level.
3. Duration of the RTCs implemented – The proposed RTCs would remain in force for 14 days as compared to 21 days for the gadoid RTCs. No reason is provided for this difference, but it is unlikely to significantly reduce the effectiveness of the closures. In any case if the trigger threshold is exceeded immediately after the closure is lifted then a new RTC would be put in place.

The proposal includes a derogation for vessels using a size selective gear incorporating a combination sorting grid with a top section with a maximum bar spacing of 19mm and the bottom section having a minimum bar spacing of 9.5mm. Vessels using this type of grid may continue to fish in RTCs, provided they do not hit the threshold trigger. STECF notes that this grid was specifically designed to reduce the catch of small *Pandalus* and Swedish and Norwegian trials of this grid showed reductions in small shrimp of at least 60%. Trials by Denmark showed no significant difference between the combination and a standard sorting grid in catch levels of small *Pandalus*.

Based on the information provided, it is not possible to assess the reasons for the significant differences in results between the Danish and Swedish-Norwegian trials. However, the three countries have subsequently agreed that the combination grid should be allowed within *Pandalus* RTCs as part of the EU/Norway agreement. STECF acknowledges there is no reason not to allow its use as proposed, provided the specifications of the grid are well defined and there is comprehensive monitoring of the vessels using the combination grid. Monitoring would help demonstrate that catches of small shrimps are consistently maintained below the threshold level. If this is found not to be the case, then while not explicitly stated in the Joint Recommendation, it is inferred that the derogation would be discontinued.

TOR 2 - Assess whether the proposed reduction in the current mesh size in Danish Seines fisheries from 120mm to 105mm is warranted.

The main basis for the Joint recommendation to allow the use of a 105mm codend in the Danish anchor seine fishery are two studies carried out by DTU in Denmark. The first study (Noack et al., 2017) presents selectivity data from a trial on board an anchor seine vessel with a codend of 124mm. The second study (Hermann et al. 2016) presents information from another selectivity analysis of an anchor seine with a codend of 129.6mm (as measured during the trial). This study also presents model estimates of selectivity for a range of codend mesh sizes for both Danish anchor seines and otter trawls. The model estimates were generated from the FISHSELECT selectivity model, developed by Hermann et al. (2009) and the model developed by Fryer et al. (2016). Data for cod, haddock, plaice and witch flounder are summarised in a table in Annex XIII to the EU-Norway Working Group report on Technical Measures in Skagerrak and presented below (Table 6.2.2).

STECF notes that the model estimates do not include confidence intervals, and notes also that it is unclear how the average value has been calculated by the Working Group, especially for cod where the observed range is very large.

Table 6.2.2 - Comparison of L50 values between demersal bottom trawls and Danish anchor seines separated by mesh sizes, as published in a large number of studies referred below. Average value in cm (Min-Max).

Species	Demersal otter trawl		Danish anchor seine	
	120-130 mm	140 mm	105 mm	120-130 mm
Cod	38.3 (30.5-50.0)[1,2,3,4,5,6,7,8,9,10]	45.7[9]	34.7[8] (model estimate)	42.6 (41.6-43.6)[11,12]
Haddock	34.8 (34.3-35.5)[10,13,14]	-	31.5[8] (model estimate)	38.4[11]
Plaice	26.4 (25.6-27.3)[15] (model estimate)	-	-	29.1 (28.7-30.1)[12]

[1]Strzyzewski et al. (1973), [2]Shevtsov (1981), [3]Lowry et al. (1995), [4]Netzel and Zaucha (1989), [5]Tschernij et al. (1996), [6]Tschernij and Holst (1999), [7]Moderhak (2000), [8]Wienbeck and Dahm (2000), [9]Madsen et al. (2002), [10]Graham et al. (2004), [11]Herrmann et al. (2016), [12]Noack et al. (2017a), [13]Kynoch et al. (2004), [14]Fryer et al. (2016), [15]Wienbeck (unpublished data)

STECF observes that other than model estimates, there is no selectivity information (either absolute or relative) provided for the Danish anchor seine with a 105mm codend. No data is presented for otter trawls with 105mm codend or data for plaice with this mesh size (see Table 6.2.2). These model estimates are compared to selectivity data generated from experiments at sea. Acknowledging there is a very detailed description of the model parameters and approach, the comparability of the model estimates and the experimental data remain nevertheless unclear. Ideally selectivity experiments to determine the absolute selectivity of the 105mm codend compared to the 120mm codend should be carried out to validate the model estimates. Obtaining selectivity estimates from seine net gear is difficult, therefore estimates of relative selectivity through alternate catch comparison experiments could facilitate a more thorough assessment.

STECF observes that the L50s for cod and haddock presented do not show the Danish anchor seine and 105mm codend to be equivalent or more selective than an otter trawl with a 120mm codend. The model estimates for the 105mm codend give lower L50s than the otter trawl with a 120mm codend for both cod and haddock by 3.6cm and 3.3cm respectively. This is in line with observations from the analysis carried out at an EU Expert Meeting in 2003 that showed for haddock, a 10 mm increase in codend mesh size leads to an increase in L50 by ~3.3 cm (Anon., 2003).

STECF also observes that the estimates of selectivity presented for anchor seine codends in the 120 – 130mm mesh size range (Table 6.2.2) are derived from sea trials where the codends were measured as 124mm (Noack et al. 2017) and 129.8mm (Hermann et al., 2016). Hence they are more representative of the top half of this range [125-130 mm], which may explain some of the difference with the selectivity estimates of the otter trawl codends in the 120 – 130 mm range, which were primarily obtained with experiments in the lower end of the mesh size range of from 120-125 mm (Table 6.2.2).

STECF notes also that the estimates provided for otter trawls with 120mm codends come mainly from the Baltic Sea cod fishery. Some of these estimates are quite dated. The estimates for haddock are from the North Sea. It is unclear how representative these estimates are to the Skagerrak Danish anchor seine fishery in terms of codend construction, fish population structures and prevailing environmental conditions. A combination of the factors outlined above and other (uncontrolled) factors will influence

the outcome (e.g. different population size structure, other trawl design differences or changed fish condition) and the validity of the comparisons.

STECF further notes that according to the report from an ICES workshop on seine net selectivity, WKSEINE11, there are a few studies that directly compared the selectivity of the two-different towed gear fishing methods (ICES, 2011). ICES did highlight a simple statistical analysis of the overall selection factor estimates for individual experiments by Wileman (1992) and a review by Ferro (1996). Both suggested that differences between gear types were not significant, i.e. they could not distinguish variations in selection factor between vessel trips for Danish anchor seines and otter trawls.

TOR 3 – Exemption from Real Time Closure*s* for a) Pandalus trawls equipped with a Nordmøre grid without a collecting bag and b) *Nephrops* trawls equipped with a species selective grid.

The RTC system for the protection of juvenile cod, haddock, saithe and whiting in the North Sea and Skagerrak is set out in Regulation (EU) No.724/2010. This Regulation contains a provision in Article 7(1) that exempts certain gears from RTCs because they have very low levels of observed catches of juvenile gadoids. These gears are:

a. pelagic trawls, purse seines, driftnets and jiggers targeting herring, mackerel, and horse mackerel;
b. pots;
c. scallop dredges;
d. gillnets;

The Joint Recommendation recommended supplementing the existing gear exemptions set out in Regulation (EU) No.724/2010 with these additional two gears. The basis for the Joint recommendation to allow these exemptions is their documented very small bycatch of juvenile cod, haddock, saithe and whiting.

The specific technical information of the proposed additional gears are presented below:

e. demersal trawls within a mesh size range 35-69 mm targeting *Pandalus* equipped with a Nordmøre sorting grid with a maximum bar spacing of 19 mm without a fish retention device; and
f. demersal trawls within a mesh size >70 mm targeting *Nephrops* equipped with a species selective grid with a maximum bar spacing of 35mm.

STECF notes that Regulation (EU) 724/2010 sets a trigger level for the gadoid RTCs of 15% by weight of juveniles of cod, haddock, saithe and whiting in any sampled haul or 10% by weight of juveniles if the sample of the catch taken contains 75% of cod. For the purposes of the Regulation, juveniles are defined as:

- Cod less than 35cm
- Haddock less than 30cm
- Saithe less than 35cm
- Whiting less than 27cm

11 ICES Workshop on seine net selectivity (WKSEINE)

To be exempted, the proposed gears must be able to achieve catches consistently below this trigger level (i.e. catches of less than 10-15% of juveniles).

TOR 3-a)

STECF notes that Nordmøre sorting grids have been used in shrimp fisheries worldwide for many years. They have been subject to extensive testing and shown to be highly effective at reducing the bycatch of fish in shrimp fisheries. In shrimp fisheries in Norway, Iceland and Canada, their use is mandatory.

Since 1997, *Pandalus* trawls used in Swedish national waters including the Skagerrak must be equipped with a Nordmøre grid, with a bar spacing of 19 mm. Following an agreement between EU and Norway, the Nordmøre grid has been mandatory since 1st February 2013 in all shrimp fisheries in Skagerrak (except Norwegian national waters within the 4 nm limit). From 1st of January 2015, this has been extended to the North Sea south of 62°N.

Trials with such grids in *Pandalus* fisheries have shown that with a bar spacing of 19 mm, 100% of cod and haddock greater than approximately 20 cm length are excluded from the catch with approximately 50% of haddock and whiting less than 12cm also excluded (Larsen, 1991; Isaksen et al., 1992; brothers and Hickey, 1998; Larsen et al. 2017). The results across different trials are consistent and confirm the effectiveness of the grid as a bycatch reduction device. The design and installation of Nordmøre grids is well established and their use accepted by fishermen in the *Pandalus* fishery.

TOR 3-b)

STECF notes that the "Swedish" 35mm grid in *Nephrops* trawls, has been gradually introduced in Sweden since 2004 (Madsen and Valentinsson, 2010) as a management strategy, partly to cope with the imbalance between available fish- and *Nephrops* quotas. The overall aim was to minimise fish by-catch while maintaining catch rates for *Nephrops*. Since 1st of February 2013, trawlers targeting *Nephrops* have been required to use either the Swedish grid or a size selective trawl with a large mesh window in the codend top panel (SELTRA-trawl; Madsen et al., 2012).

As described in the ad-hoc report, STECF notes that there is clear evidence that *Nephrops* trawls equipped with a species selective grid with a maximum bar spacing of 35mm have positive conservation benefits. They have been demonstrated to significantly reduce the bycatch of gadoids above ~20-23cm. Some catch remains though below this size range, and trials have shown between 30-60% of gadoids are retained. Therefore, it is possible that in areas with high concentrations of small gadoids the trigger levels to initiate gadoid RTCs could possibly be exceeded on occasions, even when using a sorting grid. STECF notes however, that in the absence of length frequency distribution typically encountered in the *Nephrops* fishery in the Skagerrak the likelihood of this occurring cannot be assessed. Monitoring would help demonstrate that catches of small gadoids in the fishery are consistently maintained below the threshold level.

STECF conclusions

TOR 1 - The implementation of a joint Real Time Closure (RTC) system for the Northern prawn (*Pandalus borealis*) fishery in the Skagerrak.

STECF concludes that the RTC system proposed has potential positive conservation benefits in line with the objective of Regulation (EU)2018/973. Therefore, it would seem appropriate to introduce it into the Skagerrak as per the specifications set out in the JR as submitted by the Scheveningen group. The effectiveness's of the RTC system should be subject to careful monitoring and evaluated according to the review mechanism set out in the JR. A specific monitoring programme of the combination grid to ensure it

consistently maintains catches of small *Pandalus* below the trigger level should be built into the system.

TOR 2 - Assess whether the proposed reduction in the current mesh size in Danish Seines fisheries from 120mm to 105mm is warranted.

STECF concludes that the information presented in the form of L50s for cod and haddock derived from models and selectivity experiments indicates the Danish anchor seine fitted with the 105mm codend is less selective than the otter trawl 120 mm for both species.

TOR 3 – Exemption from Real Time Closure*s* for a) *Pandalus* trawls equipped with a Nordmøre grid without a collecting bag and b) *Nephrops* trawls equipped with a species selective grid.

a) STECF concludes that given its proven effectiveness there seems to be no reason not to add *Pandalus* trawls equipped with a Nordmøre sorting grid with a maximum bar spacing of 19 mm without a fish retention device to the list of exempted gears in Article 7(1) of Regulation (EU) 724/2010.
b) STECF concludes that *Nephrops* trawls fitted with a sorting grid with a 35mm bar spacing should only be added to the list of exempted gears in Article 7(1) of Regulation (EU) 724/2010 following a review of available length frequency data. This review would help establish the likelihood that catches of juvenile gadoids with the grid trawl would exceed the trigger levels defined in the Regulation. Ideally, this review should be accompanied by the establishment of a monitoring programme in the *Nephrops* fishery.

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6.3 Evaluation of by-catch reduction plans and control measures (North West Waters Group, i.e. Belgium, France, Ireland, the Netherlands, Spain and the United Kingdom, and the Commission)

Background provided by the Commission

As part of setting the Fishing Opportunities for 2019 (Council Regulation (EU) 2019/124), the Member States forming the regional group for the North West Waters committed to develop a by-catch reduction plan for five stocks that received zero catch advice by ICES; Cod and Whiting in the West of Scotland, Whiting in the Irish Sea, Cod in the Celtic Sea and Plaice in ICES division 7hjk under the following Council Declaration:

"Member States cooperating in the North-Western Waters, in close cooperation with the North Western Waters Advisory Council, will prepare a by-catch reduction plan to ensure that by-catches of the stocks for which ICES has issued zero catch advice for 2019 are reduced through selectivity or avoidance measures. To this end the Member States concerned will submit to the Commission a by-catch reduction plan at the latest on 30 April 2019. By-catch reduction plans will contain measures such as more selective gears, area closures, real time closures, avoidance measures and move-on rules. They may build on the latest relevant discard plans. The by-catch reduction plans should be adapted to the species in question and be chosen from the above catalogue of measures according to the specificities of each fishery. The plans will be assessed by the STECF regarding their effectiveness. The Chair of the North Western Waters Group will report to the Commission by 1 October every year on progress achieved with the by-catch reduction plan.

In line with the Control Regulation, the Member States will undertake all appropriate control measures to ensure that by-catches of the stocks for which ICES has issued zero catch advice for 2019 are strictly unavoidable and that no discards take place beyond levels allowed by the discard plan. By 1 July 2019 the Member States concerned will inform the Commission of the control measures taken."

Request to the STECF

The STECF were asked to review the North Western Waters Regional Group's Bycatch Reduction Plan (BCReP) and consider the following:

- Effectiveness: Assess and where possible quantify the improvements in selectivity that will be provided in the fisheries covered by the BCReP upon the bycatches of the five stocks concerned, compared to practices until 2018). What would be the impact upon the five bycatch stocks concerned? Will continued application of the measures beyond 2019 continue a reduction in by-catches and fishing mortality in the medium term (2020-2022)?
- Comprehensiveness: has the plan considered sufficiently the possible selectivity elements which are readily available for the conditions of the respective fisheries, and which can be realistically applied from a practical and socio-economic perspective (including the dimension of loss of marketable catches or physical replacement costs or lost fishing opportunities)? This should include, if relevant, an indication of where further selectivity is currently difficult to achieve in a specific fishery, and where possible, provide information on the possible causes and if research should explore potential solutions.

Summary of the information provided to STECF

Three documents were provided to STECF:

1. COMMISSION DELEGATED REGULATION (EU) 2018/2034 of 18 October 2018 establishing a discard plan for certain demersal fisheries in North-Western waters for the period 2019-2021.

2. Joint Recommendation of the North Western Waters High-Level Group Discard Plan for demersal fisheries in the North Western Waters for 2020-2021. Version 29th of May 2019.

3. By-catch reduction plan (BCReP) in the North Western Waters; 2019-06-04 version.

The BCReP starts stating that targeted fisheries on the stocks concerned is prohibited.

The BCReP then lists the provisions included in the technical measures Regulation of the European Parliament and of the Council *on the conservation of fisheries resources and the protection of marine ecosystems through technical measures* (which will be adopted in August 2019, (COM(2016) 134 final)).

The BCReP proposes the obligation for skippers to inform the Fisheries Monitoring Centre (FMC) in case that the stock concerned represents at least 10% of the catch in a single haul. This is proposed for only three of the five stocks; the BCReP considers it not relevant for whiting in 7a and plaice in 7hjk. The BCReP proposes that in the event of a haul with at least 10% of the catch of the three stocks, avoidance measures are to be taken as long as the reporting vessel operates within 10 nautical miles around the location of the triggering haul; no specific measures are mentioned.

Regarding monitoring and control measures, the BCReP refers to a discussion to be held by the Control Expert Group and the High-Level Group with the help of European Fisheries Control Agency (EFCA). It is stated that this will be "part of a wider plan aiming to enhance the respect of the relevant discards plans in force".

The BCReP lists stock-specific measures. These mainly consist of references to the discard plan (2018/2034) and the 2019 Joint Recommendation (JR); these two documents were provided to STECF (see above). In addition, the BCReP proposes that the following assessments, further analyses, audits, reviews and tests are to be undertaken:

- Investigation by ICES/STECF of the relevance of spatio-temporal closures in helping to reduce the magnitude of bycatches of these stocks and to define areas and associated measures which could be jointly implemented;
- An assessment by ICES/STECF of the projected changes in exploitation pattern arising from the use of the selective gear options on the whiting stock in the Irish Sea;
- An analysis of the impacts of improving selectivity in the *Nephrops* fishery.
- Review and test available or new gear modifications that permit escapement of <20cm whiting earlier on in the capture process.
- An audit of the gears used in the *Nephrops* fishery and assessment of the relative impact on whiting catches of these gears to inform future management measures.
- An assessment by ICES of the whiting stock in the Irish Sea with consideration given to additional measures and safeguards needed to control fish mortality;
- Assessment by ICES/STECF of the potential positive benefits of the Trevose closure in the Celtic Sea on Cod in 7bce-k, 8, 9, 10, COPACE 34.1.1.;
- An assessment whether the management area for plaice in 7hjk is appropriate given plaice is only caught as a by-catch in 7hjk.

STECF observations

According to the background material, the Member States committed to develop a BCReP that "will contain measures such as more selective gears, area closures, real time closures, avoidance measures and move-on rules". Furthermore, the Member States stated that they "will undertake all appropriate control measures" and that by 1 July 2019 they will inform the Commission of the control measures taken. STECF, however, notes that no selective gears are presented in the BCReP besides those from the baseline technical measures regulation, which will be adopted in August 2019, (COM(2016) 134 final), those from the discard plan (Regulation (EU) 2018/2034) and the new measures proposed in the 2019 JR. STECF also notes that the BCReP does not contain area closures, real time closures, avoidance measures or move-on rules. STECF further notes that the plan does not contain any proposals on control measures nor did the Commission receive any such proposals by 1 July 2019. Instead, the BCReP only refers to a discussion to be held by the Control Expert Group and the High-Level Group with the help of EFCA.

A large part of the BCReP lists the provisions included in the soon to be adopted Regulation of the European Parliament and of the Council *on the conservation of fisheries resources and the protection of marine ecosystems through technical measures* (COM(2016) 134 final). STECF notes that these measures were not designed specifically to reduce the by-catches of the stocks concerned. In particular, the first measure listed in the table for towed gears is still including the Regulation that smaller meshes (80 mm) in ICES Subarea VII would be allowed in directed whiting fisheries, while whiting in 7a is one of the stocks with 0-catch advice for which directed fisheries should be prohibited.

The BCReP invites the Commission to ask STECF and/or ICES to investigate possible spatio-temporal closures. STECF notes, however, that the Member States could have and should have proposed spatio-temporal approaches in the current BCReP, based on the available scientific research done in this area, for example by the Member States' national institutes. STECF is aware of a number of such studies. In particular, a recent publication by authors from the national scientific institutes from Ireland, France and UK has been recently published (Calderwood et al. 2019). This article covers part of ICES Subarea 7 and explores where and when some species can be targeted while others are avoided by presenting quarterly maps of species CPUEs and catch-compositions by species that are persistent across years. The paper presents an interactive tool for stakeholders (https://shiny.marine.ie/discardless/). This is a static approach based on historical data, but various other real-time approaches have been in use in different contexts (such as Real Time Closures (RTCs; see for example ToR 6.2 of this plenary report) or the real-time spurdog by-catch avoidance programme). Similar real-time approaches could have been designed for the current purpose in the BCReP.

STECF considers that the proposal to take avoidance measures after a skipper has encountered 10% or more of one of the stocks concerned in the catch in a single haul, might have been a promising real-time approach. Nevertheless, STECF considers that the description of the approach falls short because the BCReP does not specify any avoidance measures that should follow the triggering haul and only mentions nonspecific enhanced detection/discrimination by, e.g., electronic devices. No control measures are mentioned. STECF also notes that, in line with RTCs, the obligation to take avoidance measures should be extended to all vessels operating within that 10-nautical-miles diameter circle, rather than the reporting vessel alone. Moreover, no reason is given of why the BCReP considers this approach not relevant for whiting in 7a and plaice in 7hjk.

Furthermore, STECF notes that the plan contains several proposals for evaluations or assessments to be carried out by ICES and/or STECF at some unspecified time. Evaluating all or part of these proposals is a comprehensive task requiring appropriate data and information, and a detailed work plan should be established between the various parties for these evaluations to be conducted in the near future. However, STECF stresses that such actions will only be useful, if they lead to concrete measures that will reduce bycatch.

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

Effectiveness:

Assess and where possible quantify the improvements in selectivity that will be provided in the fisheries covered by the BCReP upon the bycatches of the five stocks concerned, compared to practices until 2018.

STECF notes that the BCReP contains no new proposals to increase selectivity. However, STECF notes that since 2018 a number of changes to minimum gear standards for certain fisheries in the relevant areas have been or are planned to be introduced. These changes stem from the current discard plan (Regulation (EU) 2018/2034), the 2019 discard plan JR and the soon to be adopted technical measures regulation (COM(2016) 134 final). The three documents are summarized below.

· Changes of gear requirements for certain fisheries in the Celtic Sea protection zone and in the Irish Sea were proposed in the 2018 JR. The proposals in the 2018 JR were reviewed with regards to selectivity implications by STECF Expert Working Group EWG 18-06. These changes were introduced 1st July 2019 via discard plan 2018/2034.

· The 2019 JR from the North Western waters group proposes to introduce new gear measures for the <120 mm trawl fisheries targeting *Nephrops* in the West of Scotland (6a and 5b). Furthermore, the 2019 JR also proposes certain changes and additions of the gear options in the Celtic Sea Protection Zone and in the Irish Sea implemented in Regulation (EU) 2018/2034. These proposals were qualitatively reviewed with regards to selectivity implications by STECF EWG 19-08.

· The soon to be adopted technical measures framework regulation (COM(2016) 134 final) stipulates that the baseline mesh size in North western waters will be increased to at least 120 mm in trawls and seines (100 mm in sub-area 7b-k) in a phased-in approach over a two-year period after the adoption of the regulation (i.e. August 2021 at latest). The regulation also specifies that other selectivity modifications, after assessment by STECF can be introduced. Those selectivity modifications shall result in equivalent or better selectivity characteristics for cod, haddock and saithe as that of 120mm, or 100 mm in ICES sub-area 7b-k respectively.

Apart from the assessments of the broader qualitative impacts of selectivity changes of the proposed or implemented gear options of the discard plan made by EWG 18-06 and EWG 19-08, STECF was unable to quantify these improvements for the five stocks concerned in detail, because no evidence was supplied to support their case in the BCReP (or JR). Similarly, the implications of the new formulation in the technical measures regulation that additional selectivity modifications shall result in the same or better selectivity as 120 mm (100 mm in 7b-k) for all of the current and proposed discard plan gear alternatives could not be assessed by STECF due to lack of evidence and time.

The BCReP does not propose area closures, real time closures, avoidance measures and move-on rules and delays the proposals for control measures.

What would be the impact upon the five by-catch stocks concerned?

Impacts on the stocks can only be evaluated using appropriate population-dynamics models that are conditioned on the respective stocks. To a limited extent, STECF EWG 18-02 carried out such an analysis covering gadoid fisheries West of Scotland and the *Nephrops* fishery in the Irish Sea. EWG 18-02 considered some representative devices or gear modifications in the identified fisheries and evaluated the benefits in terms of reducing the choke risk and extending the time fisheries would remain open. This was found to vary from fishery to fishery and is highly dependent on the population structure of the targeted stocks.

Will continued application of the measures beyond 2019 continue a reduction in by-catches and fishing mortality in the medium term (2020-2022)?

As mentioned above, STECF was unable to quantify any specific improvements. Nevertheless, any improvements that may exist will continue a reduction in by-catches when applied beyond 2019. Whether this implies a reduction in fishing mortality in the medium term (2020-2022) will depend on the magnitude of the fishing effort exerted by the fisheries concerned during those years.

Comprehensiveness:

Has the plan considered sufficiently the possible selectivity elements which are readily available for the conditions of the respective fisheries, and which can be realistically applied from a practical and socio-economic perspective (including the dimension of loss of marketable catches or physical replacement costs or lost fishing opportunities)?

STECF notes that many potential gear options are available that have not been considered in the BCReP. In particular, STECF recalls the work of STECF EWG 18-02, which identified fisheries in NWW where improvements in selectivity should be prioritised. EWG 18-02 identified trawl and beam trawl fisheries (TR1, TR2 and BT2) as gear groups with the highest discard rates for a range of species, including the five stocks covered under the BCReP. EWG 18-02 reviewed possible gear options that could be used to improve selectivity in the identified fisheries. Many of these options are applicable for the reduction of bycatch of the five stocks in relevant fisheries. This is summarised in Table 6.3.1.

Table 6.3.1 A summary of possible gear options to improve selectivity for the five stocks covered in the BCReP (source: STECF EWG 18-02).

Stock	Fishery	Selective gear options
Cod 7e-k	Mixed gadoid trawl	Square mesh panels; T90 codend and extension piece; Raised footrope trawls
	Nephrops trawl	Increasing codend mesh size, with larger mesh, square-mesh panels. Sorting grids; Dual codend (separator trawl). Potential for Bycatch Reduction Devices
	Directed whiting & hake trawl/seine	Increasing codend mesh with SMP; T90 codend
	Mixed demersal trawl (hake, anglerfish and	Increasing codend mesh with square mesh panels

	megrim)	
	Mixed demersal beam trawl (flatfish and anglerfish)	Codend mesh increase with square mesh panels; T90 codends; Square mesh codends
Plaice 7hjk	Mixed demersal trawl (hake, anglerfish and megrim)	Increasing codend mesh size; Raised footrope trawls
	Nehrops trawl	Increasing codend mesh size; sorting grids; Dual codend (separator trawl)
	Mixed demersal beam trawl (flatfish and anglerfish)	Increasing codend mesh size; Large mesh escape panels (Flemish panel)
Whiting 7a	*Nephrops* trawl	Increasing codend mesh size with larger mesh, square-mesh panels. Sorting grids; Dual codend (separator trawl).
Cod and Whiting 6a	Mixed gadoid trawl	Limited options current 120mm+120mm smp is selective for whiting and cod
	Mixed demersal trawl (hake, anglerfish and megrim)	Increasing codend mesh size; T90 codends
	Nephrops trawl	Increasing codend mesh size, with larger mesh, square-mesh panels; Sorting grids; Dual codend (separator trawl).

The BCReP has not considered any area closures, real time closures, avoidance measures and move-on rules, even though such approaches are available (discussed above; e.g. Calderwood et al., in press).

This should include, if relevant, an indication of where further selectivity is currently difficult to achieve in a specific fishery, and where possible, provide information on the possible causes and if research should explore potential solutions.

STECF notes that, given the options listed in Table xxx, further selectivity may be possible to achieve. In addition, further selectivity may be possible to achieve when area closures, real time closures, avoidance measures and move-on rules are considered. Research is currently taking place and has taken place (e.g. Calderwood et al., in press) to explore potential spatio-temporal solutions.

STECF conclusions

STECF concludes that the BCReP does not fulfil the commitments made by the Member States as it does not contain any elements to ensure reduced by-catches of the relevant stocks over and above the measures already included in the discard plan, the JR and the new technical-measures regulation and the BCReP does not contain any elements of monitoring or control.

Regarding effectiveness, STECF concludes nevertheless that the respective measures in the new technical-measures regulation, the discard plan and the JR that are mentioned in the BCReP are likely to reduce by-catches of the relevant species, as qualitatively assessed by EWG 18-06 and EWG 19-08. This effectiveness is conditional upon adequate control and enforcement. For the quantitative evaluation and the assessment of the impact on the stocks, follow-up studies are needed, as proposed in the BCReP.

Regarding comprehensiveness, STECF concludes that the BCReP is not comprehensive, as it did not consider any additional gear options that are available and did not contain any area closures, real-time closures, avoidance measures and move-on rules nor did it contain proposals for monitoring, control and enforcement.

STECF concludes that the additional proposals for further assessment and evaluation will only be useful, if they lead to concrete measures that will reduce bycatch.

References

Calderwood, J. et al. 2019 in press. Hotspot mapping in the Celtic Sea: An interactive tool using multinational data to optimise fishing practices. In press in *Marine Policy*. DOI 10.1016/j.marpol.2019.103511.

6.4 Evaluation of Joint Recommendation on new Discard plan for Venus Clams in Italian waters

Background provided by the Commission

The landing obligation is compulsory, as from 1 January 2017, for the species that define the fisheries (other than small pelagics) and that are subject to a minimum conservation reference size (MCRS) according to Annex III of the "Mediterranean Regulation"[12]. The fisheries targeting the mollusc bivalve Venus clams (Venus gallina – as originally described – or Chamelea gallina) are therefore subject to this provision.

In light of this, in 2016 Italy submitted to the European Commission a proposal of a three-year discard plan for the fisheries targeting Venus clams by hydraulic dredges in the Northern Adriatic Sea (see Annexes of the present report). With the derogation at the basis of the discard plan expiring in December 2019, the IT administration is submitting a new Joint Recommendation accompanied by a discard plan.

The draft discard plan is supported by a study which evaluates the possible effects of re-defining the MCRS and the monitoring of the previous two years of implementation.

Request to the STECF

STECF is requested to review and make any appropriate comments and recommendations on the draft discard plan for the fisheries targeting Venus clams in the Northern Adriatic Sea and its supporting study.

In particular, STECF is requested to:

- Provide an opinion whether the survivability of Venus clams has been scientifically underpinned in the discard plan, and assess the potential survivability rates of Venus clams, taking into account the characteristics of the fishing gear, the fishing operations, the biological state of the Venus clams after the fishing operations, and the environmental conditions of the re-stocking area.

- Assess the potential past and future impacts on the stock of the proposed change in the MCRS for Venus clams from 25 mm to 22 mm on exploitation rates and stock biomass.

- In light of the results of the monitoring programme for the period 2017-2018, assess whether the proposed new scientific monitoring programme is likely to provide adequate data and information to evaluate the effects of the discard plan

12 Council Regulation (EC) No 1967/2006 of 21 December 2006 concerning management measures for the sustainable exploitation of fishery resources in the Mediterranean Sea, amending Regulation (EEC) No 2847/93 and repealing Regulation (EC) No 1626/94

In making this evaluation, STECF is asked to take into account the works of the STECF-EWG 15-14, 16-06, 19-01, and of the European Parliament.

The evaluation of this discard plan is linked to the evaluation of the National Management plan for hydraulic dredges in Italian territorial waters.

STECF response

Background

The draft discard plan, accompanied by a study which evaluated the possible effects of re-defining the MCRS and the monitoring of the previous two years of implementation, were assessed by STECF at the spring plenary of 201913. STECF was requested to review and make any appropriate comments and recommendations on the draft discard plan for the fisheries targeting Venus clams in the Northern Adriatic Sea and its supporting study.

In its subsequent advice STECF PLEN 19-01 concluded the following:

- There is no new information presented in the supporting documents to quantify the survivability of discarded catches. A full study following the agreed standards is required and conducted under commercial discarding conditions. If restocking of any retained <MCRS clams takes place, appropriate monitoring of survival is also necessary.
- Improvements in the selectivity of the hydraulic dredge gear operating at the seabed could reduce the quantities of undersized animals that are brought on board the vessels. Some discussion of the effects of adjusting bar spacing and the scope for making adjustments are required.
- STECF reiterated its 2016 conclusions about the impacts on the stock of the proposed change in the MCRS for Venus clams from 25 mm to 22 mm on exploitation rates and stock biomass. (This conclusion was that while the reduction is expected to provide economic gains in the short-term, the medium and long-term effects are unknown. In 2016, STECF had also noted that the stock appeared as being highly exploited, and while the MCRS at 22 mm may be compatible with the length at maturity, the change in MCRS would induce some reduction in the stock biomass).
- New information in the supporting documents is at present insufficient to provide indications of exploitation rate or trends in stock biomass.

13 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

- The monitoring programme instigated appears quite comprehensive, but some adjustments and improvements in the analysis and presentation of available data are required in order to make best use of the material being collected.

- Increased focus on stock survey elements of the monitoring (survey design, clarity in data presentation, construction of time trends etc) and on presentation of fishery information (catches, effort, effort distribution etc) would facilitate calculation of exploitation rates and provide more robust interpretation of biomass changes, which would be potentially useful for regulating yearly removals

Based on this evaluation, the Italian Administration submitted a revised discard plan with additional supporting information. STECF PLEN 19-02 has made a further evaluation of the revised Joint Recommendations for this discard plan.

Summary of the new information supplied

The following supporting information was supplied to STECF PLEN 19-02:

- *Report of the activity carried out after the entry into force of the commission delegated regulation 2016/2376 (2017-2018) (Annex A).*

This report summarises the monitoring carried out since the discard management plan for Venus clam entered into force. The work summarizes the results achieved in the first year and a half of application of the Plan. It describes the activities of restocking and monitoring and show the studies in progress aimed at achieving the defined objectives. New provisions such as the system for the control of the vessel position are included. The report also provides information on the implementation of the monitoring and recording systems relative to vessel position at sea on board hydraulic dredgers. A description of new inspection activities carried out in 2017 and 2018 in order to check compliance with the minimum conservation reference size and fishing within the restocking areas are described.

The text contains also new analyses of the main biological aspects of the species from both bibliographical studies and on ad hoc research carried out in the last years. Surveys in both 2017 and 2018 allowed an earlier determination of sex and mature gametes in both sexes were observed at length 11-12 mm. Additional information on the weight-length relationship is also provided.

New references are made to the sustainability of the fishery activities and the selectivity of the vibrating sieves and the impact of dredges. Indications of further work on selectivity are also provided.

Updated time series (up to 2018) of catches, fishing effort, number of dredgers as well as results of the surveys done with standardized methods for assessing density of individuals in different areas are provided. Data on density are available from 2003 and show important fluctuations without clear trends up to 2018. Effort data in fishing days are available for the period 2002 to 2018 in the Marche region and for 2010-2018 for the whole Central Adriatic. The time series of the number of operating vessels per year start in 1974 up to 2018. None ofl the time series are complete with data missing for certain years.

- *An Explanatory Memorandum that explains the content and supporting documentation of the JR (Annex B)*

This text defines the purpose of implementing the regionalised approach to Italian territorial waters, contains the following elements: A description of the fisheries covered by the discard plan; a derogation from the minimum conservation reference size as set out by Annex III to Regulation (EC) No 1967/2006;-specific technical measures; Specific monitoring and control measures;

- *A report detailing relevant survivability information and a description of planned work (Annex C)*

It describes studies on the striped Venus clam survivability returned at sea after the sieving process, for analysing the rebury capacity of the clams. Different factors are considered: 1) the disturbance due to fishery activity by the dredge and dredge + Sieve (specimens harvested before the return at sea) and changes in temperature. Other studies analysed the shell damage of clams captured by hydraulic dredging in two sites along the north-western Adriatic coast (Lido and Jesolo). They detect and quantify shell damage caused by fishing operations on both captured and discarded clams.

- *A report on the economic impacts of the 2016 Discard Plan on the fleets and fisheries involved (Annex D)*

This report analyses the economic performance of the sector following the recent management measures. It is stated that considering that the daily fishing hours in 2017 and 2018 have halved compared to 2016, and that the trawled areas per day have been reduced, it has been easier to manage the fishing activity and conserve the resource in areas left at rest. The document includes also some consideration on the likely negative economic consequences of a return to a MRCS of 25 mm. A return to the original MCRS would increase the time taken to reach the daily quotas and on the negative impact on the bottom.

- *A scientific paper entitled, "Variation of growth performance of the striped Venus clam Chamelea gallina (Mollusca: Bivalvia) (Linnaeus, 1758) in relation to environmental variables along the southern part of its geographic range" (Delgado et al. 2015).*

This study reports relative growth, shell length-age keys and growth performance indices (overall growth performance (OGP) and phi prime) for the striped venus Chamelea gallina from the Huelva coast in southwest (SW) Spain. The growth performance in this area is compared with populations from the Black Sea and from other locations along the southern distribution area of this species, and linked with levels of temperature, salinity and chlorophyl (chl-a) concentration.

- *A scientific paper entitled, "Aspects of reproduction of striped Venus Chamelea gallina in the Gulf of Cádiz (SW Spain): Implications for fishery management" (Delgado et al. 2013).*

The study analyses reproductive aspects of a natural population of Chamelea gallina on the SW Spanish coast (Gulf of Cadiz): gametogenic cycle, size at first maturity, size at sexual differentiation and partial fecundity. The methodology involves the use of standard histological techniques, image analysis and the assessment of the variation of gonadal growth. Monitoring throughout one year (May 2010–April 2011) identified 5 gametogenic developmental stages and evidenced the existence of a long reproductive period between March and September.

- *A scientific paper entitled "Bycatch and discard survival rate in a small-scale bivalve dredge fishery along the Algarve coast (southern Portugal)" (Anjos et al., 2018).*

The study aims to quantify the bycatch and discards, estimate damage and mortality, and propose management measures to minimize discards and mortality. A total of 15 fishing surveys (60 tows) were performed using two types of dredges ("DDredge" targeting Donax trunculus and "SDredge" targeting Spisula solida and Chamelea gallina).

- *A scientific paper entitled, "Evaluation of shell damage to the clam Chamelea gallina captured by hydraulic dredging in the Northern Adriatic Sea" (Moschino et al., 2003).*

The study assesses the impact of hydraulic dredging on Chamelea gallina populations in two sites along the north-western Adriatic coast (Lido and Jesolo) by detecting and quantifying shell damage caused by fishing operations on both captured and discarded clams. Various levels of impacts are applied. The highest being that used by commercial fishing vessels, which employ high water pressure jets and mechanised sorting. The lowest impact is from manual sampling of clams by scuba divers. Water pressure and sorting significantly increased shell damage, the highest levels always being observed in commercially dredged clams.

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- *A brief document illustrating preliminary results of the ad-hoc survival experiments "The striped venus clam (Chamelea gallina) survivability: ongoing experimental and field studies". Lucchetti A. 2019. CNR IRBIM Ancona.*

The document describes a study of survivability in experimental tanks after selecting the size classes below the MCRS. Clams have been put held in tanks for 21 days. An experimental glass tank connected with a collection tank is used to test survivability of clams. The first results from these experiments will be available in the next weeks. In addition, the report describes the experiment on capability of clams to bury themselves after restocking. The clams are monitored using two underwater cameras. The time required for the clam to be no longer visible on the surface of the sediment from the moment of introduction into the tank is recorded. Preliminary results show that clams were able to rebury themselves. A full analysis of the data will be completed later.

STECF comments

General Observations

STECF acknowledges the efforts made by the Italian administration to improve the JR. The revised JR submitted has attempted to respond to the observations made by STECF PLEN 19-01. This has included re-structuring of the existing data presented, the inclusion of new information and supporting studies, a description of measures to manage the fishery as well as indications of new research to be undertaken to fill the knowledge gaps.

STECF notes the economic analysis of the impacts of the 2016-2019 discard plan has also been provided in support of the JR. This analysis shows that the daily fishing hours have halved compared to 2016, and that the trawled areas per day have been reduced. As a result, it has been easier to manage the fishing activity and keep some areas closed to fishing. This analysis provided to STECF highlights that a return to a minimum

conservation reference size for clams of 25 mm would have negative implications for the sector in economic terms, but also for the environment, since vessels would have to dredge for longer to reach the daily quota, as indicated by the fishing effort data.

STECF considers that the improvement of selectivity, combined with the precautionary management of fishing pressure are important factors in delivering sound management of Venus clams. For these reasons, STECF considers the proposed reduction of fishing effort and catches through a reduction of fishing days per year and by a reduction of the maximum daily quota are consistent with the current status of the stocks and with the precautionary approach.

STECF notes that a long-term evaluation of the impact of reduction in MCRS is not available and that the data and information provided do not quantify any associated change in the fishing mortality. There are indications suggesting that the situation has improved and general trends in observed densities since 2016 are positive. Important fluctuations in resource availability occurred with environmental drivers indicated as a main cause.

A more detailed response to the various questions in the ToRs is given below.

Survivability

The supporting documentation to the JR provides a review of the relevant survivability evidence. STECF observes that one study shows that the mechanical sorter and water pressure of the dredge caused shell damage to more than 30% of the catch of clams (*Chamelea gallina*), and damage was less for small and discarded individuals. The re-capture of damaged and repaired individuals indicates that some damaged clams can survive after being caught and discarded. Immediate mortality ranged from ~2-20% (Moschino et al., 2003), but this does not provide evidence of survival levels, only maximum survival potential.

A study was referenced and summarised (Morello et al., 2006), on the capacity for discarded clams to rebury, but did not include estimates of discard survival. A more recent study assessed survival of clams from two dredge designs (Anjos, 2018). From fishing operations representative of normal practice, the damage rates for the different species commercial clams (*C. gallina, D. trunculus* and *S. solida*), were 1-11% and immediate mortality were 1-10%. In general, clams <MCRS were less susceptible to commercial damage and mortality. From captive observation method, following ICES WKMEDS guidance, including 7 days of monitoring, the mean survival rates of the target species were higher for undamaged individuals ranging from 86.4% to 100%, than for slightly damaged specimens, 24.2% to 60.0%. It is however not stated whether the mortalities slowed or stopped during the monitoring period, so it remains unclear whether the experiment was long enough to take all of the discard mortalities into account. If this is not the case, the survival estimates provided may represent an overestimate. Nonetheless, based on the level of immediate mortality, level of damage and survival estimates presented, STECF observes that discard survival would expect to be substantial in this fishery, however, it is noted that these estimates do not include the discard mortality from predation, the level of which is unknown.

The JR also indicates that the Italian administration has funded work to study the survivability of clams discarded after sorting. The method of captive observation will be applied, whereby samples of discarded clams will be monitored and in laboratory holding facilities and holding cages close to the shore. Details of the experiment are not provided, STECF advise that the guidance provided by ICES WKMEDS are followed to ensure robust survival estimates are generated, which are representative of the fishery

and account for all discard mortality. The experiments are due to be completed by the end of 2019.

Selectivity

STECF notes that the need for improvements in the selectivity of the hydraulic dredge gear operating at the seabed to reduce the quantities of undersized animals that are brought on board the vessels is acknowledged in the revised JR. The JR indicates that the Italian administration has recently financed an extensive series of projects to improve the selective performance of the gear as a whole: the dredge, where the first selection of the clams takes place on the seabed, and the vibrating sieve, where most of the selection occur. These experiments should help improve the understanding of selectivity over the course of the fishing operation, but no results are available yet.

Reduction of MCRS

STECF notes that the reduced MCRS is larger than the defined size at first maturity in the Adriatic (Froglia, 1989, Casali 1984).

STECF considers that detailed information on trends in stock biomass have been provided for the main Italian clam fisheries. Data series on biomass at sea estimated by surveys are provided from 1984 showing high fluctuations without a clear trend. This was probably because this species is short-lived and the stock is subject to natural fluctuations due to anoxia phenomenon, oceanographic conditions and pollution (Barillari et al, 1979; Bresan et al, 2014).

As the new MCRS (22 mm) entered in force only in 2017, based on the data of the last two years, there is no evidence to suggest the reduction in MCRS has had a detrimental impact on the stock. There are indications that the situation has improved in some stock areas, but STECF cannot assess whether this is related to the discard plan or natural fluctuations in populations levels.

As discussed in 2016, STECF notes that a study (Carlucci et al., 2015) suggests that the reduction of the MCRS may have limited implications regarding overall egg production. A reduction of MCRS from 25 to 22 mm is predicted to lead to a reduction of 8% of the reproductive potential.

However, the reduction of the MCRS along with the proposed reduction of daily quota per vessel and reduction in fishing effort would produce short to medium term economic benefits. The document provided by MS states that the revenues derived from the catch of clams between 22 and below 25 mm accounted for around 80% of the total revenue. The reduction of MCRS implies reaching daily quotas more quickly, with subsequent reductions in time at sea and fuel costs. The decrease of the fishing effort would contribute to the reduction of the impact on the fishing grounds, as well as better management of e fishing activities (e.g. through the rotation of exploitable areas).

Monitoring programme

As identified by STECF PLEN 19-01, the monitoring programme instigated appears quite comprehensive. Additional information has been provided to address the comments made by STECF 19-01, and adjustments in the analysis and presentation of available data have been made. These amendments have improved the clarity of the monitoring programme and are thus also likely to improve its effectiveness.

STECF conclusions

The revised JR submitted has attempted to respond to the observations made by STECF PLEN 19-01. This has included the re-structuring of the existing data presented, the inclusion of new information and supporting studies, measures to manage the fishery as well as indications of new research to be undertaken to fill the knowledge gaps.

STECF concludes that the Italian discard plan is comprehensive and the request of continuation of the enforced reduction in MCRS of Venus clam (*Chamelea gallina*) from 25 mm to 22 mm until 31 December 2022 seems reasonable. Nevertheless, STECF reiterates its previous conclusion that the past and predicted future impacts of the proposed change in the MCRS on exploitation rates and stock biomass cannot be fully assessed.

STECF concludes that based on the level of immediate mortality, the level of damage and survival estimates presented, discard survival would expect to be substantial in this fishery noting that these estimates do not include the discard mortality from predation, the level of which is unknown.

STECF is aware that new ad hoc survivability studies in the Adriatic are in progress and that the results will be provided by the end of 2019.

STECF concludes that the proposed scientific monitoring program is expected to provide robust data and information to allow evaluating of the effects of the discard plan. The program is extensive and based on DCF standards.

STECF concludes that the planned selectivity study with the hydraulic dredge, in combination with the survivability experiments will help improve the understanding of selectivity and survival over the course of the fishing operations in the hydraulic dredge fishery.

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6.5 Evaluation of new management hydraulic dredges in Italian waters

Background from the Commission

Under Article 19 of Council Regulation (EC) No 1967/2006 (hereafter referred to as "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 maximum sustainable yield or MSY. Where targets relating to the MSY (e.g. fishing mortality at MSY) 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 shall also contain specific conservation measures based on the ecosystem approach to achieve the objectives set. In particular, they 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 fisheries, conduct pilot projects on alternative types of fishing management techniques, etc.

In 2016, Italy submitted consolidated management plans for hydraulic dredges in Italy to the European Commission (EC) and these were adopted at national level. Italy submitted new management plans for these gears which should be re-examined by the STECF after the update performed by the Italian Administration.

Request to STECF

1) To assess and advice whether the management plans for marine commercial fishing carried out with hydraulic dredges in the territorial waters of the Republic of Italy contains adequate elements in terms of:

<u>The description of the fisheries</u>

- 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).
- 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.
- An updated state of the exploited resources.
- Information on economic indicators, including the profitability of the fisheries.

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 deteriorating quality of data or non-availability places the sustainability of the main stocks of the fishery at risk.
- Other conservation measures, in particular measures to fully monitor catches of the target species, to gradually eliminate discards and to minimise the negative impact of fishing on the ecosystem.

Other aspects

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

Documentation: The management plan for the fleets fishing with hydraulic dredges

Summary of the information provided to STECF

STECF was provided with two documents to inform its review of the new management hydraulic dredges in Italian waters:

1) *The National Management Plan for fishing with hydraulic dredges and boat-operated shell-rakes as identified in the classification of fishing equipment use by mechanical dredges including mechanised dredges (HMD) and boat dredges (DRB)*

This document describes the objectives of the plan, the legal framework, the management of the fishery and the measures to apply the each one of the target species.

The target species are striped venus clam (*Chamelea gallina*), razor clam (*Ensis minor*) and smooth clam (*Callista chione*). Striped venus is by far the most important resource in terms of landings, income and number of vessels involved.

The resources are managed at national level, with regulations that apply to Italian waters, and at Consortia level (Co.Ge.Mo., Consorzi di Gestione dei Molluschi). The owners of the vessels in the district are the members of the Consortium. The measures adopted by the 17 Consortia may differ and include setting of the maximum daily catch, fishing days and temporal closures in addition to the compulsory two months closure in summer. Management is based on territorial rights. Each Consortium operates and has fishing rights exclusively within its own territory (fishing district). Supra-district cooperation may also occur.

Monitoring is carried out at two levels, district and national. Each consortium, with its associates and the support of the scientific center it is associated with, is responsible for continuously monitoring the resource in the area under its responsibility. This fishery

involves the cultivation of the resource by the Consortia, that close and open to fishing certain areas on rotation; the collection and redistribution (seeding) of young clams in significant numbers (hundreds of millions of clams); control of the daily catches; definition of the daily catch based on the resource availability and market demand; and the implementation of no-fishing periods.

The national monitoring is carried out once a year, during the two-months closed season, with the same protocol and standard methodologies in all areas. Reference points are based on densities. Different measures may be adopted depending on the density values observed and the established reference points. The daily catch would not be very meaningful as indicator of abundance since these vary based not only on the resource, but also on market demand.

A working group on hydraulic dredging is set up at the Directorate-General for Maritime Fishing. Its members are chosen by the Directorate-General among fishery experts, biologists and shellfish ecologists. The working group prepares the sampling protocol for the annual national monitoring, examines its results and collaborates with the Directorate General in preparing the annual report on the state of bivalve mollusk resources in Italy. Such report will be sent to the European Commission.

By November 30th every year the Consortium sends the programme for management and protection activities it plans to implement for the following year to the Directorate General for Maritime Fishing, and also inform the regional authorities. By February 28th, each Consortium prepares a detailed report on the management activities carried out by the Consortium during the previous year.

2) *ANNEX 1 State of knowledge of fishing with hydraulic dredger*

This document provides more detailed information on the issues dealt with in the Management Plan, the supporting scientific basis of the plan and documents the state of knowledge of the target species.

Fishing with hydraulic dredges is practiced in Italy in 9 Regions along approximately 1400 km of the coastline out of a total length of approximately 8000 km. The fleet consists of 706 vessels and is concentrated mainly along the Adriatic coast. The number of fishers involved is around 1500. The target species are striped venus clam (*Chamelea gallina*), razor clam (*Ensis minor*) and smooth clam (*Callista chione*). The dredges operating in the Tyrrhenian Sea (roughly 40) mainly fish razor clams (*Ensis minor*), not further than 1.5 - 2 nm from the coast.

A general description on the hydraulic dredge fishing, fishing operation as well as the number of vessels per district and system for position monitoring adopted by each Consortium is given. A study on the selectivity for striped venus clam is included. The overall fishing effort trend expressed in fishing days over 2002-2018 in Italy displayed a decreasing trend until 2016 and slightly increased in 2017 and 2018. However, when expressed in fishing hours in the central Adriatic, fishing effort drastically decreased in these two more recent years.

Time series of economic data from 2012 to 2017 are presented. Data include income, operative costs and employment indicators, and are presented for the whole time series for all species combined and at national level, for the hydraulic dredge fishery.

Information on the survey results and the biology of the target species is given. The impact of the gear on by-catch species is presented qualitatively (species list indicating

occurrence and null, low or severe impact), for striped venus clam and razor clam fishing. The impact on other non-target species would be negligible according to the results of a study conducted in the northern Adriatic, expressing the dominance of the target species striped venus clam in the catch, in number of individuals in percentage.

STECF comments

STECF in its Spring Plenary (PLEN 19-01, 25-29 March 2019) revised an earlier version of the management plan for hydraulic waters in Italian waters.

STECF acknowledges the improvement of the documents submitted to the plenary and the work done to summarize the information regarding the fishing with hydraulic dredges, its management, the monitoring surveys and the management measures proposed.

STECF noted in its Spring report that a management plan had been adopted on 8 March 2019, i.e. prior to its evaluation by STECF. This same situation is repeated in the Summer Plenary, with a new management plan adopted some days before its evaluation by the plenary, on 17 June 2019 ("Piano di Gestione Nazionale per le attività di pesca con il sistema draghe idrauliche e rastrelli da natante", https://www.politicheagricole.it/flex/cm/pages/ServeBLOB.php/L/IT/IDPagina/13760).

The current management plan does not include any request for derogation. However the plan indicates that the prohibition of fishing inside 0.3 nm from the coast (MEDREG Art. 13, paragraph 2) drastically reduced the fishing area for dredges, especially in the case of razor clam. Because of this, razor clam fishing within 0.3 miles has been authorized in the last years by the Italian Administration for experimental purposes in the Maritime Compartments of Monfalcone, Venice, Chioggia, Rome, Gaeta and Naples, to collect technical and scientific elements useful for managing this resource. The experimental fishing will end on 31 December 2019. It is unclear to STECF whether this cessation of activity might have any significant impact, e.g. through the redeployment of the vessels to other fishing grounds.

There has been a decrease in the number of fishing hours in 2017 and 2018. STECF notes that this may respond to a better situation of the stock, because the daily quota can be fished in a shorter period of time, but this may also be influenced by the decrease in the daily quota set in December 2016, from 600 to 400 kg for striped venus clam. No information is available on CPUE per hour before 2017, i.e., before the decrease in the daily quota, which could have helped distinguish between the two effects.
In the future, the use of data from the vessel's position monitoring system (VMS) will enable estimating fishing effort in terms of actual fishing hours and hereby calculate the CPUE per hour.

The detailed response to the various elements of the ToRs is given below.

- *Request 1. To assess and advice whether the management plans for marine commercial fishing carried out with hydraulic dredges in the territorial waters of the Republic of Italy contains adequate elements in terms of:*

<u>The description of the fisheries</u>

- 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).

Some information is presented at national or large area (striped venus clam landings and fishing days for Italy, daily fishing hours in the central Adriatic). A description on the state of the resource in the last years, by region and district, for each target species is provided. This description includes landings trends and summary of survey results, expressed in density (g/m^2). Since daily quotas are set, that are based on the abundance of the resource, but also on market demand, CPUE would not be meaningful indices of abundance.

- 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.

Striped venus clam is subject to MCRS, but this is not the case for razor clam and smooth clam. Razor clam is subject to minimum landing size (80 mm) according to Italian regulations. Length frequency distributions from the surveys in 2017 and 2018 for the different Adriatic districts (except in Veneto Region, 2016 and 2017), are presented for striped venus clam. No information on length frequency distribution from commercial catches is given for any of the three target species in the synthesis submitted. Although not presented, this detailed information by area is expected to be available, since the length frequency distributions from the commercial catches allow the identification of the areas characterized as being where venus clams will attain or exceed the MCRS in the next three months or more. The current commercial size (22 mm) is significantly larger than the size at first maturity (16 mm already mature, Annex 1) and it is indicated that generally the presence of <22 mm individuals is scarce in the commercial catches as a consequence of the selectivity equipment. Some information on length frequency distributions of the commercial catch was also available in the documentation submitted to the previous Spring Plenary.

- An updated state of the exploited resources.

A summary of the results of the scientific surveys conducted in 2017 and 2018 is provided. These include the length frequency distributions of striped venus clam (i.e. an indication of the recruitment strength), and the density values for striped venus clam and razor clam. Some longer time series for striped venus clam are available in the documents provided for the discard plan Joint Recommendation (ToR 6.4 of this plenary report).

High mortality events are mentioned to have occurred in 2018, and also earlier in 2008, in the central-north Adriatic. These events were not linked to the fishing activity but to extreme environmental conditions, e.g. storm, strong winds, anoxia. The management plan includes a proposal to monitor the physical-chemical parameters of the water column and the granulometry of the seabed, in order to support research on the seasonal changes in the clams development and on the identification of possible causes of these mortality events.

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

At national level, during 2012-2017, the sector of hydraulic dredgers maintained both the number of vessels and the number of employees (on-board personnel) constant over time, fluctuating around 700 vessels (706 at present) and from 1453 to 1541 fishers (around 2.12 employees per vessel). The average number of fishing days per year is around 85 days.

The contribution of the hydraulic dredgers segment to the entire Italian fisheries sector is approximately 5.7% and 10.36%, in terms of gross sales value of production and total fishing fleet production respectively.

Cost of labor has not shown any clear trend over the years (around 15 million Euros), except a sharp drop in 2017 to 12 million Euros. In contrast, fuel costs have steadily declined over the years. Gross profit, total revenues and added value steadily declined over the years, except with a marked increase by almost 20% in 2016 for all the above-mentioned economic indicators.

Catches and sales are presented separately for striped venus clam, razor shell and smooth clams, for the period 2011-2017. Specifically annual catches and sales of striped venus clam displayed a gradual decrease from 2011 to 2017 by 52% and 60%, respectively. Razor shell annual catches and sales showed marked fluctuations, with abrupt peaks in catches depending on the area followed by a decline in subsequent years. The average price (euro/kg) for razor shell was shown only for 2011. Smooth clam landings and sales have undergone a progressive decrease by 40% from 2011 to 2017. Despite the decline in profit, the average price remained almost constant over the years, ranging between 4.4 Euro/kg in 2013 and 4.5 Euro/kg in 2015, 2016 and 2017. For this species the daily catches cannot indicate the state of the resource as the daily catch is mainly conditioned by the market requests.

<u>Objectives, safeguards and conservation/technical measures</u>

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

The Consortia monitor the fisheries on a daily basis, using an abundance index of the commercial fraction of the population, which can be compared against predefined reference points. These reference points are set by species and GSA, and three density values are considered, for "good management", "attention" and "fishing prohibition". Based on the results of the monitoring, the Consortium decides which areas can be closed or opened.

- Measures proportionate to the objectives, the targets and the expected time frame.

The fishery is continuously monitored and management reacts at the very short time to the observed changes in the resource. Depending on the densities observed and the reference points, a decision will be made regarding the continuation of the activity or cessation.

- 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.

Density values below the lowest limit imply the closure of the area to all fishing activities. "Attention" involves two-month monitoring, and depending on the result, fishing will continue, the daily quota may change, or the area will be closed. Density values higher than the upper limit indicate that the resource has been correctly managed.

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

Some consortia of the middle-lower Adriatic, with the support of the scientific institution they collaborate with, have introduced changes to the dredges aimed at reducing their impact by changing the position of the nozzles and increasing the flow of water inside the dredge so as to better expel the sand and juvenile specimens.

Other aspects

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

The reference points, expressed in densities, correspond to "good status", "attention" (that results in management correction measures), and "low density", that results in the closure of the area to fishing. The Consortia continuously monitor the area under their responsibility.

STECF conclusions

STECF concludes that the management plan, which is already implemented, contains almost all of the elements requested in ToR 1. The monitoring at fishing district level conducted by the corresponding Consortia follows changes in the resource on a daily basis, and areas are closed to fishing if densities are considered too low. The survey conducted at national level at the end of the fishing season provides the information necessary for the definition of the measures to be applied in the following fishing season.

STECF noted that some elements were not in the documents provided to PLEN 19-02 for this Term of Reference but were previously provided to PLEN 19-01, and/or in the joint recommendation for the discard plan (section 6.4 of this plenary report)

STECF acknowledges that the implementation of the plan represents a major effort of coordination and commitment among fishers, scientists and administrations involved.

STECF supports the need for further research on the role of the environment on clams development and on the causes of the large mortality events observed.

6.6 Presentation and possible use of MARE/2016/22 'Strengthening regional cooperation in the area of fisheries data collection in the Mediterranean and Black Sea (STREAM)' quality checks to assist in the stock assessment process

Background provided by the Commission

The MARE/2016/22 STREAM project "Strengthening Regional cooperation in the area of fisheries biological data collection in the Mediterranean and Black Sea" aimed at providing support to the Commission and MSs to build up experience in new areas of regional cooperation in the Mediterranean and Black Sea for the realization of Multiannual Regional Work Programme (MRWP). The STREAM project started in December 2017 with an initial duration of 15 months, which was extended to 17 months, in recognition of the workload on staff in scientific institutions. STREAM was organised in 9 Work Packages, 9 Tasks (3 sub-Tasks), and issued 20 deliverables. The final evaluation meeting took place on 14 June and the draft final report is under finalization.

Work Package 6 dealt with 'Procedures to assess the quality of biological data stored at regional level'. In one of the tasks of this Work Package (Task 6.1), a set of quality checks were developed, to detect errors in both raw data (*a priori*) and in the raised data required by the end-users *(a posteriori*), using R-scripts. The *a priori* data quality checks can detect errors or inconsistencies on the sampling data, before the raising procedures are applied. *A posteriori* quality checks work on the Mediterranean and Black Sea Data Call formats, focusing on providing information on the spatial coverage among the strata (i.e. quarter, metier) and on the assessment of the completeness of biological information.

Request to the STECF

STECF is requested to take into consideration the data quality tools developed by STREAM and to discuss their potential use in EWGs dealing with stock assessment. Pending a positive outcome of this discussion, STECF is requested to promote their use in STECF EWGs on stock assessment and assess their performance after one year, based on feedback from the relevant EWGs.

Summary of the information provided to STECF

The draft final report of the STREAM project is still being finalized, but the project was presented by the project coordinator, and the deliverable D6.1 "Compilation and classification of quality checks at the national level" was provided to STECF. The deliverable consists of a set of data quality checks at the national level that were developed as R markdown scripts that automatically write the outcomes in standalone MS Word documents. These R scripts together with the example datasets were also at the disposal of the STECF.

The data quality checks were classified into *a priori* and *a posteriori* checks, each of them being implemented into a separate R markdown script. The *a priori* data quality checks aim at detecting errors directly on sampling data in the Regional Coordination Group for the Mediterranean and Black Sea (RCG Med&BS) formats for commercial sampling and

commercial landings (CS and CL formats) concerning the measurements of biological variables (length, weight, maturity, sex, age) and landings. The *a posteriori* data quality checks are applied to the EU Mediterranean and Black Sea Data Call formats and provide information on the spatial coverage among the strata (i.e. quarter, metier) and on the assessment of the completeness of biological information. It also allows to detect records with discrepancies between the product of number of raised individuals and individual weight at age in the landings/discards and the total landings/discards by metier, quarter, species and GSA.

STECF comments

STECF acknowledges the work done in the STREAM project and considers the data quality checks developed could be helpful to detect errors in both raw biological data (*a priori* data quality checks) and the raised data required for stock assessment in the Mediterranean and Black Sea (*a posteriori* data quality checks).

STECF notes that the use of R markdown scripts allows building a reproducible and transparent framework that facilitates the harmonization and cooperation between member states. Other steps in the scientific workflow like data preparation and stock assessment could be added to this framework in the future. This would be in line with the transparent assessment framework (TAF) being developed by ICES.

STECF notes that other tools developed in the project could also be of interest for member states and STECF EWG. For example, the auxiliary R scripts developed in Task 3.2 allow transforming data to answer different data needs (SDEF, GFCM/DCRF, FDI). Therefore, the data quality checks could be applied to detect errors in different data calls, ensuring consistency across data calls.

STECF notes that these tools could be useful not only for member states and STECF EWG, but also for GFCM WGs. The R markdown scripts could be readily applied in the data preparation meetings of the benchmark procedures being currently implemented in GFCM.

STECF conclusions

STECF concludes that the *a priori* and *a posteriori* data quality check tools developed under the WP6 of STREAM project could be useful for member states before data submission. A reference to the existence of these tools may be added in the cover letter of the data calls.

Furthermore, the *a posteriori* quality checks could also be useful for STECF EWGs to ensure the quality of the data used for the assessment. This would need to be discussed with the persons in charge at JRC and with the chair of the STECF EWGs for Mediterranean stock assessments. Should this be the case, STECF requests EWGs to provide feedback on their ease of use, utility and any other issue considered relevant.

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

7.1. New STECF - STECF rules of procedures

Article 6, point 7, of the Commission Decision of 25 February 2016 setting up a Scientific, Technical and Economic Committee for Fisheries (C/2016/1084) requires the STECF to adopt its rules of procedure on the basis of the standard rules of procedure for expert groups. The STECF bureau consisting of STECF chair and vice-chairs, DG MARE focal and STECF secretariat will examine the rules of procedure currently in place to see if any further update would be needed.

7.2. Preparation of EWG 19-15 on the EU fish processing sector

Background provided by the Commission and request to the STECF

The collection of fish processing data is now voluntary. Potential data gaps for important MS may lead to a distorted picture of the EU overview. In order to avoid this, DG MARE 19-15 are working on a protocol to impute missing data from other sources (e.g. Eurostat) and historical data, which will be presented to the plenary for review and possible endorsement.

STECF observations

STECF notes that since 2016 the collection of economic data for the fish processing industry is no longer mandatory. Therefore, some MS will not deliver data in response to the next data call scheduled for late summer 2019.

STECF notes that already, in response to the 2017 call for economic data on the fish processing industry, the Netherlands did not deliver data for 2015 even though delivery of such data was still mandatory (see STECF 17-16, p. 25). Hence, the 2015 value for total turnover in the EU overview is too low due to the missing data from The Netherlands. Based solely on the data submitted in response to the 2017 data call, total turnover is estimated to have increased by only 1.1% in 2015 (see Table 7.2.1).

Table 7.2.1: Calculation of EU aggregates using only DCF data

Turnover (€ million)	2010	2011	2012	2013	2014	2015
Example Member State .	704	804	775	815	846	n.a.
Other Member States	26,322	26,759	27,830	27,958	28,556	29,726
Total EU (reporting countries)	27,026	27,563	28,605	28,773	29,402	29,726
p.m. Annual increase of Total EU		2.0%	3.8%	0.6%	2.2%	1.1%

STECF notes that all MS have to deliver data for the fish processing industry to EUROSTAT through their national statistical offices. The DCF data collection includes additional variables and provides, therefore, parameter values which are not included in the EUROSTAT data.

STECF notes that DG MARE Unit A4 developed a protocol and discussed it with the chair of the EWG 19-15. This protocol includes calculation methods to infer missing data from the DCF data call by using EUROSTAT data. Applying that method to the missing data from The Netherlands for 2015 leads to a different picture of the total turnover in the EU 2015 resulting in an increase in turnover of 4.2% compared to the 1.1% using only the DCF data (see Table 7.2.2).

Table 7.2.2: Calculation of EU aggregates using Eurostat data to infer an estimate for the missing turnover from The Netherlands

Turnover (€ million)	2010	2011	2012	2013	2014	2015
Example Member State	704	804	775	815	846	915
Other Member States	26,322	26,759	27,830	27,958	28,556	29,726
Total EU (reporting countries + estimates)	27,026	27,563	28,605	28,773	29,402	30,641
p.m. Annual increase of Total EU		2.0%	3.8%	0.6%	2.2%	4.2%

STECF conclusions

STECF concludes that because collection and reporting of fish processing data are no longer mandatory under the EU-MAP/DCF, data from some member states will no longer be transmitted in response to DCF data calls. The absence of data from Member states will give rise to a misleading impression of the economic performance of the EU fish processing industry due to lower coverage of the DCF datasets.

STECF endorses the protocol suggested and agrees that the EWG 19-15 scheduled for November 2019 can apply it. STECF notes however that the application of the protocol to other variables and to a larger set of Member States may lead to new unforeseen issues that would have to be addressed by the EWG.

7.3. Preparation of the EWG on Outermost Regions

Background provided by the Commission

The PLEN 18-03 report indicated that a specific EWG on ORs should identify in 2019 the concrete issues and the necessary processes for addressing the four challenges already identified: data collection, stock assessment, ecosystem knowledge and social & economic impacts. STECF concluded that the aim of the EWG on ORs should take the form of a scoping and prioritization exercise, to allow for the development of a roadmap for the subsequent meetings that will form the basis for the permanent network of research institutes.

Request to STECF

STECF is requested to further discuss and advise on the content and organisation of the EWG on ORs. The Plenary should propose draft ToRs and give indication of a date/place/composition of the EWG on ORs.

STECF observations

The STECF PLEN 18-03 noted that in response to a DG MARE call for proposals in 2015 (MARE/2015/06) the ORFISH project (https://orfish.eu/) has been established – Development of innovative, low-impact offshore fishing practices for small-scale vessels in outermost regions. STECF PLEN 18-03 noted that the project aims, amongst other objectives, to provide a platform for exchange of knowledge on low-impact offshore fishing techniques among fishers from the outermost regions.

STECF notes that in response to a DG MARE call for proposals in support of the CFP (EASME/EMFF/2018/011-Lot2 "Scientific advice in support of the CFP in the Atlantic EU western waters and the EU outermost regions") a MRAG Europe lead consortium was recently established. The framework contract is expected to improved knowledge on fish stocks and ecosystems and fisheries management schemes in place in EU outermost regions.

The STECF PLEN 18-03 also noted that the ORs are part of the EU-MAP for data collection and are consequently included in the Work Programs and Annual Reports of France, Spain and Portugal. Thus, the sampling plans and achievements are also evaluated by the corresponding STECF Experts Working Groups. Issues linked to ORs data collection could thus be investigated in more details in these EWGs by adding a specific ToR to these groups in 2019.

STECF notes that the STECF Balance / Capacity EWGs have has been calculating balance indicators for OR based on EU-MAP data and publicly available stock assessment information since the implementation of the new Balance Guidelines in 2014 (COM(2014) 545); EWG 18-14 had a specific TOR focusing on the calculation of balance indicators for the OR of France, Portugal and Spain (TOR 5). Besides the balance indicators *per se*, experts were asked to indicate the fish stocks on which the assessed fleet segments rely, and the principal fishing areas. Experts were also asked to list the fleet segments for which the information available did not allow to calculate the balance indicators. STECF PLEN 18-03 observed that the balance indicators could be calculated fully for the Portuguese ORs, and partly for the Spanish ORs, but not for the French ORs due to the lack of available data.

STECF therefore proposes that the Terms of Reference for this first Expert Working Group on ORs are:

1. Identify specific issues within the following four main challenges: data collection, stock assessment, ecosystem knowledge, and social & economic impacts for each OR.
2. Prioritize common issues within the four main challenges.
3. Identify the necessary processes for addressing the issues prioritized:
   for example, trough drafting specific ToRs on ORs data collection issues to be investigated in DCF EWGs and STECF EWG Social Data.
4. Develop a roadmap for the subsequent meetings that will form the basis for the permanent network of research institutes.

STECF suggests that the participation for this first EWG on ORs should include:

- MS experts dealing with OR stock assessment
- MS experts dealing with OR data collection (including social and economic data)
- MS experts dealing with OR small-scale fisheries
- The chairs of the DCF Regional Coordination Groups (RCG) on Large Pelagics and the RCG on Long-Distance Fisheries
- Orfish and MRAG Europe consortium coordinators.

STECF conclusions

STECF concludes that the aim of the EWG in 2019 should be to identify and prioritize the specific issues, and the necessary processes, for addressing the four challenges: data collection, stock assessment, ecosystem knowledge, and social & economic impacts in order to develop a roadmap that will form the basis for the permanent network of research institutes.

STECF concludes that the organizational details of an STECF EWG in 2019 should be examined and discussed in the remit of the STECF Bureau.

7.4. Follow-up of WGMIXFISH and WGECON

Request to STECF

STECF is requested to elaborate on the results of the ICES WGMIXFISH meeting and draw conclusions for the possibilities for the future work regarding socio-economic assessments of mixed fisheries plans.

Background

In 2018 the STECF EWG 18-05 on the 'economic impact of mixed fisheries options' convened at the ICES headquarter in parallel to the ICES Working group on mixed fisheries (WGMIXFISH). The EWG 18-05 was requested to elaborate on the possibilities for an assessment of socio-economic impacts of the TAC and quota proposal in the longer-term context of e.g. the MSY policy, full implementation of the landing obligation or area-based management measures. The EWG 18-05 selected a few cases (of e.g. TAC options) to address the request and also analysed e.g. whether the available data is sufficient, how much effort is necessary to update and run the bio-economic models or necessary infrastructure for that.

During the STECF plenary meeting in November DG MARE unit A4 informed the STECF Bureau that in 2019 there could be only the possibility for a meeting on the further development of the methodologies but not a direct follow of EWG 18-05. As the ICES WGMIXFISH are working on adding an economic module to the applied models the bureau proposed to follow the development in the WGMIXFISH regarding the improvement in methodologies for the economic assessment of mixed fisheries options. There is likely also some overlap between participants of EWG 18-05 and participants of WGMIXFISH in 2019 which means that some work can be continued there.

In addition, ICES initiated a triannual Working group on economics (WGECON) under the science umbrella (SCICOM), which met for the first time in 2018 and had its second meeting in 2019. The working group concluded that adding an economic component to the ICES mixed fisheries advice could be a good case study for the inclusion of some economic analysis in ICES.

STECF observation

STECF notes that the ICES Working groups for mixed fisheries and for economics met in the same week (June 11-15) but in different locations, which meant that economists could not attend both meetings. The result was that most of the possible participants for WGMIXFISH with economic background attended the WGECON meeting. However, the two groups had a skype conversation to clarify a possible way forward regarding the add on of economic analysis in the MIXFISH group.

STECF observes that WGMIXFISH will apply the FLBEIA model for the mixed fisheries advice in the future. In the Bay of Biscay, the economic module was already applied for

socio-economic impact assessments while in case of the North Sea the economic module will be populated with data and then used in the near future.

STECF observes that the aggregation level of the economic data (economic fleet segments) differs from the aggregation level in the FLBEIA model (métier). This is the main problem to populate the economic module in the model.

STECF observes that the project SECFISH funded under the regional grants MARE/2016/22 included a Workpackage on the disaggregation of economic data. The project partners developed an R script that member states can run with their individual vessel data and then provide the economic data on a different aggregation level – like the métier. There is, however, still some testing necessary whether the R tool is able to provide the necessary information for FLBEIA in some or all areas.

STECF observes that in the past one of the main problems when trying to use economic data in the mixed-fisheries models was the mismatch in some of the transversal data (e.g. fishing effort) between the different data sources when summed up at the same aggregation level. Therefore, further testing is necessary to elaborate not only on the usefulness of the new tool but also on the reasons for the observed discrepancies, in order to reach a consistent bio-economic dataset.

STECF notes that WGECON also proposes the mixed fisheries advice as a possible case for the inclusion of economic analyses in ICES working groups.

STECF notes that the FLBEIA model is a good candidate for analysing socio-economic impacts in several regions. This would most likely lead to enough persons familiar with the model to avoid the situation that only one person is familiar with a specific model.

STECF conclusions

STECF agrees with WGECON that the MIXFISH advice is a good candidate for the inclusion of economic assessments in the ICES work. For that, however, a first test case would help understand possible obstacles and necessary additional work to make the results useful for policy making. STECF will follow the work in the WGMIXFISH very closely to see whether there are possibilities for cooperation between STECF and ICES on the analysis of mixed fisheries options in the future.

STECF concludes that applying the FLBEIA model to several fisheries in the North-East Atlantic will improve the possibilities to run the models on a regular, yearly basis also in cases that some modelers may not be available for running their specific models every year.

STECF concludes that after the WGMIXFISH meeting in October 2019 STECF should have a follow up discussion on the recent developments during PLEN 19-03.

8. BACKGROUND DOCUMENTS

Background documents are published on the meeting's web site on: https://stecf.jrc.ec.europa.eu/plen1902

9. CONTACT DETAILS OF STECF MEMBERS AND OTHER PARTICIPANTS

1 - Information on STECF members and invited experts' affiliations is displayed for information only. In any case, Members of the STECF, invited experts, and JRC experts shall act independently. In the context of the STECF work, the committee members and other experts do not represent the institutions/bodies they are affiliated to in their daily jobs. STECF members and experts also declare at each meeting of the STECF and of its Expert Working Groups any specific interest which might be considered prejudicial to their independence in relation to specific items on the agenda. These declarations are displayed on the public meeting's website if experts explicitly authorized the JRC to do so in accordance with EU legislation on the protection of personnel data. For more information: http://stecf.jrc.ec.europa.eu/adm-declarations

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KJ-AX-19-010-EN-N

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doi:10.2760/31279
ISBN 978-92-76-09515-6