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ECONOMIC COMMITTEE FOR
FISHERIES –
66th PLENARY REPORT
(PLEN-21-01)

Edited by Clara Ulrich & Hendrik Doerner

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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 held its 66th plenary as virtual meeting from 22 to 26 March 2021.

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66th PLENARY REPORT OF THE SCIENTIFIC, TECHNICAL AND ECONOMIC COMMITTEE FOR FISHERIES (PLEN-21-01)

Virtual Meeting

22-26 March 2021

1. INTRODUCTION

The STECF hold its spring plenary as virtual meeting on 22-26 March 2021 with STECF members addressing the ToRs from their home offices.

2. LIST OF PARTICIPANTS

The meeting was attended by 30 members of the STECF, two invited experts, and nine JRC personnel. 25 Directorate General Maritime Affairs and Fisheries (DG MARE) attended parts of the meeting. Section eight of this report provides a detailed participant list with contact details. The STECF members Dimitrios Damalas, Leyla Knittweiss, Barry O'Neill, and Thomas Catchpole were unable to attend the meeting.

3. INFORMATION TO THE PLENARY

STECF-PLEN-21-02

The summer 2021 STECF plenary meeting STECF-PLEN-21-02 is planned to take place as virtual meeting, 5-9 July 2021, chaired by Clara Ulrich.

All meetings planned before autumn 2021 will take place as virtual meetings.

See STECF 2021 meeting planning here: <https://stecf.jrc.ec.europa.eu/meetings/2021>

4. STECF INITIATIVES

4.1. Discussion on the use of cpue triggers as management reference points in data-poor situations

PLEN 21-01 has evaluated several management plans (MPs) on boat seine fisheries in the Mediterranean (ToRs 6.9 to 6.13 of this Plenary Report), and this suite of ToRs has led to discussions and reflections on the commonalities and differences across all these plans.

STECF notes that although progresses are being achieved with exploratory stock assessments based on Data-Limited Stocks methods, several management plans do not include all the necessary information to assess the impact of the fishing activity on the status of the target stocks (nor on the associated species), and in many cases there is not sufficient evidence to evaluate quantitatively whether the proposed limits in fishing effort and landings could guarantee sustainable use of these resources in the long term.

When no reliable estimates of the current stock size (biomass, B) are available, nor fishing mortality (F) levels that could drive the fisheries to catches close to MSY , inferences of initial biomass (B_0) or B_{msy} are not possible. And in the absence of scientific surveys, only information on catch and effort provide some indications of the evolution of the size of the stocks along the years. Estimates of early CPUE data of the fishery may relate to B_0 , but data collection for these fisheries started when the fishery was already developed. Such circumstances have obliged managers to use alternative approaches for assessment and management rules, involving parameters such as the historical average of catch rates (CPUEs), as a proxy for abundance.

Changes in catch rates can be attributed to changes in the biomass at sea. However, changes may be also due to other causes. Changes in environmental conditions may modify availability or vulnerability of the schools, affecting perceptions of true changes in abundance. But fishery effects may also affect CPUE independently of abundance. This had been already discussed in STECF PLEN 17-01, which stated that the use of CPUE as an indicator for the current stock abundance has several important drawbacks.

CPUE data can often be highly variable or modified by:

- Changes in fishing efficiency (effective fishing effort): improvements in catching efficiency through e.g. technological development may mask stock decline over the longer term;
- Shifts in management schemes: the implementation of new regulations may alter the catch rate-abundance relationships;
- Changes in stock contraction: If periods of low stock abundance lead to the stock concentrating in smaller areas, these areas will be targeted by the fleet, and thus CPUE will not decrease at the same rate as the abundance. This pattern is common for fisheries targeting schooling fish in which searching is

- highly efficient and can lead to hyperstability (when abundance declines faster than CPUE decline) (Harley et al., 2001; Maynou et al., 2021).
- Similarly, applying a CPUE threshold can incentivise an increase in fishing intensity and fishing efficiency, in order to maintain high catches and avoid cuts even at low stock biomass
 - When the number of vessels decline, it is likely that only the most efficient vessels might remain in the fishery, their catch rates would not be directly comparable anymore with the historic baseline for TAC thresholds.

On this basis, much care must be taken when using catch rates as management indicator.

A CPUE level as a reference point for management is based on the assumption that the average (or median) value of a historical CPUE time series may be a reasonable target for a high long-term yield (Fmsy proxy). In cases that there have been no signs of impaired recruitment at the lowest observed historical CPUEs, a target reference point could be envisaged at these values (mean or median) plus a precautionary buffer.

STECF notes also that, in several cases, a Limit Reference Point (LRP) is fixed as the 25th percentile of the available time series of CPUE of the MP target species. Are CPUEs below the reference point, the fishing effort should be reduced in order to aid recovery to levels above the trigger point. In the case of boat seines fisheries, neither values of the pristine stock size nor catch rates under a non-exploitation status are available. The limit thresholds are based on catch rates of stocks already exploited. Therefore, STECF warns that a LRP for annual catches based on the 25th percentile cannot be considered as precautionary. Literature suggests that when a reliable estimate of pristine stock size is available, a stock size of approximately 35-40 % of the pristine level can be considered as a reasonable proxy of the stock size at MSY (Caddy and Mahon, 1995). Setting the LRP around that value (35 or 40th quantile of the historical time series) would thus be considered more precautionary, and more in line with the CFP objective and with the data-rich stocks management, allowing the fishing pressure to be reduced before the target stock is heavily depleted. Ideally, those LRPs or CPUEs thresholds would ultimately deserve some more rigorous definition either theoretical or via MSE testing to show their validity within the frame of the management plans to achieve sustainability.

Besides this, STECF encourages alternative attempts to provide information on the status of target stocks (and associated species, if possible) either by direct indicators of abundance (scientific surveys) or by means of appropriate data-limited stock assessment tools. A wide range of these approaches is now available, and could be investigated for finding the most adequate method for the available data and biology of the stock on a case by case basis.

In addition, STECF considers crucial the provision of any available information and scientific evidence collected under the framework of the MPs that could enable STECF to perform an adequate evaluation of the fisheries subject to the MPs, the status of the target stocks and associated species, and the impact of the fisheries on the marine environment (e.g., seagrass meadows, sensitive habitats, vulnerable species).

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5. ASSESSMENT OF STECF EWG REPORTS

5.1 EWG 20-05 Criteria and indicators that could contribute to incorporating sustainability aspects in the marketing standards under the CMO

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 to the EWG work

Regulatory marketing standards for fishery products are established under the common market organisation (CMO; Regulation (EU) No 1379/2013). In 2019, an evaluation of the implementation of these marketing standards was carried out to assess whether they were still fit for purpose (SWD(2019) 453 final). The evaluation identified shortcomings regarding the effectiveness of the current marketing standards framework in achieving the objectives set out in the CMO Regulation of 2013. In particular, the existing marketing standards do not sufficiently contribute to a level playing field on environmental and social aspects and have not been equipped to deliver on the objective of enabling the EU market to be provided with sustainable products (SWD(2019) 455 final).

The revision of the marketing standards is included as an initiative under the Farm to Fork Strategy for a fair, healthy and environmentally-friendly food system. STECF EWG 20-05 was requested to support the development of robust policy options for the revision of the EU regulatory marketing standards in terms of incorporating sustainability aspects. The main objectives of this EWG were to identify suitable criteria and indicators and to assess their potential to be incorporated in regulatory marketing standards, ideally for both fishery and aquaculture products (FAPs) on the EU market, independently of their origin (domestic and imports).

The STECF EWG 20-05 met on-line from 23th to the 27th November 2020 and was attended by 42 participants, including 30 experts (7 STECF members), 8 observers, 3 DG MARE representatives and 1 JRC representative.

STECF observations

The EWG work

EWG 20-05 was tasked to assess existing sustainability criteria and indicators for fisheries and aquaculture products in the EU, explore possibilities to assign or combine sustainability criteria / indicators and provide limits of the different combinations of criteria / indicators.

The STECF EWG 20-05 was able to build on preparatory work carried out under two ad hoc contracts preceding the launch of the EWG. This preparatory work consists of two reports (one for fisheries and the other for aquaculture) that provide a mapping of existing

methodologies providing sustainability assurance claims, including the identification and description of the criteria and indicators used in these methodologies.

STECF notes that the EWG 20-05 was tasked with addressing respectively: (i) environmental aspects for fished products, (ii) environmental aspects for aquaculture products and (iii) the social aspects of FAPs in general. To accommodate this, the EWG 20-05 meeting was split into three sub groups, each concentrating on a specific task.

STECF notes that information available for the three sub-tasks differed widely, with information available on fisheries and aquaculture being quite sufficient while information on the social dimension somewhat limited.

STECF notes that an enormous amount of work has been undertaken under the two ad hoc contracts and by the EWG 20-05 both during and after the actual meeting. Extensive discussions were held and documented on individual indicators, on the systems of scoring and on combining indicators. The EWG 20-05 report provides an analysis of sustainability aspects that could be addressed through marketing standards and proposes a methodology for measuring and communicating these sustainability aspects along the supply chain.

The proposed scoring system

STECF notes that the general principle of the system of indicators proposed by EWG 20-05 to be developed for FAP is not based on an absolute scale with sustainable/not sustainable criteria, but is based on a relative scoring system, where a seafood product is assessed to be relatively more / less sustainable than another seafood product across a set of criteria. For example, a product receiving a A+ score means that it is ranked in the best 10% of all scored products. The intent of such a system is to encourage continuous dynamic progress towards higher environmental and social standards in FAPs. Therefore, it requires the scoring to be re-evaluated at regular intervals for all FAPs products at once, as knowledge and data availability progress and more FAPs become more sustainable.

STECF notes that EWG 20-05 proposes a three-tier system (i.e. expanding the current system; developing a System 1 based on available data; and developing a System 2 based on additional data) to address the identified shortcomings regarding the effectiveness of the current marketing standards. In expanding the current system, the first step is to start with the currently required mandatory information, as defined in the CMO Regulation for fisheries products, which includes information on species, area of capture and fishing technique applied. EWG 20-05 suggests that in the short term this system of mandatory information should be applied to cover all FAPs, hence also cover processed fisheries products. Additionally, for all FAPs (including aquaculture products), information provided by the producer on species, place of production/catch and production technique/métier should in the revised system be of a much higher resolution than under the current CMO Regulation.

For a further development of robust policy options for the revision of the EU regulatory marketing standards in terms of incorporating sustainability aspects, EWG 20-05 suggests the introduction of a scoring system on a set of environmental and social criteria. The proposed scoring would be an appraisal performed by an external assessment body (or an expert tool still to be developed), either based on data publicly available (hereinafter referred to as System 1) or based on additional data provided by producers or importers (hereinafter referred to as System 2).

STECF notes that the rationale behind defining two systems (System 1 and 2) is that data availability differs widely between different FAPs. Under System 1, publicly available information is used. Having a System 2, based on additional information provided by the producers, would allow producers to obtain a more specific, and in cases a higher, sustainability score. This potentially provides an incentive to producers to share more extensive production information to meet the data requirements of System 2.

To illustrate the concept, STECF provides an example of the scoring for three contrasted theoretical fishery products sold on the EU market (Table 5.1.1). This exercise is meant to illustrate that a poor score for a given criterion does not necessarily imply a poor overall score. According to the EWG suggestion, the E to A+ categories should be defined according to specific objectives, in term of percentages of the product volume ranked per category (for instance: 10% in the two extreme A+ and E categories, which need to be flagged, and 20% for each of the A, B, C, E intermediate categories).

The three theoretical products considered here as case studies, are defined as follows:

- . Product 1, scored under system 2 according to information provided by producers, originates from a trawl fishery in a well-managed area (possibly the North East Atlantic) with low ecosystem impacts and high social standards; it thus ranks in the best 30 or 50% (final score A or B).
- . Product 2 also originates from a trawl fishery, but is scored under system 1 for all criteria, while imported from a fishing area where management and social standards are low; it thus ranks in the worse 30%, or even 10% (D or E).
- . Product 3 refers to a “best case” fishery; indicators are not all perfect, but comparatively to others this product exhibits a final score in the top 10% (A+).

Table 5.1.1. Example of scoring for three contrasted theoretical fishery products placed on the EU market (see products characteristics in the text)

Dimension	Criteria	Product 1	Product 2	Product 3
Environment	Fishing pressure	A	D	A+
	Fisheries management	A	No score	A
	Impact on ETP and sensitive species	A	No score	B
	Unwanted landings and discards	B	D	A
	Impacts on the seabed	D	E	A+
	Impact on marine food webs	B	No score	A
	Carbon footprint	C	E	A+
	Waste and pollution	A+	D	A
Social	Working condition (production)	A+	C	B
Final score		A or B	D or E	A+

STECF observes that in the EWG 20-05 report the relationship between System 1 and System 2 is not yet fully detailed. The EWG 20-05 report specifies that the highest scores can only be obtained under System 2 (ranging from A+ to E, with the latter being the lowest degree of sustainability) while System 1 would only allow low or medium scores (From B to E). Therefore, the option to move to a higher sustainability scores by moving

from System 1 and System 2 should provide an incentive to producers to fulfil the requirements of System 2. However, it may arise for some products that they will be scored under System 2 at a lower level based on additional information than the original score under System 1. Rules need to be defined to avoid such a perverse incentive.

STECF notes that for some criteria, the information required to move from System 1 to System 2 is already available. This is for example the case for a more detailed indication of the fishing area, which is already mandatory information for products fished in the North East Atlantic. Even if not mandatory, more detailed information for aquaculture is also available within the EU (from the data collection EU MAP), especially regarding the type of production system. The possibility to directly implement System 2 for certain criteria could be considered for those products for which this information is available.

Another option mentioned by the EWG would be to directly implement System 2 without using System 1, at least for some criteria. STECF notes that in such a case only products for which this information is available would be scored, while a preliminary grey "No score" (i.e. score unknown) could be attributed to the others (likely many of the imported products; product 2 in table 5.1.1 as an example) until the additional required information is obtained.

STECF notes that both Systems 1 and 2 are based on a set of criteria. STECF observes that EWG 20-05 also provided preliminary suggestions for the governance of such a system, but both for the governance of the scoring mechanism of individual indicators and for the compilation for the aggregated score, a fully operational workflow still needs to be developed. This also includes addressing concrete issues such as who is going to be involved in the scoring and how frequently the system/data should be updated.

STECF observes thus that additional work is required both for the scoring of the individual indicators and for the compiling of individual indicators into one overall sustainability score. STECF agrees nevertheless with the suggestion of EWG 20-05 that based on the sustainability criteria and indicators for both the environmental and social dimension developed, a scoring system type 1, hence based on mandatory information (and as suggested: based on a limited set of criteria) could still be developed without major hurdles in the short term. A pilot system for FAP based on a few products would be useful to provide a testing ground for the further development of the system. This would allow for a more detailed assessment of the (international) legal implications of the introduction of such as a system.

General comments

STECF observes that this scoring system is of a fundamentally different nature than the current information requirement under the CMO. In the current system producers are required to provide product data which allows, to some extent, the buyer/consumer to make his/her own personal assessment of the product's sustainability, based on simple attributes such as species, area of catch and fishing technique used. The proposed scoring system would provide a sustainability score to be displayed on the product. Thus, the sustainability appraisal would not be done *by* the buyer/consumer but *for* the buyer/consumer.

STECF notes that the EWG 20-05 was not able to discuss whether the standardisation in the sustainability scoring between aquaculture and fished products would be feasible. This implies that a given score is not comparable for both product types (e.g. a C score is not signalling the same for the same species coming from aquaculture or from fisheries). Thus, the score itself should be clearly associated to the category of FAP it is referring to (aquaculture or wild product).

STECF notes also that EWG 20-05 concentrated on developing a set of indicators for fisheries and another set for aquaculture, for unprocessed fresh and chilled products at production site only (harbour landing or farmgate). Although sustainability aspects along the value chain (processing, transportation and sales) are also important and may need to be considered, this remained outside the scope of EWG 20-05.

STECF notes that the proposed system is clearly aimed to be complementary to the existing certification schemes and labels, and not competing. STECF observes however that this aspect needs further detailing for this to be the case. This includes both aspects of how the schemes and labels relate to the EU score and how these can guarantee a level playing field, now and in the future.

STECF notes that the revision of the marketing standards is included as an initiative under the EU's Farm to Fork Strategy for a fair, healthy and environmentally-friendly food system initiative. A generic framework of a scoring system is foreseen to be developed for all types of food products and not only FAPs. STECF underlines however that fisheries FAPs have unique attributes (as being a wild capture activity depending on the natural productivity of ecosystems rather than being an agricultural production) that must be specifically considered, as highlighted by the criteria and indicators selected by the EWG.

STECF conclusions

STECF concludes that the EWG 20-05 answered its TORs and acknowledges that the analysis produced is comprehensive and of a high standard. STECF notes that the EWG 20-05 report provides a sound basis for the further development of policy options to include sustainability criteria in the marketing standards for fishery and aquaculture products.

STECF acknowledges that substantial work is still needed to develop a fully operational system. In particular, an intensive testing phase using pilot products will be required. Nevertheless, STECF concludes that the necessary elements and data requirements should be readily available to implement a scoring of type System 1 without major hurdles.

STECF concludes that the work of the EWG 20-05 strongly suggests that the revision of the CMO regulation should as a minimum include more detailed information necessary to allow a robust assessment of sustainability. This especially includes the fishing gear and area (as the current wide categories appear to be insufficient) and the typology of aquaculture production systems. These data would not directly provide a sustainability indicator but would allow the buyer/consumer to make his/her a better informed own appraisal of the product's sustainability.

STECF concludes that for the scoring system to become effective and accepted by the fishing/aquaculture sector, companies along the value chain, other stakeholders and consumers, it needs to be transparent, traceable and be developed with all parties along the market chain. In particular there needs to be (i) Transparency both in the data used and the way the data are processed that result in a FAP sustainability score. (ii) Traceability of the FAP along the entire marketing chain, starting at an initial FAP sustainability score at landing harbour/farm gate, along the chain of processing and transportation until the final consumer sustainability score. To achieve this and be able to be open and transparent the system needs to be developed and tested involving all parties along the market chain.

STECF concludes that further detailing is needed to ensure the proposed system complements rather than competes with existing certification schemes and labels. This includes both aspects of how the schemes and labels relate to the EU score and how these can guarantee a level playing field, now and in the future.

STECF concludes that the work presented here demonstrates enough potential and operability of the system proposed to give confidence to progress the further development of the system. Some specific steps could be taken already in 2021 through dedicated contracts on for example, on the collection and assessment of data available, before a dedicated follow-up EWG in 2022.

5.2 EWG 20-12 The EU Aquaculture Sector – Economic report 2020

Request to STECF

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

STECF observations

Following the 2020 call for economic data on the EU aquaculture, EWG 20-12 was requested to analyse and comment on the economic performance of the EU and national aquaculture sectors between 2008 and 2018, produce a nowcast for 2019 and analyse the effect of the COVID-19 outbreak in the aquaculture sector during the year 2020. It should be noted that this report is made on a biennial basis, and EWG 20-12 updated the time-series of the previous 2018 report, now including data for 2017 and 2018. Additionally, and for the first time, social data on gender, age, education and nationality were provided by the member states under the EU-MAP and could be analysed by the EWG.

The EWG met virtually, from 1-5 February 2021, and was attended by a group of aquaculture economic experts consisting of 32 experts from 22 countries and 3 JRC experts. The 2021 Economic Report of the EU Aquaculture Sector is the seventh report of its kind, providing a comprehensive overview of the latest information available on the production, economic value, structure and competitive performance of the aquaculture sector at the national and EU level for the years 2008 to 2018, covering the marine fish, shellfish and freshwater fish, segments. The EU aquaculture sector reached 1.2 million tonnes in sales volume and EUR 4.1 billion in sales value in 2018. This corresponds to an increase of 2% in sales volume and 11% in the sales value compared to 2016. However, the overall EU aquaculture sector has experienced a slight decrease in all economic performance indicators in 2018 compared to 2017. The negative economic development observed in 2018 compared to 2017 is driven by the marine fish segment, whereas the segments freshwater fishes and shellfish, experienced a slight increase.

STECF observes that for the first time a nowcast has been produced. In the EWG 20-12 this was performed for the year 2019. STECF notes that the nowcast is based on a similar methodology as the one used in the Annual Economic Report of the EU fishing fleet. The nowcast produces 2019 estimates of production in volume (total weight of sales), production in value (gross sales), and employment (both persons employed and FTE) at national level and for EU aggregate series.

A nowcast was also trialed for 2020, but reliable estimates could only be obtained for four countries, which is not sufficient for a quantitative nowcast for the overall EU sector. Furthermore, the impact of COVID-19 made extrapolation of data from previous years highly uncertain and the EWG 20-12 refrained from presenting estimates for 2020. Therefore, a key indication of the development of the aquaculture sector in 2020 is solely based on two surveys performed by the EWG, one asking for data to the EU aquaculture organizations and enterprises (58 interviews with enterprises and

representatives of Producers' Organizations in 17 Member States) and a second one filled by the EWG experts (20 in total) which were requested to provide a brief description of the observed impacts on their national aquaculture industries. Additionally, the EWG experts participated in a Delphi survey in two waves for estimating the impact ranges in the same key performance indicators analysed with the producers' group.

Results show how that sales volume is expected to decrease more than 10% and prices are expected to fall by almost 5% due to the disrupted supply lines caused by the COVID-19. Furthermore, costs are increasing because fish/shellfish are kept longer in the aquaculture facilities to avoid losses. Together, these factors indicate an overall income loss in 2020 of about 10% for aquaculture farmers in the EU on average compared to 2019. According to the findings of the EWG, it seems that the employment was not affected in 2020, in a short run perspective.

STECF notes that there are some gaps in data time-series due to some Member States not reporting all their production (low response rates or minor segments). Additionally, the transition from DCF to EU-MAP has led to data breaks for some countries due to some changes in the definition of some sector segments between DCF and EU-MAP in some Member States.

STECF notes that under the EU-MAP, a minimum threshold of production for data collection was introduced. This causes consistency problems when interpreting the time series of the different indicators produced at national level when there are many small enterprises (e.g. for the case of Italy). The main consequence of these changes is the analysis at aggregated EU level does not fully match with the sum of the disaggregated analyses by aquaculture segments (divided by production techniques and species produced that present more data gaps than the aggregated values).

STECF further notes that the new thresholds also affects the comparison between EU-MAP and EUROSTAT data sources, where differences still occur when producing the same indicator.

STECF conclusions

STECF concludes that the report provides a good and reliable overview of the economic performance of the EU aquaculture sector. However, the lack of obligation to provide data for the freshwater segment limits the possibilities for an overall EU data analysis of the entire sector and weakens the conclusions drawn from it. Furthermore, some data provision issues remain, including late submission (and continuous submission during the meeting) which reduces the available time that the EWG has to analyse the data and the drivers behind the indicators produced.

The differences between EUROSTAT and the data call used to produce the EWG 20-12 report are based on different definitions of the total population. Both DCF and EU-MAP collected data on the production of companies whose main activity is aquaculture while Eurostat collects data from the companies about their total production (even if part of it does not come from the aquaculture). Other sources of discrepancies with EUROSTAT are due to the threshold introduced in the EU-MAP data collection and confidentiality issues due to low samples. Therefore, STECF concludes that although a further convergence among the two data sources is desirable, these differences will persist in time, with EUROSTAT displaying in general higher production and employment values than those reported under the EU-MAP.

STECF concludes that the nowcasting procedure, based on the methodology of the AER of the EU fishing fleet, should be further developed specifically for aquaculture, including a prospective analysis of the available data (outside the data call) that could help produce more robust estimates of the indicators than the ones produced by the EWG 20-12.

STECF concludes that due to the increasing workload of the EWG, the need for data checks during the meeting and testing of an improved nowcast methodology, additional effort could be engaged for some preparatory work ahead of the meeting. This could be done through an ad-hoc contract or a preparatory EWG meeting where the data quality checks and the preparation of the nowcasting methodology is performed.

STECF concludes that the social data analysis provided by the EWG provides an important value added to the report as it gives the social perspective of the sector (e.g. age, gender, education and distribution of employment) and not only gross numbers such as FTE. However, to improve the reliability of this data, STECF concludes that the future provision of it by Member States and corresponding data calls should follow the guidelines in terms of aggregation and categories provided by the PGECON. In particular, the EWG suggested a better overview of the social dimension of the aquaculture sector would be provided if the age group 40-64 was split into smaller age categories and data was collected and reported at segment and/or technology level.

5.3 EWG 20-18 Revision of DCF Work Plan and Annual Report templates and guidelines

Request to the STECF

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

Summary of the information provided to STECF

STECF was provided with the EWG 20-18 report including electronic annexes, the revised Work Plan and Annual Report Guidance, a guidance document for the website and a compilation of comments from DG MARE to be addressed by PLEN 21-01.

STECF observations

The EWG 20-18 met virtually 8-12 February 2021 to revise the most recent templates and guidelines for Work Plans (WP) and Annual Reports (AR) to reflect changes introduced in the multiannual Union programme (EU-MAP) for the collection and management of data. The EWG was requested to consider four ToRs: one on the finalisation of the WP and AR templates and guidelines to reflect changes introduced in the EU-MAP, and the other three as preparatory items for future AR and WP assessments.

A large amount of preparatory work was conducted prior to the meeting in the form of ad-hoc contracts etc. The outcome of this work was provided to the EWG.

WP/AR templates and guidelines

STECF observes that the revision of the most recent WP and AR template consisted of adding minor changes, often to clarify the guidance, or to take out redundancies with e.g. the Data Quality sections that are proposed to be part of the template and guidance document, or to improve consistency in terminology throughout the Tables. The final templates and guidelines are presented in electronic annexes to the EWG report and consist of a Word file containing guidance text for the Excel templates and templates for Text Boxes and an Excel file with table templates and a Master Code List.

STECF notes that the EWG proposes to include separate annexes for biological and economic data quality in the WP/AR templates. In order to improve the quality reporting of economic data, the EWG used PGECON's Data Collection Methodological Document for Economic data, as described in Annex 8 of PGECON 2017. In addition to the sections

suggested by PGECON, the EWG also included the confidentiality considerations currently available in Table 5B.

Revised assessment grids and criteria for the EWG 21-17 on WP assessment

STECF observes that the EWG reviewed the previous WP assessment grid, based on EWG 16-16, and adapted them to the requirements of the revised EU-MAP. A stand-alone document for guidance of WP evaluators was also drafted by the EWG. The proposed documents are available as electronic annexes to the report.

STECF notes that as a first step towards the realisation of an online reporting platform in connection with a database (as concluded by STECF PLEN 20-02 etc) the EWG suggested that prior to the WP evaluation meeting in November (EWG 21-17) an online Data Validation (DV) tool should be developed to help verifying the Member States' coding for the WP tables and to prevent submitting wrong values.

STECF observes that the Covid-19 pandemic affected the data collection efforts in Member States to various degrees. The impacts on 2020 data collection activities will be evident in the 2020 ARs and differences in reporting compared to previous years are expected. STECF notes that it is important to distinguish these factors from other factors that has affected the data collection activities, in the 2020 ARs.

Comments from DG ENV and JRC on WP 2020-2021

STECF observes that in the WP adoption process, DG MARE consults other COM services in an inter service consultation (ISC). As these remarks came after the November STECF plenary PLEN 20-03, the EWG considered that it would be best to use them in the next WP assessment (EWG 21-17).

STECF conclusions

STECF concludes that the EWG addressed all the ToRs appropriately and endorses the report and related documents.

Regarding the WP/AR templates and guidelines, STECF concludes that the EWG revised them appropriately to reflect the changes introduced in the EU-MAP.

STECF concludes that the development of a Data Validation tool for the reporting of WPs would greatly improve the reporting and assessment of WPs and would serve as a first step towards the realisation of an online reporting platform in connection with a database (as supported in previous STECF plenary reports).

STECF concludes that the proposed dedicated annexes on data quality would improve the quality reporting of biological and economic data as well as allow for a more efficient and relevant assessment of the WPs. The information provided through the submission of the proposed annexes on data quality will be extensive and expertise on sampling/survey design and data quality is needed for their assessment. STECF concludes that the evaluation of these annexes should be conducted prior to the EWG on evaluating WPs (EWG 21-17) through specific ad-hoc contracts during the pre-screening phase (cf. ToR

7.5 of this Plenary report). The methodological approach is seldom modified within a WP period, and hence STECF considers that the evaluation of the data quality annexes is most likely only needed once for the WPs 2022-2024.

Based on the conclusions of EWG 20-18 and PLEN 20-02, STECF concludes that the evaluation of ARs would be improved by the following modifications of the evaluation procedure:

1. The Commission should notify the Member States that they might be contacted prior to the EWG and requested to resubmit parts of the AR or provide clarifications on major issues with respect to the AR based on the output of pre-screeners. Member States should also be made aware that the experts might request additional information or resubmission during the EWG.
2. The pre-screening should start no later than 3 June 2021 so that the comments can be sent to the Member States no later than 16 June, as the EWG 21-09 will start on 21 June.
3. One pre-screener should be tasked to take the coordinating role to collate and review comments raised during the pre-screening exercise together with the Commission. Following this filtering exercise, the Commission should raise serious issues with AR submissions with Member States at the end of the pre-screening exercise and before the EWG.
4. Serious issues should be defined by the pre-screeners as based on the following criteria; *gross inconsistencies, serious formatting issues, missing tables, misplaced information etc.*
5. All issues identified should be reviewed by at least two experts before being sent to the Member States.

The Covid-19 pandemic has affected the data collection efforts in Member States. STECF concludes that the Commission should advise Member States to clearly distinguish between effects caused by the Covid-19 situation and for other reasons in the submitted ARs. STECF also suggests that any reported effects due to Covid-19 should be differentiated from other factors in the AR assessment grid and in the overall presentation of the evaluation results in the EWG report. The Commission should ask MS to report Covid-19-related issues in the comment fields in the AR tables and in the AR text boxes, as appropriate for the corresponding section.

STECF concludes that the prepared standalone document for AR evaluation listing assessment criteria will facilitate for a more consistent and less subjective evaluation of ARs in 2021.

Regarding the comments from DG ENV and JRC under the inter service consultation within the Commission, STECF concludes, considering that the WPs for 2020-2021 have been approved, that the evaluation of these comments should take place in connection with the WP assessment. Therefore, the best use of the ISC documents would be as background documents for the STECF EWG 21-17 on WP assessment.

STECF comments to questions raised by DG MARE

After the finalisation of the EWG DG MARE reviewed the output from the EWG and directed a compilation of questions to be addressed by PLEN 21-01.

Table column/ text box	COM question/comment	STECF comment
Table 1.1: Time when data was available	What if data was not requested by an end user? COM suggest to delete 'to end users'.	Agree with deletion.
Table 1.2: Meeting acronym	Better to indicate in WP comments if the national meeting is not necessary or if MS does not attend an RCG meeting.	The national coordination meeting is requested by art. 25.4 of the CFP Basic Regulation and cannot be skipped. For the few cases, however, where only one institute within a MS is involved in the DCF work and the MS decided not to have national coordination meetings, the MS should comment on this fact in the 'WP comments' column.
Table 1.2: Number of MS participants	If the MS has not attended the meeting, will it enter '0' participants?	Entering zero ('0') participants in case of (justified) non-attendance is OK.
Table 1.3: Contact persons	COM has to check with data protection officer how to obtain consent for personal data in WP/AR. COM proposes to include NC here, as they give consent to publish their data on the DCF website.	OK
Text Box 1a: Test studies	COM proposes this new text box for WP/AR flexibility on new methods testing. Please give us your comments on the idea. Number 1 used not to confuse with table	STECF welcomes the addition of a new text box to provide details on studies for testing new methods of data collection.
Text Box 1b: Other data collection activities	COM proposes this optional text box for WP/AR flexibility on other areas than fish processing and new methods testing. Please gives us your comments on the idea.	STECF welcomes the addition of a new optional text box to provide details on studies in other areas of data collection.
Table 2.1: EU TAC (if any) (%)	How to indicate TACs for combined species? Full TAC per each species plus WP comment? What about quota swaps? If a MS gives away its share, the sampling obligation should be	Combined-species TACs should be reported for each species and a corresponding WP comment should be added.

	given away too. How should this be indicated here?	In the case of (known) significant quota swaps (>50% of the quota?), MS should comment on the volume of quota swaps in the WP comments. Both clarifications should be added to the WP guidelines.
Table 2.1: Achieved number of individuals measured for length at the national level from commercial sampling	Is it necessary to have 'for length' here? Why no separate column 'for weight' then? Or simply 'measured' like in table 2.2?	The distinction of the parameter 'length' is important here. Table 2.2 is a different case, as the biological variable is defined in column G.
Table 2.2: Species: 'for all areas'	In table 2.1 'region' here 'area'. Harmonise? COM proposes: all regions and areas' please confirm if OK.	Yes, adding 'regions' here follows the EU-MAP structure and thus would be more consistent.
Table 2.2: sampling scheme Table 4.1: sampling scheme	MasterCodeList does not contain mandatory surveys acronyms. Acronyms are unique, whereas 'sampling scheme' codes are rather a type of sampling. All mandatory surveys have 'S4', 'metier' or 'stock based'. Are you sure we do not need a separate column for survey ID from table 1 EU MAP implementing? Proposal: add list 'Research survey acronym' in guidance after the list 'Sampling scheme'. Adapt the MasterCodeList.	It is sufficient to refer to the survey acronym in Table 2.6.
Table 2.2: AR comments: 'discrepancy range'	discrepancy range is not the same: <80% and > 150% (Table 2.2, 4.1) <90% and > 150% (Table 2.6) No range in table 2.5 Why this difference? Why in 2.6 and 4.1 we have yellow column with 'x' indication of out of range, and in 2.2 and 2.5 no? Should this be harmonised?	The discrepancy range should be <90% and >150% throughout, as previously applied (templates 2017-2021). In Table 2.2, a column should be added to mark out-of-range cases, which helps STECF identifying those cases quickly during AR evaluation.
Table 2.2: AR comments: 'to be decided'	is the 'to be decided' to be deleted? If not, who should decide on the range?	Yes, 'to be decided' should be deleted. The range should be <90% - >150%.

Table 2.3: Agreed at RCG: 'defined'	<p>why not like in table 2.4: 'agreed' at regional level.</p> <p>COM proposes 'agreed'</p>	Yes, 'defined' should be replaced with 'agreed'.
Table 2.4: % of achievement: automatically filled'	<p>In other tables no automatic calculation indicated, except in economic part. Please confirm how to harmonise (colour in guidance, formula in Excel document, or just description of needed action and no yellow highlight, no formula).</p> <p>The formula should be explained, even if provided in the excel file as a formula as in the table 2.5 for 'Achieved % of PSUs'</p> <p>COM proposed modified column name and formula description.</p>	If there are formulae in the table templates, they should also be explained in the guidance, as proposed by the COM.
Table 2.4: Reasons for non-conformity	<p>Maybe the discrepancy can be explained in AR comment column, like in other tables?</p> <p>discrepancy range is not the same: here <100%> <80% and > 150% (Table 2.2, 4.1) <90% and > 150% (Table 2.6) No range in table 2.5 Why this difference?</p> <p>Why in 2.6 and 4.1 we have yellow column with 'x' indication of out of range, and in 2.2 and 2.5 no? No discrepancy column at all in table 2.4. Should this be harmonised?</p>	<p>The discrepancy range should be <90% and >150% throughout, as previously applied (templates 2017-2021).</p> <p>In Table 2.4, a column should be added to mark out-of-range cases, which helps STECF identifying those cases quickly during AR evaluation.</p>
Table 2.4: AR Comments	COM proposes add 'any deviation' to AR comments, and delete 'discrepancy reasons column'	Yes, 'any deviation' should be explained in the 'AR Comments'.
Table 2.5: Achieved % of PSUs	Should this row and following be formulated like yellow columns in table 2.6 and 4.1? With an 'x' if comment 'x' necessary?	Yes, it should follow the same approach.
Table 2.5: Divergence (%) of implementation year vs. reference period	<p>discrepancy range is not the same: <80% and > 150% (Table 2.2, 4.1) <90% and > 150% (Table 2.6) No range in table 2.5 Why this difference?</p>	The discrepancy range should be <90% and >150% throughout, as previously applied (templates 2017-2021).

	<p>Why in 2.6 and 4.1 we have yellow column with 'x' indication of out of range, and in 2.2 and 2.5 no?</p> <p>Should this be harmonised?</p>	<p>In Table 2.5, a column should be added to mark out-of-range cases, which helps STECF identifying those cases quickly during AR evaluation.</p>
<p>Table 2.5: Has the observer dedicated time to record the bycatch of PETS?</p>	<p>COM proposes a dedicated PET text box 2.5a. (or text box 4.2)</p>	<p>STECF notes that this text box contains the questions on PETS sampling that were included in the former Text Box 1F and agrees with this approach.</p>
<p>Table 2.5: AR Comments: 'deviation'</p>	<p>discrepancy range is not the same: <80% and > 150% (Table 2.2, 4.1) <90% and > 150% (Table 2.6) No range in table 2.5 Why this difference?</p> <p>Why in 2.6 and 4.1 we have yellow column with 'x' indication of out of range, and in 2.2 and 2.5 no? Should this be harmonised?</p>	<p>The discrepancy range should be <90% and >150% throughout, as previously applied (templates 2017-2021).</p> <p>In Table 2.5, a column should be added to mark out-of-range cases, which helps STECF identifying those cases quickly during AR evaluation.</p>
<p>Text box 2.5: 'and 4.1' in general reference</p>	<p>If we add text box 2.5a(4.2), this reference disappears here</p>	<p>OK</p>
<p>Text box 2.5a (or 4.2): Incidental catches of sensitive species</p>	<p>COM proposes a dedicated PET text box 2.5a. (or text box 4.2)</p>	<p>OK</p>
<p>Table 2.6: Threshold rules used</p>	<p>Code options in bullets below should be added to MasterCodeList; there's only one code for table 2.6 there (regional thresholds for multispecies surveys).</p>	<p>Yes, these codes should be added.</p>
<p>Table 2.6: Indication if AR comments by MS are required concerning number of sampling activities achieved</p> <p>Table 4.1: Indication if AR comments by MS are required concerning number of sampling activities achieved</p>	<p>The formula should be explained, even if provided in the excel file as a formula as in the table 2.5 for 'Achieved % of PSUs'</p>	<p>If there are formulae in the table templates, they should also be explained in the guidance, as proposed by the COM.</p>

<p>Table 2.6: Comments: 'discrepancy' AR</p> <p>Table 4.1: comments AR</p>	<p>discrepancy range is not the same: <80% and > 150% (Table 2.2, 4.1) <90% and > 150% (Table 2.6)</p> <p>No range in table 2.5 Why this difference?</p> <p>Why in 2.6 and 4.1 we have yellow column with 'x' indication of out of range, and in 2.2 and 2.5 no? Should this be harmonised?</p>	<p>The discrepancy range should be <90% and >150% throughout, as previously applied (templates 2017-2021).</p>
<p>Table 3.1, 5.2, 6.1, 7.1: Data collection scheme</p>	<p>Are the definitions of the schemes available somewhere?</p>	<p>Yes, definitions are available in: https://datacollection.jrc.ec.europa.eu/web/dcf/wordef/sampling-strategy</p>
<p>Table 3.1, 5.1, 5.2, 6.1, 7.1: Years(s) of WP implementation</p>	<p>We cannot have a limited number of years to enter. COM harmonises the column name and description with biological part, codes will be deleted.</p>	<p>Yes, it should be harmonized.</p>
<p>Table 3.1: Planned sample number</p>	<p>Why yellow colour? Is it an automatic formula? If it is 'Planned', shouldn't this column be white and in WP section? Please clarify.</p>	<p>Yes, it is an automatic formula but it is calculated on AR figures, so it cannot be "white".</p> <p>The formula to be added in the template and in the guidance is: "Number of vessels" * "Planned sample rate"</p>
<p>Table 3.1: Response rate</p>	<p>Why not 'updated' sample number? Why there is no such column here, like in table 5.2?</p>	<p>The "updated sample number" in table 3.1 is not requested because in this table MS should indicate the number of vessels (that is only part from the total population) not covered by Control Regulation or covered by CR but with low quality. Table 5.2 is a different case; in this table, MS are requested to indicate the population (total from the fleet register) and the updated sample number</p>

Table 5.1: Total population (AR)	<p>Better to include explicit instruction in cell description, harmonised with 'Number of vessels' in table 3.1.</p> <p>Please confirm that here should be 'population comprises all vessels' and not 'is based on', as all vessels are included in this population.</p>	'population comprises all vessels' is correct
Text box 5.1: general remarks: fleet segment size	Is this linked in any way to the fleet report?	Yes, it is. Indicators in the "balance" report are calculated on the basis of DCF segments (Commission guidelines COM(2014)545)
Table 5.2: Total population	<p>COM proposes 'Copy the number from ' Total population (AR)' column in Table 5.1</p> <p>Please confirm if OK with the reformulated description. Is this what has to be done?</p>	No, it cannot be just copied from Table 5.1. Table 5.2 reports the number of vessels for each (clustered) segment and each economic variable, while Table 5.1 reports number of vessels for each (unclustered) segment.
Table 5.2, 6.1, 7.1: Updated planned sample number	Why yellow colour? Is it an automatic formula?	<p>Yes, it is an automatic formula.</p> <p>The formula to be added in the template and in the guidance is:</p> <p>"Total population" * "Updated planned sample rate"</p>
Table 7.1: Economic and social variables	<p>COM proposes: 'Use codes from the MasterCodeList 'Economic and Social Variable'</p> <p>You may want to add the explanation that the codes come from PGECON..., like you mention in the report.</p>	Even if the complementary socio-economic data collection on the fish processing sector may be implemented on a voluntary basis, STECF considers that information on complementary data collection, if present, should be given according to the list of variables as reported in Annex V of the 2020 PGECON report.
Annex 1.1: Compliance international recommendations to	Double entry. COM suggests to delete and check if some other entry is missing.	Yes, the double entry should be deleted.

5.4 EWG 21-01 West Med assessments: evaluation of conversion factors and closures as well as preparation for data transmission on effort and recreational fisheries

Request to 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 Expert Working Group met online from 1st to 5th of March 2021. The meeting was attended by 19 experts, including one STECF member and two JRC experts. One DG MARE representative and one observer also attended the meeting.

EWG 21-01 was a follow-up to the EWG 20-13 (October 2020), EWG 19-14 (October 2019), EWG 19-01 (March 2019), EWG 18-13 (October 2018) and EWG 18-09 (June 2018).

EWG 21-01 had the following four TORs:

TOR 1. Based on new data (e.g. e-logbook and VMS) to be made available by Member States by mid-February and built in on analyses in STECF 18-09 and 18-13, EWG 21-01 is requested to review the datasets on the trawl fleets exploiting demersal stocks in the western Mediterranean Sea. EWG 21-01 is requested to compare the data with the FDI database (up to year 2019), in order to estimate the conversion factors between fleet segments that will ensure that effort swaps will not lead to an undesirable increase in fishing mortality. Time allowing, fishery/assemblage targeted should also be considered for the conversion factors assessment. The EWG will assess the scientific robustness of the provisional conversion factors adopted in 2020 and, in case these are not adequate, propose alternative conversion factors for the fleet segments for ES, IT and FR.

TOR 2. Based on new proposals for additional closures to be submitted by Member States by Mid- February, which are based on the standardized methodology developed by STECF, EWG 21-01 is requested to review the existing closures and the proposed additional closures (i.e. terms of placement and period). STECF is requested to estimate their efficiency to protect juveniles and spawning aggregations of the demersal species covered by the West Med WMMAP. STECF is asked comment on possible fishing effort displacement arising from the proposed additional closures. Time permitting, EWG may also parameterize the models to evaluate the effects of the proposed areas. The additional closures should result in a reduction of between 15% and 25% in the by catch of juveniles and spawners of each stock covered by the WMMAP. For each GSA, in case the closures proposed by Member States are not meeting this criterion, the EWG is requested to propose recommendations for designing alternative closures based on criteria such as but not limited to bathymetry, depth, type of substrate, stock seasonality, establishment of a buffer area etc.

TOR 3. The EWG is requested to evaluate how much gears other than bottom otter trawls, such as gillnets and longlines contribute to demersal stocks fishing mortality and especially F for mature hake. Where fishing mortality for hake or other species covered by the

WMMAP by such gears is significant, the EWG is requested to propose possible additional management measures for these gears.

TOR 4. Based on available data (including the mapping of available data from DCF/DCRF) and made available by Member States, STECF is requested to assess the impact of recreational fisheries on the stocks covered by the WMMAP. The EWG is requested to evaluate for each stock whether recreational fisheries contribute to the demersal stocks total catches and if yes to which amount.

STECF comments

STECF observes that all the ToRs have been addressed.

ToR 1. CONVERSION FACTORS ASSESSMENT

STECF observes that Spain and France presented reports to support their respective current conversion factors allowing transfer of effort allocation between fleet segments. France supports a 1 to 1 conversion factor. STECF notes that Italy uses conversion factors as adopted by Spain and did not provide additional supporting information for those.

STECF notes that the available data for the analysis were 2015-2019 FDI databases hosted by JRC (<https://stecf.jrc.ec.europa.eu/data-dissemination>) aggregated at the level of the quarter or year and at fleet segment, and the 2019 logbook and VMS data for French trawling fleet in the GSA 7 provided by the French ministry.

Two parallel statistical approaches were tested to calculate conversion factors based on FDI data. The first approach considered the six species included in the WMMAP and the second approach involved species representing the 75% of the OTB landings. Most of the FDI-based estimated conversion factors were not statistically different from 1, especially for the fleet segments VL1824 and VL2440. This would mean that in average, the CPUE of a large vessel is not statistically different from the CPUE of a smaller vessel, which may be interpreted as supporting the 1 to 1 conversion factor. However, STECF emphasises the high variability around these average CPUE, which render the differences not statistically significant. This variability indicates large differences within a given fleet segment, e.g. CPUE can vary extensively according to GSA, year and season. Accordingly, STECF underlines that it is not possible to assume that converting a fishing day from a small fleet segment to a large fleet segment will not significantly affect total catches and fishing mortality, depending on when and where that fishing day is used.

This is corroborated by the results of the disaggregated analysis performed at trip level. STECF observes that the analysis carried out with VMS and logbook data for French trawl fleet in GSA 7 successfully estimated the conversion factors at gear level, fleet segment level and gear-fleet segment level. All conversion factors were statistically different from 1, thus suggesting that larger vessels are indeed more efficient than small vessels. In particular, the gear-type (twin rigged OTT vs. single trawl OTB) is a factor explaining large differences in fishing power.

ToR2. EXISTING CLOSURES AND THE PROPOSED ADDITIONAL CLOSURES

STECF observes that no documents were presented for the evaluation of the effect of the actual closures already implemented since 2020 for protecting hake juveniles.

STECF notes that EWG evaluated a document presented by Italy for the assessment of the reduction of juvenile hake catches in GSAs 9, 10 and 11. Different scenarios including the existing closures areas and fishing effort reduction in 2020 (10% reduction compared to baseline 2015-2017), separately and combined were simulated following the methodology described in previous STECF meetings (STECF PLEN 19-03 and STECF 20-01). STECF notes

that only one scenario achieved the objective of 20% reduction of catches of juveniles of hake for each of the three GSAs. This scenario considers the 10 closures areas proposed for 2020 and the effort reduction.

STECF observes that no proposal of additional closure areas, related to Article 11.3 of WMMAP, for 2021 were presented by France or Italy.

STECF observes that Spain presented four documents of additional closures, two different proposals for GSA 6, one proposal for GSA 1 and one proposal for GSA 5.

STECF observes that the objective of additional closures has changed as stipulated the joint statement by France and Spain in December 2020 (European Council, statement 5415/1/21 Rev1): "The additional closures should result in a reduction of between 15% and 25% in the by catch of juveniles and spawners of each stock covered by the WMMAP". The term "by catch" used in the literal sentence from the joint statement, was interpreted as catch in the analysis carried out in this ToR.

STECF notes that the two Spanish proposals for GSA 6 used two different sets of data and methodology. The first proposal, a Technical Report elaborated by the ICM-CSIC, analysed the effect of additional measures: effort reduction and changes in mesh size. STECF notes however that this proposal did not analyze separately the juveniles and spawners fractions, did not include considerations on effort displacement, and neither considered the persistency analyses of hotspots of juveniles / spawners in time and space using fishery-independent trawl surveys, which are key technical requirements described in STECF PLEN 19-03 and STECF 20-01. STECF considers thus that the methodology used in this proposal is not appropriate to estimate the efficiency of closure areas to protect juveniles and spawners of the species in the WMMAP.

The other three Spanish proposals are based on IEO Technical Reports for GSA 6, GSA 5 and GSA 1. The three proposals share the same approach, using the scientific survey data to discriminate population fractions and considering the effort displacement. STECF observes that these three proposals meet the standardized methodology developed by STECF.

STECF notes that none of the proposals from Spain reached the objectives required for any fraction of the stocks. The two closure areas proposed in GSA 1 would allow less than 1% reduction in catches for any species. Five temporary closure areas are proposed for GSA 5 implying a limited reduction of catches for the five species presented in the area, the highest effect being an estimated reduction of 2.3% for juveniles and potential spawners of Norway lobster and blue and red shrimp. The closure areas defined in the IEO Technical Report for GSA 6 would only reduce the catch of spawners of Norway lobster by 2%.

STECF notes that closure areas in combination with additional measures improve the reduction rates, but they are not sufficient to achieve the objectives.

STECF notes that in the four Spanish documents, the closure areas were selected in agreement with the fishing sector, but only the proposal for GSA 6 by ICM-CSIC included an analysis of the short-term economic impact of the closure areas in terms of immediate lost revenues (and not considering the medium-term benefits of stock recovery).

STECF observes that the EWG did not address the part of ToR2 involving the exploration of new, not predefined scenarios. STECF underlines that such a task is a comprehensive work that cannot be undertaken during the week of a working group only. Assuming that a model would be already available and up-to-date for a given case study (including relevant spatial information such as GIS layers and VMS data), and notwithstanding the incompressible time and human resources necessary to parameterise new scenarios, run the computations, produce and analyse the results, STECF notes that a significant amount of time and discussion would be spent in defining which closures scenarios should be

analysed (where, when, how long) in the absence of any political guidance on preferred options. STECF recalls that defining scenarios is best placed in an iterative and interactive process involving decision-makers and stakeholders ahead of the working group.

ToR3. DEMERSAL STOCKS FISHING MORTALITY BY GEARS OTHER THAN BOTTOM OTTER TRAWLS

STECF observes that from the six species included in the West Med MAP, only European hake and red mullet are caught by fishing gears other than trawl. Nets (GNS and GTR) are responsible for 14% and 32% of hake catches in EMU1 and EMU2, respectively, and lines (LLS) contribute to 1% of hake catches in EMU1. Depending on the GSA, between 4% and 24% of the total catches of red mullet come from nets.

STECF observes that matrices of partial F were computed for each GSA and fishing gear based on the F by age and year estimated in the last assessment and the catch-at-age by fishing gear–GSA. The partial F s have remained rather stable over the most recent years. For the last year analysed (2019) and based on F_{bar} ages, the contribution of GTR to fishing mortality of red mullet was 27% in GSA 1 and 22% in GSA 10. In the case of hake, GNS accounted for 8% of fishing mortality in EMU1 and 24% of fishing mortality in EMU2 and LLS accounted for 4% in EMU1.

The EWG 21-01 proposed management measures for GTR, GNS and LLS based on a proportional reduction of the partial F to the average across either all fished ages or ages that contribute to the F_{bar} . Considering that these gears contribute to the fishing mortality mostly for older ages, if the reduction of fishing mortality is aligned with the spawning seasons of hake and red mullet, it is expected that the management measures would contribute to protect the spawners.

ToR4. ASSESS THE IMPACT OF RECREATIONAL FISHERIES ON THE STOCKS COVERED BY THE MAP

STECF notes that EWG evaluated the impact of the recreational fisheries based on the information included in the following documents: "Report on the impact of recreational marine fisheries in the Spanish Mediterranean in relation to the multi-annual plan for demersal fisheries in the Western Mediterranean" sent by *General Secretariat for the Fisheries* (Spain) and two documents sent by *General Deputy for Sustainable Fishing* (France): "Study evaluating the impact of marine recreational fisheries in France" and the report "MEDAC Advice for a regulatory framework and efficient management for recreational fisheries in the Mediterranean" based on FAO Technical Guidelines on Responsible Recreational Fisheries. Additional scientific literature was also consulted.

STECF observes that the marine recreational fisheries for the French regions bordering the Mediterranean are described, providing information about fishers population, fishing practices and catch composition. Recreational fishery is a strongly seasonal occupation with a peak of activity during the summer months. Atlantic mackerel, sea bass, and gilthead sea bream are the main species of the recreational fishery representing the 67% of catches. For the species listed in the WMMAP, the combined catches for red mullets (*Mullus spp.*) made up to 2% only.

STECF notes that a comprehensive study of the catch composition of marine recreational fishing in Spanish Mediterranean was carried out in 2021 and it was presented to this EWG. The list of species and corresponding catches by region and modality of recreational fishing was presented. None of the species included in the WMMAP appeared in the catch composition except for the Region of Murcia in the shore-based fisheries and underwater fishing/spear fishing, where combined catches of mullet species (*Mullus spp.*) represented between 5% and 18% (in numbers).

STECF observes that considering that the four crustacean species included in the WMMAP have never been reported as caught by recreational fisheries, that there was only one observation of a hake caught and an unquantified low presence of *Mullus spp.*, EWG concluded that the impact of the recreational fisheries on the stocks covered by the WMMAP is negligible.

STECF conclusions

STECF concludes that the conversion factors between fleet segments adopted in 2020 by Member States should be evaluated based on information at the fishing trip level from VMS and logbooks. Such data are not publicly available and are to be specifically provided by Member States for the analysis to be performed accurately. STECF concludes that trawl type affects significantly the catching power of fishing vessels.

STECF concludes that none of the proposed scenarios of additional closures achieved the objective of reduction of between 15% and 25% in the catch of juveniles and spawners of each stock covered by the WMMAP. Achieving this by means of closures alone would require more ambitious scenarios, adapted to the areas, fisheries and species concerned. Alternatively, the combination of closure areas with effort reductions and technical measures may contribute to achieve these levels of reduction.

STECF recalls that the evaluation of alternative closure scenarios shall follow the technical guidelines provided by STECF PLEN 19-03 and STECF 20-01. STECF underlines also that defining new closure scenarios to be explored is best placed in an iterative and interactive process involving decision-makers and stakeholders.

STECF concludes that other fishing gears than trawl accounts for fishing mortality of hake and red mullet. This contribution may vary between GSAs and fish age group.

STECF concludes that spawners of hake and red mullet can be protected through management measures that ensure the reduction of the fishing mortality attributable to GNS, GTR and LLS during the spawning seasons.

STECF concludes that the recreational fishery in the Western Mediterranean Sea has a negligible or a null impact on the six species target in the WMMAP.

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

6.1. CFP monitoring

Background provided by the Commission

Article 50 of the Common Fisheries Policy (CFP; Regulation (EU) No 1380/2013 of the European Parliament and of the Council of 11 December 2013) stipulates: "The Commission shall report annually to the European Parliament and to the Council on the progress on achieving maximum sustainable yield and on the situation of fish stocks, as early as possible following the adoption of the yearly Council Regulation fixing the fishing opportunities available in Union waters and, in certain non-Union waters, to Union vessels."

Request to the STECF

STECF is requested to report on progress in achieving MSY objectives in line with the Common Fisheries Policy.

STECF observations

STECF notes that to address the above Terms of Reference a JRC Expert Group (EG) was convened to compile available assessment outputs and conduct the extensive analysis required.

The EG output was presented in a comprehensive report accompanied by several detailed annexes providing: 1) CFP monitoring protocols as agreed by STECF (STECF, 2018a); 2a) R code for computing NE Atlantic indicators; 2b) R code for computing Mediterranean indicators, 2c) R code for computing all European waters indicators, 3) URL links of the reports and stock advice sheets underpinning the analysis, 4) ICES data quality issues corrected prior to the analysis, 5) stability tests ran for Mediterranean and Black Sea indicators, non-EU stocks indicator, data category 3 indicator and decadal recruitment indicator, 6) Sensitivity analysis on the Mediterranean and Black sea indicators. The report and Annexes are available at https://stecf.jrc.ec.europa.eu/plen21_01

STECF notes that the report is clear and well laid out, transparently describing the analysis undertaken and cataloguing the changes made in the approach since the previous report (STECF 20-01 ad hoc).

The EWG report then sets out results of the analysis for the Northeast Atlantic (NE Atlantic) and Mediterranean & Black Seas separately in Sections 3 and 4 (respectively). Based on these results STECF provides an overview of what is currently known regarding the achievement of the MSY objective, drawing together the results from the different sea areas to provide a comparative picture. In this report, "Northeast Atlantic" refers to stocks

in FAO Area 27 inside and outside EU waters¹, and “Mediterranean & Black Seas” refers to stocks in FAO Area 372.

For the NE Atlantic (FAO area 27), the information was downloaded from the ICES website comprising the most recent published assessments carried out up to and including 2020. For the Mediterranean & Black Seas (FAO area 37), the information was extracted from the STECF Mediterranean Expert Working Groups repositories comprising the most recently published assessments carried out up to 2020, and from the GFCM stock assessment forms comprising the most recently published assessments carried out up to 2019.

The analysis for the “Mediterranean and Black Seas” represents only a limited number of stocks and small proportion of total EU landings across all species and areas. In addition, there was a reduction of the number of stocks used in the analyses compared to 2020. Only one stock from the Black Sea was available (from 7 in 2020), while the number of Mediterranean Sea stocks available was reduced from 47 to 35. This reduction in the number of stocks is due to several stock assessments not being carried out by STECF anymore at the request of DG MARE, and which were not taken over by GFCM. This was the case in the Black Sea. At the same time, the different calendar for the provision of advice under the GFCM framework means that the latest stock assessments become publically available only later in the year, and the 2020 GFCM stock assessments were therefore unavailable for the present analysis.

Finally, as the last assessment carried out in 2020 refers to 2019 data, the stocks which would now be in the UK waters exclusively are still included in this EU analysis.

Trends towards the MSY objectives in the Northeast Atlantic and Mediterranean & Black Seas

The overview below describes the trends observed in the NE Atlantic and the Mediterranean & Black Sea for the periods 2003 to 2019 and 2003 to 2018 respectively. It applies to the stocks included in the reference list of stocks for these areas.

Stock status in the NE Atlantic

The indicators provided by the JRC EG show that in the NE Atlantic (both EU and non-EU waters) stock status has significantly improved since 2003 (Figure 6.1.1) but also that many stocks are still overexploited. Among the stocks which are fully assessed (Table 3, EWG report), the proportion of overexploited stocks (i.e. $F > F_{MSY}$, blue line) has decreased from around 75% to close to 40% over the last ten years. However, in 2019, the proportion of overexploited stocks has increased slightly. The proportion of stocks outside safe biological limits ($F > F_{pa}$ or $B < B_{pa}$, orange line), computed for the 42 stocks for which both

1 The stocks that are included in the NE Atlantic analysis are those stocks in ICES category 1, 2 and 3 for which assessments are available and that were managed through a TAC at EU level in 2017 (based on DG MARE TAC/quotas database). Stocks in EU waters include stocks in/or partially in ICES areas 3, 4, 6, 7, 8 and 9, but excluding Norwegian coastal stocks in area 4 (see list of stocks in section 5; Scott et al., 2017a).

2 The combinations of Species/GSA that are included in the Mediterranean & Black Seas analysis are those based on a ranking system approach for which the species having a rank in the first ten positions either in total live weight or total economic values between 2012 and 2014 were chosen (see Mannini et al., 2017).

reference points are available, follows the same decreasing trend, from 75% in 2003 to around 30% in 2018, but has increased again substantially in 2019.

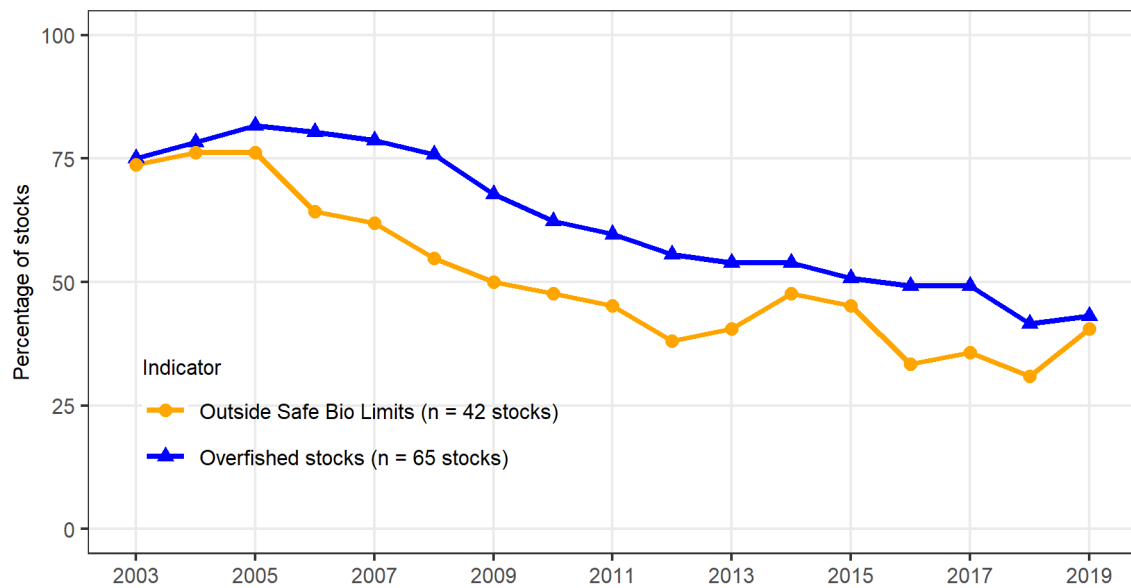


Figure 6.1.1. Trends in stock status in the NE Atlantic (both EU and non-EU waters) 2003-2019. Two indicators are presented: blue line: the proportion of overexploited stocks ($F > F_{MSY}$) within the sampling frame (out of a total of 65 stocks) and orange line: the proportion of stocks outside safe biological limits SBL ($F > F_{pa}$ or $B < B_{pa}$) (out of a total of 42 stocks).

STECF had previously commented on another indicator (see section 3.2.5 of EWG report) showing the number of stocks where $F > F_{MSY}$ or $SSB < MSYB_{trigger}$ (used as a proxy of $SSB < B_{MSY}$ since by definition $MSYB_{trigger}$ is set at or below B_{MSY} and B_{MSY} is not available for the majority of stocks). This indicator is however available for 27 stocks only. The low number of stocks used makes the results unstable from year to year, hence it is not reported in Figure 6.1.1 and the trends need to be interpreted with care.

It is important to note, however, that in 2019, 4 stocks that are exploited below F_{MSY} are still outside safe biological limits (i.e. in this case, $B < B_{pa}$), while 8 stocks inside safe biological limits are still exploited above F_{MSY} , (i.e. $B > B_{pa}$ but $F_{MSY} < F < F_{pa}$) and 23 have an unknown status with regards to safe biological limits (Table 1). This means that for the last known year, among the 42 stocks considered only 40% are simultaneously not overfished and inside safe biological limits.

³ $MSY B_{trigger}$ is considered the lower bound of spawning-stock biomass fluctuation for long-lived species when fished at F_{MSY} and is used in ICES advice rule to trigger a cautious response.

Table 6.1.1 Number of stocks overfished ($F > F_{MSY}$), or not overfished ($F \leq F_{MSY}$), and inside ($F \leq F_{pa}$ and $B \geq B_{pa}$) and outside ($F > F_{pa}$ or $B < B_{pa}$) safe biological limits (SBL) in 2019 in the NE Atlantic.

	Below F_{MSY}	Above F_{MSY}
Inside SBL	17	8
Outside SBL	4	13
Unknown	16	7

STECF continues to observe that the recent slope of the proportion of overexploited stocks (Figure 6.1.1) suggests that progress until 2019 has been too slow to allow all populations of fish to be managed at or below F_{msy} no later than 2020.

Stock Status in the Mediterranean & Black Seas

As explained above, in the Mediterranean & Black Seas, the number of stock assessments data publically available vary year to year. In addition, not all stock assessment extend back to the early part of the time series. This renders the calculation of a robust indicator difficult and potentially misleading. According to the summary Table 5.1 in the EWG report, out of 35 stocks, 6 (17%) were not overfished in 2018, the other 29 were overfished.

Trends in the fishing pressure (Ratio of F/F_{MSY})

As agreed by STECF (2018a) the Expert Group computed the trends in fishing pressure using a robust statistical model (Generalised Linear Mixed Effects Model, GLMM) accounting for the variability of trends across stocks and including the computation of a confidence interval around the median. A large confidence interval means that different stocks show different trends in F/F_{MSY} over time.

In the NE Atlantic EU waters, the model-based indicator of the fishing pressure (F/F_{MSY}) shows an overall downward trend over the period 2003-2019 (Figure 6.1.2). In the early 2000s, the median indicator of fishing mortality was more than 1.7 times larger than F_{MSY} , but this has reduced and since 2011 stabilised below 1.2, getting close to 1 in 2019. Note that the line being around 1 means that only around half of the stocks are fished below F_{msy} . STECF notes that the objective of all stocks being exploited at or below F_{msy} will be achieved when the upper bound of the confidence interval of the indicator in figure 19 in the EWG report is below 1.

The same model-based indicator was computed by the EG for an additional set of 12 stocks located in the NE Atlantic, but outside EU waters. This indicator follows the same overall decreasing trend in overexploitation levels observed in EU waters until 2014. Since then, however, the indicator has shown an increasing number of stocks being exploited above F_{MSY} , especially since 2017 where the indicator has increased to almost twice F_{MSY} . STECF acknowledges that the indicator for NE Atlantic stocks outside EU waters is based on comparatively few stocks, and uncertainty around the actual value of the estimate (confidence interval) is high (see figure 21 in the EWG report). This makes the results unstable from year to year, and should be interpreted with care. Nevertheless, the increasing trend in fishing mortality in recent years has been observed in most stocks analysed, and is particularly severe for one stock (figure 22, EWG report); this trend was also already observed in the previous CFP monitoring report.

The indicator computed for stocks from the Mediterranean & Black Seas has remained at a very high level during the whole 2003-2018 period. After the observed peak between 2011-2013 where F/F_{MSY} has reached its highest historical level, there has been a

somewhat decreasing trend in the fishing pressure. Nevertheless, the value of F/F_{MSY} has still been around 2.1 in recent years indicating that the stocks are being exploited on average at rates well above the F_{MSY} objective contained in the CFP.

The F/F_{MSY} model-based indicator was also estimated considering all stocks in EU waters, (i.e. both the in NE Atlantic EU waters *and* in the Mediterranean & Black Seas together (79 stocks), due to the international requirements on the EU to report on all stocks fished in EU Waters. However, the indicator (displayed in section 5 EG report) appeared somehow counterintuitive and difficult to interpret: instead of following a pattern in between NEA and Med-Black Sea realities as may have been intuitively expected, it rather follows closely the pattern shown by stocks in the NE Atlantic. This is due to the significant variability in trends observed in Mediterranean and Black Seas stocks, compared to the more consistent trends observed across the NEA stocks, which influence more strongly the modelled indicator. The result is that the overall F/F_{MSY} indicator for all EU waters shows a low and decreasing trend over time, which is not representative of the reality of the Mediterranean and Black Seas and may be mis-interpreted. For this reason STECF decided not to present the results in Figure 6.1.2.

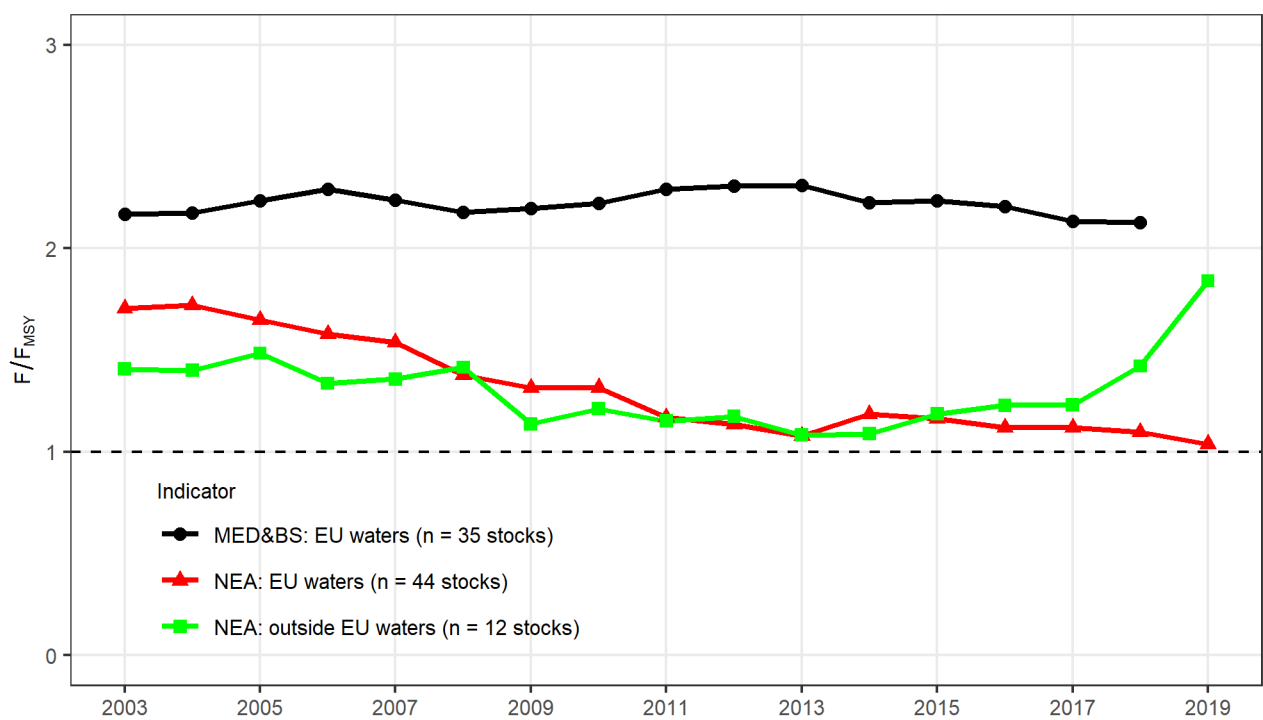


Figure 6.1.2. Trends in fishing pressure 2003-2019. Three model based indicators F/F_{MSY} are presented (all referring to the median value of the model): one for 44 stocks with appropriate information in the NE Atlantic EU waters (red line); one for an additional set of 12 stocks also located in the NE Atlantic but outside EU waters (green line), and one for the 35 stocks from the Mediterranean Sea & Black Seas (black line).

Finally, STECF notes that trends observed this year may slightly differ from previous STECF reports. Beyond the issue of the varying number of stocks from year to year, these differences are largely imputable to the annual update of stock assessment results

themselves: it happens that some stocks, assessed as overfished one year, are re-assessed as not-overfished the following year (or vice-versa), with the addition of a new year of data (the inherent so-called “retrospective pattern” of stock assessment). To illustrate this, the EG has produced a new set of graphs this year, displaying the changes of historical perceptions over time (Section 7, EWG report). They show a systematic underestimation of F/F_{MSY} in NEA Atlantic EU waters, (i.e. that in every reporting year the model estimates F/F_{MSY} being close to 1 for the final data year, but in following reporting years that value for the same given data year is re-estimated to be above 1). Therefore, small differences in the resulting outcomes compared to last year’s report should not be over-interpreted. In the Mediterranean and Black Seas there is no systematic under- or over-estimation observed in the historical pattern.

Trends in Biomass

The model-based indicator of the trend in biomass shows improvement in the NE Atlantic (EU waters only), particularly for data limited stocks (ICES category 3 stocks), but not necessarily in the Mediterranean & Black Seas (Figure 6.1.3). In the NE Atlantic the biomass has been generally increasing since 2007, and was in 2019 on average around 35% higher than in 2003. In the Mediterranean & Black Seas, biomass increased at the beginning of the time series, but declined after 2006. Since 2015 there has been an increase in biomass. STECF notes there is large uncertainty around this indicator (see figure 32 in the EG report).

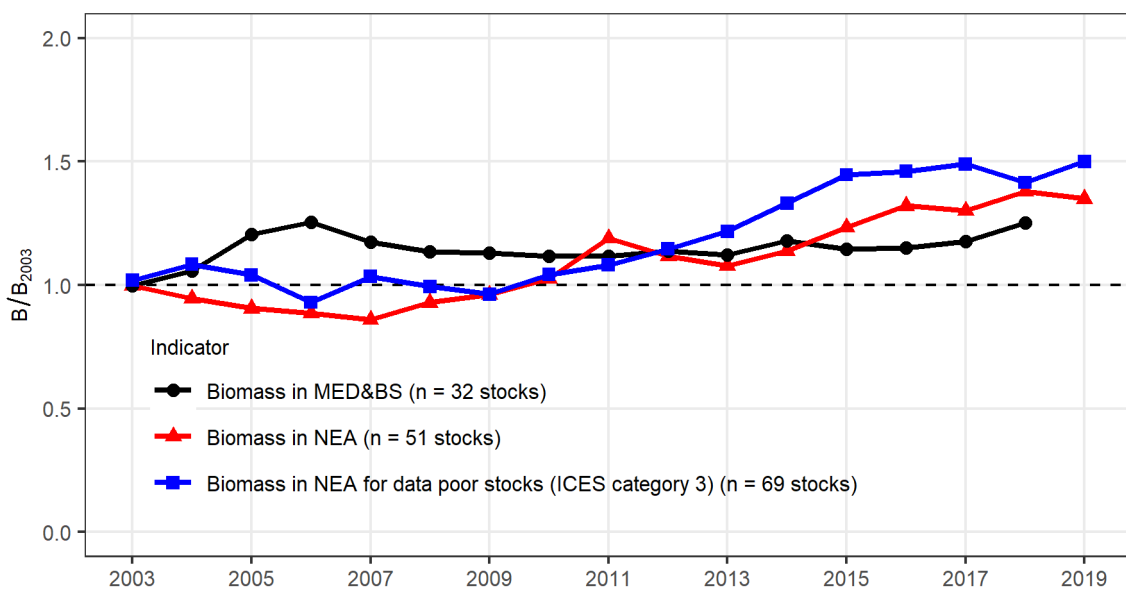


Figure 6.1.3. Trends in the indicators of stock biomass (median values of the model-based estimates relative to 2003). Three indicators are presented: one for the NE Atlantic EU waters (51 stocks considered, red line); one for the Mediterranean & Black Seas (32 stocks, black line); and one for data limited stocks (ICES category 3, 69 stocks, blue line).

Trends in Recruitment

The average decadal recruitment indicator shows a decreasing trend until 2012 and an inversion afterwards, which may reflect an increase in stocks’ production. However, the characteristics of the indicator, a decadal ratio, only expresses the overall long-term trends over a twenty years window, and does not reflect year to year variability. For example,

the 2019's decadal recruitment for a single stock is the ratio between the average recruitment from 2010 to 2019 over the average recruitment from 2000 to 2009 (check the protocol in Annex 1 of the EG report for more details; Figure 4).

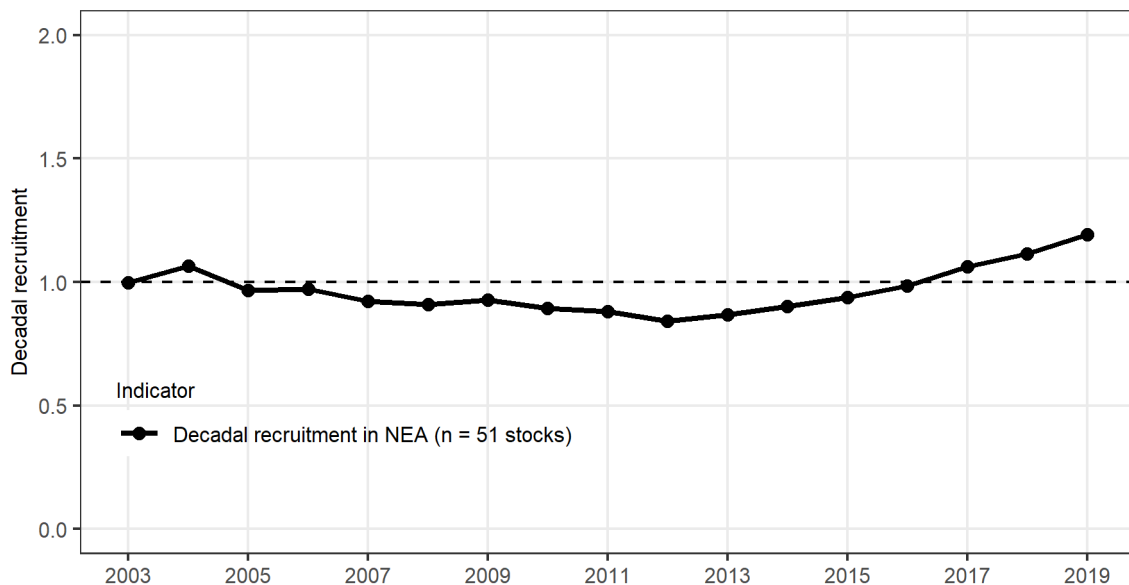


Figure 6.1.4. Trend in decadal recruitment scaled to 2003 in the NE Atlantic area (based on 51 stocks).

Trends per Ecoregion

The EG provides some information and figures broken down by Ecoregion for EU waters in NE Atlantic and the Mediterranean & Black Sea. STECF notes however, the large uncertainty associated with these indicators, particularly in the Mediterranean & Black Sea. This makes the results unstable from year to year and thus should be interpreted with care.

In EU waters the overall fishing pressure across ICES Ecoregions has decreased and the status of stocks has improved compared to the start of the time series. Nevertheless, in two out of five regions the decreasing trend in exploitation has been reversed (North Sea) or stalled (Baltic Sea) in recent years. In 2019, the proportion of overexploited stocks ranged between 13% - 71% across the different ICES Ecoregions, while the modelled estimate of the F/F_{MSY} ratio for 2019 was between 0.9 and 1.21, suggesting great regional differences in progresses. In the Iberia area a considerable increase in biomass has been observed, as well as in the widely distributed stocks.

Coverage of the scientific advice

Coverage of biological stocks by the CFP monitoring

The analyses of the progress in achieving the MSY objective in the NE Atlantic should consider all stocks with advice provided by ICES, on the condition of being distributed in EU waters, at least partially. Based on the ICES database accessed for the analysis, ICES provided scientific advice for 256 biological stocks included in EU waters (at least in part).

Of these, 159 stocks (62%) are data limited, without an estimate of MSY reference points (ICES category 3 and above, Table 2).

Table 6.1.2. Total number of stocks assessed by ICES for different stock categories in different areas. Note that not all of these stocks are considered of EU relevance (STECF 15-04) and as such, numbers are higher than those used in the CFP monitoring analysis.

	ICES Stock Category						Total
	1	2	3	4	5	6	
Arctic Ocean	8	0	4	0	0	0	12
Azores	0	0	2	0	1	0	3
Baltic Sea	8	0	8	1	1	0	18
BoBiscay & Iberia	12	0	20	0	9	5	46
Celtic Seas	25	0	16	2	13	10	66
Greater North Sea	22	0	18	4	7	3	54
Iceland, Greenland and Faroes	14	1	9	0	1	1	26
Widely	7	0	8	0	4	12	31
Total	96	1	85	7	36	31	256

The present CFP monitoring analysis for the NE Atlantic is focused on stocks with a TAC in 2017 and for which estimates of fishing mortality, biomass and biological reference points are available. As detailed in the EG's technical reports, not all indicators can be calculated for all stocks in all years, and the EG was able to compute indicators for 42 to 65 stocks of category 1 depending on indicators, years and areas, and 69 stocks of category 3 (Table 4, EWG report). These stocks represent the vast majority of catches but a large number of biological stocks present in EU waters are still not included in the CFP monitoring.

In the Mediterranean and Black Seas region, stocks status and trends are only assessed for a limited number of stocks. The EG selected 247 combinations of Species/GSA in the sampling frame (Mannini et al., 2017), of which 64 combinations (26%) have been covered by 35 available stock assessments in 2019.

Coverage of TAC regulation by scientific advice

According to the EG report, STECF notes that 156 TACs (combination of species and fishing management zones) were in place in 2019 in the EU waters of the NE Atlantic.

STECF underlines that in many cases, the boundaries of the TAC management areas are not aligned with the biological limits of stocks used in ICES assessments. The EG therefore computed an indicator of advice coverage, where a TAC is "covered" by a stock assessment when at least one of its divisions match the spatial distribution of a stock for which reference points have been estimated from an ICES full assessment. Based on this indicator, 53% of the 156 TACs are covered, at least partially, by stock assessments that provide estimates of F_{MSY} (or a proxy), 48% by stock assessments that have B_{pa} , with only 19% covered by stock assessments that provide estimates or proxies of B_{MSY} .

Additionally, STECF notes that, using this index, some TACs can be considered as "covered" even if they relate no assessment for some parts of the considered management area, or to several assessments contributing to a single TAC (e.g. *Nephrops* functional units in the North Sea) or to a scientific advice covering a different (but partially common) area (e.g. whiting in the Bay of Biscay). Thus, such an approach overestimates the spatial

coverage of advice (i.e. the proportion of TACs based on a single and aligned assessment). This means that many TACs are still not covered by scientific advice based on F_{MSY} reference values.

Ongoing developments

STECF notes that work will continue in 2021 to allow the coverage of the CFP monitoring report to be expanded and the protocol to be reinforced (section 8, EWG report).

STECF acknowledges that monitoring the performance of the CFP requires significant effort to provide a comprehensive picture. The process presents several methodological challenges due to the annual variability in the number and categories of stocks assessed (especially in the Mediterranean and Black Sea) and due to the large variation in trends across stocks. As a result, the choice of indicators and their interpretation is regularly discussed by STECF, expanded and adjusted over time when necessary.

STECF is aware that a stable methodology and set of indicators provide an easier and increasing understanding by stakeholders of the CFP monitoring analysis over time. However, STECF also has to take into account annual changes in assessment methodologies, data and models, and to balance this with expectations for consistency.

STECF recognises the need to broaden the scope of the CFP monitoring to cover additional aspects not currently dealt with. In particular, indicators covering the landing obligation, wider ecosystem and socio-economic aspects in the analysis would be a useful expansion. This was initiated in 2018, but still needs further development in the relevant STECF EWGs to be made fully operational and routinely included in the CFP monitoring.

STECF conclusions

Regarding the progress made in the achievement of F_{MSY} in line with the CFP, STECF notes that the latest results confirm a reduction in the overall exploitation rate and increases in biomass for the NE Atlantic over the long time period. However, when considering stocks in the Baltic Sea, North Sea and outside EU waters, this has recently stabilised (Baltic Sea) or has even been reversed. Furthermore, STECF notes that many stocks remain overfished and/or outside safe biological limits, and that progress achieved until 2019 is obviously too slow to ensure that all stocks are fished at or below F_{MSY} in 2020.

STECF also concludes that stocks from the Mediterranean & Black Sea remain in a very poor situation, although there has been slight improvement in terms of fishing pressure and stock biomass. STECF raises concerns about the decreasing number of stock assessments being performed and available in these regions.

STECF notes that only few stocks have estimates or even proxies of B_{MSY} available. This restricts considerably the ability to monitor the performance of the CFP. STECF therefore identifies the need to increase the numbers of stocks for which a B_{MSY} estimate is available.

STECF recognises the need to broaden the scope of the monitoring to cover additional aspects of the CFP not currently dealt with.

6.2 Monitoring the Landing Obligation

Background provided by the Commission

In line with Article 15(14) of the Regulation on the Common Fisheries Policy, the Commission reports annually on the implementation of the landing obligation of the year prior to the report based on information transmitted by the Member States, the Advisory Councils and other relevant sources to the Commission. This reporting is included since 2016 in the Commission's annual Communication submitted every June on the State of Play of the Common Fisheries Policy and Consultation on the Fishing Opportunities. The Commission's Communication in 2021 will cover the implementation of the landing obligation in 2020.

According to Article 15(14), the Commission report should include the following elements:

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

In order to facilitate the reporting, and in line with the outcome of STECF EWG 16-04, in 2017 Member States were invited on a voluntary basis to complete questionnaires seeking more detailed information on the impact of the landing obligation and national steps taken to assist with its implementation. In 2018 and 2019, Member States were asked to update the information provided as appropriate with additional questions on control and enforcement. The questionnaire continues to help structure the responses provided by the Member States and the quality of information provided has improved. The questionnaire follows a similar approach each year to ensure comparability of replies. Still, where relevant, questions are updated in view of the available scientific advice and STECF 20-03 recommendations.

The Commission's report in 2021 will cover the implementation of the landing obligation in 2020 – a year after it fully entered into force in 2019. Against this background, and to be able to report comprehensively on the implementation, the Commission stressed the importance that every Member State fills in the enclosed questionnaire as comprehensively as possible or update the information submitted, whenever appropriate. Aside from the Member States, all the Advisory Councils and the European Fisheries Control Agency (EFCA) were asked to submit information on the themes covered in the questionnaire.

Throughout the transition period (2015 – 2018), intense collaboration and exchanges with all stakeholders have taken place and have helped to reach a better, and in some instances a common, understanding in both the solutions and challenges in implementing the landing obligation. STECF concluded in PLEN 19-01 that there are many sources of information in addition to the Member States' reports and concludes that these should be better integrated into the review process of the landing obligation. Including quantitative data, research projects (Minouw, DiscardLess) and the draft report of MEP Soren Gade on securing the objectives of the landing obligation. As in previous years, STECF is asked for a review and a summary of these reports via one ad hoc contract – to feed into the STECF PLEN 21-01. Ad-hoc contract 20-01 should be used as this report gives an integrating overview, including ICES discard data available, of the different data sources available and the status of implementation of the landing obligation.

The annual reports will be received by the Commission 1 March 2021 the latest. Given the STECF PLEN 21-01 takes place 22 - 26 March 2021, the ad-hoc contracts need to be carried out between 2 – 17 March 2021.

Background documents (except the EFCA report) are published on the meeting's web site on: <https://stecf.jrc.ec.europa.eu/plen2101>

Request to the STECF

Based on the report of the STECF ad hoc contract on the monitoring of the landing obligation, STECF is requested to:

1) To advise the Commission on the elements appropriate to meet the reporting requirements of Article 15(14) of the CFP, review and summarise the main findings of the reports highlighting, in a structured manner, key salient points raised by each MS and to provide an overview of them at the sea basin level, including for the long distance fleet operating beyond EU waters;

This structured manner also to be considered as appropriate in the points below;

1. To identify to what extent discard rates are being reduced in specific fleets or fisheries;
2. Identify specific actions where Member States and producer organisations have made adjustments to support the implementation of the landing obligation, and if any differences in actions occurred in 2020;
3. Identify the most important challenge or weakness in implementation and the lessons to be learned from best practices. Where available, identify specific fleets and stocks where the landing obligation has had a direct impact on fishing activity;
4. Highlight the most important weaknesses in the reporting and registration of all catches and the lessons to be learned from best practices;
5. Make any further recommendations as appropriate to improve the full implementation of the landing obligation, its identified challenges and the reporting of catches.

Summary of the information provided to STECF

The following documents were provided to STECF:

- Annual reports submitted by Member States, Advisory Councils and European Fisheries Control Agency (EFCA);
- A report provided by the Commission summarizing the Annual reports indicated above; and
- EFCA Report on the implementation of the landing obligation.

As in previous years, the Commission asked Member States to complete a questionnaire. This was a modified version of the questionnaire originally developed by STECF-16-03, with simplifications and consolidations suggested by STECF PLEN 20-03. Reports on the implementation were requested for 2021 referring to the situation in 2020.

STECF notes that 14 Member States and 2 Advisory Councils submitted reports. The Commission did not receive 2020 reports from eight Member States before the STECF plenary: Belgium, Croatia, Cyprus, France⁴, Germany, Ireland, Italy and Romania. The UK has not submitted a report since 2019 and as the UK is no longer a Member State would not be expected to report.

The reports submitted represent a decrease in the reporting rate since last year when 17 Member States and 2 Advisory Councils reported. The responses from the Advisory councils reiterated previous advice but did not include any new information. A detailed report on the implementation of the LO including an overview of the risk of non-compliance with the LO by fleet segments, was received from EFCA. The reports were synthesised and provided to STECF in a summary report.

STECF notes that for those Member States providing a report, the summary report has followed the same illustrative classification with five qualitative categories developed and used by STECF for the last few years in this annual exercise. This is based on perceptions on magnitude of changes in the amount and quality of information provided from one year to the next across the number of questions contained in the questionnaire. In 2020, most reports were assessed to contain significant change compared to what was reported in 2019 as shown in the table below:

Member States	2016	2017	2018	2019	2020
Belgium					
Bulgaria					

⁴ The reports from France and Germany arrived during the STECF plenary meeting.

Croatia	Blue	Red	Red	Red	Red
Cyprus	Light Blue	White	White	Light Blue	Red
Denmark	Dark Blue	Dark Blue	Blue	Blue	Dark Blue
Estonia	Blue	Light Blue	Blue	Light Blue	Blue
Finland	Light Blue	Blue	Light Blue	Light Blue	White
France ⁵	Light Blue	Red	Red	Blue	Red
Germany ²	Dark Blue	Blue	White	Dark Blue	Red
Greece	Blue	Dark Blue	White	Blue	Dark Blue
Ireland	Dark Blue	Dark Blue	Blue	Dark Blue	Red
Italy	Red	Red	Red	Red	Red
Latvia	Light Blue	Red	White	Blue	Blue
Lithuania	Blue	Light Blue	Light Blue	Red	Dark Blue
Malta	Light Blue	White	White	Blue	Blue
Netherlands	Blue	Red	Light Blue	Dark Blue	Dark Blue
Poland	Blue	Light Blue	Light Blue	Blue	Light Blue
Portugal	Red	Red	Blue	Dark Blue	Light Blue
Romania	Light Blue	Red	Red	Light Blue	Red
Slovenia	Light Blue	White	White	Blue	Blue

5 The French and German reports arrived during PLEN 21-01but STECF did not have time to evaluate these during plenary.

Spain	Blue	Dark Blue	Blue	Dark Blue	Dark Blue
Sweden	Dark Blue	Light Blue	Blue	Red	Dark Blue
United Kingdom	Dark Blue	Red	Light Blue	Red	Red

Key:

	2016	>2017
Red	No Report	No Report
	No information	No change
Light Blue	Limited information supplied	Minor change with limited new information provided for specific questions
Blue	Moderate with information provided for specific questions	Moderate change with new information and data provided to specific questions
Dark Blue	Significant information provided to multiple questions	Significant change with new information and data provided to multiple questions

According to the summary report, the main points raised by Member States and by EFCA are as follows:

- Most Member States emphasized the impact of COVID-19 restrictions. This restricted the number of last haul inspections carried out in 2020, as well as supporting studies (i.e. selectivity and exemptions) intended to be carried out in 2020, many of which have been postponed until 2021.
- Several Member States referred to Brexit and the Trade and Cooperation Agreement with the United Kingdom, which created uncertainty in 2020 and may significantly increase the likelihood of “choke” scenarios in 2021. The likelihood of diverging rules in EU and UK waters and the loss of possible quota swaps have also been mentioned.
- In contrast to the previous two years, Member States have increased the number of selectivity studies carried out.

- Quota swaps, changes in quota management and re-allocation of quota are stated to remain the most effective tools used at national level to facilitate the implementation of the LO.
- Monitoring and controlling accurate documentation at sea remains a significant challenge.
- Dissemination of information and guidance to/of the stakeholders and raising awareness of the regulatory framework surrounding the landing obligation is continuing across Member States.
- There is no evidence of the landing obligation causing safety issues on board fishing vessels with no incidents reported.
- Most Member States continue to use inter annual flexibility but very few Member States are using the inter species flexibility mechanism.
- Choke species are perceived as the most significant issue with the landing obligation, but actual instances of choke situations, i.e. where a fleet would have been forced to cease fishing due to early quota shortage, seem to occur rarely.
- The EFCA report identifies that the main risks with control and monitoring of the LO are related to (i) misreporting of discards under exemptions, (ii) illegal discarding of species not under exemptions, (iii) limited recording of landings of specimen <MCRS and (iv) potential impacts of under- and misreporting of unwanted catches.

STECF comments

STECF notes that the LO introduced with the latest reform of the Common Fisheries Policy has been in place since 2015 and fully applied since 2019, yet available information suggests that implementation remains weak. STECF notes that this is confirmed by the EFCA report which indicates that the effectiveness of the LO is limited in many fisheries, because compliance is poor and illegal discarding is still occurring.

STECF notes that Member States who responded to the reports covering 2020 generally followed the questionnaire although the level of details provided varied widely. Many of the reports while provided significant new information and data in certain areas (e.g. pilot studies; number of infringement; discard quantities under exemptions) did also tend to repeat information provided for earlier years (2016-2019). For the year 2020, the Baltic Sea is the region covered most comprehensively.

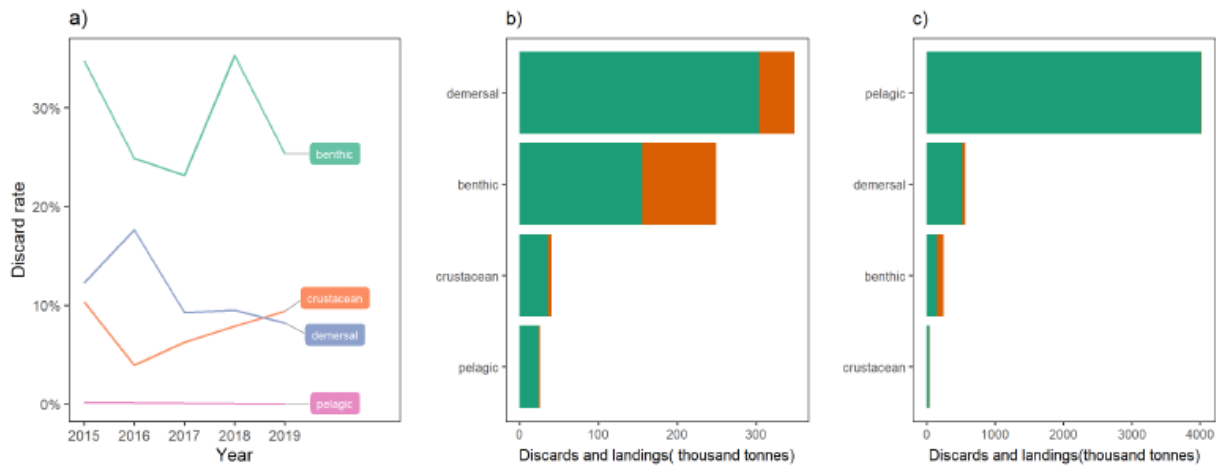
STECF observes that several years after the start of the implementation of the LO Member States report no, or only limited, adverse socio-economic impacts, mainly due to the exemptions in place (especially *de minimis*). The only impacts reported by Member States are whether fishing companies were able to sell undersized fish (e.g. Lithuania reports that fishermen could easily find buyers for the small fish). Other Member States still flag the problems of handling undersized fish and STECF notes that this may be one reason why regional groups have increasingly asked for *de minimis* derogations regarding disproportionate costs for handling the small portions of undersized fish in a large catch (see also TOR 7.6).

Request 1: Discard rates trends

STECF notes that quantitative discard data for EU fishing fleets is provided by EU Member States to ICES and STECF FDI data calls.

ICES Fisheries Overviews⁶ provide information on fishing activities for nine ecoregions, including data where available. Quantitative discards data is provided for three of these ecoregions (Greater North Sea, Bay of Biscay and Iberian Coast and the Celtic Seas), with information available by métiers, categories of species (benthic, crustaceans, demersals, pelagics) for the period 2015-2019. For the six other ecoregions (Azores, Baltic Sea, Barents Sea, Iceland, Norwegian Sea and Oceanic Northeast Atlantic), only qualitative information is provided.

Figure 6.2.1 reports the discards ratios for the three ecoregions as provided in the ICES Fisheries Overviews.



⁶ <https://www.ices.dk/advice/Fisheries-overviews/Pages/fisheries-overviews.aspx>

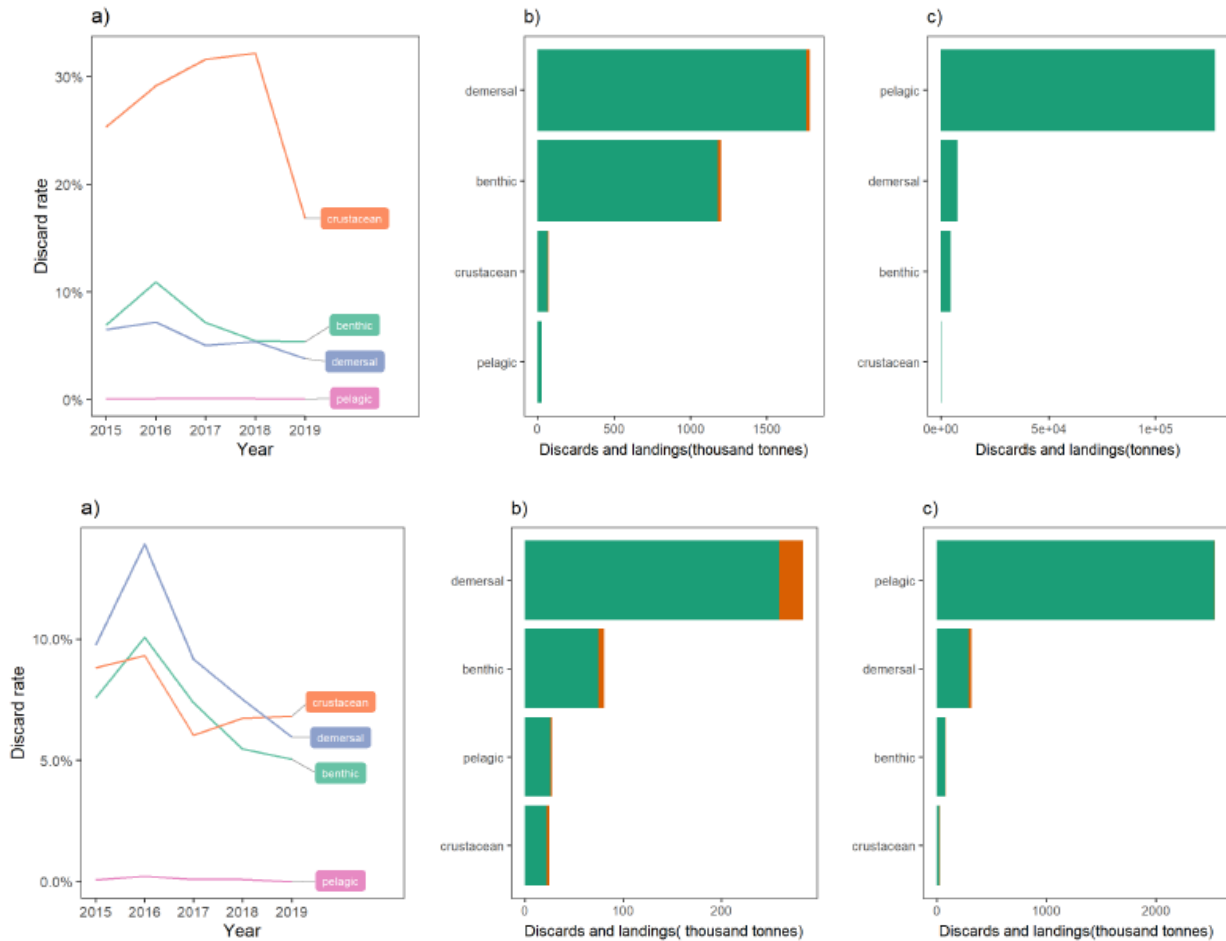


Figure 6.2.1. Top: Greater North Sea ecoregion (ICES subarea 3a, 4 and 7d). Middle. Bay of Biscay and Iberian Coast ecoregion (ICES subareas 8 and 9). Bottom: Celtic Seas ecoregion. ICES subareas 6 and 7 (excluding Division 7.d). Left panel (a): Discard rates in 2015–2019 by fish category, shown as percentages (%) of the total annual catch in that category. Middle panel (b): Landings (green) and discards (orange) in 2019 by fish category (in thousand tonnes) only of those stocks with recorded discards. Right panel (c): Landings (green) and discards (orange) in 2019 by fish category (in thousand tonnes) of all stocks, including stocks with zero discards or without discard information.

According to ICES (2021) discard rates are, in general, below 10% and decreasing over time in two ecoregions between 2015-2019, but not in the North Sea where discard rates have remained stable. STECF notes, however, that divergent discard trends between species and fisheries can be masked when aggregated in such broad categories of species.

STECF also notes that, according to ICES (2021) discard estimates for several species of elasmobranchs are still highly uncertain due to low levels of sampling.

STECF notes that the STECF FDI Report (EWG 20-10) contains tabulated 2019 discard estimates provided by EU Member States for EU fleets by species and subregion for all areas where EU fleets are operational (Annex 2 of EWG 20-10). Annex 2 does include tabulated discard estimates for the proposed 2021 exemptions, by exemption area, species and country, based on the 2019 data provided by Member States. Similar tables for the proposed 2020 exemptions are also available in the FDI report EWG 19-11 and its annexes. The FDI reports EWG 19-11 and 20-10 also include detailed tabulated and graphical percentages of discard estimates in numbers and weight above and below MCRS by Member State, year, area, métier and species (Annex 3 of EWG 20-10 includes the longest time series – 2015-2019). STECF further notes that there are detailed graphical and numerical discard information available on the JRC website (<https://stecf.jrc.ec.europa.eu/dd/fdi/graphs>) by Member State, year (2015-2019), species, vessel length, fishing technique, gear type, mesh size range, supra region, region and EEZ indicator.

STECF notes that the amount of data stored in the FDI database is extensive and extracting meaningful information on trends in discards ratios or in the percentages of catches below and above MCRS would require detailed statistical analyses beyond what can be performed during the STECF plenary. EWG 20-10 was exclusively focused on ensuring the best quality, quantity, coverage and availability of the FDI data, and did not perform quantitative analyses of trends in the data. STECF is therefore not able to comment on discard trends arising from FDI data but notes that such an analysis could be planned to be undertaken.

STECF notes that each year discards under exemptions permitted under the LO are calculated by the FDI EWGs. STECF acknowledges that the methodology to calculate the exemptions is appropriate. However, for some cases, the low level of sampling or the absence of sampling by Member States, can lead to imprecise estimates not fully representative of the actual level of discarding by the relevant fleets, noting that the actual levels of discarding are largely unknown at present. To improve the quality of these estimates, increased monitoring and accurate reporting by Member States is required.

STECF notes that the last-haul information compiled by EFCA and the discard information provided to ICES and under the FDI data call represent the best and most detailed information available and highlights the need for Member States to provide data that are representative of the level of discarding and are statistically sound.

Request 2: Adjustments to support the LO implementation

STECF notes that several Member States emphasized the importance of adjustments made in their national quota management system to adapt to the LO. For example, in the Baltic Sea, Lithuania has initiated amendments of rules for relating to by-catch of cod in pelagic

fisheries. In South Western waters, Portugal adopted a new quota management system for anchovy, establishing the fishing season and daily catch limits by vessel.

STECF observes that such adjustments to quota management systems are important in the wider implementation of the LO. However, STECF notes that such adjustments in isolation will not lead to full implementation of the LO.

Request 3 and 4: Challenges and weaknesses

STECF notes the challenges and weaknesses reported by Member States, as summarized in the summary report provided by STECF.

STECF notes that the EFCA report highlights that their activities to promote an effective and efficient implementation of the LO were impacted by the COVID-19 situation during 2020. Member States report similar difficulties as well as with on board sampling and the carrying out of research work and pilot studies relating to implementation of the LO because of COVID-19.

STECF re-iterates the need to maintain and improve the collection and reporting of catch (landings, unwanted catch and discards) data as pointed out by EWG 20-04. This remains a major weakness because if the data reported do not reflect the actual removals, this will have a significant impact on the quality of scientific advice and may compromise the achievement of the MSY objective. This potential for poor quality catch data is particularly true for species and fisheries where a *de minimis* exemption is granted as there is a risk that the volume of unwanted catch discarded may be substantially higher than that permitted. For high survival exemptions, this risk is mitigated to some extent by deducting the estimated dead discards associated with the exemptions from the advised catch prior to agreeing on a TAC.

STECF notes that the number of LO infringements detected through all joint deployment plans remains low. Based on the report by EFCA, STECF observes this likely to be due to the very low probability of detecting illegal discarding. Inspectors are generally on board vessels for a short period so observing discarding is difficult. Additionally, STECF re-iterates that existing control tools have their limitations in providing an effective enforcement of the LO rules. STECF further re-iterates that monitoring all catches using onboard measures such as Remote Electronic Monitoring (REM or EM) have been applied in several fisheries around the world and have shown to be an effective way to monitor the LO to generate catch evidence for science and compliance.

STECF notes that the underlying objective of the LO is to increase selectivity and reduce the levels of unwanted catches. There is evidence from previous STECF evaluations and from ICES that levels of unwanted catches remain high in many mixed demersal fisheries in EU waters. Member States seem more intent in adopting exemptions to allow the discarding of a level of unwanted catches rather than improving selectivity. The uptake of more selective gears while increasing, remains slow and STECF observes that the progression from trialling selective gears to adoption into legislation remains a lengthy process.

STECF observes, as highlighted by several Member States, that the Trade and Cooperation Agreement with the UK will bring new challenges in the implementation of the LO in North Western Waters and the North Sea. While the UK has stated that it will continue to implement the LO, they have not ruled out the possibility of introducing measures,

exemptions and technical measures that diverge from the EU Regulations. STECF acknowledges that under the TCA the UK is entitled to introduce such divergences in their own waters, nonetheless STECF notes that such divergences will add additional complications for control and monitoring as well as introducing additional complexity for fishermen operating in both EU and UK waters on the same fishing trip under different conditions.

STECF notes that some Member States have provided detailed data on unwanted catches discarded under exemptions as well as for the volume of unwanted catches below MCRS landed. However, such data are point estimates and may not be comparable with data available to ICES, STECF and EFCA described above. Therefore, STECF cannot assess the reliability, accuracy and representativeness of the data reported by MS reports. In this regard they have only limited utility at present.

STECF can find little evidence of specific fleets and stocks where the LO has had a direct impact on fishing activity. The number of actual cases of choke situations reported by MS remains very small. In 2020, only Spain and Portugal reported choke species in ICES zones 6 and 7 for alfonosinos and skates and rays. Undoubtedly some choke situations are being solved through adaptive quota management as evidenced in the reports from the Netherlands and Sweden. However, it is also likely that the continued discarding and mis-reporting of unwanted catches is reducing the number of choke situations being observed.

Request 5: Further recommendations as appropriate to improve the full implementation of the LO, its identified challenges and the reporting of catches.

STECF notes that it is not possible currently to assess information on socio-economic impacts of implementation of the LO as, to date, Member States have not reported on such impacts. To address this STECF suggests that DG Mare should specifically request STECF to carry out an assessment of what an analysis of the socioeconomic impacts would entail and the data requirements. This would involve defining what data is available from the databases (e.g. FDI data, AER data) for the detection of changes in fishing practices, as well as information from other sources (e.g. Member States and Advisory Councils) that could also be made accessible to STECF. This would help to define a data collection exercise for quantitative and especially qualitative data on how the fishing sector has been impacted by the LO. So far it seems that no Member States has carried out a detailed evaluation of the LO impacts.

STECF observes that the impacts of exemptions on fishing mortality is poorly understood given the level of reporting of catches discarded under exemptions. Therefore, as a first step, STECF reiterates the conclusion from EWG 20-04 that it would be appropriate and timely for regional groups and the Commission to review existing exemptions to the LO. Such a review would determine whether they have been effectively enforced and effective, whether the original STECF observations remain valid or whether the exemptions require amendment or are still required, given likely changes in catch patterns, gears used, vessels involved and uptake.

STECF observes that there is a risk that *de minimis* exemptions can provide an incentive for vessel operators to continue discarding unwanted catches at sea and only retain unwanted catches on board if they are inspected on hauling. The implications of such practices are that data quality will deteriorate and scientific advice for fisheries management will be less reliable, because the unmonitored part of the fishing mortality cannot be accurately estimated. Therefore, STECF stresses that exemptions should be

considered as a last resort and that the focus should be on improving selectivity, where possible. Where exemptions are justifiable, then they should be subject to a high-level of monitoring.

STECF acknowledges that the Member States reports for 2020 show a renewed focus on selectivity trials, which is positive. However, STECF re-iterates that while extensive work continues to be carried out on selectivity, for some regions, this work remains largely uncoordinated and not necessarily targeted at the right fisheries. A review of the work completed to identify what works and what does not, along with detailing fisheries for which *de minimis* or survivability exemptions are already in place and where improving selectivity may reduce the need for such exemptions would be desirable.

Given the risks of divergences in rules between EU and UK waters because of the TCA, STECF observes that the impact of introducing new exemptions, technical measures or control measures into EU waters which border UK waters should be carefully considered. Divergent rules potentially will lead to further challenges in implementing and monitoring the LO.

STECF conclusions

General Conclusions

STECF concludes that according to the summary report provided to STECF the quality of the reports provided Member States has improved with more detailed information being provided.

STECF concludes that the EFCA report submitted for 2020 indicates that the effectiveness of the LO is limited in many fisheries, because compliance remains poor and illegal discarding is still occurring.

STECF concludes that Member States have provided very limited information on the socio-economic impacts of the LO.

Conclusions on Discard rates trends

STECF concludes that according to discards data presented by ICES, discard rates for most commercial species groups are on average below 10% and have decreased over time in the Celtic Sea, Bay of Biscay and Iberian ecoregions between 2015-2019. In the North Sea discard rates have remained stable.

STECF concludes that extensive quantitative discards information is available in STECF FDI database, that could be used for a thorough statistical analysis of recent trends in discard ratios across regions, species and gears.

STECF concludes that the last-haul information compiled by EFCA and the discard information provided to ICES and under the FDI data call represent the best and most

detailed information available and highlights the need for Member States to provide statistically sound data that are representative of the actual level of discarding.

Conclusions on adjustments to support the LO implementation

STECF concludes that adjustments to quota management systems are important in the wider implementation of the LO. However, STECF notes that such adjustments in isolation will not lead to full implementation.

Conclusions on challenges and weaknesses

STECF concludes it is vital to maintain and improve the collection and reporting of catch (landings, unwanted catch and discards) data. If the data reported do not reflect the actual removals, this will have a significant impact on the quality of scientific advice and may compromise the achievement of the MSY objective.

STECF concludes that the number of LO infringements detected through all joint deployment plans remains low due to the very low probability of detecting illegal discarding and the limitations of the existing control tools in providing an effective enforcement of the LO rules. Monitoring all catches using onboard measures such as Remote Electronic Monitoring (REM or EM) have shown to be an effective way to monitor the LO to generate catch evidence for science and compliance.

STECF concludes that the underlying objective of the LO of increasing selectivity and reducing the levels of unwanted catches is still not being achieved in some fisheries. The uptake of more selective gears while increasing, remains slow and the progression from trialling selective gears to adoption into legislation remains a lengthy process.

STECF concludes that the Trade and Cooperation Agreement with the UK will bring new challenges in the implementation of the LO in North Western Waters and the North Sea. Divergences in rules and measures implemented by the EU and UK will potentially add additional complications for control and monitoring as well as introducing additional complexity for fishermen operating in both EU and UK waters on the same fishing trip under different conditions.

Conclusions on Further recommendations

STECF concludes that it is not possible currently to assess information on socio-economic impacts of implementation of the LO as, to date, Member States have not reported on such impacts. To address this STECF suggests that DG Mare should specifically request STECF to carry out an assessment of what an analysis of the socioeconomic impacts would entail and the data requirements.

STECF concludes that the impacts of exemptions on fishing mortality is poorly understood given the level of reporting of catches discarded under exemptions. Therefore, as a first step, STECF reiterates the conclusion from EWG 20-04 that it would be appropriate and timely for regional groups and the Commission to review existing exemptions to the LO.

STECF concludes also that exemptions should be considered as a last resort and that the focus should be on improving selectivity, where possible. Where exemptions are justifiable, then they should be subject to a high-level of monitoring.

STECF concludes that while extensive work continues to be carried out on selectivity, for some regions, this work remains largely uncoordinated and not necessarily targeted at the right fisheries. A review of the work completed to identify what works and what does not, along with detailing fisheries for which *de minimis* or survivability exemptions are already in place and where improving selectivity may reduce the need for such exemptions would be desirable.

References

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6.3 Guyana snapper

Background provided by the Commission

Red Snapper fishing stock has been showing signs of concern over biomass of juveniles. French scientific institute IFREMER alerted French authorities and the Commission through its annual report.

The report underlines the uncertainty related to fishing activity data and considers this in its analysis and recommendations for stock management.

Background documents are published on the meeting's web site on: <https://stecf.jrc.ec.europa.eu/plen2101>

Request to the STECF

STECF is requested to provide its expert knowledge to validate the analysis and stock management recommendations provided by IFREMER in its report.

More specifically, we would like to have STECF advice on:

1. If all relevant variables are considered to meet the needs for the necessary analysis. If not, what data could we ask to be collected?
2. Is the data available sufficient to reach conclusion. If not, provide recommendations
3. Do fish stock management measures suggested in IFREMER report cover all relevant possible measures? Could or should other measures be considered, and in particular, are the measures suggested in line with all precautionary principles to ensure proper recovery of the fish stock.
4. Which stock management measures does the STEF recommend to place as of now for 2021?
5. Which stock management measures, follow-up actions or further studies would the STEF recommend to put in place in the future as of next year and beyond?

Summary of the information provided to STECF

- IFREMER report: Evaluation 2020 du stock de vivaneau rouge en Guyane Française. Décembre 2020.

General:

Red Snapper (*Lutjanus purpureus*) in Guyana is considered to be a single stock. Historical catch records go back to 1976, but catches rose gradually during the eighties and in recent years have reached about 2500 t per year (landing gutted weight in Guyana). The main fishery exploiting red Snappers is by far the Venezuelan hand liners (with a total of 45 licences producing more than 95% of catches). Discards from hand liners are considered negligible as is often the case with this fishing gear (Cochrane. 2002).

Two other fleets currently account for a minor proportion of the total catches: Guyana Shrimp trawlers (14 boats in 2019 and with catches well below 100 t) and the Antillean artisanal fishery using Pots and traps, of just a few vessels (with catches of about 65 t). The two fleets have gradually decreased along the time series but were more important historically. A previous study (Caro et al. 2011) evaluated that the amount of fish caught in numbers by the shrimp bottom trawl fishery (immature fish only) were rather similar to those caught by Venezuelan hand liners until 2002. These catches represented about 20% of the Venezuelan catches in tonnes until 2002, and 6% of the total catches in 2007 (100 t, with 41 trawlers). This share has been further reduced in the last decade.

In 2019, 91% of Snappers (which are landed gutted in the Guyana) corresponded to Red Snapper, the rest mainly constituted of vermilion snapper (*Rhomboplites aurorubens*) and there are also very small catches of lane snapper (*Lutjanus synagris*).

Management:

The fishery is managed by a system of fishing licenses. In total 45 Venezuelan hand liners can fish annually in Guyana waters (Décision du Conseil de L'Union Européenne 2015/1565). This regulation forces the Venezuelan hand liners to land 75% of their catches in Guyana.

Assessment 1. An analysis of the length distribution.

Length frequency distributions have been available since 1986 for the Venezuelan hand liners. The length sampling performed by IFREMER consisted of one monthly sampling until 2018, and two monthly sampling since then, measuring about 150 kg per boat (and for a range of 1-3 boats per sampling per day). As the fish landed abroad are not sampled, it has been assumed that their length distribution is similar to those landed in Guyana. Landings from the shrimp fishery have been omitted from the analysis as they represent marginal catches in the fishery and the length distribution is unknown.

Mean size of fish in the catch declined markedly between 1985 and 2003 and stabilised at about the same level thereafter (Figure 6.3.1). Since 2006 the largest individuals ($L > 80$ cm) have no longer occurred in catches. The peak modes are around 30-35 cm.

The document mentions that over the last 10 years, on average 53% of captured fish have been smaller than the size at 50% maturity of 32 cm. In 2019 the value was though less than this average, at 43%. No clear changes in the spatial distribution of the fishing effort have been observed in the early period of the fishery (Rivot et al. 2000), therefore the drop in mean size of fish is considered to relate to increased fishing mortality, although the JR mentions that some changes in the sizes of hooks could also have happened in the past, although there are no data available to ascertain that assumption.

Assessment 2. Stock Synthesis method

The report provides a summary of an assessment of red snapper (the target species), using the Stock Synthesis method (Methot 2009). This assessment model was set up as part of the 2020 WECAFC/CRFM/IFREMER Working Group on shrimp and ground fish of the Northern Brasil-Guianas shelf. The Assessment based on SS3 used as input data: catches (1976-2019) (corrected for the fraction of catches landed abroad), CPUE (1986-2019) and length frequency distributions (1986-2019) of Venezuelan handlines boats. Effort is taken as the numbers of days at sea of these boats (from logbook information cross referenced with VMS data and information from fish factories). CPUE estimates are produced as total annual catch over the total number of fishing days, without any standardization. In previous assessments it was shown that the inclusion of the CPUE improved the model fit to input data (Tagliarolo 2019). Growth and reproductive

parameters come from previous studies (Rivot et al. 2000; Caro et al. 2011). Finally, a dome shape fishing selectivity was assumed. For the latter, a sensitivity analysis was run testing the setting of a single (constant) selectivity pattern throughout the entire period or by allowing two blocks (periods) of fishery selectivity (pre and post 1997). The split year for the selectivity blocks was selected as achieving a better fit to the rapid changes that occurred in the size of fish caught at the end of the nineties. Estimates of the net reproductive rate ($\ln(R_0)$) and of the selectivity parameters are produced in the assessment. Steepness of the S-R relationship was set at 0.7 (the value suggested by FishLife for *L. purpureous*).

The results of the assessment were rather sensitive to the assumption on the number of selectivity periods occurring in the fishery (Figure 6.3.2).

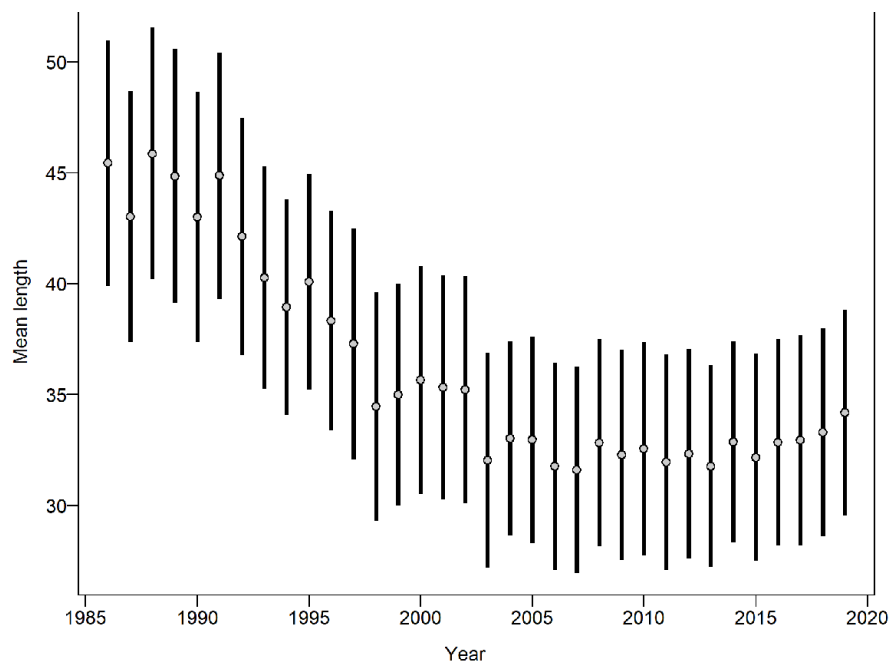


Figure 6.3.1. Mean length (and 95% confidence intervals) of red snapper fishes landed in Guyana. This is based on a sampling level of min 12 samples per year.

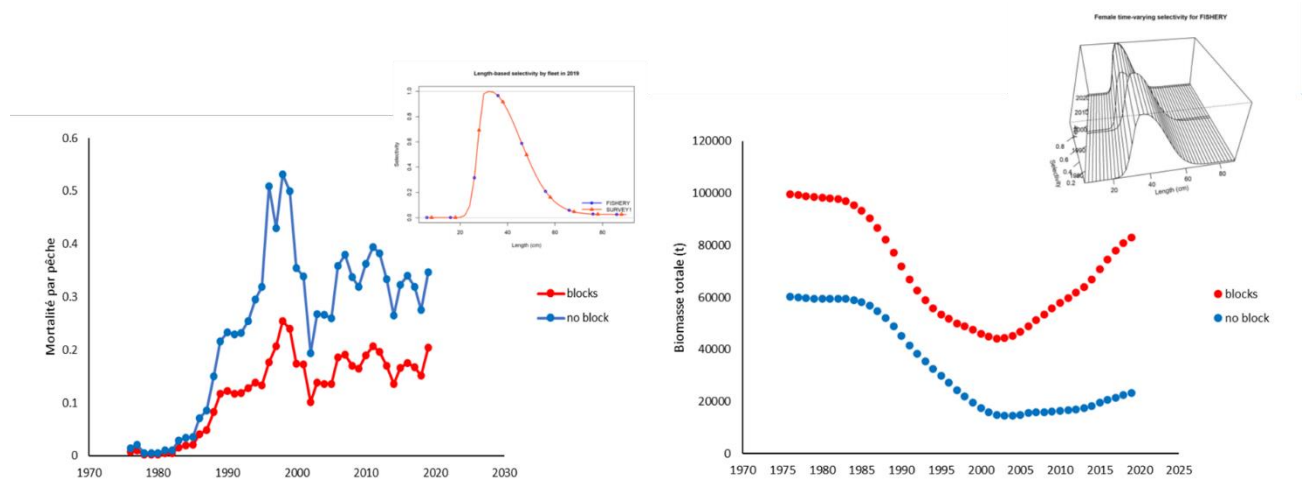


Fig. 4. Mortalité par pêche estimée par le modèle (moyenne sur tous les âges) selon l'hypothèse sur la sélectivité.

Fig. 5. Biomasse estimée par le modèle selon l'hypothèse sur la sélectivité.

Figure 6.3.2 Assessment of Fishing mortality (left) and Biomass (right) trajectories of red Snapper assuming either one (blue) or two (red) blocks of fishing patterns (until or after 1997) (with the fitted selectivity included in the smaller embedded graphs).

Despite the sensitivity of results to the assumption of the number of selectivity periods, the main conclusions in the report were:

- The biomass has plummeted in the period 1980-2000, along with a strong increase in fishing mortality; F has then stabilised some recovery has been observed over the last 20 years (more pronounced in the model with two selectivity periods).
- Given the uncertainties, no reference point was estimated and the current stock status relative to MSY is unknown.

The discussion on the assessment deals with some caveats in the inputs:

- The catches from the shrimp fishery, considered marginal, are not integrated in the assessment as there is a lack of information on the exact quantities and on the length frequency distribution (LFD).
- According to the regulation, 25% of catches may be landed outside Guyana, but that fraction of the catch is little known and monitored, and there are uncertainties regarding the actual volumes and LFD landed abroad (so an assumption of LFDs equal to that of the catches landed in Guiana is made).
- The fact that there is no standardization of the Effort or CPUE undermines the validity of CPUE as an indicator of stock abundance trends.
- Effort (fishing days) does not account for potential changes in the amount or size of hooks per fishing vessel (and spatial fishing tactics) in time. The assessment assumes this has remained unchanged.
- Doubts on potential changes in the features are directly related to the sensitivity analysis of the 1 or 2 blocks of times in selectivity patterns.

Discussion and suggestions for management and research:

The results show a reduction in the mean size and in the biomass, along with an increase of fishing mortality at the beginning of the assessed period (until 2000). Given the high amount of immature fish caught (about 53% in the last 10 years), the report points out the need to adopt management measures to reduce the fishing mortality on juveniles, either by

- Setting a minimum hook size to improve fishing selectivity towards larger individuals (Ralston 1990; Garner et al. 2020; Yamashita et al. 2009), noting there is insufficient knowledge on the sizes of hook being used. An experimental study on the size hook selectivity is suggested.
- Setting a minimum fish landing size to improve selectivity. This may incentivise fishermen to change their spatial distribution towards deeper waters where the biggest fish tend to occur (Perodou and Berti 1990), but with the risk of increasing discarding until such tactical changes have occurred, with high discard mortality due to decompression. Such a change in the minimum landing size of fish may also have large economic impacts since the fish sizes currently caught are highly valued in the markets nowadays.

The management based on licencing of fishing vessels has a weak link to the actual fishing mortality as the total number of fishing days fluctuates largely (in the range 3310-7307 until 2011, when 41 licences were granted, to a range of 3774-5734 since 2012 with a total of 45 licences).

The report concludes that the data is too uncertain and the model too sensitive to provide firm conclusions on the status of the stock and the fishery, thus, hampering the proposal of quantitative management measures.

However, considering the uncertainties, the report calls for a precautionary management approach:

- either by keeping effort at current levels
- or suggesting a small reduction (recalling that ICES recommended a precautionary buffer of an F reduction of 20% for data limited stocks).

To address the difficulties of managing with fishing licences, the report considers also:

- Setting Maximum Allowable Effort (TAE), or Catch limits (TAC)
- Seasonal closures (NOAA 2018)

To allow restoring good reproductive potential for the population, a large fraction of old fish should be guaranteed, by reducing the fishing pressure on juveniles either:

- by setting a bigger hook size to change selectivity towards larger fishes, or
- by reducing global fishing effort and mortality so that fish have a better chance of surviving and maturing.

In addition, uncertainties on the available data should be reduced:

- Through interviews about the evolution of fishing practices (areas of fishing, number and size of hooks evolutions, etc.)
- Experimental hook selectivity studies for improving the parameterisation of the assessment model
- Technical measures such as increasing the % of landings being forced to be landed in Guiana (currently 75%) or enforcing length sampling of all catches originating from Guyana.

- NOTE FROM FRENCH AUTHORITIES TO THE EUROPEAN COMMISSION (31/12/2020)
 - Subject: Management of the snapper stock off French Guiana

In this note, the French authorities outline to the European Commission possible ways of improving stock management, which have emerged as a result of discussions with all the French stakeholders concerned (i.e. Directorate-General Territory and Sea (DGTM) of Guyana, Ifremer, representatives of professionals and processing industries).

The priority identified by the stakeholders is to improve knowledge of the resource, the impact of fishing techniques and the life cycle of the snapper. A combination of these will support the effective management and conservation of the stock.

To this end, it is envisaged to carry out several scientific studies:

— Identify areas in which snappers of different ages are present and analyse the presence of different stocks of different sizes and characteristics. The juveniles would be closer to the coast and mature specimens further off the coast;

— Identify the life cycle of snappers including the breeding season, spawning grounds or whether stocks in French Guiana are shared with other States.

—Improvements of knowledge through experiments to measure the impact of the various fishing techniques: Variation in hook size, impact of shoot — pot, determining the selectivity of the different gears and their impact on the environment and all species. This

study will be carried out by Ifremer in collaboration with industry professionals. Following the studies, the most effective measure (s) could be selected (e.g.: change of fishing gear, change in size of hooks, reduction of fishing effort, prohibition of fishing in an area at certain times etc.).

— Regular monitoring of the stock.

The French authorities have indicated they will revert to the Commission to provide additional information, on the financing and timing of the study.

In the immediate future, it was also agreed to complement the data of Ifremer observers present at landing on sizes, through observations in processing plants and the use of size or weight data available from fishing companies.

The French authorities have requested that the Commission informs them of any measure that would be envisaged, to ensure time for discussion and effective communication with the various Guiana stakeholders involved.

STECF comments

STECF observes that proper knowledge on the biology of snappers is fundamental for the selection of appropriate assessment methods and management measures.

- Snappers are long lived and slowly growing fish, reaching a maximum age of 20 years, and maximum length of about 85 cm, maturing at the age of 4 (35 cm mean length). The fact that a large fraction of the fish caught are immature indicates a reduction of fishing pressure on juveniles would help achieve higher recruitment, keeping also in mind that an individual of 80 cm is able to produce 10 times more eggs than an individual of 46 cm (Rivot et al. 2000; Gallaway et al. 2009).
- Snappers are demersal reef-associated species, which display an affinity for bottom shelters and vertical structures offering refuges (Wells and Cowan 2007). For this reason, in some places artificial reefs have shown to be beneficial to the stock (Gallaway et al. 2009). In addition, closed areas may act as refuges for large spawners diminishing the impact of fishing on spawning aggregations (Burton et al. 2005; Graham et al. 2011; Heyman et al. 2019) or in other places they have been shown to help prevent high bycatch of juveniles in bottom fisheries (Sandra et al. 2010).
- Identifying stock boundaries is paramount for the design of management actions effective at achieving a sustainable exploitation and optimal stock status. There are doubts on the actual identity and distribution of the stocks in the region. In the third meeting of the WECAFC/CRFM/IFREMER Working Group (FAO 2021) the possibility of merging all national data from the sub-region was put forward for consideration, to provide a better insight on the sub-regional trends under the assumption of stock unity for several species of the Brazil-Guianas shelf, but a combined assessment was not considered further.
- As this is a partially mixed fishery, management of red snapper should be harmonized with that of the other species occurring in the fishery.

STECF considers that the Ifremer report addresses comprehensively the challenges for the assessment and the basic knowledge needed to improve it. This includes the main relevant

issues affecting the knowledge of the biology of snappers, lack of effective fishery monitoring and management measures needed for this fishery.

STECF considers that the proposed future studies are well aligned to filling the main gaps in the knowledge detected by the IFREMER report.

Here below follow some comments on the work and suggested studies included in the background documentation to STECF:

Questions 1 and 2 - the suitability of data inputs for the analysis carried out

STECF observes that the input data have been used appropriately, but the following limitations in the data remain requiring further research (see also comments on questions 5 further below):

- *Standardization of CPUEs* relative to the size and number of hooks used by the vessels and to the fishing areas to better reflect tendencies in stock abundance.
- *Better knowledge and length sampling of the landings occurring in the Antilles.* The lack of information on the length distribution of catches landed abroad Guyana by the Venezuelan fishery was overcome by assuming equal distributions. This requires validation as if this is an erroneous assumption, it would bias the assessment. Further monitoring of catches landed outside Guyana and of its length distribution would be useful.
- *Reconstruction of plausible catches and Length Frequency Distribution (LFD)* The inclusion of data from the shrimp bottom trawl fishery may be appropriate to obtain a more accurate picture of the historical changes in the selectivity of the whole fishery. Nowadays, those catches are minimal and have not been included in the assessment, but they have historically represented large amounts of catches both in tonnage and in numbers (Caro et al. 2011).

Regarding the SS3 stock assessment, STECF agrees that major uncertainties remain. STECF notes that the WECAFC/CRFM/IFREMER Report of 26-27 November 2019 suggested that the current stock is overexploited ($B/B_{msy} < 1$) and overfished ($F_{sq}/F_{msy} > 1$). However, the updated IFREMER report does not indicate the relative value of current F_{sq}/F_{msy} as it considers the assessment still too uncertain. Nevertheless, based on the SS3 diagnostic outputs made available to STECF upon request showed that, while the diagnostic with regards to the target fraction of virgin biomass (0.4B0) is indeed sensitive to the assessment parameters (stock well above (0.8 over 0.4B0) or below (0.33 over 0.4B0) when assuming two or one blocks of fishery selectivity respectively), the stock is in all cases above the minimum stock size threshold (placed at 0.25B0). In both assessments a continuous increase of the stock is also estimated to have happened over the last five years, coincident with a reduction of effort and an increase of catches and CPUE levels since 2014.

STECF observes that additional sensitivity analyses could be conducted to assess the robustness of the assessment to key assumptions.

- *On the changes in selectivity in time.* Further analyses and clarification on the reasons for the need for two blocks of fishery selectivity in the time series would

be useful and why this particular year of separation between the two blocks was chosen. There are contradictory views about the role that gradual changes in the fishing areas may have played in changing the size of fish caught (Rivot et al. 2000; Caro et al. 2011).

- *Potential implications for the changes in selectivity* of including catches and length distribution of the other gears (particularly of the shrimp trawlers).
- *The dome shape selectivity* seems rather suitable for the hand and long lines hook fisheries assuming that only a given size of fish is fully selected by the hook (Garner et al. 2020). However the shape of the selectivity curve is really steep. Dedicated hook selectivity studies may help assessing its biological relevance.
- *Better model diagnostics* inputs and outputs could have been produced with SS3.

STECF observes that the uncertainties in the assessment still qualifies this stock as a Data limited Stock (DLS). The quantity and the length of time series of available data is nonetheless substantial, allowing exploration of several options of alternative DLS assessment methods making use of length and CPUE data. In addition to SS3 which is also a valid assessment tool for DLS, other methods could be explored, such as SPICT (Mildenberger et al., 2019b) (suitable for CPUE data), or using length-based methods for DLS in category 3 and 4 outlined in ICES Technical Guidelines, or other equivalent DLS framework used by WECAFC.

Question 3 - long-term management measures

STECF notes the management measures proposed in the Ifremer report (i.e. Maximum Allowable Effort, or seasonal closures, or Total Allowable Catches). STECF observes a clear management effort objective is dependent on a valid (accepted) assessment whereby current effort is assessed against sustainable target effort. In addition, a better definition of effort is required. Currently TAE management can be considered in the framework of a precautionary buffer towards achieving a reduction of fishing mortality, and as a tool to recover the population (and size of fish caught) quickly. TACs might be considered in the framework of Catch rules for Data limited stocks (see comments on other management measures below).

STECF observes that closures can be a valid tool to protect spawning aggregations from fishing. STECF suggests an expert study on potential seasonal closures and benefits and impacts would be desirable (see also STECF PLEN 19-03 and PLEN 20-01 reports where guidelines on evaluation of closures were included).

STECF observes that setting a minimum hook size to improve fishing selectivity would be appropriate. However, a better understanding of selectivity profiles of hook size is required before being able to define the optimal hook size that may help to achieve leading MSY. STECF supports the experimental study investigating hook size selectivity proposed in the background documentation.

STECF observes that a minimum landing size could be set at the size at a50 maturity. However, STECF agrees with the comments in the Ifremer report that setting a minimum landing size at a50 maturity risks inducing higher discards with associated unaccounted mortality (by decompression) (Rummer and Bennett 2005; Burns 2009).

STECF observes that as a generic rule (e.g. ICES 2017; Jardim et al. 2015 or Fischer et al. 2020), of the Type

$$TAC(y + 1) = TAC(y - 1) \cdot r \cdot f \cdot b$$

can be applicable to this population, where, **r** corresponds to the trend in a biomass index (as CPUE) (for example the 2-over-3 rule used by ICES), component **f** is a proxy for the ratio of current F over FMSY proxy based on length data from the catch (Current Mean length /Over expected mean length at MSY), and component **b** is a biomass safeguard intending to protect the stock from dropping below a threshold level relative to the historical indicator series. This was shown to be applicable to stocks with $k < 0.32$ with an interannual uncertainty cap constraint in the relative change of advice of about 20% (allowing consecutive advice changes within ratios of 1.2-0.8 --- or 1.2-0.7) (Fischer et al. 2020). Careful checking by MSE of its performance would be advisable for the particular biological features of the stock and also for the fishery as regards the dome shape selectivity for which expected mean length at MSY is to be carefully tuned. This can be applied every two years instead of annually (as in Fishcher et al. 2020). If TAC setting is not desired and TAE is preferred instead, testing of the performance of such rules for TAE can also be devised in an MSE context. The same problems outlined before for the reliability of effort and CPUE may appear as well here, but the only condition would be that on average from now on effort remain rather constant.

STECF observes that permanent closures act as reservoirs for old and more reproductive individuals and protect fish spawning aggregations. Such closures have been considered and applied for snappers elsewhere (Burton et al. 2005; Graham et al. 2011; Heyman et al. 2019). STECF suggests an expert study on potential area and seasonal closures to assess their benefits and impacts would establish this would be an effective measure in the Guyana fishery.

Question 4 - immediate management measures

STECF observes that the two alternative assessments included in the Ifremer report suggest that the population has slightly increased in recent years. However, the assessment carried out the previous year (Tagliarolo 2019) suggested the stock was overexploited ($B/B_{msy} < 1$) and overexploited ($F_{sq}/F_{msy} > 1$) (with opposite trends if using or discarding the CPUE indexes).

However, STECF observes that there is no evidence to suggest the stock is reproductively impaired. Furthermore, STECF notes there has been a sharp reduction of the shrimp fishery which harvested almost entirely immature fish. Additionally, fishing effort has already decreased by about 15% since 2014 (compared to the average fishing days in the period 2006-2013), leading to a recent increase of catches and CPUE. Therefore, STECF considers there are no warning signs to suggest an immediate reduction of effort is required but suggests maintaining fishing effort at its current level (around 4000 fishing days). This would seem appropriate to STECF to maintain and gradually improve the stock status in the short-term until longer-term management measures are implemented. A more precautionary 20% effort reduction would though be expected to lead to quicker increase in biomass and CPUE.

Question 5 - Future scientific studies to improve knowledge

STECF endorses all suggestions for scientific studies proposed in the background documents and considers they are useful and relevant.

STECF observes that the study to complement the data collected by Ifremer observers presently on landing sizes, including observation from processing plants and the use of size or weight data available to companies would be desirable. It would potentially improve the quality of the monitoring system.

Furthermore, STECF notes that if this provides information on the size distribution separately for different areas, it would provide a better understanding on the interactions between the fishery spatial distribution and the length distribution of landed fish (and hence the selectivity of the fishery). It would also provide a better understanding of the fraction of the population covered in the CPUE data.

STECF notes Ifremer has proposed either increasing the % of landings being forced to be landed in Guiana or enforcing length sampling of all catches originating from Guiana. STECF considers the latter proposal is more appropriate. It would provide better knowledge of catch and Length Frequency Distribution of the 25% of landings occurring outside Guiana and improve reliability of the assessment.

STECF supports the conducting of experimental hook selectivity studies. Such studies will inform potential management measures to improve selectivity and will also inform the parameterisation of the SS3 assessment.

STECF supports the regular monitoring of the stock which will generate a valuable time series of independent abundance index from surveys. Several options could be considered, using tagging data, egg surveys or a mixed commercial and scientific fishing surveys. STECF notes there are examples of tagging on snapper are common (Patterson et al. 2001; Pina-Amargós and González-Sansón 2009), some applications of egg surveys are also available (i.e., as the DEPM method as applied in the Australian snapper fishery Fowler et al. 2020) or by a mixed commercial and scientific fishing survey.

STECF supports the carrying out of studies to investigate the areas in which snappers of different ages are present and to confirm the presence of different stocks of different sizes and characteristics. STECF observes that enhanced observation in processing plants mentioned above, as well as the proposed commercial and scientific fishing surveys will be helpful to achieving such knowledge.

- *Studies to better know the life cycle of snappers: Identify the breeding season, spawning grounds or whether stocks in French Guiana are shared with other States (mentioned in the Note from French authorities); and*
- *Better definition of stock unit in relation to the neighbour countries in the SouthEast Atlantic (genetics and tagging studies) (Open issue in WECAFC/CRFM/IFREMER working group)*

STECF observes that the studies to understand the life cycle of snappers and provide a better understanding of the stock unit in relation to neighbouring countries in the southeast Atlantic through genetics and tagging studies are highly relevant.

Additional suggestions by STECF:

In addition to the above-mentioned studies, and as discussed in question 1 above, STECF suggest additional studies that could be carried out:

STECF observes that standardizing fishing effort and CPUE would improve the reliability of CPUE as indicators of abundance. This could be trialled according to the variability of fishing results in space and any other available covariate of relevance (like type of bottom) (Maunder and Punt 2004; Gruss et al. 2019). STECF considers this is feasible as there logbook and VMS data is available for the fleet for several years. Inclusion of other covariates such as the number and sizes of hooks per boat would be useful, although it would require having historic information by vessel.

STECF notes that in the Ifremer report there is a proposal to collect information in the evolution of fishing practices from interviews. This would allow tracking (by an extensive interview plan) the evolution of fishing effort over time (i.e. evolution of the number of handlines and hooks per boats, and gradual changes in spatial fishing strategies and reasons). This would provide better definition of fishing effort, better standardization of CPUE and better understanding of the trends resulting from the assessment.

STECF observes that the SS3 model has shown to be very sensitive to assumptions on selectivity, and STECF suggests that this should be explored further. Dedicated model explorations could be performed adding plausible reconstructions of historical catch and Length Frequency Distributions of juvenile bycatch in the shrimp fishery.

STECF conclusions

STECF acknowledges that the Ifremer report addresses comprehensively the challenges for the assessment of snapper and the basic knowledge needed to improve the assessment. This includes the gaps in knowledge relating to the understanding of the biology of the stock, effective fishery monitoring and management measures for this fishery.

Regarding questions 1 and 2 of the ToRs, STECF concludes that all relevant available data was used for the assessment, but acknowledges that uncertainties in the reliability of these inputs hampers reaching firm conclusions on the status of the stock.

STECF concludes that the main data gaps relate to missing data on the other fleets (particularly of the shrimp trawl fishery) and absence of sampling of the fish landed abroad. Fishery independent survey indices would significantly enhance the quality of the assessments.

Regarding question 3, STECF concludes that the Ifremer report includes a wide range of proposed management measures. STECF concludes that of these measures, the regulation of hook size represents a simple and effective means to improve selectivity in the fishery.

STECF concludes that complementary management measures that are not discussed in the documents, including catch rules for data limited stocks or protected areas may be considered.

Regarding question 4, STECF concludes that the ideas put forward for immediate management measures are aligned with the precautionary principle. To this end, STECF suggests that an immediate limitation on fishing effort at its current level would be appropriate to at least maintain and slowly improve the stock status in the short-term until long-term management measures are implemented. A more precautionary 20% effort reduction would likely lead to quicker increases in biomass and CPUE.

Regarding question 5, STECF endorses all suggestions proposed in the background documents for scientific studies and considers they are useful and relevant. In addition to these, STECF also suggests additional studies that could be performed, including (i) a standardization of fishing effort and CPUE according to variability in space and any other available covariate of relevance; (ii) an exploration of options for reconstructing and incorporating historical catches and LFD from the other fleets, and additional sensitivity analyses of the SS3 model selectivity assumption; (iii) a study on potential areas and seasonal closures to assess their likely benefits and impacts on the stock and the fishery; (iv) alternative Data-Limited stock assessments methods.

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6.4 Evaluation of the BALTFISH Joint Recommendation on mitigation measures to prevent by-catch of Baltic harbour porpoise in the Baltic Sea

Background provided by the Commission

The Member States of the BALTFISH Regional Group have provided a Joint Recommendation with the aim of reducing accidental catches of harbour porpoise in the Baltic Sea.

This Joint Recommendation was prepared in response to the ICES advice of 26 May 2020. The advice mentions that all EU Member State assessments and the EU biogeographical assessment of conservation status of harbour porpoise in the Baltic Marine Region classified the status of the Baltic Proper harbour porpoise as “unfavourable-bad” for the three consecutive assessments under Article 17 of the Habitats Directive 92/43/EEC. ICES mentions as well that the Baltic Proper harbour porpoise is listed as Critically Endangered by IUCN and HELCOM and that ASCOBANS considers that the “Baltic subpopulation of the harbour porpoise is of particular concern” and advise that the population cannot bear one single animal by caught per year.

The Commission is working on emergency measures for the Baltic Proper harbour porpoise. This emergency measure, based on the ICES advice, should be a short-term measure bridging the time gap between now and the entry into force of a long term Joint Recommendation, if adopted.

The Commission wishes to be informed of the likely consequences of implementing this Joint Recommendation.

An ad hoc contract was carried out in support of this request, to reply to the below question on compliance of the Joint Recommendation with the Common Fisheries Policy.

Background documents are published on the meeting’s web site on: <https://stecf.jrc.ec.europa.eu/plen2101>

Request to the STECF

STECF is requested to analyse the relevant report of the ad hoc contract, assess the consequences of implementing the Joint Recommendation and advise on the contribution that the measures in the Joint Recommendation of the BALTFISH Regional Group aiming to reduce accidental catches of the Baltic Proper harbour porpoise in the Baltic Sea, if implemented, would make to the achievement of objectives set out in Article 3, paragraphs 2(b) and 2(d) and the target set out in Article 4 Paragraph 1(b) of Regulation (EU) 2019/1241.

Summary of information provided to STECF

STECF was provided with three documents.

- BALTFISH Joint Recommendation “Mitigation measures to prevent bycatch of Baltic Proper harbour porpoise (*Phocoena phocoena*) in the Baltic Sea fisheries”.

The BALTFISH Joint recommendation proposes the following six conservation measures:

1. Closure of the Northern Midsea Bank (Figure 2) to all fisheries, with the exception of pots, traps, and longlines.

The Northern Midsea Bank is defined as the area delimited within the following coordinates:

NW: 56.241°N, 17.042°E

SW: 56.022°N, 17.202°E

NE: 56.380°N, 17.675°E

SE: 56.145°N, 17.710°E

2. Closure of the Natura 2000 site “Hoburgs bank and Midsea Bank” (SE0330308) for fishing with static nets.

3. Closure of the Southern Midsea Bank for fishing with static nets.

The Southern Midsea Bank (Figure 2) is defined as the Swedish part of the Southern Midsea Bank, covering all waters between the Natura 2000 site “Hoburgs bank and Midsea Bank” (SE0330308) and the Swedish–Polish border. Polish waters are delimited as the area within the following coordinates:

SW: 55.377°N, 16.589°E

SE: 55.466°N, 17.538°E

NE: 55.797°N, 18.037°E

4. Closure for fishing with static nets in the Natura 2000 sites Adler Grund and Rønne Bank (DK00VA261) (Figure 3), Adlergrund (DE1251301), Westliche Rönnebank (DE1249301), Pommersche Bucht mit Oderbank (DE1652301), Greifswalder Boddenrandschwelle und Teile der Pommerschen Bucht (DE1749302), Ostoja na Zatoce Pomorskiej (PLH990002), Wolin i Uznam (PLH320019), and the SPA site Pommersche Bucht (DE1552401) during November–January.

5. Obligatory use of ADDs on static nets in the area west and east of the sandbank Ryf Mew (Inner Puck Bay and Outer Puck Bay) within and outside the Zatoka Pucka i Półwysep Helski Natura 2000 site.

6. For the purposes of implementing paragraphs 1-5, Member States shall ensure that their fishing vessel`s activity can be monitored at any time by the control authorities.

The BALTFISH Joint Recommendation states that not later than 1 June 2021 it will be supplemented by a second Joint Recommendation regarding additional mitigation measures (including where appropriate the use of ADDs) outside the areas covered by this first Joint Recommendation on harbour porpoise.

- The ICES Special Request Advice on emergency measures to prevent bycatch of common dolphin (*Delphinus delphis*) and Baltic Proper harbour porpoise (*Phocoena phocoena*) in the Northeast Atlantic (ICES 2020).

ICES (2020) advice was the main information underpinning the elaboration of the JR. It includes five bycatch mitigation measures that, if implemented together, are expected to reduce bycatch risk of Baltic Proper harbour porpoise. ICES further advises that protection measures, considering the life history of small cetaceans, can only be effective when applied for a longer period of time. The measures and their rationale are detailed in Table 6.4.1.

ICES (2020) notes also that enhanced monitoring is required to assess the effectiveness of management measures and to augment precision in population abundance and bycatch mortality estimates.

- “Report on *ad hoc* analysis of a Joint Recommendation for measures to reduce cetacean by-catches in the Bay of Biscay (ToR 1a), and Joint Recommendation mitigation measures to prevent by-catch of Baltic Proper harbour porpoise (*Phocoena phocoena*) in the Baltic Sea fisheries (ToR 2)”

The Report provides a preparatory analysis on the Joint Recommendation Mitigation measures to prevent by-catch of Baltic Proper harbour porpoise (*Phocoena phocoena*) in the Baltic Sea fisheries, in support to the STECF plenary. The expert was asked to comment on the contribution that the measures in the Joint Recommendation of the BALTFISH Regional Group aiming to reduce accidental catches of the Baltic Proper harbour porpoise in the Baltic Sea, if implemented, would make to the achievement of objectives set out in Article 3, paragraphs 2(b) and 2(d) and the target set out in Article 4 Paragraph 1(b) of Regulation (EU) 2019/1241. The report provides the comparative analysis of mitigation measures suggested in the ICES (2020) Advice and the BALTFISH JR (Table 6.4.1).

Table 6.4.1. A set of five bycatch mitigation measures proposed by the ICES (2020) advice and the respective measures suggested by the BALTFISH Joint Recommendation (from ad hoc Contract Report (2021)).

ICES Measure	ICES Rationale	JR BALTFISH Measure	Differences between ICES advice and JR
<p>1</p> <p>Closure of the Northern Midsea Bank (Figure 1) to all fisheries, with the exception of passive gears proven not to bycatch harbour porpoise (this includes pots, traps, and longlines, but excludes static nets equipped with pingers or other acoustic devices).</p> <p>The Northern Midsea Bank is defined here as the area delimited within the following coordinates:</p> <p>NW: 56.241°N, 17.042°E SW: 56.022°N, 17.202°E NE: 56.380°N, 17.675°E</p> <p>SE: 56.145°N, 17.710°E</p>	<p>Core area for the Baltic Proper harbour porpoise during breeding season and also used to a high extent during winter.</p>	<p>1</p> <p>Closure of the Northern Midsea Bank (Figure 2) to all fisheries, with the exception of pots, traps, and longlines.</p> <p>The Northern Midsea Bank is defined as the area delimited within the following coordinates:</p> <p>NW: 56.241°N, 17.042°E SW: 56.022°N, 17.202°E NE: 56.380°N, 17.675°E SE: 56.145°N, 17.710°E</p>	<p>JR did not include 'excluding static nets equipped with pingers'. JR BALTFISH is closing the Northern Midsea Bank to all fisheries, apart from those employing passive gears proven not to bycatch harbour porpoise.</p>

2a	<p>Closure of the Natura 2000 site "Hoburgs bank och Midsjöbankarna" (SE0330308, Figure 1) for fishing with static nets.</p>	<p>High-density area for Baltic Proper harbour porpoise and designated site for their protection. The site encompasses a large proportion of the population in summer (May–October) and is used to a high extent during winter (November–April). The measure is intended to ensure that fishing effort from métiers of concern is removed.</p>	2	<p>Closure of the Natura 2000 site "Hoburgs bank and Midsea Bank" (SE0330308, Figure 2) for fishing with static nets (area defined in 5.3).</p>	<p>Same measure proposed, closure of the same NATURA 2000 site code SE0330308</p>
2b	<p>Closure of the Southern Midsea Bank for fishing with static nets.</p> <p>The Southern Midsea Bank (Figure 1) is defined here as the Swedish part of the Southern Midsea Bank, covering all waters between the Natura 2000 site "Hoburgs bank och Midsjöbankarna" (SE0330308) and the Swedish–Polish border. Polish waters are delimited as the area within the following coordinates (Figure 1):</p> <p>SW: 55.377°N, 16.589°E SE: 55.466°N,</p>	<p>Important habitat to the Baltic Proper harbour porpoise in May–October, especially during the breeding season, and is used to a high extent during winter (November– April). The measure is intended to ensure that fishing effort from métiers of concern is removed.</p>	3	<p>Closure of the Southern Midsea Bank for fishing with static nets.</p> <p>The Southern Midsea Bank (Figure 2) is defined as the Swedish part of the Southern Midsea Bank, covering all waters between the Natura 2000 site "Hoburgs bank and Midsea Bank" (SE0330308) and the Swedish–Polish border. Polish waters are delimited as the area within the following coordinates (Figure 2):</p> <p>SW: 55.377°N, 16.589°E SE: 55.466°N, 17.538°E</p>	<p>Same measure proposed.</p>

	17.538°E NE: 55.797°N, 18.037°E			NE: 55.797°N, 18.037°E	
3	Closure of the Natura 2000 sites Adlergrund (DE1251301), Westliche Rönnebank (DE1249301), Pommersche Bucht mit Oderbank (DE1652301), Greifswalder Boddenrandschwelle und Teile der Pommerschen Bucht (DE1749302), Ostoja na Zatoce Pomorskiej (PLH990002), Wolin i Uznam (PLH320019), and the SPA site Pommersche Bucht (DE1552401) (Figure 2) for fishing with static nets during November–January.	Together, these smaller sites form a larger cluster (approximately 5,000 km ²) of designated Natura 2000 site with Baltic Proper harbour porpoises being (occasionally) present during some winter months.	4	Closure for fishing with static nets in the Natura 2000 sites Adler Grund and Rønne Bank (DK00VA261) (Figure 3), Adlergrund (DE1251301), Westliche Rönnebank (DE1249301), Pommersche Bucht mit Oderbank (DE1652301), Greifswalder Boddenrandschwelle und Teile der Pommerschen Bucht (DE1749302), Ostoja na Zatoce Pomorskiej (PLH990002), Wolin i Uznam (PLH320019), and the SPA site Pommersche Bucht (DE1552401) (Figure 4) during November–January (areas defined in 5.3).	An additional site listed in the JR BALTFISH: Adler Grund and Rønne Bank (DK00VA261)
4	Obligatory use of pingers on static nets in the area west of the sandbank Ryf Mew within the Zatoka Pucka i Półwysep Helski Natura 2000 site (PLH220032), with the concurrent closure of static net fisheries in the area east of the sandbank Ryf Mew within the Zatoka Pucka i Półwysep Helski Natura 2000 site	The area had 18 bycatches of harbour porpoise between 1990 and 1999. The area is only used by Baltic Proper harbour porpoise that are regularly present in the area. It is important that both measures are implemented	5	Obligatory use of ADDs on static nets in the area west and east of the sandbank Ryf Mew (Inner Puck Bay and Outer Puck Bay) within and outside the Zatoka Pucka i Półwysep Helski Natura 2000 site (Figure 5) (areas defined in 5.3).	JR BALTFISH did not state that fisheries in the area east of the sandbank Ryf Mew within the Zatoka Pucka i Półwysep Helski Natura 2000 site would be

	(Figure 3).	simultaneously.			closed, but stated that that pingers would be obligatory within and outside the Natura 2000 site.
5	Prohibit the use of static nets without the simultaneous use of pingers during May–October in EU waters between the southwestern management border, proposed by Carlén <i>et al.</i> (2018) (a line drawn between the island of Hanö, Sweden, and Jarosławiec near Słupsk, Poland) and a line drawn between 60.5°N at the Swedish coast and 61°N at the Finnish coast; and during November–April in EU waters between a line drawn along east of longitude 13°E between the Swedish and German coasts, and a line drawn between 60.5°N at the Swedish coast and 61°N at the Finnish coast (Figure 1), with the exception of Natura 2000 sites and other areas, where static net fisheries have been closed.	<p>The seasonal areas reflect the current best knowledge of the seasonal distribution of the Baltic Proper harbour porpoise.</p> <p>Static nets are the gear type with the highest bycatch numbers in these areas and represent a large proportion of the fleet.</p>			Mitigation strategies will be addressed in the next JR submitted in June 2021.

STECF comments

General comments

STECF analysed the “Report on ad hoc analysis of a Joint Recommendation for measures to reduce cetacean by-catches in the Bay of Biscay (ToR 1a), and Joint Recommendation mitigation measures to prevent by-catch of Baltic Proper harbour porpoise (*Phocoena phocoena*) in the Baltic Sea fisheries (ToR 2)” and found the report of the ad hoc contract concise and much helpful in the process of compiling the STECF response to the Commission request.

STECF notes that EU Regulation (EC No 2019/1241) aims to ensure that incidental catches of sensitive marine species that are a result of fishing are minimised and possibly eliminated (objectives set out in Article 3, paragraphs 2(b)). This includes those species listed under Directives 92/43/EEC and 2009/147/EC. The objective is that such incidental catches do not represent a threat to the conservation status of these species. Article 2(d) of the Regulation requires that fisheries management measures for the purposes of complying with Directives 92/43/EEC, 2000/60/EC and 2008/56/EC are in place, in particular with a view to achieving good environmental status in line with Article 9(1) of Directive 2008/56/EC, and with Directive 2009/147/EC. In addition, the target set out in Article 4 Paragraph 1(b) obliges Member States to ensure that incidental catches of marine mammals, marine reptiles, seabirds and other non-commercially exploited species do not exceed levels provided for in Union legislation and international agreements that are binding on the Union.

STECF acknowledges that both ICES (2020) Advice and the BALTFISH Joint Recommendation are aimed as a step forward towards achieving these objectives. STECF understands though that not later than 1 June 2021, the current Joint Recommendation will be supplemented by a second Joint Recommendation from BALTFISH regarding additional mitigation measures.

STECF notes that both the ICES (2020) and the BALTFISH Joint Recommendation are based on the SAMBAH (2016) study, which mapped the probabilities of presence of harbour porpoise in the Baltic and the associated risk of bycatch. According to this study, occurrence of the harbour porpoise is highest in the south-western and western waters in the Baltic Sea but rare in the eastern and northern waters (east of longitude 20° E and north of latitude 60° N (Figure 6.4.1).

STECF observes that ICES advised for the Baltic harbour porpoise management unit a combination of spatial-temporal closures and application of acoustic deterrent devices (ADDs/pingers) in static net (i.e. trammel net, gillnet, and semi-driftnet) fisheries. Spatial closures to fisheries with static nets were recommended in areas of higher probability of detection of Baltic harbour porpoises rather than recommending the use of acoustic deterrent devices (pingers). Outside these areas, ICES identified some Natura 2000 sites and other areas where static net fisheries should be fully closed.

ICES also recommended prohibiting the use of static nets without pingers in all other areas of the Baltic (Figures 6.4.2). Additionally, ICES advised on monitoring measures, potential biological removal (PBR) limit calculation (set at 0.7 % of best population estimate) and high-risk areas for bycatch of harbour porpoise in the Baltic.

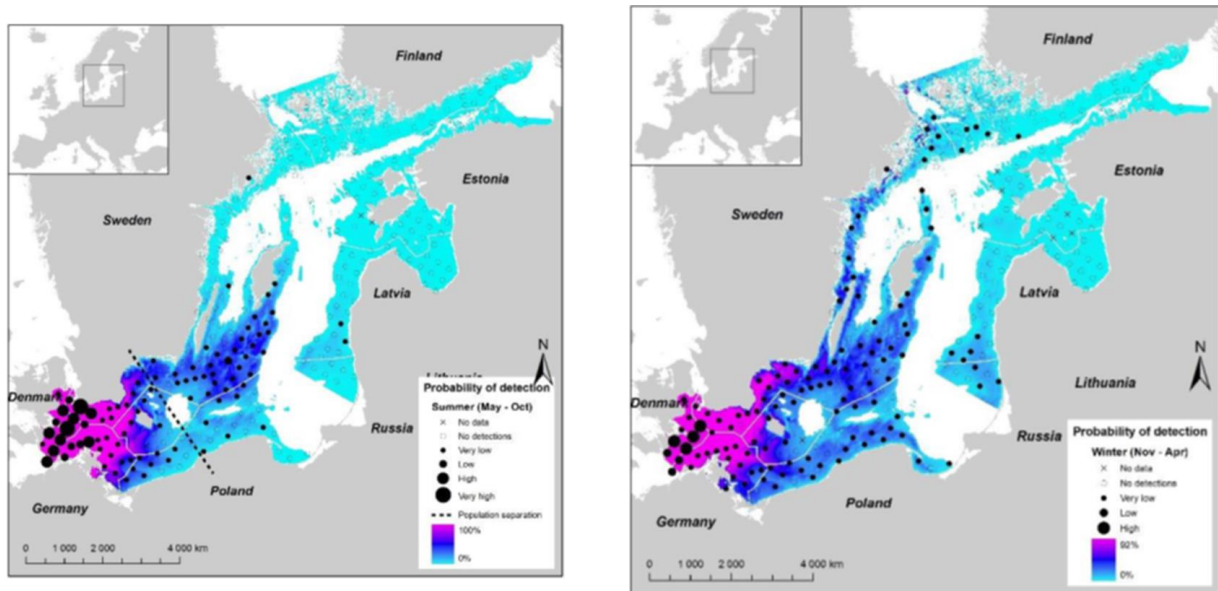


Figure 6.4.1. Probability of detection of harbour porpoise in summer (left) and winter (right) (from SAMBAH study, 2016)

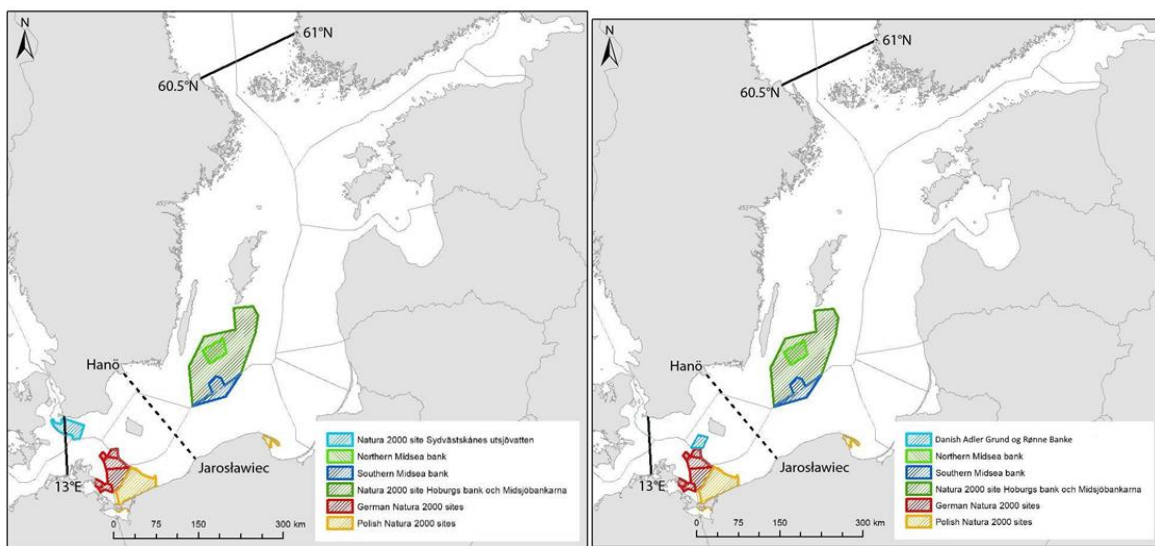


Figure 6.4.2. Map showing the Baltic Sea region with sites and areas referred to in the text. (from ICES (2020) Advice- left, and BALTFISH JR-right).

Fishery closures vs. pingers

STECF notes in areas of higher probability of bycatch of Baltic harbour porpoises, ICES recommend closing the areas rather than requiring the use of acoustic deterrent devices (pingers). STECF notes that the rationale for this is that pingers are not 100% effective at avoiding bycatch. Pingers have been shown to reduce the bycatch rate of harbour porpoise by 50–80% in operational fisheries with static nets, in comparison to nets without pingers (Orphanides and Palka, 2013). However, there are also concerns about the wide use of pingers, with studies showing that the long-term use of pingers can have negative side-effects like habituation over time, and a reduced foraging efficiency of deterred porpoises (Beest et al., 2017; Dawson et al., 2013; Kindt-Larsen et al., 2019; Kyhn et al., 2015).

STECF additionally notes that the costs related to the deployment, running and monitoring of pingers and their reliability should be considered.

Comparison of the JR with ICES (2020) advice

STECF notes that the BALTFISH Joint Recommendation on bycatch mitigation measures for Baltic Proper harbour porpoises include five conservation measures and one measure on enforcement.

As detailed and discussed below, STECF observes that the measures proposed in the BALTFISH Joint Recommendation follow the ICES (2020) advice to a large extent, but not entirely. A comparative overview is reported in the Table 6.4.1. STECF notes however that the ICES (2020) advice does not quantify the individual contribution of each proposed measure in terms of expected bycatch reduction. Therefore, STECF is not in the position to provide a quantitative analysis of the consequences of not following the entirety of the ICES advice on achieving the management objectives for Baltic harbour porpoise..

The following section lists STECF observations and comments on BALTFISH JR measures (the corresponding ICES Advice measure is given in brackets).

1. (ICES #1) Closure of the Northern Midsea Bank to all fisheries, with the exception of pots, traps, and longlines.

Differences: BALTFISH JR proposes closing of the Northern Midsea Bank to all fisheries, apart from those employing passive gears proven not to bycatch harbour porpoise. The JR did not include the wording in the ICES advice of '*to the exception of passive gears proven not to bycatch harbour porpoise excluding static nets equipped with pingers*'.

STECF comment: The JR recommendation implies a full closure of fishery in the area with "high risk" gears without exception. STECF notes that the full closure would ensure zero by-catch without potential side-effects of acoustic deterrent devices (ADDs).

STECF understands that the proposed recommendation mirrors the corresponding ICES measure, although formulated in a slightly simpler wording.

2. (ICES #2a). Closure of the Natura 2000 site "Hoburgs bank and Midsea Bank" (SE0330308) for fishing with static nets.

STECF comment: The JR recommendation is identical to the corresponding proposal by ICES.

3. (ICES #2b). Closure of the Southern Midsea Bank for fishing with static nets.

The Southern Midsea Bank (Figure 2) is defined as the Swedish part of the Southern Midsea Bank, covering all waters between the Natura 2000 site "Hoburgs bank and Midsea Bank" (SE0330308) and the Swedish–Polish border.

STECF comment: The JR recommendation is identical with the corresponding proposal by ICES.

4. (ICES #3). Closure for fishing with static nets in the Natura 2000 sites Adler Grund and Rønne Bank (DK00VA261), Adlergrund (DE1251301), Westliche Rønnebank (DE1249301), Pommersche Bucht mit Oderbank (DE1652301), Greifswalder Boddenrandschwelle und Teile der Pommerschen Bucht (DE1749302), Ostoja na Zatoce Pomorskiej (PLH990002), Wolin i Uznam (PLH320019), and the SPA site Pommersche Bucht (DE1552401) during November–January.

Differences: An additional site Adler Grund and Rønne Bank (DK00VA261) is included in the BALTFISH JR compared to the ICES advice. The other elements in the BALTFISH JR are identical with the ICES advice.

STECF comment: The inclusion of the additional area covering Adler Grund and Rønne Bank means a larger spatial coverage with gear restrictions in designated Natura 2000 where Baltic Proper harbour porpoises is occasionally present during winter months (November–April). STECF notes that the proposed measure is more precautionary than the corresponding ICES measure.

5. (ICES #4). Obligatory use of ADDs on static nets in the area west **and east of the** sandbank Ryf Mew (Inner Puck Bay and Outer Puck Bay) within **and outside** the Zatoka Pucka i Półwysep Helski Natura 2000 site.

Differences:

ICES advice would allow the fishery with static nets equipped with ADDs west of the sandbank Ryf Mew within the Zatoka Pucka i Półwysep Helski Natura 2000 site (Puck Bay) and close the fishery east of the sandbank Ryf Mew. In comparison, BALTFISH JR does

not recommend the closure of fisheries with static nets in the area east of the sandbank Ryf Mew within Puck Bay to be closed and instead recommend that the fishery should be allowed with obligatory ADDs deployed both within and outside the Natura 2000 site. STECF notes that the rationale for this alternative compared to the ICES Advice proposal was not explained in the BALTFISH JR.

STECF comments:

Both the inner and outer parts of Puck Bay are important areas where presence of harbour porpoises is regularly observed. ICES WKEMBYC (2020) report presents acoustic data obtained in (2017-2018) which showed that the area was used by harbour porpoises throughout the year, with the majority of acoustic detections observed in spring and summer.

Given the importance of the whole region as a habitat for the Baltic Proper harbour porpoise STECF consider that if implemented, the measures proposed in the JR would be less effective in delivering a reduction in harbour porpoise bycatch than the measure proposed by ICES.

6. For the purposes of implementing of JR proposals 1-5, Member States shall ensure their fishing activity can be monitored at any time by the control authorities.

STECF observes that ICES (2020) advises that an enhanced monitoring is required to assess the effectiveness of management measures and to augment precision in population abundance and bycatch mortality estimates. In particular, ICES recommend three monitoring plans for Baltic harbour porpoise:

1. Long-term acoustic monitoring in key areas for the Baltic Proper harbour porpoise population.
2. Repeated large-scale acoustic surveys of harbour porpoise.
3. Sample and necropsy for stranded and bycaught harbour porpoises.

ICES also provided the relevant recommendations on a series of measures required to be taken in the short term, including accurately recording fishing effort, increasing dedicated monitoring of bycatch of PETS (protected, endangered and threatened species), monitoring of harbour porpoise occurrence, and also compliance control of mitigation measures (pinger/ADD use).

STECF notes that the BALTFISH JR may enhance the accuracy of the recording of bycatch events of PETS. STECF notes however that the rest of the measures suggested by ICES for the increased monitoring of Baltic Proper harbour porpoise populations have not been considered in the BALTFISH JR.

ICES (2020) Advice proposal No. 5, not considered in the BALTFISH JR

STECF observes that ICES Advice Measure #5 which prohibits the use of static nets without pingers in defined regions of EU waters at certain times of year (see Figure 6.4.2), was not considered in the BALTFISH Joint Recommendation. The rationale behind this measure

proposed by ICES was because the defined regions reflected the best available knowledge of the seasonal distribution of the Baltic harbour porpoise. Static nets are the gear type with the highest bycatch numbers in these areas and represent a large proportion of the fleet, the obligatory equipment of these gears with pingers (ADDs) would decrease the potential bycatch of harbour porpoise and thus support the achieving of the management objective for the Baltic harbour porpoise.

STECF notes that the rationale behind not considering this ICES measure was not discussed in the JR. As stated above, STECF hypothesises thus that there may be economic reasons to leave this measure out as the associated costs may be substantial (purchase costs, reliability, replacement, control etc.), but maybe also concerns about the potential ecological effects of wide-scale deployment of acoustic deterrent devices.

STECF is not in the position to provide a quantitative analysis of the consequences of not following this measure advised by ICES. Nevertheless, STECF understands from Figure 6.4.1 that bycatches in these large areas are likely to be substantial, and may thus undermine the achievement of the objectives of EU Regulation (EC No 2019/1241). STECF understands though that not later than 1 June 2021, the current Joint Recommendation will be supplemented by a second Joint Recommendation from BALTFISH regarding additional mitigation measures, including where appropriate the use of pingers (ADDs) outside the areas covered by this first Joint Recommendation on harbour porpoise.

STECF conclusions

STECF analysed the report of the ad hoc contract and endorses its content.

STECF concurs with the ICES advice on bycatch mitigation measures for harbour porpoise in the Baltic Sea and the rationale for such measures.

STECF concludes that the measures proposed in the JR are largely, but not exactly in line with those proposed by ICES, and one major measure advised by ICES has not been followed in this JR.

STECF is not in the position to provide a quantitative analysis of the consequences of not following the entirety of the ICES advice in terms of bycatch reduction.

STECF concludes however that if effectively implemented the JR will contribute to reducing unintended, incidental catches of harbour porpoise in the Baltic, but it is highly unlikely that the measures will eliminate all unintended incidental catches.

STECF concludes thus that the implementation of the proposed measures would be a step towards achieving the objectives of Article 3.2 b of Reg. 2019/1241 and would contribute to the objective of achieving GES, but STECF is unable to advise whether the proposed measures will ensure that incidental catches of harbour porpoise in the Baltic do not exceed levels provided for in Union legislation and international agreements that are binding on the Union.

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6.5 Evaluation of the SWW Joint Recommendation for measures to reduce cetacean bycatches in the Bay of Biscay

Background provided by the Commission

The Member States of the South Western Waters (SWW) Regional Group have provided a Joint Recommendation (JR) with the aim of reducing accidental catches of small cetaceans in the Bay of Biscay.

This JR was prepared in response to the ICES advice of 26 May 2020. This advice mentions that reporting for the Habitats Directive (Council Directive 92/43 EEC) in 2019, Northeast Atlantic common dolphins were classified by EU Member States as either "unknown" or "unfavourable-inadequate" under Article 17 with only one EU Member State reporting its status as "favourable" within their national waters. ICES indicates that there are still uncertainties about the population abundance and distribution.

The Commission wishes to be informed of the likely consequences of implementing this JR, in particular with respect to whether the Potential Biological Removal of 4927 animals would be exceeded in the near future.

An ad hoc contract was carried out in support of this request, on the below question on compliance of the Joint Recommendation with the Common Fisheries Policy and to advise on the expected percentage change in by-catches of common dolphin in the Bay of Biscay that would occur on implementation of the Joint Recommendation compared to:

- (i) best available estimates of average by-catches in the period 2016 to 2018
- (ii) best available estimates of by-catches in 2019
- (iii) if available, estimates of by-catches in 2020

If this evaluation was not possible, the contractor was expected to explain the reasons why.

Background documents are published on the meeting's web site on: <https://stecf.jrc.ec.europa.eu/plen2101>

Request to the STECF

STECF is requested to:

- 1) Analyse the report of the relevant ad hoc contract, assess the consequences on the population in implementing the Joint Recommendation and advise on the contribution that the measures in the "Joint Recommendation of the South Western Waters High-Level Group aiming to reduce small cetaceans accidental catches in the Bay of Biscay", if implemented, would make to the achievement of objectives set out in Article 3, paragraphs 2(b) and 2(d) and the target set out in Article 4 Paragraph 1(b) of Regulation (EU) 2019/1241.

2) Advise on the expected percentage change in by-catches of common dolphin in the Bay of Biscay that would occur on implementation of the Joint Recommendation compared to

(i) best available estimates of average by-catches in the period 2016 to 2018

(ii) best available estimates of by-catches in 2019

(iii) if available, estimates of by-catches in 2020

If it was not possible to assess the consequences of the population, STECF is requested to explain the reasons why this was not possible.

Summary of the information provided to STECF

STECF was provided with the SWW JR text and 2 reports from ad hoc contracts:

1. The SWW JR text ("SWW JR vs October.pdf")

In correspondence to DG MARE, and given Art. 7.1, 7.2, Art 18.7 of CFP Reg. 1380/2013, and Art. 21 in Reg. 2019/1241, the South Western Waters High-Level Group (SWW-HLG) submitted a Joint Recommendation aiming to reduce small cetaceans incidental catches in the Bay of Biscay.

The JR addresses issues from the ICES Special Request published on the 26th of May 2020 (ICES 2020a). The ICES advice for the 'EU request on emergency measures to prevent bycatch of common dolphin (*Delphinus delphis*) and Baltic Proper harbour porpoise (*Phocoena phocoena*) in the Northeast Atlantic' provides an evaluation of a series of management measures to reduce bycatch. These were initially proposed by 26 European environmental non-governmental organizations (NGOs). The scenarios presented by ICES and corresponding estimates of the potential number of bycaught dolphins in subareas 8 and 9 were based on 2016-2018 ICES data and the most recent (2016) abundance assessment of the Northeast Atlantic common dolphin population (from the SCANS-III survey), further analysed by ICES WGBYC 2020 (ICES 2020b), and which was updated by ICES WKEMBYC 2020 (ICES 2020c).

To mitigate the interaction between fishers and common dolphin in the Bay of Biscay, the JR proposes to:

- Reduce the bycatch by equipping mid-water pelagic trawls (OTM, PTM) and demersal twin trawls (PTB) with an acoustic deterrent device in ICES subarea VIII throughout the year. This equates to scenario K in the ICES 2020a advice;
- Improve knowledge by implementing the obligation for fishing vessels to report bycatch events;
- Improve knowledge by increasing data collection with Cetaceans bycatch observation at sea;
- Improve knowledge on the state of the common dolphin population and stranding events;
- Commit to find innovative mitigation solutions;
- Commit to share knowledge at the European level.

2. Ad hoc contract report 1 ("Ad hoc DGMARE contract on Joint Recommendations to Reduce Bycatch Version 1 8.3.2.1.doc")

DG MARE commissioned a preparatory *ad hoc* contract report to analyze the proposals in the JR in support to STECF plenary.

The contract report recalls in some details the lengthy assessment and review process that led to the ICES evaluation and advice: ICES addressed aspects of the DGMARE request building upon the ICES Marine Mammal Ecology (WGMME, ICES 2020d) and the ICES Working Group on Bycatch of Protected Species (WGBYC). Following this, a Workshop on Fisheries Emergency Measures to minimize bycatch of short-beaked common dolphins in the Bay of Biscay and harbour porpoise in the Baltic Sea (WKEMBYC) was organized. WKEMBYC was tasked with assessing the emergency measures proposed by the NGOs, exploring alternative measures and suggesting emergency measures that are necessary to ensure a satisfactory conservation status of these species. The contract points to shortcomings of the JR in terms of implementation and enforcement, and underlines the needs to greatly improve the data availability and the accuracy of estimates of bycatch rates in métiers of concern, suggesting good practices for ensuring a sufficient monitoring of the case.

3. Ad hoc contract report 2 ("Ad hoc DGMARE contract on revision and update of current information available regarding sensitive species 15.3.21 PART A Submitted.doc")

This report provides background information on previous STECF evaluations of bycatch of sensitive species concerning the EU TMR (Technical Measures Regulation) (cf. also ToR 6.8 of this plenary report). In the STECF Report "Review of technical measures - part 1" (STECF 20-02) it was recalled that the métiers that pose the highest risk of bycatch of sensitive species (i.e. gillnet fisheries), had relatively low levels of observer coverage. At the same time, the majority of métiers with more than 5% observer coverage were for mobile gears.

The ad-hoc report also notes that there was no conclusive evidence of the effectiveness of acoustic deterrents for reducing cetacean bycatch mortality at the fleet level in European waters. Furthermore, the results of studies to test the robustness and practicality of pingers in fishing operations demonstrate significant operational problems, and failure rates would exceed 50% in some cases - though fewer operational issues were encountered with small-scale vessels (STECF 20-02). An overview of the compliance to Regulation (EU) 812/2004, now repealed by Regulation (EU) 2019/1241, was reported in STECF-19-07, suggesting that there is very little information available on the enforcement of pingers' usage, but that it has likely been very limited until now.

The report recalls that, as outlined in the FAO (2020) guidelines ('report of the Expert Meeting to Develop Technical Guidelines to Reduce Bycatch of Marine Mammals in Capture Fisheries'), bycatch prevention and mitigation plans such as those expected to be included in JRs should ideally include both regulatory and voluntary mitigation measures, identify research needs, and include timelines for implementation and evaluation.

ToR 1Comments on ICES advice of May 2020 (ICES 2020a)

The SWW Joint Recommendation based its proposal on a subset of the ICES Special Request Advice published the 22 May 2020. ICES's main conclusion was to advise in the Bay of Biscay (ICES subarea 8) a combination of temporal closures of all métiers of concern and application of pingers on pair trawlers to mitigate bycatch outside of closure period.

STECF notes that using data from the most recent survey (SCANS-III and ObSERVE surveys estimates, updated in ICES WGEMBYC 2020 (ICES 2020c)), ICES (2020a) assumes that the best available estimate of the abundance of the common dolphin population in the North-East Atlantic is 634286 individuals [95% confidence interval (C.I.) 352227 – 1142213] in 2016. STECF notes that several observations would suggest an increase in common dolphin abundance in the Bay of Biscay over recent years (ICES 2020a). However, this increase is likely to be the result of an influx of dolphins into the Bay of Biscay, potentially from oceanic/southern waters, rather than a population increase in the entire North-East Atlantic (the ICES Assessment Unit in SCANS-III) *per se* (ICES 2020a).

STECF observes that ICES provides two different bycatch estimates based on two independent data sources and methods; i) from on-board observer sightings (hereby referred to as monitoring at sea) and ii) reverse drift model estimates from strandings data. The strandings method results in higher estimates of bycatch rates. The report comments that, as outlined in the ICES advice, extensive inter-annual variation has been observed in the total common dolphin bycatch mortality estimates, especially those inferred from strandings. Combining data from 2016–2018, ICES produced an average bycatch estimate of 6620 dolphins per year ([95% CI: 4411–10827]; Table 7 in ICES 2020a) for *subarea 8 alone*, when derived using the strandings reverse drift model method (method described in Peltier et al. 2016). In comparison, STECF notes that the estimated bycatch of common dolphin for *subareas 8 and 9* combined for the period 2016-2018 derived using data from monitoring at sea was 3973 [C.I. 1998-6598] and was based on sampling coverage of less than 0.4% of fishing effort, all fishing techniques pooled (505 days at sea out of 137395 days at sea in subareas 8 and 9 pooled).

STECF notes that in the absence of appropriate biologically-based estimates, ASCOBANS proposes a generic bycatch limit threshold of <1% of total abundance for fisheries bycatches to limit negative impacts on cetaceans populations. STECF notes however that ICES used instead the biologically-based PBR biological objective (Potential Biological Removals, Wade 1998, see STECF 19-07), which should ensure that the population is at or above 50% of its carrying capacity for 95% of the time, leading to a PBR of no more than 4927 common dolphins to be bycaught in the entire North-East Atlantic. This PBR corresponds to 0.7% of the overall North-East Atlantic common dolphin abundance.

STECF observes that ICES noted ongoing issues with data availability and quality, contributing to high levels of uncertainty in estimating population abundance, distribution, bycatch, and other major threats for small cetaceans. Notably, observer coverage is well below 1% of the total effort in most fisheries. The annual fluctuations in common dolphin abundance are unknown (SCANS conducted every ca. 10 years, last conducted in 2016) and the two different information sources to estimate bycatch (monitoring at sea, or reconstruction from strandings data) differ widely. Besides this uncertainty, nothing is assumed in the proposed scenarios about potential effort redistribution of the affected métiers to areas or times where bycatch risks may be higher. ICES adopted thus an ad hoc precautionary approach when advising on the best management options (ICES 2020a). This precautionary approach consisted of determining the likely level of bycatch with each of the two bycatches estimation methods (i.e. strandings and monitoring at sea data) for different combinations of management options, and to compare these estimates with several PBR thresholds (e.g. that would not exceed 75%, 50% or 10% of the PBR). ICES further deemed that reducing bycatch to less than 10% of PBR was its, somehow arbitrary, quantitative interpretation of the 2019/1241 objective of 'minimizing and where possible eliminating' bycatch, while acknowledging that this may still be insufficient to meet the requirements of strict protection under Council Directive 92/43/EEC (EU, 1992).

STECF observes that the PBR limit of 4927 animals was estimated based on the abundance estimate of 634286 (CV = 0.307) as a possible mixture of common and striped dolphins (at the scale of the North-East Atlantic ICES Assessment Unit), a R_{max} (maximum rate of increase in population size) of 4% and a recovery factor of 0.5. STECF underlines two important aspects for the interpretation of bycatch and PBR values: (i) the PBR limit is based on the abundance estimate for the entire North-east Atlantic population and (ii) it is applicable to all anthropogenic mortality, not just incidental capture. Hence, to fully assess whether bycatch has exceeded the PBR limit, the comparison should best be undertaken for the entire North-east Atlantic population and to include all forms of anthropogenic mortality and not only fisheries bycatch mortality, whereas in reality the numbers used in ICES (2020a) and in the JR are for a smaller area and for fisheries bycatch only.

STECF observes that accounting for these uncertainties of the population abundance and distribution, ICES (2020a) advised that cetacean bycatch should be kept below the Potential Biological Removal (PBR) of 4927 animals and presented a series of scenarios to indicate how that might be achieved. Such scenarios, initially suggested by NGOs, consisted of a combination of temporal closures, effort reduction and/or the use of acoustic deterrent devices (pingers) to apply in ICES subareas 8 and 9 only. The results of the different scenarios are listed in Table 6.5.1 below (outcomes of ICES Scenarios A to O). STECF notes that among the scenarios achieving at least the minimum performance level (i.e. bycaught animals estimated with the stranding method < PBR), the least constraining scenarios (yellow cells) are:

1. (E) 4-week closure for all métiers (mid-Jan.–mid-Feb.)
2. (B) Annual fishing effort reduction of 40% for métiers of concern
3. (J) Pinger PTM/PTB year-round + 2-week closure (mid-Jan.–end of Jan.) all other fisheries.

Therefore, STECF observes that, for the common dolphin in the Bay of Biscay, ICES identified that a minimum combination of temporal closures of all métiers of concern, and application of pingers on pair trawlers to mitigate bycatch outside of the period of closure, or an overall effort reduction, would likely reduce the bycatch to below the PBR for the period 2016-2018, assuming no bycatch in the North-East Atlantic outside subareas 8 and 9, and no other sources of anthropogenic mortality.

STECF notes also that ICES considered that a temporal closure with a sufficiently large time window in the Bay of Biscay (ICES subarea 8) during the winter months to gear groups PTM, PTB, OTM, GNS, GTR, and PS (Scenarios E, B, J for <PBR; G, I, D for <0.75*PBR; L, C, H for <0.50*PBR; and M, N or O for <0.10*PBR) were likely to be the most effective management measures for reducing bycatch mortality in the short term.

Table 6.5.1. Extracted from ICES 2020a. Information on the tested scenarios and synthesis of their performance. The key information for scenarios A to O is: scenario title, total bycatch mortality from monitoring programmes, total bycatch mortality from stranding data, bycatch reduction obtained, the implied effort reduction, and an efficiency score. The colour coding is explained in the box below the table. The efficiency score of each scenario is bycatch reduction rate divided by effort reduction rate. This efficiency could be seen as a rough cost effectiveness for each scenario, considering that a reduction of effort is a cost for the industry. Bycatch values are in number of individuals.

Scenario	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
Description	NGO proposed 4 month closure (Dec-Mar) all métiers	Annual effort reduction of 40% all métiers	2-month closure (mid-Jan-mid-Mar) all métiers	6-week closure (mid-Jan-end Feb) all métiers	4-week closure (mid-Jan-mid-Feb) all métiers	2-week closure (mid-Jan-end Jan) all métiers	Pinger PTM / PTB all year & same 6-week closure all other métiers	6-week closure (mid-Jan-end Feb) all métiers and pinger PTM / PTB rest of the year	Pinger PTM / PTB all year and same 4-week closure all other métiers	Pinger PTM / PTB all year and same 2-week closure all other métiers	Pinger PTM / PTB all year	2-month closure all métiers + pinger PTB / PTM rest of the year	4-month closure all métiers + pinger PTM / PTB rest of the year	3-month (Jan-Mar) + 1 month (mid-Jul-mid-Aug) closure all métiers + pinger PTB / PTM rest of the year	3-month (Jan-Mar) + 1 month (mid-Jul-mid-Aug) closure all métiers
Total resulting <u>bycatch</u> : monitoring Mortality	548	2384	1034	1685	2392	3087	1593	1340	2077	2551	3151	824	437	391	494
Total resulting <u>bycatch</u> : strandings Mortality	913	3975	1725	2809	3989	5148	2657	2235	3463	4254	5254	1374	729	651	824
<u>Bycatch</u> reduction Obtained	0.86	0.40	0.74	0.58	0.40	0.22	0.60	0.66	0.48	0.36	0.21	0.79	0.89	0.90	0.88
Effort reduction Needed	0.3	0.4	0.2	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.2	0.3	0.3	0.3
Efficiency score	2.6	1.0	4.4	5.0	5.2	5.8	5.4	5.5	6.5	9.7	N/A	4.8	2.7	2.7	2.6

Colour coding used in table above for PBR levels:

% of PBR	< 10% PBR	< 50% PBR	< 75% PBR	< PBR	> PBR
Number of bycaught individuals	< 493	< 2464	< 3695	< 4927	> 4927

STECF observes that ICES recommended adopting a precautionary approach (i.e. using threshold lower than PBR) given the high uncertainty around bycatch estimates. This is because the criteria of bycaught animals < PBR would not be met at the upper bounds of the confidence intervals in bycatch estimations, thus maintaining high probabilities of not achieving the PBR.

STECF observes that ICES stressed the need to consider the life history of small cetaceans, which requires that any protection measures can only be effective when applied continuously over a long period of time.

Comments on the SWW Joint Recommendation

STECF observes that the JR acknowledges the threshold provided by ICES 2020 of 4927 animals a year based on the calculated PBR. However, the JR also proposes the alternative threshold of 6340 animals that corresponds to 1% of the most recent (2016) estimate of the total population numbers, in agreement with ASCOBANS legally binding limit.

STECF reiterates that the 1% limit (estimated as 6340 dolphins) would also apply to the entire North-East Atlantic and not in the Bay of Biscay (ICES subarea 8) only.

According to the ICES' advice for the period 2016-2018, STECF notes that:

- both the PBR calculated by ICES of 4927 animals and the 1% threshold of 6340 animals are not exceeded when using the monitoring at sea data average bycatch estimate (3973 animals) as a basis.
- Both the PBR and the 1 % threshold are exceeded when using the stranding data bycatch average estimate (i.e. 6620 animals) as a basis.

STECF observes that the JR proposes to equip mid-water pelagic trawls (OTM, PTM) and demersal twin trawls (PTB) with an acoustic deterrent device in ICES subarea 8 throughout the year. STECF notes that the measures proposed in the JR corresponds to Scenario K (plus OTM) in Table 6.5.1, which provides an estimated bycatch of 5254 animals (using strandings data) and 3151 animals (using monitoring at sea data). Both estimates represent an annual 21% reduction on the average 2016-2018 bycatch estimates compared to their respective baseline.

STECF observes that according to ICES, Scenario K (Table 6.5.1) is not robust to the bycatch estimation method and does thus not achieve the minimum performance level (i.e. bycaught animals estimated with the stranding method > PBR, cell in red in Table 6.5.1). Even with the monitoring at sea estimation method, the scenario also fails to achieve the criterion adopted by ICES (i.e. "reducing bycatch to less than 10% of PBR") as a quantitative interpretation of what 'minimize and where possible eliminate' might mean. ICES acknowledges thus that this scenario may be insufficient to meet the requirements of strict protection under Council Directive 92/43/EEC (EU, 1992) and therefore, would not meet the requirements of paragraphs 2(b) and 2(d) and the target set out in Article 4 Paragraph 1(b) of Regulation (EU) 2019/1241.

STECF observes that the JR also proposes that, considering the specificity of the area and its fishing activities, the JR proposes the mandatory deployment of pingers on bottom trawlers PTB and OTB. This is because this type of gears has a Very High Vertical Opening (VHVO) of approximately 25 metres and targets both demersal (e.g. hake) plus pelagic species in the case of PTB (e.g. horse mackerel and blue whiting) (WKEMBYC, 2020), increasing the likelihood of dolphin bycatches. STECF acknowledges this rationale but notes that OTB has not been mentioned as an important cause of bycatch in ICES 2020. In the absence of data specifically presented for that gear, STECF is thus not in a position to quantitatively assess the impact of this added gear on the achievement of objectives.

STECF observes that the JR does not propose any bycatch mitigation measures for gillnets (GNS) or trammel nets (GTR) fishing for sole and anglerfish. However, the GTR gears accounted for most bycatch events during 2016-2018 (ICES 2020c). The individual bycatch rate for GTR is low, but the large number of days at seas deployed result in the largest bycatch estimate among the gears.

STECF notes that the generic and somehow arbitrary ASCOBANS bycatch limit of '<1%' of the population is very sensitive to the overall population estimate, and recalls the large uncertainties surrounding that estimate. The ICES' 2016 North-East Atlantic population estimate of 634286 animals (ICES 2020c) is derived from common dolphin and a proportion of common/striped dolphin, mixing up different populations and life-traits. The SCANS-III survey in July 2016 estimated the abundance of common dolphin alone in the entire surveyed North-East Atlantic area to be 467673 animals [95% confidence intervals 281100 – 778000]. An additional 13633 common dolphins (CV = 0.85) in Irish waters was estimated from the ObSERVE surveys in summer 2015 (Rogan et al., 2018). The value of 467673 (+13633), the estimate of common dolphins alone, was raised by ICES to 634286 animals based on the proportion of dolphins that could not be clearly identified as being either common dolphins or striped dolphins in mixed groups (ICES 2020c). The large difference between these two estimates illustrates the large uncertainty around the actual population estimates, supporting ICES advice to use a more precautionary approach based on the biologically-based PBR.

Comments on the use of pingers

STECF also notes that the 21% average bycatch reduction rate used in scenario K, assumes at least a 65% reduction in dolphin bycatch when acoustic deterrent devices of type DDD-03H. are deployed on gear types PTM (pelagic pair trawl) and PTB (demersal pair trawl). The assumed 65% reduction is based on the results from a single experimental study involving 3 pair-teams of French mid-water trawlers, over a period of one month in winter 2018 (Rimaud et al. 2019). STECF reiterates the uncertainties around the effectiveness of pingers, and the variability in expected effects for different cetacean species. As reported in the ad-hoc contract, STECF EWG 19-07 reviewed the implementation of the EU Regulation on the incidental catches of cetaceans (STECF-19-07), noting that 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 such as dolphin, results seemed to be less conclusive. The implementation of pingers in Member States is low and enforcement is difficult. STECF EWG 20-02 reviewed

this further and noted again that there was no conclusive evidence yet of the effectiveness of acoustic deterrents for reducing cetacean bycatch mortality at the fleet level in European waters. It noted that studies to test the robustness and practicality of pingers in fishing operations show significant operational problems, with failure rates exceeded 50% in some cases - though fewer operational issues were encountered with small-scale vessels (STECF 20-02).

Comments on knowledge improvement

Finally, STECF notes that there are no specific details in the JR for monitoring and enforcement of the proposed measures. While an increase in at sea observation or use of CCTV to cover a minimum of 2% (suggested by the JR) of deployed effort would potentially improve dolphin bycatch estimates and overall compliance with the intended use of pingers, it would not necessarily lead to a reduction in dolphin bycatch.

STECF notes that the JR commits to “knowledge improvements” but does not clearly specify what knowledge is to be improved and how this will be undertaken.

STECF refers to the ad-hoc contracts, to ToR 6.8 of this Plenary report and to the FAO (2020 Guidelines) for more detailed discussions on improved monitoring and enforcement. The ad-hoc contract pointed to the fact that, in operational procedures of the fisheries, the implementation of some avoidance techniques (e.g. lowering the trawl headline and cessation of fishing activities when dolphins were in the vicinity), may contribute to a reduction in the incidental capture of common dolphins in the pelagic or semi-pelagic trawl fishery.

ToR 2

New data available

STECF notes that the ICES (2020) advice is based on older data (abundance in 2016, bycatch data 2016-2018), and only limited updated estimates are already publicly available.

Bycatch data from monitoring at sea in 2019 and 2020 are not yet available to review. They were not summarised in the JR, and with the repeal of Regulation 812/2004 in 2019, Member States are no longer obliged to report annually on their monitoring and mitigation strategies. ICES WGBYC is not meeting until the end of September 2021, and ICES has not yet published the data call for years 2019 and 2020 to fulfil WGBYC ToRs.

The following information from strandings data is however already available (Figure 6.5.1)⁷:

For 2019, 1072 strandings have been recorded in the Area 8, leading to an estimate of 11300 common dolphins bycaught in Subarea 8 between January and April, using the reverse drift strandings methods (95% CI: 7550–18530, Peltier et al., 2019, also given in ICES 2020c).

For 2020, 1130 strandings have been recorded along the French Atlantic coast, the highest reported number since 2010. The corresponding level of bycatch estimate using the reverse drift model is not yet publicly available.

For 2021, between 1st January 2021 and 15th February 2021, 464 cetaceans were reported stranded along the French coastline of the Bay of Biscay. As a comparison, the number of small cetaceans reported stranded in January 2021 was almost twice as high as in January 2020 (<https://www.observatoire-pelagis.cnrs.fr>).

STECF observes thus that the estimated bycatch of dolphins off the French Atlantic Coast (ICES Subarea 8ab) has increased in the last two years and has been substantially higher than the 2016-2018 estimates used in ICES (2020a). For 2019, the 11300 estimate based on the stranding methodology represent a 70% increase compared to the corresponding 2016-2018 value used by ICES 2020, and a value that far exceeds both the PBR and the 1% bycatch threshold applied to the best available North East Atlantic common dolphin population estimate of 2016. That level of bycatch would require a reduction of 43.6% to fall below the PBR value of 4927 animals bycaught.

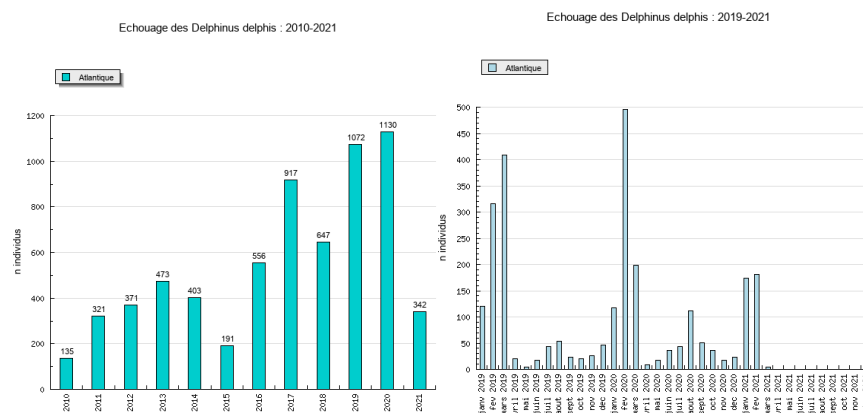


Figure 6.5.1. Strandings of common dolphins along the French Atlantic Coast by (a) year (2010-2021) and (b) month (January 2019 – March 2021). Charts were created on the 5th

7 <http://pelagis.in2p3.fr/public/histo-carto/index.php>

March 2021 using the histogram tool on <http://pelagis.in2p3.fr/public/histo-carto/index.php>. It is unknown if all strandings data from 1st February 2021 to 5th March 2021 were available for analysis using the online tool. The online tool reported 183 common dolphins as stranded in February 2021. Other available sources reported that for the period 1st to 15th February 2021, 101 common dolphins stranded in addition to 73 that had yet to be identified to species⁸, which suggests the online tool is under-reporting for the month of February 2021.

New national plans development end of 2020 not included in the submitted JR

STECF underlines that the submitted JR was provided at the end of 2020. Although not specifically asked to comment on this, STECF draws attention that newer information is publicly available from the relevant Member States, indicating that additional management plans are being implemented beyond what is stated in the JR, which are briefly summarized below.

France

In the Bay of Biscay (ICES subarea 8), the French fisheries are the most important fisheries considering the total effort exerted. French fisheries are responsible for 93% of the total effort in ICES subareas 8abde. Since the submission of the Joint Recommendation France has progressed its action plan noting seven commitments on the government's website⁹ to reduce incidental captures for which strandings would be a symptom. These commitments include 1) making declarations of all incidental catches mandatory (since January 1st 2019); 2) keeping a record of strandings, publishing data and keeping an account of progress made by initiatives (since mid-December 2020); 3) fitting all trawlers that interact with cetaceans with acoustic deterrent devices and to pursue the development of technical solutions - which includes fitting 87 with pingers, and the implementation of two scientific projects developing new deterrent technologies (since January 1st 2021), 4) commencing an aerial observation programme, three-months of flyovers to estimate abundance and distribution area of the population (Winter 2020-2021), 5) fitting onboard cameras on gillnetters operating in the Bay of Biscay, with the intention to fit 20 vessels with these system (February 2021), 6) commencing an international EU funded project with Spain and Portugal on incidental capture of cetaceans' CETAMBICION' (March 2021), 7) conducting a voluntary observation campaign of fishing on board trawlers and gillnetters, with the intention of observing 1 375 days at sea (30 December 2020 to 30 April 2021). The pilot/experimental project was announced by the French ministry at the national working group on the 7th October 2020 and will run from December 2020 to May 2021.

STECF notes thus French authorities have already made pingers mandatory since 2021 for French PTM fleet, thus already implementing the measure suggested in the JR.

⁸ https://mer.gouv.fr/sites/default/files/2021-03/Bulletin-capture-cetaces_S6.pdf

⁹ <https://mer.gouv.fr/protection-des-cetaces-annick-girardin-presente-les-7-engagements-de-letat-des-pecheurs-et-des>

Nevertheless, STECF notes that the number of bycaught of animals stranded on the French coast was almost twice as high in January 2021 compared to January 2020.

Spain

Spain is the second largest country fishing in the Bay of Biscay (ICES subarea 8), with 6% of fishing effort in ICES subarea 8abde, and 97% of effort in 8c (WKEMBYC, 2020). In December 2020, Spain issued a new ordinance to establish measures of mitigation and improvement of scientific knowledge to reduce the bycatch of cetaceans in Subarea 8 by Spanish fleets to be taken from 2 January 2021 onwards (Order APA/1200/2020 of 16th December 2020) that includes the following measures: a program of observers onboard, a pilot study to monitor the fishing activity using cameras, compulsory use of acoustic deterrent devices for some fleet segments, mandatory declarations of all incidental catches, practices to increase survival in case of bycatch occurrence and move-on rules.

STECF conclusions

Regarding ToR 1, STECF agrees with the ICES' interpretation that in the context of Article 4.2b, "minimize or eliminate" can be interpreted as reducing bycatch of cetaceans to less than 10% of the estimated potential biological removals (PBR) which should ensure that the population is at or above 50% of its carrying capacity for 95% of the time.

In adopting such an interpretation STECF concludes that the measures proposed in the SWW JR are unlikely to minimise and will not eliminate incidental catches of common dolphin in fisheries in the Bay of Biscay.

In relation to the provisions of Article 4 Paragraph 1(b) of Reg. 2019/1241, STECF concludes that implementation of the proposals in the JR will not ensure that incidental catches of common dolphins do not exceed levels provided for in Union legislation and international agreements that are binding on the Union (i.e., ASCOBANS limit at 1%).

The above conclusions remain valid irrespective of the uncertainty associated with both the estimates for the size of the dolphin population and the numbers incidentally caught in fisheries in the Bay of Biscay. However, because of such uncertainty together with the uncertainty associated with the degree to which the proposed measures will be effectively implemented, the contribution that they are likely to make to minimizing or eliminating bycatch of common dolphin or ensuring that internationally and EU agreed levels are not exceeded, cannot be quantified with any certainty. In addition to this, incidental bycatches estimates to consider are not the ones for the Bay of Biscay only, as the mortality thresholds are estimated for the entire North-East Atlantic.

10 <https://www.boe.es/buscar/pdf/2020/BOE-A-2020-16490-consolidado.pdf>

Regarding ToR 2, STECF concludes that the proposals in the SWW JR are similar to those assumed in scenario K by ICES (ICES, 2020a). Scenario K assumes that over the period 2016-2018, and a pinger-effectiveness of 65%, if all pelagic trawlers (PTM and OTM) had been fitted with pingers, the bycatch of common dolphin in the Bay of Biscay would have been 21% less than the average bycatch estimated for that period. STECF cannot quantify the additional effect of implementing pingers on bottom trawlers (OTB), but considers this is likely to be small since the risk of incidental bycatch of dolphins by bottom trawlers is low.

Considering the high interannual variability and the dramatic increase of stranding events observed in the most recent years, and considering also the other large sources of uncertainty in population abundance and bycatch estimates, STECF concludes it is inappropriate to directly assume that the 21% bycatch reduction estimated by ICES for scenario K in 2016-2018 will proportionally apply in 2019 and 2020. STECF is therefore not in a position to advise on the expected percentage change in bycatches of common dolphin in the Bay of Biscay that would occur on implementation of the Joint Recommendation compared to best available estimates of bycatches in 2019 and 2020, but considers it highly unlikely that the JR, if it had been implemented during those years, would have achieved the objectives set out in Article 3, paragraphs 2(b) and 2(d) and the target set out in Article 4 Paragraph 1(b) of Regulation (EU) 2019/1241.

STECF concludes that to provide accurate quantitative estimates of potential bycatch reductions for 2019 and 2020 would require a full update of the models used by ICES (2020a), including most recent estimates of catch, bycatch and effort of the various fleets segments, in order to re-run the management scenarios. In addition, it is likely that population abundance of common dolphins has substantially varied since 2016, both inside the Bay of Biscay and in the whole North-East Atlantic distribution area, so any management scenarios assessment update would be best supported by conducting an updated abundance survey.

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6.6 Evaluation of Joint Recommendations on the Kattegat (Article 11 of the CFP)

Background provided by the Commission

Sweden and Denmark have presented separate joint recommendations to manage fisheries in several areas of the Kattegat. In accordance with Article 11 of Regulation 1380/2013, Member States having direct management interest in certain areas or fisheries may submit joint recommendations that are necessary to comply with their environmental obligations for fisheries conservation. The Commission can implement these measures through delegated acts.

Sweden suggests conservation measures for the Marine Protected Areas Fladen, Lilla Middelgrund, Stora Middelgrund och Röde bank and Morups bank. Denmark suggests conservation measures for the protection of six Marine Strategy Framework Directive (MSFD) areas in the Natura 2000 area site Kims Top og Den Kinesiske Mur.

Sweden, Denmark and Germany jointly recommend these measures. The North Sea Advisory Council has been informed and consulted.

Once the Commission receives these joint recommendations, it is necessary to evaluate them and to identify areas if and where additional supporting information may be required. In particular, it has to be assessed whether the measures in the joint recommendations are compatible with the requirements referred to in Article 11(1) of Regulation 1380/2013. This calls for the review of the supporting scientific information provided.

Background documents are published on the meeting's web site on: <https://stecf.jrc.ec.europa.eu/plen2101>

Request to the STECF

STECF is requested to:

1. Review whether the proposed conservation measures minimise the negative impacts of fishing activities on the marine ecosystem and ensure that fisheries activities avoid the degradation of the marine environment as stipulated under Article 2(3) of Regulation 1380/2013.
2. Review whether the proposed measures contribute towards reaching the site-specific conservation objectives (in relation to the fishing activities as a pressure) for the habitats and species of Community interest addressed in the recommendation and present:
 - inside the relevant special protection areas classified under the Birds Directive
 - and special areas of conservation designated under the Habitats Directive
 - and areas as stipulated under Article 1(2) of Directive 2008/56/EC

In undertaking this review, all relevant aspects, including ensuring compliance with the proposed measures, should be considered.

3. Assess whether the proposed conservation measures would contribute to the objectives under Articles 1(1) and 13(4) of the MSF Directive 2008/56/EC, in particular with the objective of achieving a good environmental status by 2020.

Summary of the information provided to STECF

Documents submitted to the Commission and provided to the STECF are as follows

DENMARK

Doc. 6.6.1. Joint recommendation regarding Fisheries Conservation Measures_020221.pdf – presents a summary of the proposed conservation measures.

Doc. 6.6.2 Fisheries measures_MSFD_020221.pdf – presents a more detailed description and rationale for the proposed conservation measures

Doc. 6.6.3 Annex_DK_MFSD_020221.pdf – numerous annexes to the proposal containing supporting information and a time-line of consultations and outcomes.

SWEDEN

Doc. 6.6.4. JR conservation measures SE MPA Kattegat.pdf - presents a summary of the proposed conservation measures.

Doc. 6.6.5. Proposal conservation measures SE MPA Kattegat 20201221.pdf pdf – presents a more detailed description and rationale for the proposed conservation measures

Doc 6.6.6. Appendix conservation measures SE MPA Kattegat 20201221.pdf - numerous annexes to the proposal containing supporting information and a time-line of consultations and outcomes.

All the above documents are available at <https://stecf.jrc.ec.europa.eu/plen2101>

STECF observations

General remarks on the submission

STECF emphasises that the response provided below, was prepared during the limited time of the plenary meeting week only and under tight deadlines. Furthermore, the information to analyse was extensive and complex and several references to Annexes, Tables and Figures in both submissions seem incorrect, making reading sometimes confusing and tedious. Given the above circumstances, STECF acknowledges that it could be possible that relevant information and analyses have not been fully taken into account in providing a response.

The figures referred to in this report (Figures 6.6.1 – 6.6.6) are reproduced from the documents submitted with the JRs and were selected to illustrate the STECF response. For a full overview of the information presented in support of the JRs, it will be necessary to consult all relevant material.

Joint Recommendation submitted by Denmark.

Purpose

The stated purpose of the present proposal is to regulate fisheries activities with mobile bottom contacting gears in order to establish a coherent and representative network of marine protected areas in accordance with the Marine Strategy Framework Directive (MSFD - Directive 2008/56/EC), which adequately cover the diversity of the individual ecosystems, with due considerations for the social and economic consequences. Furthermore, the purpose is to ensure full protection of reef structures in the Natura 2000 site Kims Top og Den Kinesiske Mur from physical disturbance due to fishing activities and thereby contribute to the achievement of favourable conservation status for reef structures (habitat code H1170).

Areas concerned

The JR submitted by Denmark (jointly with Germany and Sweden), concerns 6 sites (MSFD areas A-F) designated for the protection of soft seabed (mud and sandy mud) under the MSFD, and one Natura 2000 site (Kims Top og den Kinesiske Mur; code DK00VA24 7) designated under the Habitats Directive (Council Directive 92/43/EEC). Kims Top og den Kinesiske Mur is also both a HELCOM and OSPAR Marine Protected Area (MPA). All seven sites are located in the Danish part of the Kattegat. See Figures 6.6.1 and 6.6.2.

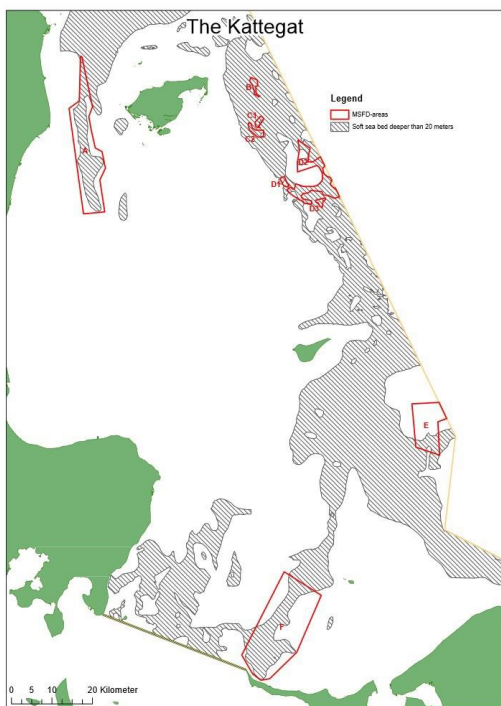
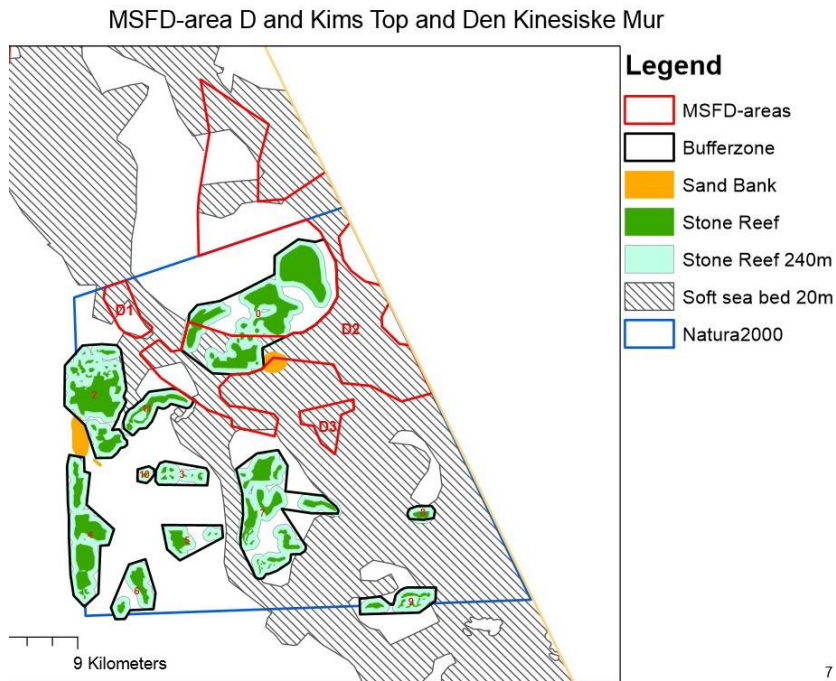


Figure 6.6.1. The 6 MSFD areas (A-F) in the JR submitted by Denmark (From Figure 1, Doc. 6.6.1)



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Figure 6.6.2. The Natura 2000 site and relating to MSFD area D (D1-D3) (from Annex J of Doc 6.6.3).

The 6 MSFD areas cover a total of 590 km², corresponding to approximately 4 % of the Danish part of Kattegat. The areas cover about 7 % of the soft seabed in this Danish part of the Kattegat, mostly at depths greater than 20 metres.

The boundary of the Natura 2000 site Kims Top og Den Kinesiske Mur, encompasses most of MSFD area D. It covers a total area of 262 km² which encloses an area of reef structures of 19.16 km². According to the European Nature Information System (EUNIS) (<https://eunis.eea.europa.eu/sites/DK00VA247#tab-species>), it protects 2 habitat types; reefs (habitat code H1170) and submarine structures made by leaking gases (bubbling reefs, habitat code H1180) and 1 species; harbour porpoise (*Phocoena phocoena*).

STECF notes that according to Annex B of Doc 6.6.3, the current measures relate to a first planned period of measures to be implemented to protect Danish Natura 2000 sites, to be followed by a second period at a later stage. The first period focuses on protection of reef structures (habitat type 1170) and bubbling reefs (habitat type 1180) from irreversible damages due to impact from fishing activities. In the second period (that is, at a later stage) sites designated for other habitat types and/or species (e.g. sandbanks, harbour porpoises, sea birds etc.) will be dealt with. This second stage is planned after all designated reef structures in Danish waters have been fully protected in regards to fisheries. There are 97 marine Natura 2000 site in Denmark, 65 of which are designated for reef structures (Annex B, Doc 6.6.3).

STECF therefore assumes it is for the above reasons that there is no reference to measures for the protection of harbour porpoise in the JR. STECF also notes that while Kims Top og Den Kinesiske Mur is designated in EUNIS for both reef structures H1170 and H1180 (designated in May 1995), it is pointed out in Annex E of Doc 6.6.3 that new recent mapping of the area showed no identification of bubbling reefs which is why no measures were introduced to protect this habitat type H1180.

Each mapped area of reef within the Natura 2000 site Kims Top og Den Kinesiske Mur will be protected from impact from fishing activity with mobile bottom contacting gears by establishing buffer zones around the reef structures (Figure 6.6.2). The buffer zones will correspond to a distance of 240m, equivalent to 6 times the average water depth, in accordance with ICES guidelines (ICES Advice 2013, Book, 1.5.5.2. Special request).

Figures illustrating the location of each of the sites are given in Section 1.2 of Doc 6.6.2. and the associated geographical coordinates are given in Annex G, Doc. 6.6.3.

Proposed measures

Fishing restrictions

All the prescribed zones will be closed for the following mobile bottom contacting gear types (Annex XI in EU regulation No. 404/2011):

- Beam trawls (TBB)
- Bottom trawl / Otter trawl (OTB, OTT, PTB, TBN, TBS, TB)
- Seine nets (Danish and Scottish seines) (SDN, SSC, SX, SV, SPR)
- Dredges (DRB)

STECF notes that the partial overlap of JR areas with the designated Natura 2000 may be slightly confusing with regards to fishing restrictions. For clarity purposes, STECF understands that, within the Natura 2000 site Kims Top og Den Kinesiske Mur, the prohibition of fishing with the mobile bottom contacting gears listed above only applies to the mapped areas of reef structures as well as the buffer zones surrounding them and also to the parts of areas D1-D3, specified as MSFD areas for the protection of soft seabed, that are inside the Natura 2000 site. STECF also understands that fishing with the mobile bottom contacting gears listed above will be prohibited in all areas specified as MSFD areas for the protection of soft seabed (MSFD areas A-F, including the areas D1-D3 which are largely within the Natura 2000 site Kims Top og Den Kinesiske Mur). The restrictions do not apply to the rest of the Natura 2000 area.

Control and enforcement

Each of the sites will be enclosed by a so-called AIS-zone where all vessels fishing within a four nautical mile distance from the MSFD-areas A-F and the Natura 2000-area Kims Top og Den Kinesiske Mur, shall be fitted with and maintain in operation an automatic identification system, AIS (class A), which meets the performance standards in Article 10.1 of (EC) No 1224/2009 (Figure 6.6.3). Although not explicitly stated in the JR, the STECF assumes the measure is proposed to ensure that the activity of under 12m vessels which currently are not required to carry either VMS or AIS can be monitored and to increase the reporting intervals for vessels only carrying VMS (i.e vessels between 12 and 15 m). The coordinates of the AIS-zones can be found in section 5 of the JR summary (Doc 6.6.1.). The JR also indicates that the combination of AIS and VMS monitoring and control will be assessed for effectiveness on a regular basis and necessary adaptations will be carried out.

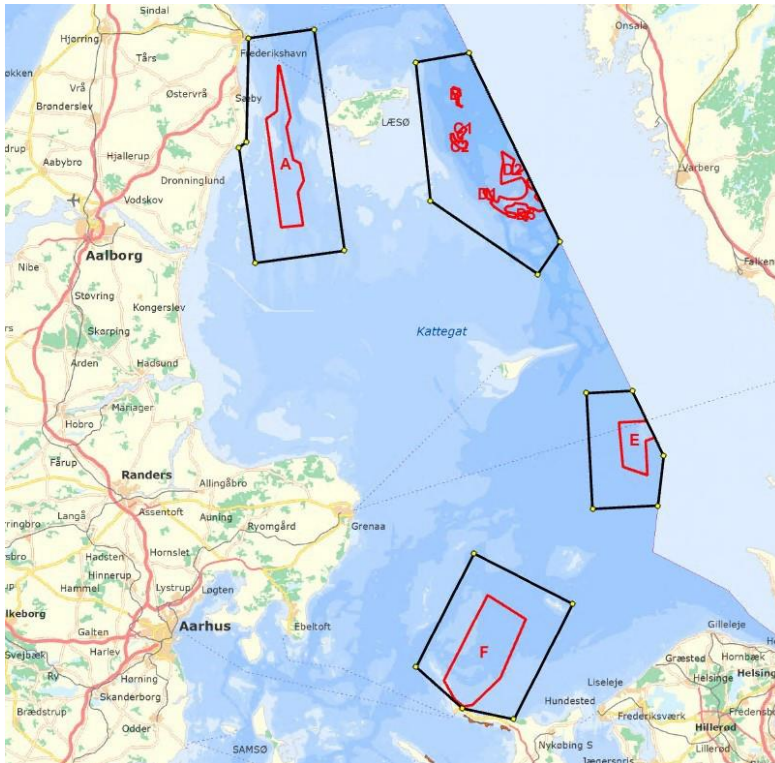


Figure 6.6.3 The 6 MSFD areas (A-F- red outline) and the accompanying AIS zones (black outline). The Natura 2000 site Kims Top og Den Kinesiske Mur overlaps MSFD zone D which is located within the top-right AIS zone.

STECF comments

STECF notes that the supporting information to the JR (Doc 6.6.2), indicates that the proposed restrictions are similar to fisheries conservation measures i) in four coastal Natura 2000 sites under Danish sovereignty, which came into force on 1 September 2013, ii) in the delegated act (EU) 2017/1180, concerning fisheries conservation measures in 17 Natura 2000 sites and iii) in 10 coastal Natura 2000 sites under Danish sovereignty, which came into force on 1 January 2018.

Analyses of fishing activities have been carried out based on VMS and logbook data for vessels of 12 meters or larger, since smaller vessels are not obliged to carry VMS. The fishing patterns from smaller vessels are assessed to be the same as for vessels above 12 meters (Section 6.1 of Doc 6.6.2.). The JR states that smaller and larger vessels use the same fishing grounds although no spatial information on small vessels is available to ascertain this. Seasonal trends have not been analysed due to the relatively low level of fishing activity.

Detailed fishing activity based on 2011-2017 VMS data for Danish and Swedish vessels for each of the MSFD areas (A-F), shown in Figures 12-20 of Doc 6.6.2. Figures 16 and 17 of Doc 6.6.2 (reproduced here as Figures 6.6.4 and 6.6.5), also depicts the activity in relation to the reef structures within the Natura 2000 site. STECF notes that, within the boundaries of the Natura 2000 site Kims Top og Den Kinesiske Mur, outside of the mapped areas of reef (including the buffer zone) and the MSFD soft-bottom areas, the fishing activity of Danish and Swedish vessels with mobile bottom-contacting gears appears relatively high

(Figures 6.6.4 and 6.6.5). However, inside the MSFD soft-bottom areas and the mapped reefs within the Natura 2000 site fishing activity is very low (Figures 6.6.4 and 6.6.5). Assuming that the information in Figure 12-20 of Doc. 6.6.2 is a reliable representation of the fishing activity of vessels using mobile bottom-contacting gears, fishing activity has been low in the proposed MSFD areas and almost absent in the reef areas of the Natura 2000 site.

MSFD-area D and Kims Top and Den Kinesiske Mur

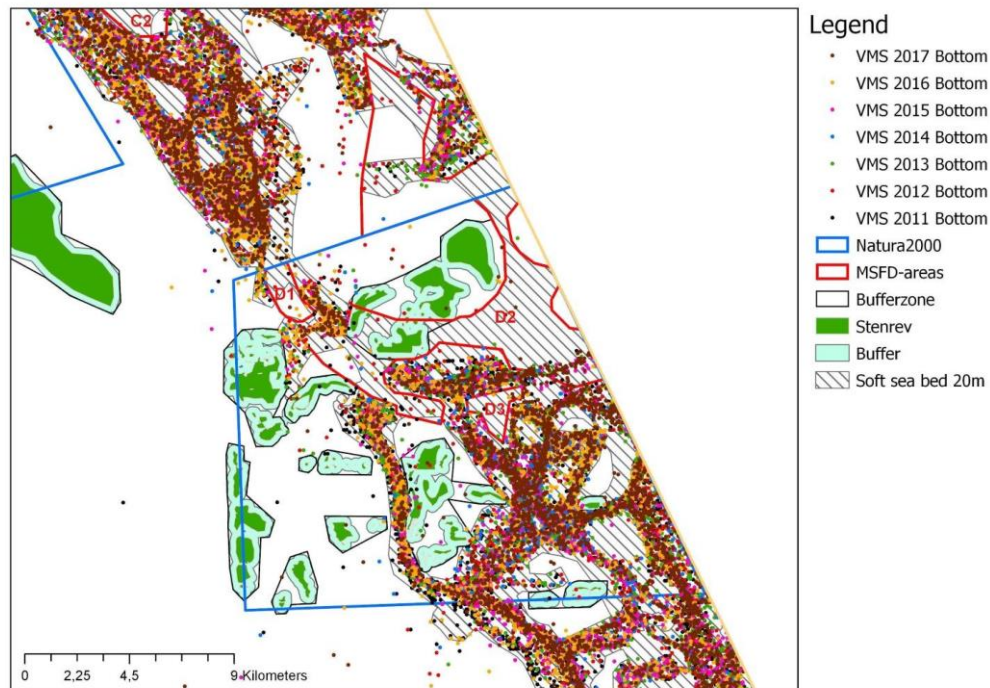


Figure 6.6.4. Danish fisheries with mobile bottom contacting gears in MSFD area D and Natura 2000 site Kims Top og Den Kinesiske Mur (VMS for vessels over 12 m. (over 15 m. in 2011)) – From Figure 16, Doc 6.6.2.

MSFD-area D and Kims Top and Den Kinesiske Mur

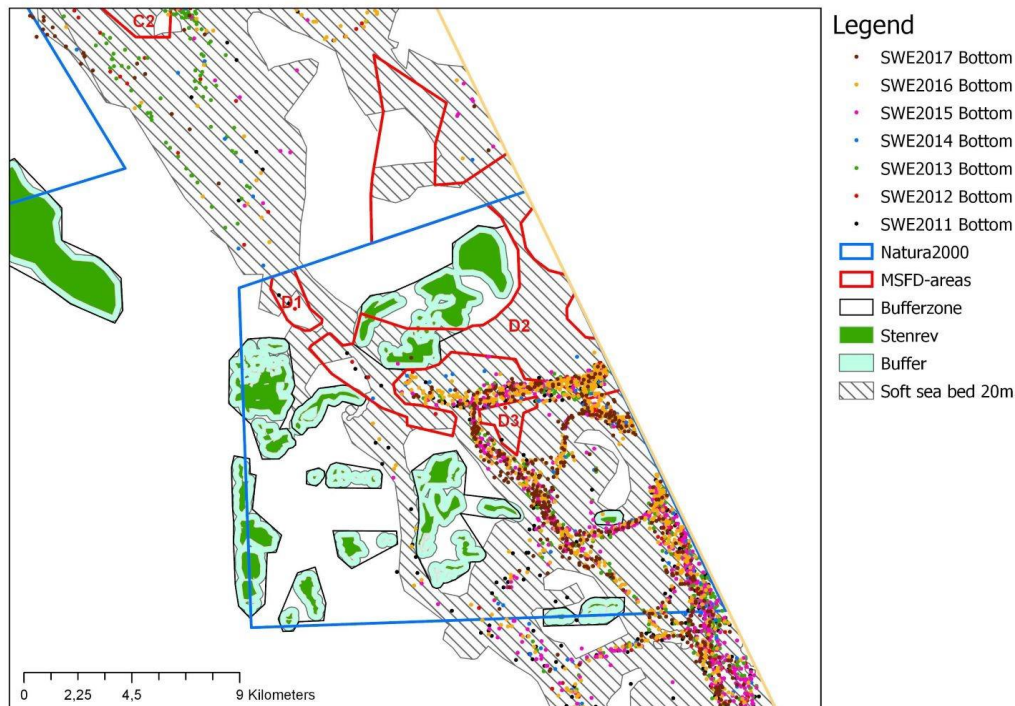


Figure 6.6.5. Swedish fisheries with mobile bottom contacting gears in MSFD area D and Natura 2000 site Kims Top og Den Kinesiske Mur (VMS for vessels over 12 m. (over 15 m. in 2011)) – From Figure 17, Doc 6.6.2.

Total German fishing activity in the Kattegat is reported to be very low (Doc. 6.6.2), but no data are given in the JR and supporting documentation.

Taking into account the low activity in combination with the small areas involved, any displacement of fishing activity to other areas that are already being fished, is unlikely to have any significant additional detrimental effect on such areas.

STECF notes that no attempt to quantitatively assess the forward-looking potential effects of the measures in the proposed MPA or elsewhere are presented in the JR or supporting documentation. Nevertheless, because even low levels of fishing activity with bottom-contacting gears can have major and long-lasting effects on sensitive habitats, especially reef habitats, STECF considers that provided they are complied with, the proposed measures noted above will ensure adequate protection of these reef structures from direct impact from fishing activities, thereby helping to contribute to achieving some of the environmental targets specified in the Danish marine strategy as set out in Section 1.4 of Doc 6.6.2.

STECF notes that there is a discrepancy between JR Doc 6.6.1 and supporting Doc 6.6.2. regarding which vessels are entitled to use AIS.

In the JR (Doc. 6.6.1) the following is stated:

"All fishing vessels fishing in AIS-zones within a four nautical mile distance from the MSFD-areas A-F and the Natura 2000-area Kims Top og Den Kinesiske Mur shall be fitted

with and maintain in operation an automatic identification system, AIS (class A), which meets the performance standards in Article 10.1 of (EC) No 1224/2009. The coordinates of the AIS-zones can be found in section 5."

However, in the supporting proposal (Doc. 6.6.2), the following is stated:

*".. this proposal includes mandatory AIS, class A transponder for vessels **using mobile bottom contacting gears** within a zone of four nautical miles around the protected areas."*

Regarding the discrepancy noted above, the STECF has assumed that the intention of the JR is reflected in the text of the JR (Doc. 6.6.1) and has based its response in accordance with that assumption i.e. complementary to the existing VMS requirement for vessels over 12m, all fishing vessels, irrespective of length, fishing in AIS-zones within a four nautical mile distance from the MSFD-areas A-F and the Natura 2000-area Kims Top og Den Kinesiske Mur, shall be fitted with and maintain in operation an automatic identification system. The proposal to make use of AIS-A for all fishing vessels when fishing in the AIS zones, aims to ensuring transmission of all vessels' position, speed and direction, often multiple times per minute.

STECF notes that detailed information of the location of the vessels through the AIS-system allows authorities to undertake real-time monitoring of fishing spatial activity. However, the provisions in the JR for fishing vessels to use AIS in the AIS zones only relates to when they are fishing, smaller vessels (under 15m in length) will be able to transit the AIS zones without using AIS provided they do not fish.

STECF considers that if effectively implemented, the proposed control and enforcement measures will be sufficient to ensure that the proposed fishing restrictions are complied with.

STECF notes that the MSFD areas cover approximately about 7% of the soft seabed habitat and the Natura 2000 site represents one of 65 Natura 2000 sites designated for reef structures (habitat types 1170 and 1180) in the Danish part of the Kattegat. While the proposed measures relate to a relatively small proportion of the total area of such habitats that potentially could be protected from fisheries impacts, the proposed measures represent a positive step forward towards minimizing the fisheries impacts on the habitats.

STECF conclusions on the JR submitted by Denmark

Regarding ToR 1, STECF concludes that the measures proposed in the JR submitted by Denmark for conservation of the six MSFD areas soft seabed (mud and sandy mud) and reef structures (habitat type 1170) in the Natura 2000 site Kims Top og Den Kinesiske Mur, if implemented and complied with, will represent a positive step forward towards minimizing the negative impacts of fishing activities on the habitats concerned. The extent to which the measures will contribute to minimizing the negative impacts of fishing activities on all reef (Natura 2000 habitat type 1170) and soft seabed (mud and sandy mud) habitat located within the Kattegat has not been quantitatively assessed.

Regarding ToR 2, STECF concludes the proposed restrictions on fishing activity and associated control measures, if implemented and complied with, will reduce fishing activity and hence fishing pressure within the areas concerned. As such they are expected to contribute to the stated purpose for the proposed measures i.e. to regulate fisheries

activities with mobile bottom contacting gears in order to establish a coherent and representative network of marine protected areas in accordance with the MSFD, which adequately cover the diversity of the individual ecosystems, with due considerations for the social and economic consequences. Furthermore, they are also expected to contribute to the purpose of ensuring full protection of reef structures in the Natura 2000 site Kims Top og Den Kinesiske Mur from physical disturbance due to fishing activities and they thereby contribute to the achievement of favourable conservation status for reef structures (habitat code H1170).

Regarding ToR 3, STECF concludes that the proposed conservation measures make an additional contribution to the protection of sites which comprise a network of marine conservation areas as prescribed under Article 13(4) of the MSF Directive 2008/56/EC. Since the proposed measures have not yet been implemented, they will not contribute to achieving a good environmental status (GES) by 2020.

Joint recommendation submitted by Sweden.

Areas concerned

The JR concerns 4 marine protected areas Fladen, Lilla Middelgrund, Stora Middelgrund och Röde bank and Morups bank, which are Natura 2000 sites (SE0510127, SE0510126, SE0510186 and SE0510187). A chart showing their location is given in Figure 6.6.6. The supporting information (Doc. 6.6.5) states that the areas are mainly offshore shallow banks with species and habitats of high conservation value and were designated as Natura 2000 sites for reef structures, sandbanks, harbor porpoise (*Phocoena phocoena*) in 2003 (Fladen, Lilla Middelgrund) and 2008 (Stora Middelgrund och Röde bank and Morups bank). Lilla Middelgrund was designated as a Natura 2000 site for seabirds guillemot (*Uria algae*) and razorbill (*Alca torda*) in 2003. The JR states that Fladen and Stora Middelgrund are both planned to be designated as Natura 2000 for seabirds guillemot and razorbill as well. The areas are also part of the OSPAR and HELCOM networks of marine protected areas.

Proposed measures

The stated purpose of the proposed fisheries conservation measures is to ensure adequate protection of designated and sensitive species and habitat types including the associated ecological functions in the marine protected areas in the Kattegat. STECF notes that this is in accordance with Article 6 of Directive 92/43/EEC (the Habitats Directive) and Article 4 of Directive 2009/147 EC (the Birds Directive). Additionally, it is also in line with the need to protect the habitats and species on the OSPAR List of Threatened and/or Declining Species and Habitats (OSPAR 2008-6) as well as relevant HELCOM underwater biotopes which aim to ensure a representative network of marine protected areas.

Fishing restrictions

The proposed measures given in the JR can be summarised as follows:

-Each of the proposed Natura 2000 sites is surrounded by a buffer zone of 120m (6 x depth) in accordance with ICES guidelines. Each of the resulting protected areas including the buffer zones, are partitioned into a "no-take zone" and a "restricted fishery zone" (Figure 6.6.6). For detail by each MPA see, Appendix 2, Doc. 6.6.6.

- Within designated no-take zones, all fishing operations (recreational and commercial) are to be prohibited.
- Fishing vessels may transit across no-take zones provided that any gear carried on board is lashed and stowed in accordance with the conditions laid down in Article 47 of (EC) No 1224/2009.
- within restricted fishery zones, only fishing operations with the following fishing gears will be permitted: pelagic floating trawls (OTM,PTM), handheld fishing gears like rod and line (LHP), fishing for crustaceans with pots and traps (FPO, FIX).Fishing will also be allowed in the restricted fishery zones within the marine protected areas for those vessels fishing with gillnets and trammel nets (GTN) if the vessel is taking part in a national program conducted by or on behalf of the national authorities for monitoring and assessing accidental bycatch of harbour porpoise and seabirds by use of remote electronic monitoring (REM) including the use of CCTV and recording of positional data.

- The data on accidental bycatches should be reviewed annually and a final assessment should be done no later than after three years with the possibility of adjustments to the conservation measures. Any appropriate new data should be used in order to assess necessary conservation measures for the gillnet fishery in the marine protected areas.

- Member States concerned shall review the data collected from the gillnet fishery. If there is a need for revision, Sweden will coordinate a joint recommendation in accordance with Articles 11 and 18 of the Common Fisheries Policy in collaboration with Member States having a direct management interest (i.e. Denmark and Germany).

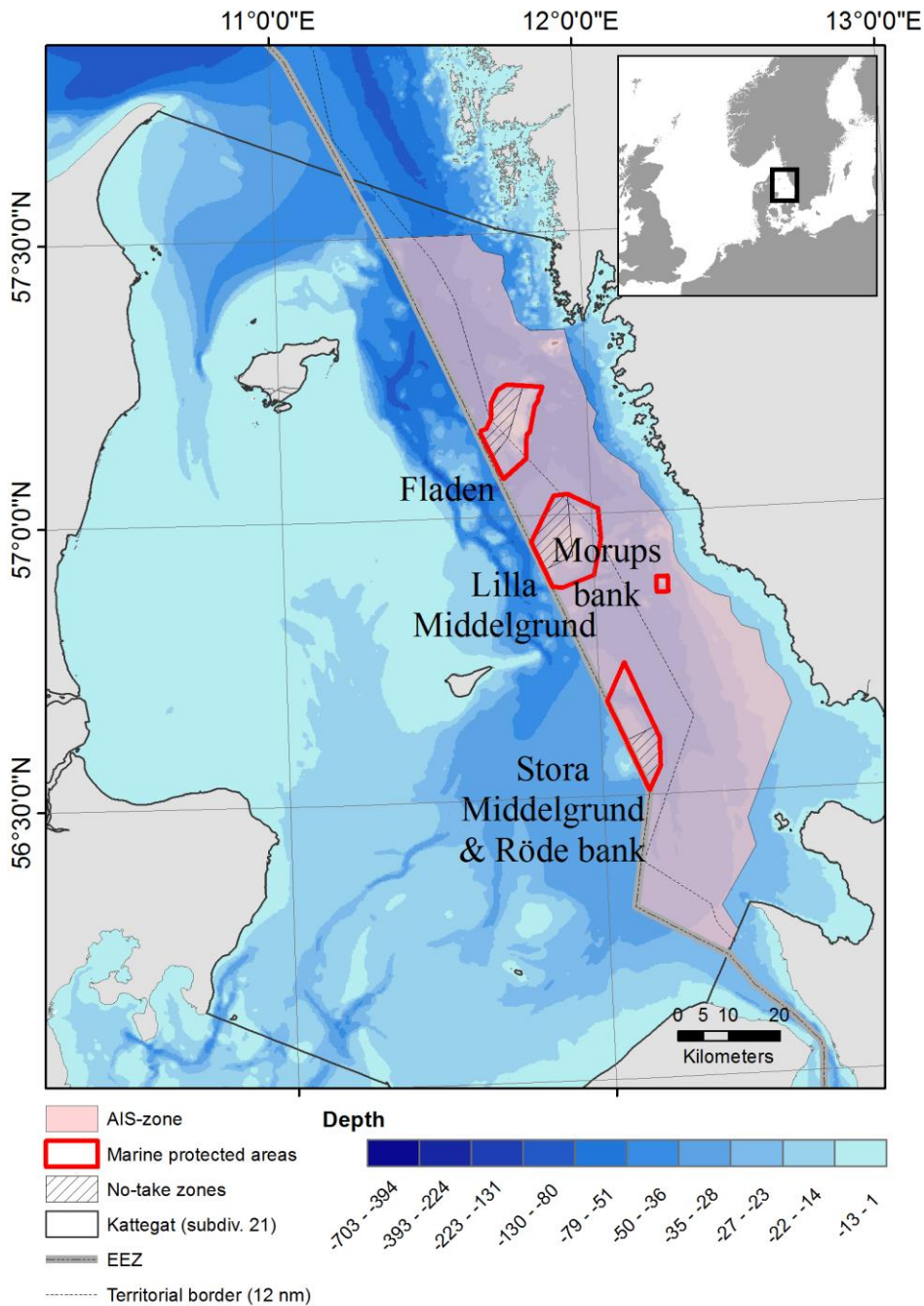


Figure 6.6.6. The four Natura200 sites concerned with the JR submitted by Sweden together with the AIS zone. Natura 2000 habitat 1170 reefs; Natura 2000 habitat 1180 bubbling reefs; Natura 2000 habitat 1110 sublittoral sandbanks and sublittoral mud/OSPAR habitat sea pens and burrowing megafauna (From Figure 2a, Doc 6.6.6.).

3. Control and enforcement

The proposal includes a zone that covers the concerned marine protected areas in the Kattegat with compulsory use of AIS for all commercial vessels fishing in the area to ensure efficient control. (Figure 6.6.6).

The following control measure is proposed to be adopted:

- Automatic identification system

All fishing vessels present in the AIS-zone that covers the marine protected areas Fladen, Lilla Middelgrund, Stora Middelgrund och Röde bank and Morups bank in the Kattegat shall be fitted with and maintain in operation an automatic identification system, AIS, class A, which meets the performance standards in Article 10.1 of (EC) No 1224/2009.

STECF comments

Detailed descriptions of each area, the conservation targets and ecological recovery (expected effects of the measures) are given in Section 6 of Doc. 6.6.5. STECF notes that the rationale for removing fishing gear that has a physical impact on the seafloor is to protect habitats. Prohibiting or reducing all fisheries within no-take zones is primarily to protect large, resident predatory fish (only cod *Gadus morhua* is listed in the JR) which play an important role in maintaining ecosystem structure and function. The stated rationale for a ban on gillnet fisheries (GTN) in the designated areas is to minimize unintended catches of seabirds and harbour porpoises and reduce fishing pressure on large predatory fish.

Section 6 of Doc 6.6.6. also discusses the potential implication of displacement of the gillnet fishery and the potential effect on harbour porpoise. STECF notes that the analysis of fishing activity (Figures 4a-d, Appendix 4, Doc 6.6.6) for Danish and Swedish vessels in each protected area over the period 2013-2017 indicates that apart from gillnets, the activity from other fishing gears is comparatively low. Furthermore the only gillnet activity in the Natura 2000 areas by Swedish vessels took place within Lilla Middelgrund. For Danish gill netters, activity was reported in the Lilla Middelgrund and Stora Middelgrund och Röde bank MPAs. STECF notes that any displacement of gill net activity arising as a result of the proposed measures is unlikely to result in significant detrimental ecosystem effects in other areas unless it is displaced to areas where there is an increased incidence of bycatch of seabirds and/or harbour porpoise. STECF notes though that no attempt to quantitatively assess the forward-looking potential effects of the measures are presented in the JR or documentation.

STECF notes that the proposal includes the provision to allow vessels to fish with gillnets in the proposed restricted fishery zones provided that such vessels are taking part in a national program conducted by or on behalf of the national authorities for monitoring and assessing accidental bycatch of harbour porpoise and seabirds by use of electronic monitoring. STECF suggests that making such a provision can be considered somewhat perverse as a fishery in a protected area is being permitted to collect incidental bycatch information on protected species, whereas if the fishery were not present, there would be no bycatch at all, and thus no need to monitor. However, the proposed measures indicate that the data from the gillnet fishery and on incidental bycatches are to be monitored annually for 3 years and STECF notes thus that adjustments will be possible to be proposed through a future joint recommendation if deemed necessary.

STECF notes that the rationale for allowing fishing with pots targeting crustaceans (*Nephrops*, brown crab and European lobster), pelagic trawling for herring and sprat as well as recreational fishing in designated (restricted fishery) zones within the MPAs is to minimize the impact on commercial and recreational fisheries, while not significantly compromising the conservation targets. According to the information provided (Doc 6.6.5), such fisheries have minimal or no by-catch of seabirds, harbour porpoise and predatory fish. STECF also notes that according to studies by Eno et al (2001) and Kopp et al. (2020) pots have low impact on benthic fauna and on the seabed. Similarly, recreational fisheries are likely to have only minor detrimental impacts on seabed habitat according to available scientific advice (Fuller et al. (2008); Kaiser et al. 2003).

Regarding the pelagic trawl fisheries for mackerel herring and sprat, according to the supporting information, STECF understands that the level of pelagic trawling activity is limited. This fishery is by Swedish vessels predominantly targeting herring - there are no vessels targeting pelagic species with OTB in the Swedish fleet. Furthermore, from the supporting information it is stated that "*Pelagic trawling also occurs in the marine protected areas and according to the fishermen, the trawls are deployed safely in deeper areas, usually outside the banks and are then manoeuvred to target schools at the flanks of the banks but not shallower than 18 meters to avoid risking that the gear interacts with the seafloor.*" STECF observes that assuming this is correct and taking account of available information on the impacts of pelagic trawling on benthic habitats the risk to benthic flora and fauna is likely to be minimal (McConnaughey et al. 2020).

Regarding measures to ensure an effective implementation of the no-take zones and restricted fishery zones, STECF observes that in complement to the VMS requirement, a mandatory use of AIS (class A) is proposed for all fishing vessels entering the AIS zone which encompasses all four MPAs (Figure 6.6.6.).

As AIS is currently only required for vessels above 15 meters and VMS for vessels above 12 meters, control authorities are not able to monitor fishing vessels below 12 meter using such tools. The mandatory use of AIS-A for all fishing vessels, irrespective of overall length when fishing in the AIS zones, will ensure transmission of the vessels' position, speed and direction, often multiple times per minute.

STECF notes that detailed information of the location of the vessels through the AIS-system allows authorities to undertake real-time monitoring and to monitor risk objects, act upon infringements and for verification of compliance by administrative control in which position data from the AIS can be compared with self-reported data in logbooks.

As any transmission of the location of the vessel (with AIS or VMS) does not provide information of whether fishing activity is taking place or not the JRs propose an obligation to lash and stow any fishing gears during transit.

STECF notes that the proposed measures in the current JRs are similar to those for the Bratten MPA which were reviewed by the STECF in 2016 (PLEN 16-02). Subsequent to that review Delegated regulation (EU) 118/2017 has been implemented which includes the same provisions for the mandatory use of AIS to ensure compliance with the conservation measures for the Bratten MPA.

STECF considers that if effectively implemented, the proposed control and enforcement measures will be sufficient to ensure that the proposed fishing restrictions are complied with.

STECF conclusions on the JR submitted by Sweden.

Regarding ToR 1, STECF concludes that the measures proposed in the JR submitted by Sweden for conservation of the four Natura 2000 sites Fladen, Lilla Middelgrund, Stora Middelgrund och Röde bank and Morups bank if implemented and complied with, will represent a positive step forward towards minimizing the negative impacts of fishing activities on the Habitats concerned. The extent to which the measures will contribute to minimizing the negative impacts of fishing activities on all Natura 2000 marine sites located within the Kattegat has not been quantitatively assessed.

Regarding ToR 2, STECF concludes that the proposed restrictions on fishing activity, if implemented and complied with, will reduce fishing activity and hence fishing pressure within the areas concerned and are expected to contribute to the stated purpose for the proposed measures i.e. to ensure adequate protection of designated and sensitive species and habitat types including the associated ecological functions in the marine protected areas in the Kattegat.

STECF concludes that detailed information of the location of the vessels through the AIS-system will allow authorities to undertake real-time monitoring of vessels present in the areas including the designated buffer zone.

Regarding ToR 3, the proposed conservation measures make an additional contribution to the protection of sites which comprise a network of marine conservation areas as prescribed under Article 13(4) of the MSF Directive 2008/56/EC. Since the proposed measures have not yet been implemented, they will not contribute to achieving a good environmental status (GES) by 2020.

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6.7 Assessment of a Joint Recommendation concerning Change to the MCRS for Short Necked Clams in Area 8, Statistical Rectangle 18E8

Background provided by the Commission

Under Annex VII of EU Regulation 2019/124111 on Technical Measures (TMR), the current minimum conservation reference size (MCRS) for Short Necked Clams (*Venerupis philippinarum*) in ICES area 8 is listed as 35 cm.

The European Commission has received a Joint Recommendation from the South Western Waters Regional Group of Member States, specifying a change of the MCRS to 32 cm, with supporting information from the Arcachon Basin, specifically statistical rectangle 18E8.

Background documents are published on the meeting's web site on: <https://stecf.jrc.ec.europa.eu/plen2101>

Request to the STECF

STECF is requested to evaluate the scientific information supporting the joint recommendation on Short Necked Clams in the Arcachon Basin (Statistical Rectangle 18E8), paying particular attention to Article 15(4) of the Technical Measures Regulation.

In particular, STECF is requested to assess:

1) Whether this change in MCRS for statistical rectangle 18E8, complies with Article 15(4) (d) of the TMR (2019/1241) and the objectives of Article 18 of ensuring the protection of juveniles of marine species. The attached supporting material should sufficiently evidence that the measures "as a minimum, lead to such benefits for the conservation of marine biological resources that are at least equivalent" to the measures in place.

Summary of the information provided to STECF

Three documents were provided to PLEN 21-01 to support this request:

- (a) A report from Ifremer "Determination of possible impacts on the deposit of a change in the minimum [catch] size of Japanese clam on the basin d'Arcachon" by Caill-Milly et. al., which is a translation of the original report "Détermination des impacts éventuels sur le gisement d'une modification de la taille minimale [de capture] de

11 <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A02019R1241-20210101&qid=1614249964397>

la palourde japonaise sur le bassin d'Arcachon". STECF used the English version in this evaluation.

- (b) Cover letter from the head of the IFREMER station in Arcachon explaining the rationale behind the proposal for a local MCRS
- (c) Copy of an e-mail conversation between DG MARE and the French administration in which the main conclusions of the study translated to English was provided

Documents (b) and (c) mainly consists of extracts and management interpretations based on document (a) and are therefore not described further here.

Document (a) is a summary of biological and fisheries information on short-necked clam from Ifremer produced as response to a request from the DPMA (French ministry). The request was to assess the risks to the population of lowering MCRS (from 35mm to 32 mm) and to advise on a suitable count (numbers per kg) for market and control purposes to be associated with the MCRS. The document contains a significant amount of information, so only the parts relevant for the current request to STECF are summarized here.

The short-necked clam is a widespread species originating from the western Pacific. The species was introduced intentionally to Europe in the 1970s for aquaculture to compensate for production problems with the native carpet shell clam (*Ruditapes decussatus*). It is one of the most economically important bivalve species in fisheries and aquaculture worldwide. Short-necked clam is an invasive species with reports of displacement of native species, hybridization with *R. decussatus* and subsequent introgression (Cordero et. al 2017; Moura et. al 2017).

Size at sexual maturity has not been studied in the Arcachon basin. Document (a) instead summarises six studies of maturity from other short-necked clam populations worldwide (USA, Russia, Korea, UK and Portugal). Length at 50% maturity in these populations varies between 15 and 29 mm according to the referenced papers. The authors propose that although size at first maturity is unknown in the Arcachon basin, considering the available information on the reproduction (gametogenesis, breeding period) in the area, they contend that the size at first maturity of clams in the Arcachon basin is probably close to the average size at first maturity observed elsewhere in Europe (i.e. 25 mm).

A large part of the report is focused on biological information that analyses growth and mortality of local subpopulations from an optimization of yield and market point of view of clams within the Arcachon basin. As such these analyses are not directly suitable for the request to reduce the MCRS.

Growth was shown to vary significantly between adjacent sites in the basin. The current MCRS (35 mm) is, on average, reached after 3 years but varies between 1.6 to 4.4 years for different locations. By transplanting marked individuals between the sites, it was shown that differences in growth could mainly be explained by phenotypic variability. Local environmental factors explained the observed differences in growth. Furthermore, the referenced growth experiment also indicated that individual growth rate decreased for larger sized clams with a distinct reduction in growth rate from about 30 mm (Dang 2009).

Previous research is also presented which indicates that clams from the Arcachon basin exhibit a more rounded shape than elsewhere in Europe (Caill-Milly et. al. 2012). Estimates of the optimal size of first capture to maximize the yield of a cohort (LC_{50}), calculated based on site-specific growth and total mortality estimates, indicated that LC_{50} varied between 30 and 40 mm between the five sites in the study.

The stock size has been estimated in 2003, every second year between 2006 and 2014 and in 2018. The estimated total stock size has varied between 4600 and 8200 tonnes during the period, with the last estimate (2018) being the highest recorded. However, harvestable biomass (i.e. individuals >35 mm) has shown a gradual reduction over time and was at its lowest level (490 tonnes) in 2018. The previous all-time low was 724 tonnes in 2012. Individuals between 20 and 32 mm dominate the population. The report further suggests that spawning stock biomass (assumed to be individuals >25 mm) has varied between 4000 and 7000 tonnes over time with the last estimate (2018) being the highest recorded.

The report provides information on the landings of short-necked clams which shows they varied between 400-600 tonnes during the last decade peaking at over 1000 tonnes in 2007. It also shows that the number of licenses varied between 55 and 70 between 1997 and 2013 but has since then gradually increased to 92 in 2019. However, other valuable information about the fishery and management such as fishing practices and gears, fishing effort, CPUE, length frequency distributions, selectivity, management targets and restocking programs are not well described in the report.

It is also notable that 22 control inspections of size composition of commercial landings during 2018-2020 found that the proportion of undersized (<35 mm MCRS) is substantial (73% by number). Taking the proposed MCRS of 32 mm the inspection data indicates that 58% of landings would still have been below the MCRS and thus undersized.

Apart from the EU MCRS of 35 mm, there are national management measures in place. These are nationally issued annual permits with at times additional local regulations. After the stock decrease in 2008 local regulations were in place during 2009-2013. These included a reduction of the number of licenses (1 in 2 out), a ban on fishing on Sundays and introduction of closed areas. According to the report, since then these local regulations have been abandoned due to economic difficulties for the clam fishers.

Regarding MCRS in other clam fisheries, it is noted that a MCRS of 40 mm has been re-established for market reasons in Lower Normandy, while in Mediterranean waters, the MCRS is currently 25 mm (Regulation (EC) No 40/2008).

In the conclusions section of document (a) the report states that a reduction of MCRS to 32 mm would still mean that this is 28% higher than the assumed size at first maturity (25 mm) and that this buffer will contribute to sustainability. Furthermore, the authors conclude that since the fishery already exhibits a large proportion of undersized individuals in the catches a reduction of MCRS will likely have limited impact on the stock. Finally, the authors also stress that the possible change of MCRS should be seen in conjunction with the need for other measures to reach sustainability such as closed areas and effort limitations.

STECF comments

Previous STECF assessments

STECF notes that PLEN 07-03 and PLEN 14-02 have assessed similar requests for short-necked clam. In 2007 the request was to reduce minimum size from 40 mm to 35 mm while the 2014 request was for a MCRS reduction from 35 mm to 30 mm.

PLEN 07-03 concluded that the risk to the stock of changing the minimum size from 40 mm to 35mm was probably low. However, PLEN 07-03 indicated that the results of a specific research program on growth of short-necked clam would provide a stronger scientific basis on which to recommend a revised minimum landing size. In 2008 the minimum landing size was reduced to 35 mm.

PLEN 14-02 concluded that no updated information had been submitted on size at first maturity in the Arcachon basin. Signs of weak recruitment and a continued reduction of clams >35 mm, which not only is targeted in the fishery but also contribute to stock renewal, lead PLEN 14-02 to conclude that lowering the MCRS may worsen the state of the stock. PLEN 14-02 also concluded that having different MCRS to the rest of area 8 would make control and enforcement more difficult, particularly in circumstances where shellfish from different localities are presented on the same market.

PLEN 14-02 was also requested to "comment on whether for sedentary shellfish species like Japanese (short-necked) clams it is more appropriate to set minimum sizes at local level rather than at a European level reflecting differences in stocks". PLEN 14-02 concluded, "generally, in cases where differences in growth and in the size-at-first-maturity are demonstrated for the same species in different areas, the minimum landing size could be set differently considering the population specific growth in each area. However, STECF notes that this would require evidence on a relevant scale subject to independent and periodic review".

PLEN 21-01 comments

The main focus of this evaluation was the two articles of the TMR referred to in the request. Article 15(4)(d) stipulates that joint recommendations for adapted regional technical measures shall "as a minimum, lead to such benefits for the conservation of marine biological resources that are at least equivalent, in particular in terms of exploitation patterns." to the measures in place, while article 18 specifies that such proposals shall ensure the protection of juveniles of marine species.

STECF considers that inferring size at first maturity from other populations in the world (incl. Europe) as a basis for changing MCRS and as a basis for stock assessments and for evaluation of different management scenarios is inappropriate, especially considering that (i) estimates for these populations worldwide vary themselves substantially, (ii) growth has been shown to be highly variable between adjacent areas within the basin due to

differences in environmental factors and (iii) the Arcachon clams have a different morphology according to the scientific report.

STECF further notes that growth rate and size at first maturity is not necessarily tightly coupled and that the variability indicates that care must be taken before assuming that clams in Arcachon basin are no different to other clam populations. In line with this, STECF considers that the assumption from other studies of a length at first maturity of 25 mm in Arcachon basin, and the argument that a MCRS reduction to 32 mm would guarantee a sustainability buffer, is unfounded.

STECF reiterates the conclusion from PLEN 14-02 that population specific maturity information is needed for such requests and analyses to be conducted. STECF considers that maturity studies are standard biological studies, but no information has been given on reasons why this has not yet been undertaken considering the comments on previous proposals. STECF also refers to the important considerations given on the setting of MCRS in the context of the landing obligation. More information can be found in STECF EWG 14-01, including guidelines for the selection of MCRS, and supporting information for such proposals.

STECF notes that existing (or plans for) management measures other than MCRS, to meet the requirements on article 15(4)(d) and achieve the objectives of article 18, are not specified in the request. Such a plan should focus on management objectives, monitoring, management measures and safeguards/remedial actions to be taken if the stock shows signs of reduced conservation status. Examples of management measures are for example reduced effort, increased selectivity and closed areas schemes. STECF concurs thus with the scientific underpinning (document b) that clearly highlight the need for additional measures to accompany a change of MCRS in order not to reduce the conservation status of the stock.

STECF considers (similar to PLEN 14-02) that the implications of a changed MCRS in a single ICES rectangle may risk making enforcement more difficult and may potentially affect markets.

STECF considers that basic information about the fishery (e.g. fishing practices, time series of effort, CPUE, length frequency distributions and selectivity) and management (e.g. management targets, licensing, monitoring and restocking) would be beneficial for the evaluation of future requests.

STECF notes the dominance of undersized individuals in the landings from control inspections 2018-2020 but questions the interpretation that a reduced MCRS would, against this background, result in a status quo situation with little impact on the stock. Shelled molluscs like short-necked clam are likely to exhibit high survival rates after being returned to the sea. Therefore, STECF considers that an effective implementation of the current rules to make sure that undersized individuals are released would be beneficial for the conservation status of the stock, for which there are clear indications of overexploitation of large individuals (see also PLEN 14-02).

STECF also considers, based on the indications of non-compliance with the current size limit, that a reduced MCRS may not result in status quo in terms juvenile protection due to the risk that a reduction would incite targeting towards even smaller individuals.

STECF conclusions

STECF concludes that the information provided does not justify the reduction of MCRS for short-necked clam to 32mm, since there is not sufficient evidence that the proposal would ensure the protection of juveniles.

STECF concludes that a representative study of length at first maturity in the Arcachon basin is still necessary to answer future requests of this nature.

STECF concludes that if other measures are to be introduced in conjunction with the proposed reduction of MCRS to guarantee conservation benefits that are at least equivalent to the measures in place, these need to be described fully to facilitate future evaluations. No such measures are identified in the current proposal.

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6.8 Revision and update of current information available on sensitive species

Background provided by the Commission

During 2020, STECF was tasked with assessing to what extent the performance of technical measures to conserve fisheries resources and protect marine ecosystems was achieving the desired effects. While performing this task, STECF was requested to consider the situation of sensitive species and minimisation of incidental catches of these species.

As a continuation of these works, it was considered necessary to proceed with a thorough revision of current information available, in absence of new data that would allow an increased knowledge of population status.

With this objective in mind, DGMARE commissioned the two ad-hoc contracts (one for the Atlantic sea basins, and the other for the Mediterranean and Black Sea).

Background documents are published on the meeting's web site on: <https://stecf.jrc.ec.europa.eu/plen2101>

Request to the STECF

STECF is requested to revise and extract conclusions of the mentioned ad-hoc contracts. In particular, STECF is requested to suggest a coordinated, coherent and consistent approach to progress in the protection of sensitive species, considering the framework provided by the Technical Measures Regulation and the outcomes of EWG 21-07.

Summary of the information provided to STECF

STECF PLEN 21-01 was provided with three reports from two contracts commissioned by DG MARE, one relating to the Atlantic sea basins and a second for the Mediterranean and Black Seas. The report of the Atlantic sea basin consists in two parts, with an added part B uniquely dedicated to considerations on Iberian porpoise (item 6 below). All reports are available on meeting's web site on: <https://stecf.jrc.ec.europa.eu/plen2101>.

The contractors were requested to progress the work started by the STECF in 2020 (EWG 20-02) on assessing the extent to which technical measures have contributed to conserving fishery resources and protecting marine ecosystems particularly with respect to minimizing incidental catches of sensitive species.

To progress the above work, the contractors were provided with the following Terms of Reference:

- 1) Briefly review the reports and where necessary provide updates and recent complementary information to allow addressing the points below.

2) Advise on the extent to which the measures to reduce by-catches of marine mammals, sea turtles, sharks and seabirds in the above-mentioned reports are applicable and suitable to reduce by-catches of these species in EU fisheries.

3) Where the measures described are found to be inappropriate, inadequate or suboptimal with respect to EU fisheries, advice on alternative measures.

4) Where existing data are inadequate to advise on appropriate conservation measures, advise on the necessary data collection and surveying procedures to enable such advice to be given.

5) Indicate cases where there is an evident need for conservation measures on precautionary grounds where detailed data may not be adequate for a fully quantitative assessment.

An additional task (assessing recent bycatch estimates and reviewing the status of the Iberian harbour porpoise management unit) was added only for the Atlantic basin:

6) In particular, referring to STECF 20-02, which described the risk factors associated to certain métiers and areas, the experts are requested to further develop the risk posed by the TBB and PS gear in the Iberian Sea.

With regards to ToR 1, the following reports were consulted by the ad-hoc contractors:

- ACAP Review and Best Practice Advice for Reducing the Impact of Pelagic and Demersal Trawl Fisheries on Seabirds Reviewed at the Eleventh Meeting of the Advisory Committee Florianópolis, Brazil 13 - 17 May 2019 (<https://www.acap.aq/bycatch-mitigation/mitigation-advice/3531-acap-2019-review-and-best-practice-advice-for-reducing-the-impact-of-pelagic-and-demersal-trawl-fisheries-on-seabirds/file>)
- FAO (2010) Guidelines to reduce sea turtle mortality in fishing operations (<http://www.fao.org/3/i0725e/i0725e.pdf>)
- FAO, 2020. Report of the Expert Meeting to Develop Technical Guidelines to Reduce Bycatch of Marine Mammals in Capture Fisheries. Rome, Italy, 17–19 September 2019
- Improving scientific advice for the conservation and management of oceanic sharks and rays (wire leader ban, chapter 8 of <https://op.europa.eu/en/publication-detail/-/publication/bb27e867-6185-11e9-b6eb-01aa75ed71a1/language-en>)
- Report EWG 19-17 on the implementation of the Shark Finning Regulation and the 2009 EU Action Plan on Sharks.
- STECF report EWG 20-02

These were complemented by additional relevant published papers from the scientific literature.

To provide a comprehensive and informative advice, in relation to sensitive species, the STECF comments on the mentioned ad-hoc contract reports follow the same six items.

STECF comments

The request to the STECF was interpreted as follows:

- i) Taking into account the findings in the ad hoc contract reports, STECF is requested to draw out any relevant conclusions with regard to items 2-6 of the terms of reference listed in the contract reports.
- ii) STECF is requested to suggest ways to further protect sensitive species within the provisions of the Technical Measures Regulation (Reg 1241/2019) considering the outcomes of EWG 20-02 and to be further considered by EWG 21-07.

The STECF response is given with respect to the above interpretations.

General overview of the reports

STECF notes the terms of reference to the contractors were wide ranging and hugely demanding and while the contract reports provide useful summary overviews of the documents they were requested to consult, neither report fully addresses points 2-6 (see above) of the terms of reference. This should not be interpreted to be any fault of the contractors, as the documentation they were specifically asked to review did not contain the data and information required to respond directly to the requests. Consequently, STECF is not able to provide a comprehensive and detailed response to each of the Items 2-6 in the contract reports.

The contract reports include an overview of bycatch cases and mitigation measures aimed at protecting sensitive species. They also include proposals for future developments, including among others, measures such as an increase in monitoring (métiers, spatial and temporal coverage), species identification, abundance estimation and thresholds.

Based on the reports, STECF notes that the main species and areas of concern are as follows:

(i) Marine mammals: Harbour porpoise (*Phocoena phocoena*) in the Iberian Peninsula, Celtic Sea, English Channel, and Black Sea, Common dolphin (*Delphinus delphis*) in Bay of Biscay, Celtic Sea, Bottlenose dolphin (*Tursiops truncatus*) in the Black Sea and Andalucia, Humpback (*Megaptera novaeangliae*) and minke whale (*Balaenoptera acutorostrata*) in Scottish waters, Monk Seal (*Monachus monachus*) in the Mediterranean basin.

(ii) Marine turtles: Loggerhead turtle (*Caretta caretta*), Green turtle (*Chelonia mydas*), and leatherback turtle (*Dermochelys coriacea*) in the Mediterranean basin, the Atlantic subpopulation of loggerhead turtle and the leatherback turtle in the Bay of Biscay and the Iberian waters.

(iii) Sea birds: Gannets (*Morus* spp.) in southern North Sea, the Celtic Sea, and in the Bay of Biscay, Pelagic diving seabirds in Atlantic Western Waters, including Balearic Islands, Shearwater (*Puffinus mauretanicus*) and Scopoli's shearwater (*Calonectris diomedea*) and Audouin's gull (*Larus audouinii*) in the Mediterranean basin.

(iv) Sharks-rays: Rays: Thornback ray *Raja undulata* in the North Sea, Bristol Channel, English Channel and Bay of Biscay; Blonde ray *R. brachyura* in Bristol Channel and Western English Channel; Cuckoo ray *Leucoraja naevus* in Bristol Channel, Western English Channel, Irish Sea, Balearic Islands; Small-eyed ray *R. microcellata* in Bristol Channel and Western English Channel; Spotted ray *R. montagui* in Western English Channel. Sharks: Blue Shark *Prionace glauca*, shortfin mako *Isurus oxyrinchus*, Porbeagle *Lamna nasus*, Spiny dogfish *Squalus acanthias* in all European waters; Angel sharks *Squatina sp.* in Eastern Atlantic and Mediterranean Basin; Great White Shark *Carcharodon carcharias* in the Mediterranean basin; common guitarfish *Rhinobatos rhinobatos*; and the blackchin guitarfish *Glaucostegus cemiculus* in the Central Eastern Mediterranean Basin.

ToR 1. Taking into account the findings in the ad hoc contract reports, STECF is requested to draw out any relevant conclusions with regard to items 2-6 of the terms of reference listed in the contract reports.

The STECF response is given according to each of the items referred to as follows:

2. Advise on the extent to which the measures to reduce by-catches of marine mammals, sea turtles, sharks and seabirds in the above-mentioned reports are applicable and suitable to reduce by-catches of these species in EU fisheries

STECF notes that most of the implemented measures to reduce by-catches of sensitive species have emerged following various experiments and studies performed in different sea areas and fisheries. Experience with these have demonstrated that there is no single solution to reduce or avoid bycatch mortality, and the most effective approach is to use a combination of measures on a case-by-case basis, , considering the nature of the fisheries, species and sea area concerned. For instance, while Acoustic Deterrent Devices (ADDs) for cetaceans and pinnipeds have been the principal method stipulated by the technical measures regulation (TMR; Reg. 1241/2019), it is crucial that mitigation does not solely rely on ADDs, as these are not proven to be effective for many cetacean species and only apply to certain gear types (e.g. static net fisheries). Examples of combined sets of mitigation measures are detailed and discussed in ToRs 6.4 (regarding harbour porpoise in the Baltic Sea) and 6.5 (regarding common dolphins in the Bay of Biscay) of this Plenary report.

STECF advises that all the methods discussed by the contractors (Table 6.8.1 below) are potential candidates to mitigate incidental bycatches of sensitive taxa indicated. However, STECF notes that care must be given that the benefits of deploying a specific method to reduce the incidental bycatch of one taxon may have adverse consequences for other taxa; there are reported cases of such unattended effects in the scientific literature reviewed in the contracts reports. For example, night-setting of longlines to reduce bycatch of seabirds, but could potentially result in a higher bycatch of some shark species. Similarly using circle hooks in pelagic longline fisheries could reduce catches of turtles but could also increase the capture of sharks, although the post-capture mortality of sharks caught using circle hooks is potentially less than that for catches with traditional J-hooks. Such potential trade-offs need also to be considered on a case-by-case basis. For this reason, it is not possible for STECF to give a detailed and quantitative opinion on the extent to which each method will reduce by-catches of sensitive species and whether they bear a risk of negative cross-taxa effects.

Table 6.8.1. Case studies of applied bycatch mitigation methods for specific taxa referred in the ad-hoc contracts.

Mitigation method	Gear	Taxa	Target	Reference
Fishing strategy				
Backdown maneuver to release dolphins	Purse seine	Dolphins	Reduce bycatch and does not create conflicts with other organisms	Gilman et al. (2019)
Night-setting while ensuring deck lights have been turned off and illumination (especially, on deck) is limited to those lights necessary for navigation and for health & safety standards.	Pelagic and demersal longlines	Seabirds	Effective method to reduce by-catch	ACAP (2019)
Reducing the net profile, increasing filament diameter, using stiffer weaves, using larger floats on the top rope and heavier weights on the bottom rope, and infusing certain compounds in e.g. barium sulfate or other metal compounds that have acoustical detection features for reducing bycatch	Netters	Dolphins, sea turtles	Reduce the likelihood of entangling with low probability of causing cross-taxa conflicts	Gilman et al. (2019)
Setting hooks deeper than turtles' most common depth range (40-100 m), reducing gear soak time and retrieving gear during daytime.	Pelagic longlines	Sea turtles	Reduce sea turtle interactions without compromising catch rates of target species (e.g., swordfish, tunas).	FAO (2010)
Eliminating or increasing the length of tiedowns	Gillnets	Sea turtles	Eliminates a bag of slack webbing that entangles organisms	Gilman et al. (2019)
New gear/devices				
Non-entangling and biodegradable designs of fish aggregating devices (FADs)	Purse seine	Tuna	Reduce the entanglement of sharks, sea turtles and other organisms	Gilman et al. (2019)
Use of net colors, thicker twine diameter, corks or other materials	Gillnets	Sea turtles, seabirds and marine mammals	Reduce catch rates	ACAP (2019), Gilman et al. (2019)

within the net, and illuminating nets with chemical or battery-operated light sticks				
Ropeless fishing (i.e. deploying pots and traps without buoy lines to avoid entanglements)	Pots	Marine mammals, sharks	Significantly reduce entanglements and no significant effect on target catch reported. However, it is expensive device with high probability of losing gear.	ICES WGBYC (2020)
Circle hooks	Pelagic and demersal longlines	Sea turtles, sharks	Reduce turtle by catch and although increase shark catchability, they also reduce at-vessel mortality and the proportion of those captured that are deeply hooked.	FAO (2010)
Turtle Excluder Devices, sorting and shepherding devices	shrimp and prawn trawl fisheries	Sea turtles, sharks	Excludes by catch of sensitive species, while largely retaining smaller organisms, such as targeted shrimp	Gilman et al. (2019)
Side-setting, bird-scaring tori lines, dumping of offal and artificial baits and underwater setting devices	Pelagic longlines	Seabirds	Limiting bird access to baited hooks without cause cross-taxa conflicts	ACAP (2019)

STECF notes that the degree of compliance in the use of existing mitigation measures in identified high risk areas and fisheries is unknown and might need to be strengthened. For example, the use of tori lines in longlines fisheries is mandatory in Spain (Article 19 of the Regulation AAA/ 658/2014). However, no other information was provided within the report on mandatory mitigation employed by other MS, nor was the compliance with the use of tori lines on longline fisheries in Spain reported on.

3. Where the measures described are found to be inappropriate, inadequate or suboptimal with respect to EU fisheries, advice on alternative measures

There is insufficient information in the contract reports to address whether specific mitigation methods could be effective in specific fisheries. Nevertheless, several points of note to highlight concrete issues of concern can be drawn from the contract reports.

Regulation (EU) No 605/2013 on the removal of fins of sharks on board vessels does not apply to non-EU fleets resulting in difficulties in estimating total catches for these sensitive species.

Identifying and quantifying the factors that can affect post-release survival of bycatch species is problematic and is limited to species-specific studies and heterogeneous

experiments in terms of timing, season, environmental conditions, gear handling and catch processing.

Although the TMR addresses bycatch in Union waters in the Indian Ocean and the West Atlantic and specifies that it is mandatory for vessels operating any trawls targeting shrimps (*Penaeus* spp., *Xiphopenaeus kroyeri*) to use a turtle excluder device (TEDs), the EU does not require the use of turtle excluder devices for imported wild-caught tropical shrimps into the Union¹². A possible solution would be to enhance the role of the regulatory mechanisms in the global roll-out of Turtle Excluder Devices and endorse the need to adopt import regulations requiring the introduction and adoption of TEDs by all countries exporting wild-caught tropical shrimp to the European market (<https://www.iucncongress2020.org/motion/097/63902>).

Awareness raising and training of professional fishers for performing in situ release, as foreseen by the current legislation, could be envisaged (Council Regulations (EC) 1005/2008 and (EC) 1010/2009). For example, as detailed in OSPAR (2020), Spain has already promoted many management measures due to high turtle bycatch rates in the Mediterranean Sea, these include the setting of deeper longlines, implementing changes of baits and hooks for surface longlining, and is currently testing lightsticks in gillnets. Further, longlines cutlines have also been successfully used for releasing and increasing the chances of survival of sea turtles (OSPAR 2020). Guidelines on best practice for the handling and post-release recently produced by FAO and ACCOBAMS (<http://www.fao.org/gfcm/data/good-practice-guides/en/>) could be used in combination with mitigation measures imposed for testing the applicability to reduce by-catches.

Recent research projects have provided valuable information. For example results from SELPAL (Poisson et al., 2020) could help reduce bycatch, propose mitigation measures to minimise the environmental impact of fishing gears on elasmobranches and to identify the factors affecting post-release survival in the Mediterranean fisheries.

4. Where existing data are inadequate to advise on appropriate conservation measures, advise on the necessary data collection and surveying procedures to enable such advice to be given

There is insufficient information in the contract reports to advise on appropriate species- and fishery-specific conservation measures. Nevertheless, several points of note to highlight issues of concern can be drawn from the contract reports.

The reporting by Member States of the by catch on sensitive species remains low and heterogeneous and this impedes any assessment of the performance of the measures included in the TMR.

For a large number of sensitive species, only scarce and scattered data on bycatch are currently available (e.g. seabird and shark bycatch in the Mediterranean and Black Seas). The present monitoring and data reported for a large number of sensitive species also does not provide detailed information on survival rates and breeding patterns. Important biological and distribution data are not yet available (e.g. the tuna-RFMOs: Coelho et al., 2019) but are also required.

12 https://wwf.panda.org/wwf_news/?1083466/IUCN-members-call-on-EU-to-reduce-marine-turtle-bycatch

Taking into account the MSFD recommendations on the pressures and impacts on incidental non-target catches (e.g. by commercial and recreational fishing) (Table 2 in Annex III of Directive 2008/56/EC), STECF comments that Member States shall take into account the biological features regarding the description of the population dynamics, natural and actual range and status of species of seabirds, marine mammals and reptiles and species under Community or International Agreements (art. 9, par 1 of Directive 2008/56/EC).

EU-data collection

STECF notes that the new EU-MAP for data collection (Implementing Decision 2019/909) contains several improvements for the collection of data on sensitive species (c.f. STECF EWG 19-12). The bycatch on sensitive species shall be better recorded, when occurring in the sampling schemes on commercial fisheries (Annex 3, Table 2.5 in STECF 20-16). For example the revised EU-MAP changed the data collection requirements for biological sampling of sharks from family/genus level to species level for all areas. However, STECF notes that the EU MAP remains not well suited for the dedicated monitoring of rare and protected bycatch in high-risk fisheries since its main focus is the statistically-sound random sampling of all commercial fisheries.

The provisions of the EU-MAP regarding the catch estimates from existing recreational fishery surveys, including those carried out under the Data Collection Framework or from additional pilot studies could provide additional information on sensitive species catches. There are huge differences between areas regarding the effectiveness of the collection of recreational fisheries data (STECF PLEN 19-02). Nonetheless, these data should be collected to evaluate the impact of recreational fisheries on sensitive species (e.g., angel sharks: Gordon et al., 2017, 2019).

STECF notes that the STECF FDI Report (STECF EWG 20-10) contains tabulated 2019 discard estimates provided by EU Members States for EU fleets by species and subregion for all areas where EU fleets are operational

Specific sampling programs dedicated to sensitive species

Dedicated at-sea observers based on FAO Technical Guidelines (FAO, 2019) provide the framework on dedicated sampling (interviews at port or by telephone, self-sampling with logbooks and observers on board). Sampling coverage could range from 2 % to 7 % (FAO, 2009b; ACCOBAMS, 2010), although a minimum level of 0.5% is often accepted (MARE/2014/19, 2016). However, as the cost of a sampling program is a limitation, it is possible to combine different methodologies to achieve a high-enough percentage of coverage without exceeding the cost of the program.

Fishery dependent method such as the Remote Electronic Monitoring (REM) has also proven to a cost-efficient and reliable way to monitor bycatch on fishing vessels, in cases where there are practical limitations on using VMS or dedicated at-sea (e.g. small-scale vessels). Denmark was the first nation in Europe to promote the use of Fully Documented Fisheries through Remote Electronic Monitoring and CCTV camera systems, since 2008, and to trial it for monitoring the bycatch of sensitive species. New trials are now being conducted in other Member States to monitor cetacean bycatches, not least France and Spain (c.f. ToR 6.5 of this Plenary Report). There is now extensive information available on experiences and best practices with REM (van Helmond et al., 2020)

Landings declaration

There is a need to improve species identification by fishers for a better accuracy of reporting. Actions are also needed against mislabeling, in particular for species classified

as threatened or regulated by CITES. Sensitive species of elasmobranchs including prohibited or CITES shark species are sold under substituted species, creating more uncertainty in the landing data for population estimation (Pazartzi et al., 2019).

The Regulation (EU) 2015/2102 and Recommendation GFCM/42/2018/2 contain specifications to improve species identification, increase the landings resolution, minimize illegal fishing, and strengthen citizen science networks and market controls, and need to be fully enforced and complied with.

5. Indicate cases where there is an evident need for conservation measures on precautionary grounds where detailed data may not be adequate for a fully quantitative assessment

There is insufficient information in the contract reports to advise on precautionary grounds when data are not adequate for a fully quantitative assessment.

The reports provide examples of cases where bycatch probabilities have been modelled using ecosystem-based models such as spatial distributional models (GAMs) end-to-end mass balance models.

OSPAR's Marine Mammal Expert Group (OMMEG) has developed biodiversity indicators and is currently developing a revised Marine Mammal Bycatch indicator (OSPAR biodiversity common indicator M6: numbers of individuals within species being bycaught in relation to population) for the harbour porpoise, common dolphin and grey seal. For data poor species, OMMEG suggest employing ASCOBANS intermediate precautionary objective for small cetaceans is 'to reduce by-catches to less than 1% of the best available population estimate'.

6. In particular, referring to STECF 20-02, which described the risk factors associated to certain métiers and areas, the experts are requested to further develop the risk posed by the beam trawl (TBB) and purse seine (PS) gears in the Iberian Sea

Based on the information presented in the contract report for the Atlantic Seas area, STECF notes that the Iberian porpoise population is reported to have a very low abundance, around 2 900 porpoises and is cause for high level of concern. STECF notes that according to the ad hoc report the majority of porpoise by-catch appears to be related to gillnets and Portuguese beach seines. The ad hoc contract suggests that purse seine (PS) fisheries are responsible for only a small proportion of bycatch of Iberian porpoise. There is no reference to beam trawls in the report. Therefore, STECF observes that while there is no doubt that it is extremely unlikely that true by-catch is as low as reported due to low observer effort, and the by-catch rate in this population is almost certainly unsustainable, there is no evidence to suggest that purse seines and beam trawls are high risk gears.

ToR 2. STECF is requested to suggest ways to further protect sensitive species within the provisions of the Technical Measures Regulation (Reg 1241/2019) considering the outcomes of 21-07.

The scope of the request goes far beyond what could be expected within the confines of a plenary meeting of the STECF. Hence the committee is not able to provide an detailed response but recalls some important generic actions to be considered.

- Implementation of the obligation for fishing vessels to report bycatch events.

- Increasing data collection of the professional and recreational fisheries with dedicated bycatch observation, fishery-independent survey data and fishers' feedback.
- Development of pilot studies to promote Fully Documented Fisheries through Remote Electronic Monitoring (REM) and on board cameras monitor the fishing activity.
- Identification of the factors that can affect post-release survival of bycatch species is problematic and is limited to species-specific studies and heterogeneous experiments in terms of timing, season, environmental conditions, gear handling and catch processing.
- Achieving the high survival exemption for skates and rays, associated research efforts and improvements in best handling practices should be promoted.
- Encounter best handling protocols proposed by FAO to increase survival in case of bycatch occurrence.
- Development of scenarios involving a combination of temporal closures, effort reduction and/or the use of mitigation devices to apply to high fishing effort- higher probability of bycatch areas.
- Consider the monitoring of the life history data (i.e., biological parameters and spatial distributional patterns) of sensitive species over a long period of time.

STECF conclusions

STECF concludes that the terms of reference to the contractors were wide ranging and hugely demanding and while contract reports provide useful summary overviews of the documents they were requested to consult, neither contract fully addressed points 2-6 (see above) of the terms of reference.

STECF concludes that this should not be interpreted to be any fault of the contractors, but notes that the documentation they were specifically asked to review did not contain the data and information required to respond directly to the requests. Consequently, STECF is not able to provide a comprehensive and detailed response to each of the Items 2-6 in the contract reports.

STECF concludes that the two ad-hoc contracts have reported that there is extensive knowledge available in key reports and in the scientific literature regarding approaches to progress in the protection of sensitive species; however, these all concur on the understanding that there is no single solution to reduce or avoid bycatch mortality, and the most effective approach is to use a combination of compulsory and voluntary measures on a case-by-case basis, considering the nature of the fisheries, species and area concerned, and considering also the potential adverse cross-taxa effects.

STECF concludes that there are still many data gaps regarding the information and reporting of bycatch events, which cannot be addressed with the EU data collection framework (EU MAP) alone but requires accurate declarations obligations and dedicated monitoring programs. Intergovernmental agreements and conventions may support transboundary population (or shared resource) conservation efforts of highly migratory sensitive species.

STECF concludes that based on the information provided there is no evidence to suggest that purse seines and beam trawls are responsible for high levels of bycatch of Iberian porpoise, noting that observer data is scant, and the population is at a level that is cause for a high level of concern

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6.9 Evaluation of management Plan for boat seines in Greece

Background provided by the Commission

Under Article 19 of Council Regulation (EC) No 1967/2006 (hereafter "MEDREG"), Member States are expected to adopt management plans for fisheries conducted by trawl nets, boats seines, shore seines, surrounding nets and dredges within their territorial waters.

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

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

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

Moreover, with a view to exploit the target species of picarel (*Spicara smaris*) and bogue (*Boops boops*), the boat seine fisheries concerned should be granted both derogations to the minimum mesh size of 40 mm square or 50 mm diamond and to the minimum distance from the coast of 3 nautical miles or to the depth of 50 m isobath where that depth is reached at a shorter distance from the coast. In order to benefit of such derogations, as stipulated by Article 9(7) and Article 13(5) and (9) respectively of the MEDREG, the fisheries concerned, in addition of being managed within an adequate management plan, shall be highly selective, in order to ensure that catches of species mentioned in Annex IX of Regulation (EU) No 2019/1241 are minimal, have a negligible effect on the marine environment and shall not be carried out above seagrass beds of *Posidonia oceanica* or other marine phanerogams.

For the latter issue a derogation to operate in the water columns above seagrass beds is available (Article 4(1) second subparagraph) provided that the lead-line and/or the hauling ropes of boat seines do not touch the seagrass bed during the fishing operations.

In 2016, Greece adopted the first management plan for boat seines fisheries (Ministerial Decision 6719/146097/29-12-2016). The European Commission adopted the respective implementing Regulation establishing a derogation to the minimum distances and depths, (Regulation (EU) 2017/929 of 31 May 2017 establishing a derogation from Council Regulation (EC) No 1967/2006 as regards the minimum distance from coast and the minimum sea depth for boat seine fishing in territorial waters of Greece).

The technical basis of the management plan and the derogation were assessed by the STECF in September 2016. In 2020, Greece provided a triennial report of monitoring of the plan for boat seines fisheries. In 2021, Greece provided up-to-date information to extend the plan and its derogation. Greece was expected to provide up-to-date scientific and technical justifications to renew the management plan and to extend the derogations.

Background documents are published on the meeting's web site on: <https://stecf.jrc.ec.europa.eu/plen2101>

Request to the STECF

TOR 1. The STECF is requested to advise and assess whether the management plan for boat seines in Greece contains adequate elements in terms of:

1.1. The description of the fisheries

- Biological characteristics and state of the exploited resources with reference in particular to long-term yields.
- Description of the fishing pressure and measures to accomplish a sustainable exploitation of the main target stocks.
- Data on catches (landings and discards) of the species concerned, fishing effort and abundance indices such as catch-per-unit-effort (or CPUE).
- Catch composition in terms of size distribution, with particular reference to the percentage of catches of species subject to minimum sizes in accordance with Annex III of the MEDREG13.
- Information on the social and economic impact of the measures proposed.
- Potential impact of the fishing gear on the marine environment with particular interest on protected habitats (i.e. seagrass bed, coralligenous habitat and maërl bed);

1.2. Objectives, safeguards and conservation/technical measures

- Objectives that are consistent with the objectives set out in Article 2 and with the relevant provisions of Articles 6 of CFP14 Regulation and quantifiable targets, such as fishing mortality rates and total biomass.
- Objectives for conservation and technical measures to be taken in order to achieve the targets set out in Article 15 of Regulation (EU) No 1380/2013, and measures designed to avoid and reduce, as far as possible, unwanted catches.
- 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.

13 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.

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

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

1.3. Other aspects

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

TOR 2. The STECF is requested to evaluate whether the following conditions set by the MEDREG are fulfilled:

2.1 Derogation to the distance from the coast (Article 13 – Paragraphs 5, 9 and 10)

- There are particular geographical constraints, such as the limited size of the continental shelf along the entire coastline;
- The fisheries have any significant impact on the marine environment;
- The fisheries involve a limited number of vessels and do not contain any increase in the fishing effort;
- The fisheries cannot be undertaken with another gear;
- The fisheries are subject to a management plan and carry out a monitoring of catches as requested in Article 23;
- The vessels concerned have a track record of more than 5 years;
- The fisheries do not interfere with the activities of vessels using gears other than trawls, seines or similar towed nets;
- The fisheries are regulated in order to ensure that catches of species mentioned in Annex IX of Regulation (EU) 2019/1241¹⁵ with the exception of mollusc bivalves, are minimal
- The fisheries do not target cephalopods.

2.2 Derogation to the minimum mesh size (Article 9, paragraph 7)

- The fisheries are highly selective and have a negligible effect on the marine environment; and
- The fisheries do not operate above seagrass beds of, in particular, *Posidonia oceanica* or other marine phanerogams.

Summary of the information provided to STECF

The new Management Plan includes several documents:

- 1) A draft Ministerial Decision establishing a Management Plan for fishing using boat seines targeting picarel (*Spicara smaris*) and bogue (*Boops boops*) in Greece.

¹⁵ Regulation (EU) 2019/1241 of the European Parliament and of the Council of 20 June 2019 on the conservation of fisheries resources and the protection of marine ecosystems through technical measures, amending Council Regulations (EC) No 1967/2006, (EC) No 1224/2009 and Regulations (EU) No 1380/2013, (EU) 2016/1139, (EU) 2018/973, (EU) 2019/472 and (EU) 2019/1022 of the European Parliament and of the Council, and repealing Council Regulations (EC) No 894/97, (EC) No 850/98, (EC) No 2549/2000, (EC) No 254/2002, (EC) No 812/2004 and (EC) No 2187/2005.

- 2) Management Plan for Derogation to mesh size and the minimum distance from the coast and the minimum sea depth (COUNCIL REGULATION (EC) 1967/2006, articles 9 & 13) regarding the operation of traditional boat seine (SB) in Greek waters for *Spicara smaris* and *Boops boops*.
- 3) Supporting information entitled "Bans proposed by boat seine association (thematic maps)."
- 4) Supporting information entitled "Sampling protocol for the collection of biological data from boat seine fishing vessels."
- 5) Supporting information entitled "List of involved fishing vessels."
- 6) Supporting information entitled "Monitoring the implementation of the management plan (1.10.2017- 31.03.2020) for the traditional Greek boat seine (SB) in accordance to the Commission Implementing Regulation (EU) 2017/929 of 31 May 2017 "establishing a derogation from Council Regulation (EC) No 1967/2006 as regards the minimum distance from coast and the minimum sea depth for boat seine fishing in territorial waters of Greece for *Spicara smaris* and *Boops boops*"

STECF comments

The STECF observations are listed below under each of the elements of the request.

ToR 1.1. The description of the fisheries

The MP includes a description of the fishery including precise information on target species, on gear and fishing operations, landings and discards, the structural characteristics of the fleet, the number of vessels, the evolution of the fleet between 1991 and 2020, the spatial distribution of fishing operations, length composition of landings and discards. The fleet is constituted by small vessels with average total length of 10.16 m. Data show a drastic reduction in the number of active vessels: while in 1991 operating vessels were 604, only 231 boats remain operational in 2019.

The fishing season is fixed from the 1st of October up to the 31st of March. The fishing operations are mostly restricted to a distance of about 700 m from the coast and is exerted exclusively over soft bottoms during daylight hours. The number of hauls per day usually ranges from three to eight depending on the fishing area, the availability of the resources, and the market demand.

Annual estimates of the capacity of the boat seiners provided together with estimates of fishing effort are available for the period 1991- 2018.

Biological characteristics and state of the exploited resources with reference in particular to long-term yields.

- *Description of the fishing pressure and measures to accomplish a sustainable exploitation of the main target stocks.*

The boat seine fishery targets are the picarel, *Spicara smaris* and the bogue, *Boops boops*, eventhough sardine, *Sardina pilchardus*, represent a less important, but constant fraction of the catch (about 10% of the overall catch).

The boats that exert such activity operate from 82 ports positioned along the 16,452 miles of the Greek continental coasts and islands. The number of vessels have decreased up to present years. Landings, even though showing important oscillations, have followed a quite similar trend.

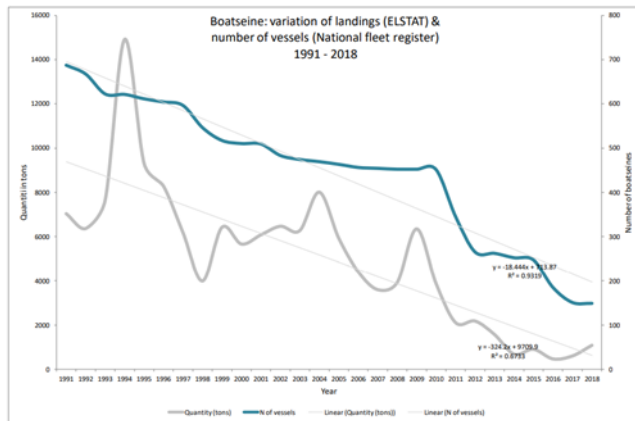


Fig. 19. Variation of boatseine landings and number of vessels during the period 1991-2018 with respective values of R^2 (source: ELSTAT, Fleet Register)

Number of vessels in blue, landings in black

The boat seine activity is exclusively carried out by fishers having a specific fishing licence. No new licenses have been delivered since 1997. The mesh size used in this boat seine fishery is very small, since the target species are small-sized.

Assessments of the status of the stocks were carried out in the framework of the EU funded project RECFISH (EASME/EMFF/2016/032). Assessments used data to infer whether five important species of the fishery was likely to be overfished ($B/B_{MSY} < 1$) or experiencing overfishing ($F/F_{MSY} > 1$). The 5 stocks analysed were *Spicara smaris*, *Boops boops*, *Mullus barbatus*, *Mullus surmuletus* and *Sardina pilchardus*. According to the MP, results showed that in most of the cases $F/F_{MSY} < 1$ and $B/B_{MSY} > 1$, suggesting that the stocks are not overfished. Only for sardine F/F_{MSY} was estimated to be above 1. However, STECF notes that there are no details provided in the MP, neither on the methods used for the estimation of the variables, nor on the data used. The mentioned assessments have not been presented to and validated by the GFCM. STECF cannot thus verify the reliability of the assessments. In addition, the non-implementation of the DCF programme for 3 years (2009-2012) is likely to have led to estimations with high degree of uncertainty.

Table 26. The estimated Reference points for the species under investigation

	GSA 20		GSA 22	
	F/F_{MSY}	B/B_{MSY}	F/F_{MSY}	B/B_{MSY}
<i>Spicara smaris</i>	0.48	1.16	0.18	1.78
<i>Boops boops</i>	0.61	1.07	0.77	1.52
<i>Mullus barbatus</i>	0.52	1.48	0.65	1.35
<i>Mullus surmuletus</i>	0.46	1.28	0.66	1.05
<i>Sardina pilchardus</i> *	1.14	-	1.03	-

* The method used for estimating the stock status of Sardine does not provide ratios for B/B_{MSY}

In addition to these exploratory assessments results presented, empirical indicators were calculated using length frequency data of commercial catch. The ICES WKLIFE V length-based indicators approach (LBI) was used for deriving a perception of stock status classifying the stocks in terms of sustainability, yield optimization and MSY considerations. STECF acknowledges that such length-based indicators are potentially useful for monitoring size distributions and stock dynamics.

LBI were computed only for *S. smaris* and *B. boops*. Length frequency distributions from catch-at-size data were used to derive indicators for the years 1999 to 2009, 2014, 2016, 2018 and 2019 separated for GSAs 20 and 22.

A set of length-based indicators were used in the MP, and traffic light representations of the results of such analyses are shown in pages 79-90. They suggest that the stocks are mostly within safe biological limits in all the areas. The value referring to the conservation status of large individuals (P_{mega}) in all cases is well above the expected reference point value. The same stands for the L_{MSY}, with the estimated values positioned in all cases above the proxy value for MSY. The prosecution of analytical assessments and the further use of LBI for providing information on stock status are planned as future work for the monitoring of the fishery.

- *Data on catches (landings and discards) of the species concerned, fishing effort and abundance indices such as catch-per-unit-effort (or CPUE).*

STECF notes that there is detailed information on catches and discards. The average quantities landed by boat seines are approximately 1000 tons by fishing season. Such landings correspond to about 2% of Greece's total fish landings.

Landings of boat seines are dominated by two targets (*Spicara smaris* and *Boops boops*) that represents about 73.10% of the total. *Spicara smaris* represents 54.9% and *Boops boops* 18.2%. *Sardina pilchardus* is the third stock in importance (9.10%), followed by *Loligo vulgaris* (2.7%), *Scomber colias* (2.1%), *Pagellus erythrinus* (1.9%), *Mullus barbatus* (1.5%), *Trachurus spp.* (1.0%), *Mullus surmuletus* (1.0%). Other bony fish (2.0%), and other species (95 taxa) (5.6%). (ELSTAT, 2018).

Discards are 10% of the total catch in terms of weight and 11% in terms of numbers of individuals, and mainly consists of non-commercial species (*Etrumeus golanii* (16%), *Chromis chromis* (10), *Coris julis* (6%). Results show that the commercial species included in ANNEX IX of 2019/1241 in the discards are: *Sardina pilchardus* that represent about 4.9% of total catches, *Mullus barbatus* and *M. surmuletus* 1% each one, *Pagellus erythrinus* 1.4%. For *S. smaris* and *B. boops*, discards are seldom observed, and are market-driven and not based on the size, as also small individuals are appreciated by consumers. No MCRS exists for most of the discarded species. Even though not listed in ANNEX IX, Greek authorities fixed a minimum landing size of 10 cm for picarel and 8 cm for bogue.

The effort in fishing days of boat seines represent on average less than 1% of the total effort of the Greek fleet. Fishing effort has shown a drastic reduction from 113,160 days fishing in 1991 to only 12,035 in 2019. A significant 66% decline in the number of vessels has been observed since 1991 (from 687 vessels in 1991 to 231 in March 2020). The vessels are distributed in 82 fishing ports (22 in GSA-20, 57 in GSA-22 and 3 in GSA-23)

The MP reports that during the last three years, only 62% of the registered boat seines were active. The overall fishing effort of each vessel was in average relatively low

(approximately 47% of the potential fishing effort (6 months * 30 days * N vessels). STECF notes that catch per unit of effort can be computed as the information on exerted effort and catches is available.

CPUE as average total catch (Kg) per day, per haul and month for GSA 20 and GSA 22 are reported for *Boops boops*, *Mullus barbatus*, *Mullus surmuletus*, *Sardina pilchardus* and *Spicara smaris*. Such information proceeds from onboard data collection made during the implementation of the management plan. No time series of CPUE are provided for the past years.

- *Catch composition in terms of size distribution, with particular reference to the percentage of catches of species subject to minimum sizes in accordance with Annex IX.*

STECF notes that the MCRS of a selected number of stocks, listed in the Annex IX of 2019/1241, is aimed at improving exploitation of stocks and for setting standards for building the national management systems for coastal fisheries. The selectivity of a fishing gear should be consistent with the MCRS established. In the case of this fishery using boat seines, the mesh size of the net is much smaller than the legal one, because is designed for the capture of the small-sized targets of the fishery (picarel and bogue). The gear retains individuals under the MCRS of some species, such as *Sardina pilchardus*, *Mullus* spp., *Pagellus* spp.. In any case, considering the small annual capture of the fishery and the low percentages that those species represent in the catch, the impact of such removals is negligible.

The length frequency distributions of the five species under special consideration (*Spicara smaris*, *Boops boops*, *Sardina pilchardus*, *Mullus barbatus*, *Mullus surmuletus*) are provided. Size distributions derive from studies conducted in the past twenty years and from the last three years of monitoring.

STECF notes that the new Management Plan proposes new measures for ensuring boat seine fishery compliance to the Council Regulation of 2019/1241 for reducing catches of species mentioned in Annex IX.

- *Information on the social and economic impact of the measures proposed.*

STECF notes that the Management Plan provides only limited quantitative information on the social and economic characteristics of the fishery and on the likely socio-economic impact of the proposed measures. It mostly presents a few general social and economic arguments in support of maintaining boat seining activity and on the likely consequences in the case the activity was prohibited. *Spicara smaris* is a low-priced species, but highly appreciated on the market. This activity is the main one concerning picarel catches in Greece. Their catches are reported to account for about 50% of total catches of picarel in Greece, especially of small-sized individuals, which are highly appreciated by consumers.

In the MP it is stated that the prohibition of the boat seiners targeting *S. smaris* would affect employment particularly in isolated and less-developed regions with minimum work opportunities, especially during winter. Moreover, banning boat seine operations close to the shore would force boat seiners to shift towards other fishing gears, with a consequent increase of fishing pressure on other grounds, with a major competition for space and resources. The MP also stresses that boat seine fishing provides employment for older people, who constitute a sizeable proportion of the fishers involved in such activity.

- *Potential impact of the fishing gear on the marine environment with particular interest on protected habitats (i.e. seagrass bed, coralligenous habitat and maërl bed);*

No detailed quantitative information on the impact of the fishing gear on the marine environment is presented. In previous studies, (Petrakis et al, 2009) it was observed that while fishing over *Posidonia* meadows, the rope passes over the plants without causing any harm. New evidence of the impact of the fishery over *Posidonia* are provided. They proceed from recent studies where 734 catches, made during normal fishing operations, were examined. Results show a very scarce number of *Posidonia* clumps. STECF notes that such experiments were carried out after 2017, year when operations over the seagrass meadows was no longer allowed.

The MP presents maps showing *Posidonia* meadows and other areas across the Greek coastline where operations with this gear are not allowed (i.e. on other sensitive habitats, or improper substrate types as hard bottoms).

1.2. Objectives, safeguards and conservation/technical measures

- *Objectives that are consistent with the objectives set out in Article 2 and with the relevant provisions of Articles 6 of CFP Regulation and quantifiable targets, such as fishing mortality rates and total biomass.*

The MP stresses that a precautionary approach will be used with the aim to ensure that exploitation of living marine biological resources involved in the fishery maintains their populations above levels which can produce the maximum sustainable yield. The objective of the Plan is to evaluate whether the enforced management measures are appropriate and, if not, to introduce amendments.

The MP has identified and established indicators to verify the operating state and the effectiveness of the enforced measures.

The ratios $F/F_{MSY} < 1$ and $B/B_{MSY} > 1$ are considered the reference values for fishing mortality and biomass respectively. Such RPs as well as length-based indicators using the size structure of the commercial catch will be used for monitoring the stock status of Picarel, Bogue, Striped red mullet, Red mullet and Sardine. Correction measures will be set in case the indicators suggest that a desired status is not achieved (i.e. the enforcement of a fishing effort reduction, a limitation of fishing licences, closure of the fishery or of certain areas).

The MP proposes some technical measures for reducing an undesired fishing pressure on certain stocks or on small-sized individuals of commercial species. Some of the proposed measures are: a minimum mesh size of the gear, a maximum length of the tow line of the net of 600m on each side, a fishing ban for boat seines in spring and summer months, a prohibition of operations over seagrass beds, the prohibition to combine boat seining with any other type of fishing technique during the same day.

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

The management plan target is the conservation and sustainable exploitation of stocks. It also includes the related measures to minimise the impact of fishing on the environment. The MP contains a series of measures aimed to maintain or restore of the natural habitats and the fish populations and environment.

The reference levels proposed for the specified species are based on F_{MSY} and B_{MSY} and consistent with the objectives set out in Article 2 of Regulation (EU) No 1380/2013.

The spring and summer seasonal ban for the fishery is a technical measure that reduces the fishing pressure in certain periods of the year while increasing the protection of juveniles. In Greek waters, in spring-summer, species as *Pagellus* spp. and *Mullus* spp., recruit to the ground very close to the coast where they remain for some months very concentrated and vulnerable.

The modification of the size of some parts of the net has produced a further reduction in the undesired captures.

Also the ban for operations in areas where the target species are not dominant in the catch is foreseen in the future.

As regard the landing obligation, that in the Mediterranean applies to species that are subject to MCRS, picarel and boops are excluded of these measures.

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

Measures aimed at the conservation of stock status are included in the MP. Such measures are consistent with the biological characteristics of the exploited stocks and with the characteristics of the fisheries in which these stocks are caught.

The timescale intended to reach the quantifiable targets is not specified. Several measures are enforced for reducing, or at least keep stable, the levels of fishing pressure. The terms and conditions for fishing are set out and prescribes that a licence to fish using boat seines shall be granted to vessels which hold a valid fishing permit. The delivery of new licences has been blocked since 1997.

Other measures are imposed for protecting certain coastal areas. STECF notes that provisions for regulating the number of vessels, the numbers of fishing days and the numbers of fishing hours per day are included in the MP itself.

In order to monitor the status of the stocks, assessments will be conducted every year. Moreover, a monitoring of the fishing activities will be organized with samplings on board on a monthly basis and it will be carried out a daily recording of catch and landings of all the involved fishing vessels.

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

STECF notices that safeguards as well as remedial actions are not defined in detail. There are general statements on the possible adoption of measures as restriction or suspension of fishing licences and the implementation of different or supplementary management measures. No details of what might constitute such supplementary management measures other than temporal or spatial restrictions in the fishing activity.

Based on the results of the scientific monitoring activities, Greece will evaluate whether the adopted management measures are appropriate and, if not, necessary amendments/modifications will be introduced considering the management indications and the pre-negotiated management measures. Fishing effort shall be set at levels consistent with a sustainable exploitation.

Fishing licences may be suspended at any time if the monitoring shows that the stock is in a worse condition than the reference levels laid down.

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

Beyond the restrictions of fishing in sensitive areas, additional measures are proposed for contributing to increase the selectivity of the gear, to reduce the fishing pressure on non-target species and to limit conflicts with other coastal fishers. New information collected allowed the identification of additional measures for reducing or banning boat seine fishing activities in certain areas. These areas mainly concern locations where the dominant target species are not *Spicara smaris* or *Boops boops* but other non-target species (e.g. *Pagellus erythrinus*).

Experiments carried out utilizing nets with a maximum rope length by side of the net of 600m instead of 700 have shown a potential to reduce the undesired presence of certain species in the catch (i.e., up to 6 times reduction of *Pagellus erythrinus*, 2 times less *Loligo vulgaris*, 3 times less for *Mullus barbatus*).

1.3. **Other aspects**

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

The management plan proposes a prosecution of the monitoring activities. Several variables such as the fishing capacity of the boat seine fleet, fishing effort, catch and landings will be measured. An onboard monitoring of the fishing operations, including the species composition of the catch and discards, operation areas, etc will be carried out. The exploitation state of the primary species will be assessed every year. All the analysed information will be used to identify and enforce alternative management measures when necessary.

All the boat seiners authorized to operate will be monitored in 3 ways:

1) through the satellite Vessel Monitoring System 2) through the daily recording of their catches and 3) by observers onboard monthly collecting catch data (marketable and discarded), spatial distribution of the activity and biological information on a representative number of vessels.

Moreover, during the monitoring it is planned a collection of environmental data as water temperature, primary production, precipitation regime, wind direction and intensity changes in near shore biophysical processes considered useful for developing a predictive recruitment model as well as the recording of the presence in the catches of invasive alien species.

TOR 2.1 Derogation to the distance from the coast (Article 13 – Paragraphs 5, 9 and 10)

- There are particular geographical constraints for the use of such gear with their specific targets. Since boat seine according to MEDREG Article 13(1) is obliged to use such gear at a minimum distance of 3 miles from the coast. The compliance with these requirements is incompatible with the bathymetric distribution of picarel, which is the target of boat seines.

Would the small-sized boat seiners be constrained to operate at longer distances, this will create a drastic loss of captures and revenues. Such spatial shift should increase the fishing effort external to the 3 miles stripe, which is undesirable. The operations of boat seines in the coastal stripe inside the 3 miles of the coast has a very limited impact on non-target species and will be regulated in order to ensure the sustainability of both (target and by-catch) resources.

- *The fisheries have any significant impact on the marine environment.*

The impact of the use of boat seines has no significant impact on the marine environment. No fishing operations on *Posidonia* meadows nor on other critical sensitive areas is allowed. Such areas are already well defined and well known by fishers. The net is light and the contact and undesirable impact to the bottom communities is limited. Moreover, it is worth noting that the net is not towed but hauled with the boat anchored and without motion.

In the MP it is stated that the boat seine vessels are registered in 82 fishing ports and distributed along the 16452 km coastline of Greece. These facts underline the potential modest impact on each one of the local grounds.

The permanent 6 months closure period, that includes spring and summer months, aims at protecting the spawners and recruits of many demersal fish.

No protected species as marine mammals, birds or turtles are caught.

- *The fisheries involve a limited number of vessels and do not contain any increase in the fishing effort;*

The number of vessels involved in the fishery is limited. A noticeable reduction of boat seine occurred along the period 1991-2020. Moreover, a reduction of the number of days at sea related to the potential ones has been observed and in many cases accompanied by a reduction in the number of daily hauls. The issuing of new fishing licences has been blocked since 1979. All vessels included in the list shown in ANNEX-III have demonstrated that they have operated for more than 5 years.

The fishing season was reduced from eight to six months. Recently, the Greek government has decided to grant an economic aid to ship owners for withdrawal of the seine boat fishing license resulting in a 43% reduction of the number of boat seines' licences compared to 2019.

- *The fisheries cannot be undertaken with another gear;*

The fisheries cannot be undertaken with another gear and operations need to be carried out in shallow waters within the 3 miles stripe. The gear and fishing operations are very efficient for the capture of the target species, which is mostly concentrated in the depth interval where the fishery operates. The net has to be constructed utilizing a very small-sized meshes, especially in the codend. Moreover, the gear shows a far more lightweight construction than other towed gears.

The rigging of the gear is highly conditioned to both the targeting species and the geomorphology of the fishing area. No doors are used for the operations with this gear.

- *The fisheries are subject to a management plan and carry out a monitoring of catches as requested in Article 23;*

A new Management Plan is presented, based on scientific, technical, and economic elements, and containing conservation measures to restore and maintain fish stocks levels above the maximum sustainable yields. The plan contains a timeframe, quantifiable reference points and safeguards.

Moreover, it aims at a reduction of unwanted catches of individuals of commercial species under their legal minimum landing size as well as of species that do not constitute the target of the fishery.

The management plan will be valid for three years and the monitoring of the activity will be performed through the National Fisheries Data Collection Programme and according to a sampling scheme which is described in the management plan. In this 3-years period, information will be collected, and data analysed in order to check the biological and socio-economic sustainability of the activity. The utilization of such gear exploited areas, catches, discards, size frequencies, will be monitored according to the procedures defined in the management plan.

- *The vessels concerned have a track record of more than 5 years;*

The vessels allowed to operate with boat seines targeting picarel and bogue must demonstrate that they operated with such gear and in the fishery for at least 5 consecutive fishing seasons.

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

Boat seines fishing operations lasts from 10 to 12 hours per day and are conducted at depths between 10 and 45 m. The operations occur during daylight and are restricted to about 700 m from the coast. They are carried out exclusively over soft bottoms. In the MP is stressed that there is no spatial conflict with bottom trawlers nor purse seiners as they operate at a longer distance from the coast. Even though some spatial conflict may exist with small-scale fisheries, netters and long-liners mostly operate over rough substrates and during the night hours and hence spatial conflicts can be considered limited. Only with fishers utilizing fyke nets, that work over smooth substrates and with their nets that are set for more than one day, the conflict may be more intense.

Competition for the resources with other gears concerns mainly the species *Sardina pilchardus* (mostly caught by purse seiners) and *Mullus barbatus* and *Mullus surmuletus*

(mainly caught using static nets and bottom trawls). However, the catch of boat seines represents a very small fraction of the total catch of these stocks if all gears are considered.

- *The fisheries are regulated in order to ensure that catches of species mentioned in Annex IX of Regulation (EU) 2019/1241 with the exception of mollusc bivalves, are minimal.*

Most of the boat seine target and by-catch species are late spring-early summer spawners and they recruit during spring-summer months (i.e. *Pagellus* spp., *Mullus* spp.). Thus, the early demersal phases of their juveniles are already protected as boat seine fishing operations starts in autumn. Sardine is an exception since it spawns during winter but sardine catches of boat seines are relatively small.

The primary target species of boat seine, *Spicara smaris* and *Boops boops* represent the largest landing share. The only species included in ANNEX IX with not negligible catches is *Sardina pilchardus* that represents about 9.10% of the total catch, but the importance of such removals has to be considered in the context of the boat seine catches for all the species that is only about 1000t per fishing season.

For the other species included in the Annex IX, such as *Pagellus erythrinus*, *Mullus barbatus*, *Mullus surmuletus*, *Sparus aurata*, *Diplodus sargus* catches are very low. Some recently enforced technical measures were demonstrated to be useful for a further reduction of catches of some species of ANNEX IX.

- *The fisheries do not target cephalopods.*

The capture of cephalopods is limited, probably because some of these species are living mainly on hard bottoms and are not vulnerable to the fishery as boat seiners are not allowed to operate over such bottoms. Cephalopods catch is almost exclusively composed by the squid *Loligo vulgaris*. In any case, it represents a small fraction of the catches (about 2%).

2.2 Request of derogation to the minimum mesh size (Article 9, paragraph 7)

The MP includes a request for exemption from the defined minimum mesh size. In the MP is stressed that such derogation is necessary for the prosecution of the activity.

The target species of boat seine (picarel and bogue) are small-sized species. According to the documentation presented in the MP, they are exploited sustainably in all GSAs off the coasts of Greece.

The boat seine fishery, due to the specificity of their operations and fishing period, is very selective regarding the target species and shows quite small discard rates. The presence of juveniles in the catch is reduced.

This fishery cannot be carried out legally by using an alternative gear.

Experiments carried out with boat seines using the legal net mesh size 40mm in the codend, have shown that picarel is almost completely absent in the catch and also the catches of other species resulted very low in relation to those usually obtained using the fisheries' traditional small mesh sizes.

2.3 Derogation from Council Regulation 1967/2006 as regards the minimum distance

from coast and the minimum sea depth

The fishery operates between 7 and 45 meters. Since boat seine is classified as a subclass of towed gear, it is allowed to operate only at distances of more than 3 miles from the coast or within the 50 m isobath in the case such depth is reached at a shorter distance. Compliance with these requirements is incompatible with the bathymetric distribution of picarel, which is the target of boat seines.

In the MP is stressed that the derogation acceptance may reduce conflicts with other gears as trawlers, operating off the 3 miles and targeting a species mix that includes many of the boat seines target species. On the contrary, the non-acceptance of the derogation will necessarily produce an increase of the fishing effort in these grounds and will create conflicts with other fishing activities. Picarel and bogue, according to the available information on stock status, are not considered as species at risk. Moreover, in the MP is stressed that the operations of boat seiners remarkably close to the coast has limited impact on non-target species. Fishing effort is regulated as well as the duration of the fishing season. Juveniles by-catch is limited, also because most of the coastal stocks recruit in spring-summer when the activity is forbidden.

STECF conclusions

STECF considers that the Greek MP contains numerous adequate elements and useful proposals for limiting the level of exploitation of the main targets and for reducing the negative impact on non-target species and on the marine environment.

STECF acknowledges the use of exploratory assessments and data-limited methods to assess the status of the target stocks. Although this knowledge remains uncertain, there is no evidence that the stocks would be exploited unsustainably by this fishery.

STECF underlines though that many of the stocks of this fishing activity are also exploited in other fisheries with gears operating at different depths, areas or seasons and with different exploitation patterns.

STECF concludes that the MP contains the elements supporting the request for derogations for mesh size and distance from the coast.

References

Petrakis, G., Kavadas, S., Siapatis, A., Segovia, M., Lefkaditou, E., and Sourlas, E. 2009. Assessment of impacts of the boat seine fishery on fisheries resources. Technical report (in Greek).129 pp

6.10 Review of national management plans for boat seines in the Ligurian Sea (GSA 09)

Background provided by the Commission

In January 2021, the Italian Administration has expressed its intention to adopt a new management plan for the transparent goby (*Aphia minuta*) in the Ligurian Sea (GSA 09). This plan envisions the renewal of the derogation from EC 1967/2006 article 9/13 in terms of distance and minimum depth from the coast in the Ligurian Sea (GSA 09), which is currently granted with the Regulation¹⁶ (EU) 2018/1634 of 30 October 2018. The current derogation will expire on 31 March 2021.

Background documents are published on the meeting's web site on: <https://stecf.jrc.ec.europa.eu/plen2101>

Request to the STECF

TOR 1. STECF is requested to advise and assess whether the management plan for boat seines targeting transparent goby in the waters of Tuscany and Liguria contains adequate elements in terms of:

1.1. The description of the fisheries

- Biological characteristics and state of the exploited resources with reference in particular to long-term yields.
- Description of the fishing pressure and measures to accomplish a sustainable exploitation of the main target stocks.
- Data on catches (landings and discards) of the species concerned, fishing effort and abundance indices such as catch-per-unit-effort (or CPUE).
- Catch composition in terms of size distribution, with particular reference to the percentage of catches of species subject to minimum sizes in accordance with Annex III of the MEDREG17.
- Information on the social and economic impact of the measures proposed.

¹⁶ Commission Implementing Regulation (EU) 2018/1634 of 30 October 2018 renewing the derogation from Council Regulation (EC) No 1967/2006 as regards the minimum distance from coast and the minimum sea depth for boat seines fishing for transparent goby (*Aphia minuta*) in certain territorial waters of Italy C/2018/7036 http://data.europa.eu/eli/req_impl/2018/1634/oj.

¹⁷ 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.

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

1.2. Objectives, safeguards and conservation/technical measures

- Objectives that are consistent with the objectives set out in Article 2 and with the relevant provisions of Articles 6 of CFP18 Regulation and quantifiable targets, such as fishing mortality rates and total biomass.
- Objectives for conservation and technical measures to be taken in order to achieve the targets set out in Article 15 of Regulation (EU) No 1380/2013, and measures designed to avoid and reduce, as far as possible, unwanted catches.
- 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 gradually eliminate discards, taking into account the best available scientific advice or to minimise the negative impact of fishing on the ecosystem.

1.3. Other aspects

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

TOR 2. STECF is requested to evaluate whether the following conditions set by the MEDREG:

2.1 Derogation to the distance from the coast (Article 13 – Paragraphs 5, 9 and 10)

- There are particular geographical constraints, such as the limited size of the continental shelf along the entire coastline;
- The fisheries have any significant impact on the marine environment;
- The fisheries involve a limited number of vessels and do not contain any increase in the fishing effort;
- The fisheries cannot be undertaken with another gear;
- The fisheries are subject to a management plan and carry out a monitoring of catches as requested in Article 23;
- The vessels concerned have a track record of more than 5 years;
- The fisheries do not interfere with the activities of vessels using gears other than trawls, seines or similar towed nets;

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

- The fisheries are regulated in order to ensure that catches of species mentioned in Annex IX of Regulation (EU) 2019/1241¹⁹ with the exception of mollusc bivalves, are minimal
- The fisheries do not target cephalopods.

2.2 Derogation to the minimum mesh size (Article 9, paragraph 7)

- The fisheries are highly selective and have a negligible effect on the marine environment; and
- The fisheries do not operate above seagrass beds of, in particular, *Posidonia oceanica* or other marine phanerogams.

Summary of the information provided to STECF

The following supporting information was provided to STECF PLEN 20-01:

- *Mapping of fishing effort in GSA 9 in relation to the presence of vulnerable habitats. Report prepared in accordance with the surveillance and control strategy established by the Management Plan for the fishing of transparent goby (Aphia minuta) in GSA9. Two-year period 2018/19 – 2019/2020 (DatiSegnatura_Relazione mappatura rossetto (28-01-21).pdf; 23 pp)*

This report describes the spatial distribution of the fishing activity and effort in relation to vulnerable habitats (i.e. seagrass meadows of *Posidonia oceanica*). Information is provided on the description of the gear, fishing operation, limits of the fishing areas and position of hauls. Boat-seines are exclusively used to fish transparent goby. The boat-seine is shown to operate only on clean bottoms, made of sand or mud. The report includes maps of *P. oceanica* meadows for Liguria and Tuscany. A total of 199 hauls (119 in Liguria and 80 in Tuscany) were geolocated and indicated on the maps. The report states that the location of the hauls is the same year after year, for environmental and ecological reasons, but also because in other areas the fishing activity is not possible due to the presence of obstacles on the bottom (rocky bottoms, wrecks, blocks). The average number of fishing days in the two fishing seasons 2018/19 – 2019/2020 was 186 in Liguria and 1726 in Tuscany; the total landings were 1.8 t and 35.1 t in Liguria and Tuscany, respectively; and the overall CPUEs were 9.5 and 20.3 kg/day/vessel in Liguria and Tuscany, respectively. The report states that the benthic community, as a whole, is not impacted during fishing operations based on the very rare presence of crustaceans or benthic echinoderms and molluscs in the by-catch and because the gear is not towed.

¹⁹ Regulation (EU) 2019/1241 of the European Parliament and of the Council of 20 June 2019 on the conservation of fisheries resources and the protection of marine ecosystems through technical measures, amending Council Regulations (EC) No 1967/2006, (EC) No 1224/2009 and Regulations (EU) No 1380/2013, (EU) 2016/1139, (EU) 2018/973, (EU) 2019/472 and (EU) 2019/1022 of the European Parliament and of the Council, and repealing Council Regulations (EC) No 894/97, (EC) No 850/98, (EC) No 2549/2000, (EC) No 254/2002, (EC) No 812/2004 and (EC) No 2187/2005.

- *Annex 1. Geographical distribution of hauls in the twenty areas of the GSA 9 exploited by the fishing fleet for transparent goby *Aphia minuta* (MIPAAF-2021-0101263-Allegato-relmappatura(Allegatocartografico)26-1-21.pdf; 11 pp)*

Annex 1 is also included in the previous document.

- *National Management Plan regarding the use of boat seines for transparent goby (*Aphia minuta*) fishing in the GSA9 for derogation to mesh size and distance from the coast (Reg. (EC) n. 1967/2006, art. 9 and 13) and application of the EC Reg. (EC) n. 1241/2109 (art. 15 par. 1 letter e) and Annex IX, part B, point 4 (MP *Aphia* GSA 9 (2021-24) ENG (DEF) 010321.pdf; 57 pp.)*

This Management Plan (MP) is the fourth update of the MP in GSA 9 for the use of boat seines for the fishing of the transparent goby (*Aphia minuta*). Previous MPs were implemented for the fishing seasons 2011-12 to 2013-14; 2015-16 to 2017-18 and 2018-19 to 2020-21. If approved, the management measures will be applied for a period of three years (2021-22 to 2023-24). Two derogations are requested: derogation to the distance from the coast, and derogation to the minimum mesh size.

The fishery is managed based on annual CPUE reference points set in 2012 and based on the 25% percentile of the annual CPUE time series. These are 8.5 and 3.65 kg/day/boat for Tuscany and Liguria respectively. In the MP it is explained that in 2012, in Tuscany, the method of calculating the Limit Reference Point of biomass index (expressed in kg/day/boat) has been reviewed. No explanation is provided on how the LRP were re-calculated.

STECF comments in relation to each of the elements outlined in the ToRs

This MP was reviewed by STECF in 2018. PLEN 18-02 evaluation had concluded that the MP contained a lot of elements for the monitoring and management of the fishery, but had raised concerns. STECF noted that the characteristics of the gear suggested relatively low impact on the ground and limited contact with the bottom during the fishing operations. However, there were no actual experimental studies on the impact of the gear on the sea floor, or on the spatial distribution of fishing operations in relation to sea grass habitats that would allow a proper evaluation of the gear impact on habitats.

STECF PLEN 18-02 also noted that it could not fully evaluate the appropriateness and the risks associated with the gradual actions proposed for the reduction and suspension of the fishery if the annual average CPUE fell below the LRP during one, two or three consecutive years.

TOR 1.1. The description of the fisheries

- *Biological characteristics and state of the exploited resources with reference in particular to long-term yields.*

The species biology is well known and described (distribution, life cycle, reproduction, age, growth). The life cycle is short, lasting only one year, and ends shortly after reproduction. Transparent goby can grow up to 60 mm TL. Gonadal maturation takes place at 35-40 mm TL (Baino et al., 1995; Abella et al., 1997). The reproduction period lasts around 6 months (March-April to August-September). Subsequent reproductive peaks result in the presence of different cohorts (Baino et al., 1995). No stock assessment has been presented and no SSB or F targets are defined. The success of recruitment and the amount of catches each year do not appear to be exclusively dependent on the previous year's catch and the size of the spawning stock, but also linked to changes in environmental factors. In support of the lack of a direct relationship between the exploitation of the resource and the biomass available in the following year, it is shown that after the closure of the 2010-11 fishing season the annual CPUE in 2011-12 did not increase in relation to the values attained before the closure.

As a consequence of the presence of different cohorts, different recruitment pulses occur along the fishing season. For this reason, the catch rates reference values are calculated at annual scale and monthly CPUE alone are considered not useful for management purposes.

- *Description of the fishing pressure and measures to accomplish a sustainable exploitation of the main target stocks.*

The number of vessels will remain the same in the new MP as the 117 boats already authorized (41 in Tuscany and 76 in Liguria). The number of authorizations is much higher than the number of active boats (29 and 10 respectively in Tuscany and Liguria in 2019-2020, according to Figs. 17 and 18 in the MP).

CPUEs in Tuscany in the last two years have decreased from 23 kg/day/boat in 2018-19 to 18.2 kg/day/boat in 2019-20, while, in Liguria, CPUE has increased from 7.5 kg/day/boat (2018-19) to 15.4 kg/day/boat (2019-20)

The MP includes technical restrictive measures implemented in combination with the biomass index limit set (CPUE), regarding the number of boats, characteristics of the boats and fishing gear, duration of the fishing season, fishing days per vessel, fishing area.

- *Data on catches (landings and discards) of the species concerned, fishing effort and abundance indices such as catch-per-unit-effort (or CPUE).*

The MP includes for Tuscany and Liguria, monthly and seasonal information on fishing days, catches and CPUE for the fishing seasons 2018-19 and 2019-20. Data is also provided, for Tuscany, on catches and annual CPUE, indicating average, median and 25% and 75% percentiles (time series from 1991 to 2019); and for Liguria, data on CPUE from 1991-92 to 2020 are provided, noting that some fishing seasons are missing.

Over the period 1991-92 to 2019-20 the catch per season in Tuscany ranged between 7.8 t in 2011-2012 and 34.7 t in 2004-2005, with mean value of 18.8 ± 6.4 t. Total catches per fishing season decreased in Tuscany from 18,7 t (2018-19) to 15,1 t (2019-20) and in Liguria from 1 t to 0,7 t. The CPUE time series, both in Tuscany (1991-2020) and Liguria (2011-2020) do not display any significant trends. Fishing effort in Tuscany in the period 2011-12 to 2019-20 decreased with a reduction in the number of active boats. Fishing days increased, although according to the report these two trends were not statistically significant. In Liguria, in the same period 2011-12 to 2019-20 fishing effort significantly decreased, in terms of active boats and fishing days. This decrease in boat number is due to several factors, the most important being stated to be the high average age of fishers due to a lack of generation renewal, and the ageing of vessels, which makes operations at sea more hazardous.

- *Catch composition in terms of size distribution, with particular reference to the percentage of catches of species subject to minimum sizes in accordance with Annex III of the MEDREG20. (Annex IX of Regulation 2019/1241)*

For the target species, *Aphia minuta*, monthly length-frequencies distributions 2019-20 (December-February) are provided for Tuscany and 2018-19 (December-March) for Liguria. The fishing activity impacts almost exclusively on the juvenile phase of the species, when it has a gregarious and demersal behavior: the average size of the catches was $30.0 \pm 5,9$ mm TL in Liguria and 25.0 ± 6.0 mm TL in Tuscany.

In Tuscany, the presence of other species is occasional. Over the entire fishing season, transparent goby represented more than 99% in number and about 96% in weight of the whole catches. According to log-books, by-catch, that is immediately released into the sea, represented 2.4% of the total weight. By catch composition included: *Octopus vulgaris* (58.8%), brown meagre *Sciaena umbra* (11.7%), common dentex, *Dentex dentex* (8.3%), cuttlefish *Sepia officinalis* (8.3%), squid *Loligo vulgaris* (6.7%) and comber *Serranus cabrilla* (6.3%); none of these species is included in Annex IX. The incidental catch of *Labridae* juveniles, returned into the sea alive, is mentioned. The composition of the by-catch changes substantially from year to year.

In Liguria, bycatch was about 9.9% of the total catch, of which 9.4% related to adults and 0.5% to juveniles of bycatch species. Main bycatch species were: squid sp. (*L. vulgaris*; 40% of by-catch), common pandora (*P. erythrinus*; 10%), red mullet (*M. barbatus*; <10%) and striped seabreams (*L. mormyrus*; <10%). According to the information provided in the MP, most of the individuals are retained alive on board and can be released without apparent damage. Among the juvenile specimens, the catches occasionally found in some hauls included sardine (*S. pilchardus*), sea bream (*Pagellus* sp.) and sandeel (*G. cicerelus*), all found in spring sampling, at the end of the fishing season. *P. erythrinus*, *M. barbatus*, *L. mormyrus* and *Pagellus* are included in Annex IX Length frequencies distributions are provided for crystal goby (*Crystallogobius linearis*), occasionally fished mixed with *Aphia minuta*

20 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.

- *Information on the social and economic impact of the measures proposed.*

A specific survey was carried out in Tuscany and in Liguria in 2018-2020. The indicators used to assess the economic and social impact were income variation of fishermen involved by the MP; profitability variation of small enterprises affected by the MP; impact of the MP on employment; and improvement of competition conditions emerging from the implementation of the MP.

In Tuscany, the activity of transparent goby fishing is practiced mainly by fishermen who are members of cooperatives, and use other fishing gear when not using boat seines for transparent goby. Transparent goby fishing accounts for 63% of the income from fishing. Fishermen have an average age of 60 years and have been fishing for 35 years. The average gross profit per vessel is 22.217€, with an incidence of intermediate costs and maintenance costs of 18% and 5% respectively. The gross profit per employee amounts to 10.999€ and the added value to 8.299€.

In Liguria, 66% of fishermen are in >65 age category, with more than 40 years of activity. Transparent goby fishing incidence on income is 20-50%. Five boats realise 80% of catches out of 14 active vessels.

- *Potential impact of the fishing gear on the marine environment with particular interest on protected habitats (i.e. seagrass bed, coralligenous habitat and maërl bed);*

Fishing operations on *Posidonia oceanica* meadows have been forbidden since the beginning of 2011 and the gear used is very selective (Serena et al., 1990). Maps *P. oceanica* and haul position are provided for Tuscany and Liguria. A total of 199 hauls (119 in Liguria and 80 in Tuscany) were identified and geolocated. According to these maps, the fishing operations do not take place over *Posidonia* meadows.

STECF notes, however, that the number of hauls used to show the spatial distribution of fishing effort is very low in relation to the total fishing activity, especially in Tuscany (80 hauls out of 1726 fishing days). No explanation is provided on the procedure for the selection of the hauls that are shown in the maps. STECF cannot assess whether the spatial data presented are representative of the distribution of the entire fishery, and cannot thus fully conclude whether the fishery has no impact on protected habitats.

ToR 1.2. Objectives, safeguards and conservation/technical measures

- *Objectives that are consistent with the objectives set out in Article 2 and with the relevant provisions of Articles 6 of CFP21 Regulation and quantifiable targets, such as fishing mortality rates and total biomass.*

The objectives stated in the MP are the same as in previous plans: to maintain the historic artisanal fishing activity and to adopt appropriate management measures to ensure its continuation; to monitor the exploitation status and the respect of fishery parameters through the collection of data of catches, fishing effort, impact on the ecosystem and the monitoring of biological and economic parameters; to identify the necessary indicators to verify the exploitation status and the effectiveness of adopted management measures..

Since no analytical assessment is available and quantifiable targets such as fishing mortality rates and total biomass are not defined, STECF cannot assess whether The MP objectives are consistent with the objectives stated in Articles 2 and 6 of Regulation (EU) 1342/2013.

CPUE time series in Tuscany (1991-92 to 2019-20) and in Liguria (2011-12 to 2019-20) do not display any significant trends, which STECF considers would suggest stability in the fishery.

STECF notes, however, that the limit reference point (LRP) currently in force (25% percentile of annual CPUE time series, set in 2012), and that are proposed for the next three fishing seasons in the MP, are much lower than the CPUEs values observed both in Tuscany and Liguria.

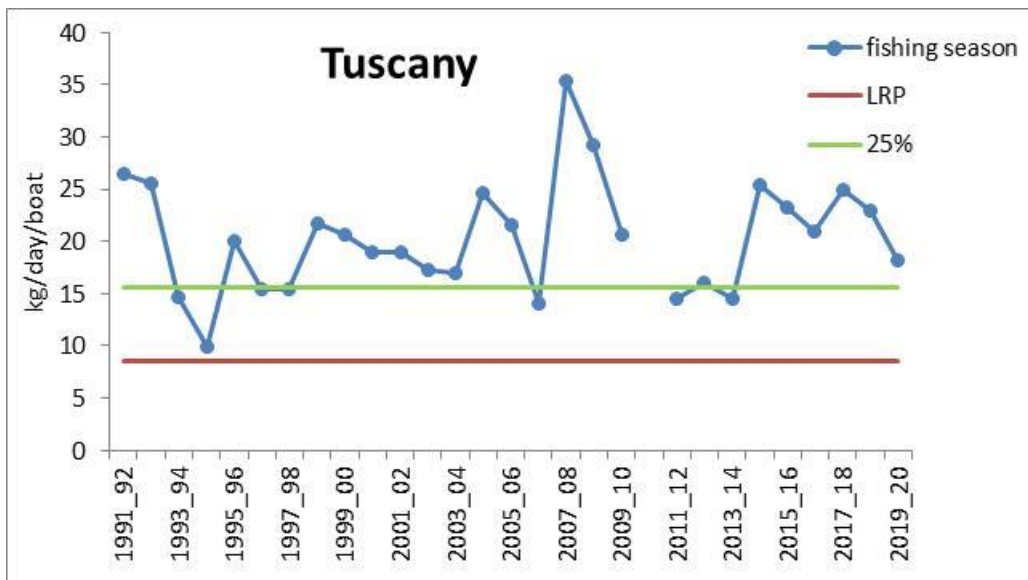
In Tuscany, the 25% percentile of the annual CPUEs calculated by STECF according to the data provided in the MP (reported in Table 6.10.1), is 15.6 kg/day/vessel, while the LRP in the MP is 8.5 kg/day/vessel. Most of the fishing season CPUEs still remain above the re-calculated 25% percentile. No explanation is provided regarding the calculation of the LRP, nor on the time period considered. Clarification is needed on how LRP and annual CPUEs were calculated. Should these not have been calculated in the same way, the values cannot be compared and the given LRP should not be used as a basis for management.

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

Table 6.10.2 - Total catches, mean CPUE (kg per day and vessel) and percentiles estimation (q1/4, q1/2 e q3/4) for each fishing season in Tuscany (management plan, p. 16).

Tuscany	kg	mean	median	25%	75%
1991_92	25275	26.5	19.0	33.0	11.0
1992_93	28665	25.6	20.0	32.0	11.0
1993_94	15456	14.6	12.0	19.0	7.0
1994_95	8999	9.9	8.0	11.0	5.0
1995_96	23483	20.0	14.0	24.0	8.0
1996_97	21409	15.4	10.0	18.0	6.0
1997_98	12925	15.4	11.0	18.0	6.0
1998_99	20183	21.7	14.0	25.0	9.0
1999_00	20332	20.7	14.0	24.0	9.0
2000_01	20310	19.0	14.0	24.0	9.0
2001_02	20857	18.9	15.0	22.0	10.0
2002_03	17928	17.2	13.0	20.0	9.3
2003_04	17564	16.9	14.0	20.0	9.0
2004_05	34748	24.6	19.0	28.0	13.0
2005_06	23002	21.6	15.0	24.0	10.0
2006_07	10920	14.1	11.3	16.0	8.0
2007_08	28767	35.3	22.0	40.0	12.8
2008_09	15916	29.2	18.7	40.5	10.0
2009_10	17772	20.6	13.0	25.0	7.0
2010_11					
2011_12	7798	14.5	10.0	18.0	6.0
2012_13	11545	16.1	12.0	20.0	7.0

2013_14	9625	14.5	10.5	18.5	6.0
2014_15	25152	25.4	20.0	32.0	10.5
2015_16	15131	23.3	14.5	28.0	8.7
2016_17	16347	20.9	17.0	28.0	9.0
2017_18	21807	24.9	18.9	31.0	10.0
2018_19	18693	23.0	18.0	31.0	10.0
2019_20	15157	18.2	15.0	24.4	8.0



Transparent goby CPUE in Tuscany over the fishing seasons 1992-92 to 2019-2020. In blue, mean CPUE, value that is compared against the LRP defined in the management plan (8.5 kg/day/vessel; red). In green, the 25% percentile of the fishing season CPUE time series, as calculated by STECF according to the data reported in Table 6.10.2.

In addition, STECF notes that several MPs in the Mediterranean Sea, including this one, use commercial CPUEs time series as an indicator for stock biomass and have defined CPUEs thresholds under which management actions are triggered, such as effort reduction or fishery closure. A commonly used threshold is the 25% quartile of historical CPUEs time series. There is usually not enough independent information available to monitor the actual trends in the biomass and fully assess the robustness of the CPUE threshold to guarantee the sustainable use of these resources in the long term; but based on generic knowledge on stock assessment and seine fishery dynamics, STECF is of the opinion that a 25% quartile threshold is unlikely to be fully in line with the MSY objective of the CFP. A more detailed discussion on this is given in section 4.1 of this Plenary Report.

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

Restrictive measures combined with the limit expressed as a CPUE index are foreseen. These include: no increase in the number of vessels authorized under the MP; limitation of fishing season (November - March); limitation of fishing time (daytime); maximum number of fishing days per vessel (60 days); limitation of gear usage and features; limitation of fishing area (marine compartment and protected habitats); limitation of fishing capacity (vessels <15GT and/or <120 kW).

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

The management plan is based on annual CPUE that has to be maintained above the Limit Reference Points set for Tuscany and Liguria. The reported fishing season CPUEs have been above the LRPs, in both areas.

- *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.*

The MP includes pre-negotiated management measures:

Limit Reference Point

The LRP set for each single fishing season is 8.5 kg/day/boat for Tuscany and 3.65 kg/day/boat for Liguria.

Early closure of the fishing season

In the event that the annual average CPUE drop below the LRPs, during the following fishing season the average CPUE is checked by February at the latest to ensure that it remains above the limit values and, where appropriate, consideration is given to the early closure of the fishing season by one month.

Corrective measures

If the annual average CPUE drops below the LRPs for two consecutive fishing seasons, before the beginning of the following season, measures must be adopted. These measures include a reduction of the duration of the fishing season. STECF notes that this reduction is not pre-specified.

Suspension of transparent goby fishery

If the annual average CPUE remains below the LRPs for three consecutive years, the fishery is closed for the entire fishing season.

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

According to the information provided in the MP, this type of fishing is very selective and does not operate over *P. oceanica* meadows. STECF is unable to fully assess whether fishing operations are not undertaken over *Posidonia* meadows since the number of hauls used to show the spatial distribution of fishing effort is very low compared to the total fishing activity, and their representativeness is unknown.

According to the monitoring carried out in two most recent fishing seasons (2018-19 and 2019-20), in Tuscany the target species represented more than 99% in number and about 96% in weight of the whole catches, while in Liguria by-catch was about 9.9% of the total catch.

1.3. Other aspects

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

Landings and CPUE are monitored during the fishing season, and compared to the Limit Reference Point. An annual CPUE of 8.5 kg/day/boat in Tuscany and 3.65 kg/day/boat in Liguria is proposed as LRP which will be used to adopt corrective measures in case the annual CPUE drop below the LRPs.

TOR 2.1 Derogation to the distance from the coast (Article 13 – Paragraphs 5, 9 and 10)

- *There are particular geographical constraints, such as the limited size of the continental shelf along the entire coastline;*

The continental shelf is limited in width, particularly in the Central-Western Ligurian Sea and the fishery is carried out mainly within a short distance from the coast (10-100 meters), where the transparent goby is more concentrated during the winter season. Therefore, STECF observes the fishery is geographical constrained.

- *The fisheries have any significant impact on the marine environment;*

Transparent goby fishing is forbidden over *P. oceanica* meadows and the fishing gear is very selective. STECF observes that this cannot be fully evaluated due to only limited information being provided.

- *The fisheries involve a limited number of vessels and do not contain any increase in the fishing effort;*

The number of authorized vessels will not increase under the MP. STECF notes though that the number of authorized vessels (117 boats, 41 in Tuscany and 76 in Liguria) is much higher than that of active vessels (29 and 10 respectively in Tuscany and Liguria), and this measure is not likely to be restrictive. The maximum number of fishing days per vessel is 60.

- *The fisheries cannot be undertaken with another gear;*

The fishing gear is specific for fishing transparent goby. This fishing takes place very close to the shore and cannot be undertaken with another gear. STECF agrees that the fishery cannot be undertaken with other gears.

- *The fisheries are subject to a management plan and carry out a monitoring of catches as requested in Article 23;*

In 2018 a management plan for the transparent goby fishery was adopted (M.D. of 12/09/2018 – Adoption of a management plan on the fishing of the transparent goby (*Aphia minuta*) using boat seines in the GSA9 by derogation from art 9 (minimum mesh size) and art.13 (distance from the coast) of the Reg. EC n.1967/2006. Published on Gazzetta Ufficiale della Repubblica Italiana 226, 28.9.2018, supplemento ordinario n. 44). This management plan started on 1 November 2018 and will end on 31 March 2021.

- *The vessels concerned have a track record of more than 5 years;*

The fleet is limited to a total of 117 vessels, with a track record of more than five years. STECF notes this is included in the MP.

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

Fishing is carried out at very short distance from the coast and therefore do not interfere with the activities with vessels using gears other than trawls, seines or similar towed nets. STECF notes there is no evidence of the fishery conflicting with other fisheries.

- *The fisheries are regulated in order to ensure that catches of species mentioned in Annex IX of Regulation (EU) 2019/1241 with the exception of mollusc bivalves, are minimal*

The fishing gear is very selective, and the catch of species mentioned in Annex IX of Regulation (EU) 2019/1241 are minimal. Therefore, based on the information provided STECF agrees that the catches of species of species mentioned in Annex IX of Regulation (EU) 2019/1241 with the exception of mollusc bivalves, are minimal.

- *The fisheries do not target cephalopods.*

Based on the information provided STECF agrees that the transparent goby fishery does not target cephalopods.

2.2 Derogation to the minimum mesh size (Article 9, paragraph 7)

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

STECF agrees that the boat-seine fishing targeting transparent goby is highly selective.

- *The fisheries do not operate above seagrass beds of, in particular, *Posidonia oceanica* or other marine phanerogams.*

The MP states that transparent goby fishing cannot be undertaken above *P. oceanica* seagrass beds. STECF cannot fully assess whether this is the case as only limited haul information is provided, noting that the data provided does shows there is no impact on seagrass beds.

22 Regulation (EU) 2019/1241 of the European Parliament and of the Council of 20 June 2019 on the conservation of fisheries resources and the protection of marine ecosystems through technical measures, amending Council Regulations (EC) No 1967/2006, (EC) No 1224/2009 and Regulations (EU) No 1380/2013, (EU) 2016/1139, (EU) 2018/973, (EU) 2019/472 and (EU) 2019/1022 of the European Parliament and of the Council, and repealing Council Regulations (EC) No 894/97, (EC) No 850/98, (EC) No 2549/2000, (EC) No 254/2002, (EC) No 812/2004 and (EC) No 2187/2005.

STECF conclusions

STECF concludes that the plan contains several elements for the monitoring and management of activities of the boat seine fishery in Liguria Sea.

However, STECF concludes that the number of authorizations for the fishing of transparent goby is much higher than the number of active vessels, and is unlikely to be restrictive.

STECF concludes that the observed CPUE time series, both in Tuscany and Liguria, are well above the LRPs that were set in 2012 and do not display any significant trends. STECF observed that the LRP used for Tuscany is much lower than the 25% percentile calculated based on data provided in the MP and concludes that a clarification is needed on whether LRPs and annual CPUEs were calculated in the same way. If this is not the case, then the values cannot be compared.

STECF concludes that the MP contains the main elements supporting the requests for derogations. However, STECF concludes that while data and maps have been provided showing that the fishery does not operate on protected habitats to address the comments raised by PLEN 2018-02, a larger number of hauls should be mapped to provide more robust evidence supporting the absence of impact of the fishery on seagrass meadows, especially *Posidonia oceanica*.

STECF has provided some generic considerations on the use of CPUE 25th percentile as limit reference point (in section 4 of this Plenary Report), and suggests that in the absence of additional fishery-independent information, a higher threshold would be considered more precautionary and more in line with the CFP objectives.

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6.11 Review of national management plans for boat seines in the Gulf of Manfredonia (Apulia, Italy)

Background provided by the Commission

In January 2021 the Italian Administration has expressed its intention to adopt a new management plan for the transparent goby (*Aphia minuta*) fishery with boat seines in the Gulf of Manfredonia (Apulia, Italy). This plan envisions the renewal of the derogation from EC 1967/2006 article 9/13 in terms of distance and minimum depth from the coast, which is currently granted with the Regulation²³ (EU) 2018/1634 of 30 October 2018. The current derogation will expire on 2 March 2021.

Background documents are published on the meeting's web site on: <https://stecf.jrc.ec.europa.eu/plen2101>

Request to the STECF

TOR 1. STECF is requested to advise and assess whether the management plan for boat seines targeting transparent goby in the waters of the Gulf of Manfredonia (Apulia, Italy) contains adequate elements in terms of:

1.1. The description of the fisheries

- Biological characteristics and state of the exploited resources with reference in particular to long-term yields.
- Description of the fishing pressure and measures to accomplish a sustainable exploitation of the main target stocks.
- Data on catches (landings and discards) of the species concerned, fishing effort and abundance indices such as catch-per-unit-effort (or CPUE).
- Catch composition in terms of size distribution, with particular reference to the percentage of catches of species subject to minimum sizes in accordance with Annex III of the MEDREG²⁴.
- Information on the social and economic impact of the measures proposed.

²³ Commission Implementing Regulation (EU) 2018/317 of 2 March 2018 establishing a derogation from Council Regulation (EC) No 1967/2006 as regards the minimum distance from coast and the minimum sea depth for boat seines fishing for transparent goby (*Aphia minuta*) in certain territorial waters of Italy: http://data.europa.eu/eli/req_impl/2018/317/oj.

²⁴ 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.

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

1.2. Objectives, safeguards and conservation/technical measures

- Objectives that are consistent with the objectives set out in Article 2 and with the relevant provisions of Articles 6 of CFP²⁵ Regulation and quantifiable targets, such as fishing mortality rates and total biomass.
- Objectives for conservation and technical measures to be taken in order to achieve the targets set out in Article 15 of Regulation (EU) No 1380/2013, and measures designed to avoid and reduce, as far as possible, unwanted catches.
- 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 gradually eliminate discards, taking into account the best available scientific advice or to minimise the negative impact of fishing on the ecosystem.

1.3. Other aspects

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

TOR 2. STECF is requested to evaluate whether the following conditions set by the MEDREG are fulfilled:

2.1 Derogation to the distance from the coast (Article 13 – Paragraphs 5, 9 and 10)

- There are particular geographical constraints, such as the limited size of the continental shelf along the entire coastline;
- The fisheries have any significant impact on the marine environment;
- The fisheries involve a limited number of vessels and do not contain any increase in the fishing effort;
- The fisheries cannot be undertaken with another gear;
- The fisheries are subject to a management plan and carry out a monitoring of catches as requested in Article 23;
- The vessels concerned have a track record of more than 5 years;
- The fisheries do not interfere with the activities of vessels using gears other than trawls, seines or similar towed nets;
- The fisheries are regulated in order to ensure that catches of species mentioned in Annex IX of Regulation (EU) 2019/1241²⁶ with the exception of mollusc bivalves, are minimal

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

26 Regulation (EU) 2019/1241 of the European Parliament and of the Council of 20 June 2019 on the conservation of fisheries resources and the protection of marine ecosystems through technical measures, amending Council

- The fisheries do not target cephalopods.

2.2 Derogation to the minimum mesh size (Article 9, paragraph 7)

- The fisheries are highly selective and have a negligible effect on the marine environment; and
- The fisheries do not operate above seagrass beds of, in particular, *Posidonia oceanica* or other marine phanerogams.

Summary of the information provided to STECF

STECF was provided with a document entitled:

“NATIONAL MANAGEMENT PLAN FOR DEROGATION TO MESH SIZE AND DISTANCE FROM THE COAST (REG EU 2141/2019 ANNEX IX, PART B AND REG EC 1967/2006, ART 13) REGARDING THE FISHING OF TRANSPARENT GOBY (*APHIA MINUTA*) BY BOAT SEINES IN THE MANFREDONIA FISHING DISTRICT”

STECF notes that previous versions of the management plan have been examined by STECF in PLEN-14-03 and PLEN-16-02.

The main information contained in the document is summarized below.

(1) Species biology and ecology

The biology and ecology of *Aphia minuta* is described. The transparent goby is a small-sized schooling fish with longevity of about one year. It spawns in summer (typically May-August in the southern Adriatic) and young specimens are targeted by the fisheries in winter-spring. In winter, the schools of transparent goby are located at depths 4-10 m and move offshore at 20–40 m during early spring. The species lives above muddy and sandy bottoms or seagrass meadows.

(2) the transparent goby fisheries in the Manfredonia Gulf before the introduction of the seine-net

In the past (until 2010), fishing for transparent goby was carried out during late autumn – spring in coastal waters, including the area within 3 NM from the coast, at depths between 3 and 40 m, using bottom trawl nets with small mesh size. The management plan contains information related to fishing activities of the trawl fisheries from 1996-2010 (number of vessels authorised, fishing days, landing, prices etc). Transparent goby catches were

Regulations (EC) No 1967/2006, (EC) No 1224/2009 and Regulations (EU) No 1380/2013, (EU) 2016/1139, (EU) 2018/973, (EU) 2019/472 and (EU) 2019/1022 of the European Parliament and of the Council, and repealing Council Regulations (EC) No 894/97, (EC) No 850/98, (EC) No 2549/2000, (EC) No 254/2002, (EC) No 812/2004 and (EC) No 2187/2005.

relatively stable throughout 1996-2010, with an average CPUE of 19 kg day⁻¹ vessel⁻¹. In 11 of the 14 fishing seasons analyzed the number of licenses issued was 50, and the mean number of fishing days vessel⁻¹ season⁻¹, was 77. Transparent goby accounted for 30%-50% of total catch, implying low selectivity of this (trawl) fishery.

(3) Fishing the transparent goby with boat seine nets

Following the implementation of MED REG (Reg. 1967/2006), fishing of transparent goby with bottom trawls was stopped in 2010. This had a major socio-economic impact because a large fraction of the small-scale fleet (LOA<15 m) lost an important source of income (see socioeconomic assessments summarized below). Consequently, national pilot projects were initiated in 2011-2012 to determine the feasibility of using seines as an alternative capture method. Specifically, these projects aimed at training the local fishermen (those involved in the previous trawl fisheries) and at conducting experimental fishing using boat seine nets similar to those utilized, under a management plan, in GSA 9 (Ligurian Sea and Northern Tyrrhenian Sea). A series of training/experimental trials were therefore conducted in the Manfredonia Gulf from 2011 to 2015, which are summarized in Table 1. Training on technical specifications of the gear and on the method of its deployment was provided by fishermen from GSA 9. The experimental trials in 2013-2015 involved 100 vessels (Table 1), although only 30 vessels were authorised on a daily basis, through a turnover mechanism. In reality, the average number of vessels operating daily varied from 23 (2013) to 6 (2015). In 2013 and 2014, the quantities of transparent goby caught were recorded at the Manfredonia fish market together with selling prices (Table 1). There is no information given regarding the years 2016 and 2017, i.e., it is not mentioned if the boat seine fishery was carried out or not between 2015 and 2018.

In 2018-2020, the fishery was conducted under an adopted management plan applying to 100 vessels. Again, 30 vessels were authorised daily, through a turnover mechanism.

The only information provided in the MP regarding the 2018-2020 fishing periods consists of three Tables (Table 25-27) reporting, for each calendar day and vessel, the catch day⁻¹ of transparent goby in 2018, 2019 and 2020, respectively, and the mean annual catch day⁻¹ vessel⁻¹. The row labels of Tables 25-27 include the vessels that participated in the fishery (i.e., those vessels that used their authorisation and fished for transparent goby at least for one day during the fishing season). The column labels of Tables 25-27 include the calendar days with at least one vessel participating in the transparent goby fishery.

STECF summarised that detailed information into Table 6.11.1 below. The number of participating vessels summed up to 23, 34 and 26 in 2018, 2019 and 2020 respectively, i.e., their number was much lower than the total number of authorised vessels (100). The number of calendar days with registered fishing activity summed up to 29, 24 and 38 in 2018, 2019 and 2020, respectively (Table 1), i.e., their number was low compared to the extent of the authorised fishing season (November-May). Actually, the transparent goby fishery was carried out in only April-May, March-May and January-May in 2018, 2019 and 2020. STECF summed the number of vessels participating in the fishery for each calendar day (column) in Tables 25-27 and calculated that the average number of vessels operating in each of the 29, 24 and 38 calendar days was 11 in 2018, 10 in 2019 and 8 in 2020 (Table 1). The total number of days-at-sea (i.e., number of filled cells in Tables 25-27) was 330, 234 and 301 in 2018, 2019 and 2020, respectively.

For the entire time series (Table 6.11.1), the mean CPUE for the seine fisheries ranged between 26 (2015) and 65 kg day⁻¹ vessel⁻¹ (2018).

Table 6.11.1. information on boat seine fisheries in the Manfredonia Gulf as summarised by STECF.

Year	Fishery	N. of vessels authorized	N. of calend. days with boat seine fishing	Total days -at-sea	Average N. of vessels day ⁻¹	Mean catch day ⁻¹ vessel ⁻¹ (kg)	Mean price kg ⁻¹ (€)	Transparent goby landings (kg)
2012	Training	3	5					
2013	Experimental	100	41	961	23	51.8	18	49782
2013	Training	2	7					
2014	Experimental	100	24	276	12	63.1	19	17415
2015	Experimental	100	32	179	6	26.1		5437
2018	Management plan	100	29	330	11	64.7		
2019	Management plan	100	24	234	10	57.6		
2020	Management plan	100	38	301	8	58.2		

Length compositions of the catch are only provided for 2012, 2013, 2014 and 2020.. Available information on by-catches is summarized in Table 6.11.2.

Table 6.11.2. Summarized information on size compositions and by-catch.

Year	Fishery	Size composition of goby	By catch
2012	Training	+	It is stated that by-catch was extremely variable. No data presented.
2013	Experimental	+	It is stated that by-catch was extremely variable. No data presented.
2013	Training		By-catch species were sardine <i>Sardina pilchardus</i> and anchovy <i>Engraulis encrasicolus</i> , as well as hake <i>Merluccius merluccius</i> , mantis shrimp <i>Squilla mantis</i> , scaldfish <i>Arnoglossus laterna</i> and the gastropods murex <i>Bolinus brandaris</i> and pelican's foot <i>Aporrhais pespelecani</i> . Annular seabream <i>Diplodus annularis</i> and red mullet <i>Mullus barbatus</i> were also quite frequently

			present in the hauls. 2 out of 27 hauls contained specimens of whitebait (<i>S. pilchardus</i> juveniles).
2014	Experimental	+	Same species as above. It is stated that all Annex III species caught were above minimum landing size. It is also said that bycatch was variable but <10% of total catch in weight.
2015	Experimental		There was no bycatch. This is attributed to the high selectivity of the gear and the good technique adopted by the fishermen.
2018	Management plan		
2019	Management plan		
2020	Management plan	+	

(4) Socioeconomic assessments

Two socio-economic assessments are presented, the first one regarding the trawl fleet (LOA<15 m) that traditionally fished transparent goby, until 2010; and a second one aimed at comparing the Manfredonia fishing fleet in 2009-2010 and in 2013 and 2014. A number of economic and social indicators are contained in the document.

It is estimated that between 2010 and 2011 vessels with LOA < 15 m lost more than 30% of their profits following the closing of the trawl fishery in 2010, due to the combination of low/stagnant prices, the substantial increase of operating costs and the loss of income from transparent goby. The 2013 and 2014 results (seine net fishery) indicated that transparent goby sales represented 63% and 44% of the turnover.

(5) Fishing gear and technique

The MP contains a description of the seine nets used in Tuscany and their operation. It is stated that 'Phase 1: the fish is identified on the seafloor using an echo-sounder', and 'Phase 4: ... so the net can drop until it almost brushes against the seafloor'.

(6) Stock status – CPUE trigger

The initial biomass of the transparent goby stock in fishing seasons 2005-2010 (bottom trawl fisheries) was estimated using the Leslie-De Lury depletion model. The MP acknowledges that the current status of the stock is unknown.

From the cumulative distribution of the monthly transparent goby CPUE ($\text{kg day}^{-1} \text{ vessel}^{-1}$) in the period 2005-2010 (bottom trawl fisheries), the mean CPUE and the lower percentile (25%) were identified as 19 and $15 \text{ kg day}^{-1} \text{ vessel}^{-1}$ respectively.

The lower percentile ($15 \text{ kg day}^{-1} \text{ vessel}^{-1}$) is proposed as reference (trigger) point for the definition of harvest control rules in the MP. However, as seen in Table 1, the mean daily yields reported for the boat seines in 2013-2020 were three-four times higher than that obtained by the trawl fleet in the period prior to 2013 ($19 \text{ kg day}^{-1} \text{ vessel}^{-1}$).

STECF comments in relation to each of the elements outlined in the ToRs

ToR 1.1. The description of the fisheries

- *Biological characteristics and state of the exploited resources with reference in particular to long-term yields*

STECF notes that there is no information regarding the current stock status or any analysis that can be used to determine the long-term yield that would be consistent with CFP objectives.

STECF notes that the Leslie-De Lury depletion model used to estimate the initial biomass of the transparent goby stock in past fishing seasons (2005-2010) has not been updated, and cannot be used to determine the current stock status.

- *Description of the fishing pressure and measures to accomplish a sustainable exploitation of the main target stocks*

During the experimental seine fisheries 2013-2015 and the 2018-2020 fishing seasons a total of 100 vessels were authorized to fish. Only 30 vessels were authorised daily, through a turnover mechanism. From the information available in the plan, STECF understands that the average number of vessels operating each day was lower than the 30 vessels permitted (Table 6.11.1). The total number of days-at-sea was higher during the first year (2013) of the fishery (961 days) and it ranged between 234 and 330 days in 2018-2020 (Table 6.11.1).

The revised MP proposes the reduction of the number of boat seines authorizations from 100 to 80. Again, only 30 vessels will be authorised daily, through a weekly turnover mechanism. The fishery will be open from 1st November to 31st May. Each vessel will operate for a maximum of 60 days during each fishing season. Fishing will be allowed up to 4 days per week, from Monday to Thursday, and only in daytime (6:00-18:00).

Using data from the now ceased trawl fishery, the management plan proposes that a management trigger based on a minimum CPUE ($15 \text{ kg day}^{-1} \text{ vessel}^{-1}$) be used to enact

measures to reduce fishing effort. However, the measures to be taken are neither specified in advance nor in quantitative manner.

The efficacy of the CPUE trigger has not been evaluated in terms of its appropriateness in accomplishing sustainable exploitation of the target stock. Furthermore, there is no consideration given to the changes in catchability associated with the switch from trawl to seine nets, whose average CPUE is substantially higher.

STECF considers that management reference points based on gears that are no more in use are inappropriate and should not be used. Furthermore, the substantially lower CPUE reference point, compared to current CPUEs, is likely to be reached when the stock would be already severely depleted. STECF notes that this cannot be considered precautionary. STECF emphasises that a new CPUE threshold should be defined based on the current situation and the most recent boat seine time series.

- *Data on catches (landings and discards) of the species concerned, fishing effort and abundance indices such as catch-per-unit-effort (or CPUE)*

For the seine fisheries, data on transparent goby landings are provided for the experimental fisheries 2013-2015. For the 2018-2020 fishing seasons total landings are not reported. Available information (2012-2020) on transparent goby CPUEs and fishing effort (days-at-sea) are summarized in Table 6.11.1. There is no mention on discards.

STECF notes that the mean transparent goby CPUEs reported in the Manfredonia Gulf for boat seines are much higher than similar estimates in GSA 9 (cf also ToR 6.10). For example, in Tuscany, mean annual CPUEs for the period 1991-2020 ranged from 9.9 to 35.3 kg day⁻¹ vessel⁻¹ with an average of 20.3 kg day⁻¹ vessel⁻¹. STECF notes that the higher CPUEs in Manfredonia Gulf may be due, at least in part, to a modified gear in relation to the traditional transparent goby seine used in GSA 9. Indeed, on page 57 in the MP, it is stated: "*On account of the knowledge acquired during the two years of experimentation, the fishers from Manfredonia implemented some changes to the structure of the seine, adapting it to the characteristics and the operative requirements of their vessels.*" STECF notes that no description is given of the modified seine net used in Manfredonia as well as of the changes made to the trawl vessels to operate the net (e.g., winch, engine, propeller pitch, eco-sounder). A detailed scheme of the modified boat seine, as well as images of the adjustments made on the vessels would allow a better understanding of the fishery and a better interpretation of the data provided.

- *Catch composition in terms of size distribution, with particular reference to the percentage of catches of species subject to minimum sizes in accordance with Annex III of the MEDREG*

In certain years, length-frequency distributions of the transparent goby catch are provided (see Table 6.11.2).

STECF notes that although several pelagic and demersal species (including species from Annex IX of regulation 2019/1241) are reported as bycatches in 2013 and 2014, it is

declared that bycatch was nil in 2015 (Table 6.11.2). By-catch quantities are only provided for one boat in 2014. Size compositions of bycatches are not provided. For 2014, it is stated that all Annex III species caught (now Annex IX in the Technical Measures Regulation) were above minimum landing size, but no information is provided to support this.

STECF considers that the MP contains very limited information on boat seine catches, bycatches and discards. For the recent 2018-2020 years, during which the fishery operated under a MP, no data are provided.

- *Information on the social and economic impact of the measures proposed*

Except for the socioeconomic assessment of 2013 and 2014 (see above), no other socioeconomic data have been reported for purse seines. No information is provided for the recent 2018-2020 period.

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

The MP plan explicitly prohibits to fish above protected habitats.

Given that no information is provided on the protected habitats in the area where the fleet targeting transparent goby operates, it is however not possible to assess the potential impact of the boat seine on the marine environment.

From the descriptions of how the seine is used (section 4.2 of the supporting document), the net appears to touch the bottom during its retrieval. This is also confirmed by the bycatch reported for 2013 and 2014 (Table 6.11.2) that include demersal and benthic species, even gastropods. Furthermore, given that the transparent goby often occurs above *Posidonia* and its schools are located in close proximity to the bottom, fishing operations are likely to affect *Posidonia* if conducted above it. No evidence is provided in the MP to assess whether or not the fishing operations overlap with the spatial distribution of *Posidonia*.

STECF notes however that at least two public sources of information, (a) modelled *Posidonia* habitat maps from the MEDISEH project (available in EMODnet)²⁷ and (b) maps in (Telesca et al. 2015)²⁸, suggest that *Posidonia* meadows are absent from the Gulf of Manfredonia.

27 <https://webgate.ec.europa.eu/maritimeforum/en/node/4331>

28 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4516961/>

ToR 1.2. Objectives, safeguards and conservation/technical measures

- *Objectives that are consistent with the objectives set out in Article 2 and with the relevant provisions of Articles 6 of CFP Regulation and quantifiable targets, such as fishing mortality rates and total biomass*

STECF notes that there are no quantitative stock assessment and thus no quantifiable targets, such as fishing mortality rates and total biomass. There are thus no biological or exploitation reference points currently available for transparent goby. The proposed management plan includes trigger values based on observed CPUE which would be used to enact more restrictive management actions, e.g., fishery closures and/or effort limits.

Considering the fact that the CPUE trigger value is based on historic trawl (not seine) data, STECF considers it inadequate, and highly unlikely that it would be compatible with the CFP objective of sustainable exploitation. Nevertheless, in the absence of a more detailed analysis STECF cannot fully assess this point.

In addition, STECF notes that several MPs in the Mediterranean Sea, including this one, use commercial CPUEs time series as an indicator for stock biomass and have defined CPUEs thresholds under which management actions are triggered, such as effort reduction or fishery closure. A commonly used threshold is the 25% quartile of historical CPUEs time series. There is usually not enough independent information available to monitor the actual trends in the biomass and fully assess the robustness of the CPUE threshold to guarantee the sustainable use of these resources in the long term; but based on generic knowledge on stock assessment and seine fishery dynamics, STECF is of the opinion that a 25% quartile threshold is unlikely to be fully in line with the MSY objective of the CFP. A more detailed discussion on this is given in section 4.1 of this Plenary Report.

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

The MP stipulates that the by-catch of juveniles of other species shall be under 5% of the catches in weight. Alive catches shall be released. The total by-catch shall be under 10% of the catches. They shall be reported on the logbook or record form. The species with an established minimum size will be landed and not sold for human consumption.

STECF notes that the MP does not specify what actions will be taken if the specified bycatch thresholds would be exceeded.

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

A CPUE trigger is proposed that would initiate management responses once the CPUE observed in the fishery dropped below 15 kg day⁻¹ vessel⁻¹. As described above, this CPUE

trigger was proposed based on data from the previous bottom trawl fisheries and is not considered appropriate for the current seine fisheries.

STECF notes that although 100 vessels were authorized to fish in 2018-2019-2020, only 23, 34 and 26 vessels, respectively, used their authorization (see above). The remaining authorized vessels did not participate in the fishery. STECF considers that clarifications need to be given regarding the high number of trawl vessels (80) requested in the fishery.

STECF notes that the proposed combination of effort restrictions (7 months fishing season × 4 weeks × 4 days × 30 vessels daily) allows for about 3360 maximum potential fishing days. Given that the average number of days-at-sea was about 300 in 2018-2020 (Table 6.11.1), there is a scope of expanding up to 11 times (3360/300) the recent levels of fishing effort.

STECF considers thus that this measure will never restrict the fishery, and cannot thus be considered as an appropriate and effective management measure. Realistic limits should be imposed on the total number of authorized vessels as well as the days-at-sea allowed to the authorized fleet.

- *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*

The MP specifies that the appropriate catch and effort data will be collected daily and will be continuously monitored by scientists in the Centro Italiano Ricerche e Studi per la Pesca which will immediately convene the management committee in case of alarm.

The following “alarms” are set:

1. The daily average CPUE falls below the value of 15 kg day⁻¹ vessel⁻¹ for 3 consecutive days.
2. The daily average CPUE falls, two times within 15 days, below the value of 15 kg day⁻¹ vessel⁻¹.

In case of alert, a management committee (“control entity”), including a member from the “Organizzazione dei Produttori Ittici Sud Adriatico”, a member from the “Centro Italiano Ricerche e Studi per la Pesca”, a member from the “Capitaneria di Porto di Manfredonia” and a member of the Municipality of Manfredonia, will meet immediately to decide actions to be taken (e.g., reduction of the duration of the fishing period, of the number of vessels authorised etc).

STECF considers that the exact management actions to be taken once the CPUE observed in the fishery drops below the management trigger should be pre-defined and specified and in quantitative manner in the MP, and not left to be decided once the situation deteriorates.

The MP does not consider the possibility of deterioration in the quality of data or nonavailability.

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

The seine net cannot be longer than 300 meters, and must be equipped with neutral buoyancy in order to avoid or reduce to the minimum level the impact with the seabed.

STECF notes that the traditional boat seine net used in Tuscany (for which descriptions are provided in the MP) is said to have been modified (page 57 in the document) in order to improve operations onboard the bottom trawlers. No technical specifications regarding changes made to the net and to the vessels (e.g., winch, engine, propeller pitch, eco-sounder) are provided in the plan. Images and videos recorded during the fishing operations (following the example of the Sonsera fishery MP in Catalonia) could provide a helpful picture of the transparent goby fishery in the Manfredonia Gulf.

No measures to gradually eliminate discards are proposed in the MP.

ToR 1.3. Other aspects

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

A CPUE of 15 kg day⁻¹ vessel⁻¹ estimated from the trawl fleet yields (2005-2010) is proposed as reference value which will be used to trigger management intervention in circumstances when the observed CPUE falls below 15 kg day⁻¹ vessel⁻¹.

STECF notes that the value of the CPUE trigger would need to be updated for the seine fisheries.

Monitoring of the plan include (a) surveys on board the fishing fleet by scientific personnel; (b) Filling a record form or logbook daily with data on all catches (fishing area, number of fishing operations, goby catch, bycatch etc), (c) collection of socio-economic data (income, employment etc).

An annual report will be written by the scientific responsible (Centro Italiano Ricerche e Studi per la Pesca) focusing in particular on the catch per unit effort statistics, the length frequency distributions, and on all the necessary information to assess the exploitation level of the resource.

ToR 2.1. Derogation to the distance from the coast (Article 13 – Paragraphs 5, 9 and 10)

- *There are particular geographical constraints, such as the limited size of the continental shelf along the entire coastline*

There are specific geographical constraints given the spatial distribution of the target species, which is mainly found in coastal areas at depths <50 m. The fishing grounds are therefore limited.

- *The fisheries have any significant impact on the marine environment*

The MP plan explicitly prohibits to fish above protected habitats. Information provided in the MP is however very limited (see above) and STECF is therefore unable to assess the full impact of the seine fisheries. More detailed and up-to-date information is needed regarding the quantities and species/size compositions of bycatches and discards.

Existing scientific information suggests that *Posidonia* meadows is absent from the Gulf of Manfredonia (see above).

- *The fisheries involve a limited number of vessels and do not contain any increase in the fishing effort*

The derogation requested now affects a total of 80 vessels (100 vessels were authorised previously), and only 30 vessels will be authorised daily, through a weekly turnover mechanism. Each vessel will operate for a maximum of 60 days during each fishing season.

As stated above, clarifications need to be given regarding the high number of trawl vessels (80) requested in the fishery. With the proposed combination of effort restrictions, there is a scope of significantly expanding the recent levels of fishing effort (see analysis in ToR 1.2. "Measures proportionate to the objectives, the targets and the expected time frame"). STECF considers that a realistic restriction should be imposed on the total number of authorized vessels as well as the days-at-sea allowed to the authorized fleet.

- *The fisheries cannot be undertaken with another gear*

Boat seines fishing for transparent goby is carried out in shallow depths with a small mesh size (3-5 mm). The nature of this type of fishery is such that it cannot be undertaken with any other gear, except from the previous used bottom trawls which were forbidden.

- *The fisheries are subject to a management plan and carry out a monitoring of catches as requested in Article 23*

The Italian management plan includes measures for the monitoring of fishing activities (see above). Although the plan in force for the 2018-2020 period stipulated the collection of similar information (onboard sampling, catch and bycatch data, socioeconomic), the data reported in this revision are very limited and restricted to CPUEs. STECF considers that all data foreseen to be collected under the MP should be reported to adequately monitor the effectiveness of the plan.

- *The vessels concerned have a track record of more than 5 years*

The request concerns vessels registered in the maritime Directorate of Manfredonia. Fishing authorisations will be issued to specified 80 vessels that are already authorised to fish. From the information provided, STECF is unable to assess whether all of these vessels have a record of more than 5 years in the transparent goby fishery.

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

The fishing activities concerned take place at a short distance from the coast and tow durations are very short (e.g., see Table 20 in the supporting document). Therefore, they are not expected to interfere to a large extent with the activities of other vessels.

- *The fisheries are regulated in order to ensure that catches of species mentioned in Annex IX of Regulation (EU) 2019/1241 with the exception of mollusc bivalves, are minimal*

Bycatch information provided in the MP is very limited and the effect of fishing activities on Annex IX species cannot be fully evaluated. STECF notes that the use of boat seines will be permitted from 1 November to 31 May and that, during that period, juveniles of other species could be expected to concentrate in the fishery area (e.g., sardine juveniles).

- *The fisheries do not target cephalopods*

No bycatch of cephalopods is mentioned in the MP. However, STECF notes that information on bycatches is very limited.

ToR 2.2. Derogation to the minimum mesh size (Article 9, paragraph 7)

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

As mentioned above more information is needed to fully assess the selectivity of the fishery and its effects on the marine environment. The argument that the fishery is highly selective should be supported by the appropriate scientific evidence.

- *The fisheries do not operate above seagrass beds of, in particular, Posidonia oceanica or other marine phanerogams*

The MP plan explicitly prohibits to fish above protected habitats.

Existing information suggests that *Posidonia* meadows are absent from the Manfredonia Gulf (see above).

STECF conclusions

STECF concludes that the MP does not contain enough of the necessary elements to ensure the adequate monitoring of the fishery and the sustainable exploitation of the target species.

STECF (PLEN-14-03 and PLEN-16-02) has previously evaluated two management plan proposals for boat seines fishing transparent goby (*Aphia minuta*) in the Manfredonia Gulf, Italy. STECF notes that the new elements presented in the revised MP are very limited and restricted to only CPUE data from the 2018-2020 fishing seasons. No or only fragmented information is provided regarding total catches, fishing effort, bycatches and discards, locations of fishing operations and collected socioeconomic data for the entire time series since the beginning of the boat seine fishery (2013-2020) and the implementation of management plans.

STECF notes that technical changes seem to have been brought to the 'traditional' transparent goby seine net (used in GSA 9) in order to adapt it to the operational requirements of the trawlers now engaged in the seine fishery. These changes are likely to have increased the catch efficiency of the net and should be duly documented.

STECF concludes that the CPUE trigger used in the MP is not appropriate and should be updated to correspond to the current boat seine fisheries instead of the (old) trawl fisheries, taking also into account the likely technical creep mentioned above.

STECF concludes that the proposed combination of effort restrictions is not constraining compared to the current level of fishing effort, and cannot ensure that fishing effort will not increase. This measures cannot thus be considered precautionary.

STECF has provided some generic considerations on the use of CPUE 25th percentile as limit reference point (in section 4 of this Plenary Report), and suggests that in the absence

of additional fishery-independent information, a higher threshold would be considered more precautionary and more in line with the CFP objectives.

References

Telesca L. et al. (2015). Seagrass meadows (*Posidonia oceanica*) distribution and trajectories of change. Scientific Reports 5:12505, DOI: 10.1038/srep12505

6.12 Review of national management plans for boat seines fishing for sand eel (*Gymnammodytes cicerelus* and *G. semisquamatus*) and gobies (*Aphia minuta* and *Crystallogobius linearis*) in certain territorial waters of Spain (Catalonia)

Background provided by the Commission

In February 2021, the Spanish Administration has expressed its intention to adopt a new management plan for sand eels (*Gymnammodytes cicerelus* and *G. semisquamatus*) and gobies (*Aphia minuta* and *Crystallogobius linearis*) in certain territorial waters of Spain (Catalonia). This plan envisions the renewal of the derogation from EC 1967/2006 article 9/13 in terms of distance and minimum depth from the coast in waters of Spain (Catalonia), which is currently granted with the Regulation (EU) 2018/922 of 28 June 2018. The current derogation will expire on 2 July 2021.

Background documents are published on the meeting's web site on: <https://stecf.jrc.ec.europa.eu/plen2101>

Request to the STECF

STECF is requested to review and make any appropriate comments and recommendations on the new management plan for the fisheries targeting sand eels and gobies in Catalanian waters and its supporting study.

In particular, STECF is requested to:

TOR 1. Advise and assess whether the management plan boat seines targeting sand eels and gobies in the waters of Catalonia contains adequate elements in terms of:

1.1. The description of the fisheries

- Biological characteristics and state of the exploited resources with reference in particular to long-term yields.
- Description of the fishing pressure and measures to accomplish a sustainable exploitation of the main target stocks.
- Data on catches (landings and discards) of the species concerned, fishing effort and abundance indices such as catch-per-unit-effort (or CPUE).
- if possible, catch composition in terms of size distribution.
- Information on the social and economic impact of the measures proposed.
- Potential impact of the fishing gear on the marine environment with particular interest on protected habitats (i.e. seagrass bed, coralligenous habitat and maërl bed);

1.2. Objectives, safeguards and conservation/technical measures

- Objectives that are consistent with the objectives set out in Article 2 and with the relevant provisions of Articles 6 of CFP Regulation and quantifiable targets, such as fishing mortality rates and total biomass.
- Objectives for conservation and technical measures to be taken in order to achieve the targets set out in Article 15 of Regulation (EU) No 1380/2013, and measures designed to avoid and reduce, as far as possible, unwanted catches.
- 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 gradually eliminate discards, taking into account the best available scientific advice or to minimise the negative impact of fishing on the ecosystem.

1.3. Other aspects:

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

TOR 2. Evaluate whether the following conditions set by the MEDREG and Regulation (EU) 2019/1241 are fulfilled:

2.1 Derogation to the distance from the coast (Article 13 – Paragraphs 5, 9 and 10)

- There are particular geographical constraints, such as the limited size of the continental shelf along the entire coastline;
- The fisheries have any significant impact on the marine environment;
- The fisheries involve a limited number of vessels and do not contain any increase in the fishing effort;
- The fisheries cannot be undertaken with another gear;
- The fisheries are subject to a management plan and carry out a monitoring of catches as requested in Article 23;
- The vessels concerned have a track record of more than 5 years;
- The fisheries do not interfere with the activities of vessels using gears other than trawls, seines or similar towed nets;
- The fisheries are regulated in order to ensure that catches of species mentioned in Annex IX of Regulation (EU) 2019/1241 with the exception of mollusc bivalves, are minimal
- The fisheries do not target cephalopods.

2.2 Derogation to the minimum mesh size (Article 9, paragraph 7)

- The fisheries are highly selective and have a negligible effect on the marine environment; and
- The fisheries do not operate above seagrass beds of, in particular, *Posidonia oceanica* or other marine phanerogams.

Summary of the information provided to STECF

The information submitted by Spain consists in three documents:

Scientific Report supporting the management plan

This report was drafted by the Institute of Marine Science (ICM-CSIC) in Barcelona, and was aimed at addressing the requests raised by STECF in 2018 ("Assessment of the implementation report of the management plan for boat seines ('sonsera') in the autonomous region of Catalonia", STECF OWP-18-01).

Technical and scientific report, and proposal of modification of the "Sonsera" management plan (in Spanish)

This document contains a summary of the activities performed by the Commission of Co-Management of the "Sonsera" fishery in relation to the management plan during the period of enforcement of the Reg. (EU) 2018/922. This documents also contains the proposal of administrative and technical modifications of the "Sonsera" management plan.

"Sonsera" management plan 2014-2019 (in Spanish).

This document contains the management plan implemented from 2014 to 2019.

The previous STECF evaluation (STECF OWP 18-01) requested that Spain re-evaluate the TAC rules (e.g., reconsider the TAC baseline in an ITQ context), and investigate and implement alternative management and recovery scenarios to achieve a sustainable exploitation of the resources, accounting for changes in the size distribution of the catches and taking into account the socio-economic impacts. STECF encouraged also undertaking scientific surveys in the area, allowing for a fishery-independent abundance index.

STECF OWP 18-01 noted that the decline of sand eel catch together with the predominance of recruits in the catches indicate that the stock is in poor condition and not exploited sustainably, which was confirmed by the results of the exploratory assessment presented in 2018. This might be further aggravated by poor environmental conditions and reduced productivity of the sand eel stock.

STECF comments in relation to each of the elements outlined in the ToRs

TOR 1.1. The description of the fisheries

- *Biological characteristics and state of the exploited resources with reference in particular to long-term yields.*

The scientific report produced by ICM-CSIC provides exhaustive information on the biology of sand eels, *Gymnamodytes cicereus* and *G. semisquamatus*, and gobids, *Aphia minuta* and *Crystallogobius linearis*, including length-weight relationship and reproductive biology.

Length frequencies distributions (LFDs) suggest that sand eel catches are mostly made of juveniles.

An assessment of sand eel stock was performed using a multi-annual generalized depletion (MAGD) model (Roa-Ureta 2012, 2014). The application and results of this assessment are described in the report by ICM-CSIC, and published by Maynou et al. (2021). The results of the assessment show a fluctuating pattern of both recruitment and biomass, with the lowest values in the period 2016-2017, and an increase in the last two years (2018-2019) towards values similar to those observed at the beginning of the time series (2012-2015). According to Maynou et al. (2021) the exploitation of the sand eel stock could continue to be carried out sustainably if fishing mortality is kept at low levels (instantaneous exploitation rate < 0.04 or annual harvest rates not exceeding 60 % of the unfished population) because natural mortality is very high (estimated here at $M = 2.6$). According to Maynou et al. (2021), a harvest rate close to 60% of the unfished population can be achieved with 20-30 vessels involved in the fishery. At present, 26 vessels are authorized for this fishery.

The fluctuating population dynamics of this stock, whose year class strength depends mostly on recruitment, might explain the alternation of periods of high abundance followed by similar periods of very low abundance (e.g., 2015-2017), when fishing mortality (or harvest rate) should be kept to a minimum.

Maynou et al. (2021) found that the sand eel fishery is characterized by hyperstability of CPUEs, i.e. catches can be maintained at high levels despite shrinking stock. That is, relatively small increases of fishing effort (i.e. fishing days or high increase of catches) could rapidly increase the rate of removals from the fishery, but the corresponding decrease in population numbers would be difficult to detect from CPUE statistics due to hyperstability. Therefore, the harvesting capacity of this fishery is high, and the MP must continue to tightly control fishing effort.

No assessment is available for gobids. Depletion models could not be applied as in most years the largest landings and CPUEs were observed at the end of the fishing season (March-April). The status of gobid stocks is estimated by taking into considerations landing trends which have remained rather constant since the implementation of the MP.

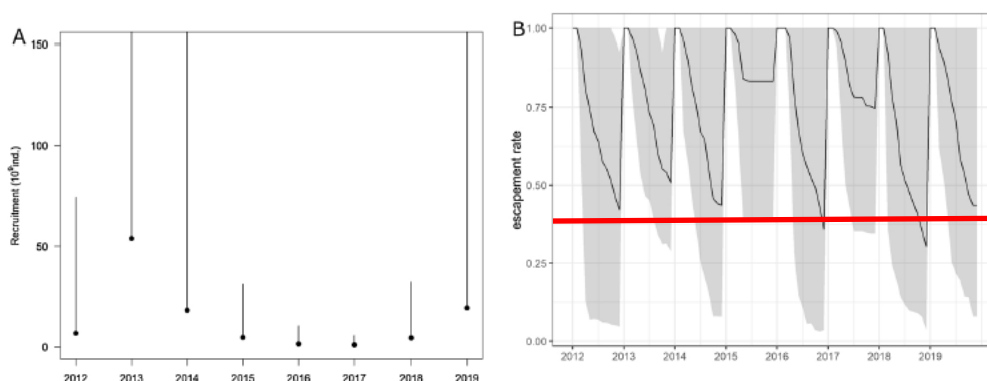


Figure 6.12.1 – A: annual recruitment estimated by the Multi-Annual General Depletion model for the sand eel fishery with upper 95% confidence interval. B: Escapement rates

(survivors after removals from fishing). The escapement at the end of the fishing season is estimated at 42, 51, 44, 83, 35, 75, 30 and 44% for the years 2012-2019 (from Maynou et al., 2021). The red line represent the 40% escapement rate, corresponding to the harvest rate of 60%.

- *Description of the fishing pressure and measures to accomplish a sustainable exploitation of the main target stocks.*

The description of the fishing fleet includes number of vessels involved, daily, weekly and annual activity, changes that occurred along the time series and along the year. A maximum of 26 vessels are currently involved in the fishery. The MP allows fishing with the Sonsera vessels smaller than 10 m LOA and with the engine power less than 75 kW. The fishing activity regulated by this MP is limited to the Catalan coastline between the coast off Barcelona and the northern Gulf of Roses. The Sonsera fishery targets sand eel for the major part of the year and only a reduced number of vessels target gobids, mostly in winter.

The MP fixes catch quotas considered to support a sustainable exploitation of the target stocks of the fishery, based on historical landings which did not show important declines along the available time series. This can be considered as an indicator, but sustainability is not supported by robust scientific evidence for all target stocks. Only in the case of sand eel, *G. cicereus*, an assessment based on a multi-annual generalized depletion model shows that the exploitation of the sand eel stock could continue to be carried out sustainably if fishing mortality is kept at low level (instantaneous exploitation rate < 0.04 or annual harvest rate not exceeding 60 % of the unfished population; i.e. escapement rate at the end of the fishing season should be above 40%). Figure 6.12.1.B above shows that this value (1 – escapement rate at the end of fishing season) has been achieved in most years.

- *Data on catches (landings and discards) of the species concerned, fishing effort and abundance indices such as catch-per-unit-effort (or CPUE).*

For sand eel, monthly data on catches (t) and CPUE (number of individuals [thousands] per vessel per day) are provided for the period 2012-2019. CPUE decreased in 2015-2016, and the fishery was closed before the end of the season. In the last three years, CPUE increased to levels close to the first period of the implementation of the MP. For the two gobids, longer time series of catches and CPUE are available, starting from 2001. CPUEs of the two gobids did not show any particular trend.

- *if possible, catch composition in terms of size distribution.*

For sand eel, monthly length-frequency distributions (LFDs) are provided for the period 2014-2019. LFDs are available starting from 2012 for transparent goby, *A. minuta*, and crystal goby, *C. linearis*. No evident trend can be observed in the LFDs, which are very stable in the case of gobids, while noisy in the case of sand eels, but with no particular pattern. Annual differences in the fishing season timing may determine the annual differences in LFDs and mean size in the catches.

- *Information on the social and economic impact of the measures proposed.*

Annual and monthly total incomes from the sale at the auction are presented for 2017-2019 period. The Management Plan does not provide other quantitative information on the social and economic characteristics of the fishery nor on the likely socio-economic impact of the new measures.

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

The evidence provided through the maps comparing spatial distribution of the fishing activity (haul latitude and longitude position gathered from logbooks compiled by fishermen in the period 2016-2019) and seagrass meadows location along the coast supports the fact that the "Sonsera" fishery does not significant impact on seagrass meadows, in particular *Posidonia oceanica*, and other vulnerable habitat, such as coralligenous habitat and maërl bed. According to the maps provided in the scientific report by CSIC-ICM, the hauls performed by the vessels involved in the "sonsera" fishery are located in very shallow waters close to the coasts, on sandy bottoms. In some cases, hauls can be performed closed to seagrass meadows, but not directly above them.

1.2. Objectives, safeguards and conservation/technical measures

- *Objectives that are consistent with the objectives set out in Article 2 and with the relevant provisions of Articles 6 of CFP Regulation and quantifiable targets, such as fishing mortality rates and total biomass.*

The management plan aims at the conservation and sustainable exploitation of target stocks. It also includes related measures to minimise the impact of fishing on the environment (e.g., ban of the fishery over seagrass meadows).

TACs for sand eels and gobids and their partitioning by month are fixed at the start of the season based on the results of the previous fishing season. At the end of each fishing season, evaluations are performed to estimate the population biomass, the trend of CPUEs, fishing mortality and the exploitation status of the stock in relation to reference points. Taking into account the results, the MP Committee fixes the TACs for the following year. The annual TACs are divided into monthly fractions and the monthly quota divided among the authorised boats in equal proportions.

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

The Art. 5.3 of the MP establishes that the by catch of species other than the targets of the Sonsera fisheries shall be less than 3% of the total catch in weight (1% in the case of regulated species), and in any case they shall not be larger than 5 kg for fishing trip.

The by catch of the fishery targeting sand eels represented less than 1% of the total catches in weight in the period 2017-2019. Almost 50 species were observed in the by catch, including several species included in the Annex IX of Regulation (EU) 2019/1241. Size distributions of regulated species are provided.

The by catch of the fishery targeting transparent goby, *A. minuta*, represent the 4.6% of the catches in weight. Regulated species are present in the by catch, and the most abundant are *Diplodus annularis*, *Trachurus spp.*, *Pagellus erythrinus* and *P. acarne*. LFDs of regulated species caught as a by catch in the transparent goby fisheries are reported.

For the fishery targeting crystal goby, a by catch of 50% in weight has been observed. The bulk of the by catch is represented by picarels, *Spicara spp.* (around 40% in numbers), followed by regulated species, such as *P. erythrinus* and *Mullus barbatus*. *Common Pandora*, *P. erythrinus*, represents 23.5% in numbers of the by catch, with 60% of individuals below the MCRS (15 cm TL).

STECF notes that transparent goby and crystal goby fisheries have marginal interest in the MP as the TAC set up are less than 2 and 4 tons per fishing season, respectively, against around 800 t for sand eels. Therefore, also the contribution on by catch is lower in absolute values.

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

The MP fixes catch quotas considered to accomplish a sustainable exploitation of the target stocks of the fishery, based on historical landings which did not show important declines along the available time series. This can be considered as an indicator, proportionate to the objectives and targets of the plans. However, but sustainability is only supported by robust scientific evidences for sand eel, *G. cicerelus*.

- *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.*

The landings are monitored on a monthly basis analysing information of landings per boat per day. If the monthly landings of the fleet are less than 75% of the defined quota, the collective quota for the following month is reduced by 50%. If the threshold is not reached in that following month, the fishery is closed. STECF notes that in 2015 and 2016 the fishery was closed before the end of the season by recommendation of the co-management committee, following the criteria of precautionary management.

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

STECF notes that the MP imposes the prohibition of fishing over seagrass meadows and rocky bottoms. The Sonsera can be used on sandy and muddy bottoms only. No additional conservation measures to gradually eliminate discards are foreseen under the MP.

1.3. Other aspects:

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

The landings are monitored on a monthly basis analysing information of landings per boat per day. If the monthly landings of the fleet are less than 75% of the defined quota, the collective quota for the following month is reduced by 50%. If the threshold is not reached in that following month, the fishery is closed.

In its previous evaluation (STECF OWP 18-01), STECF expressed concerns that applying a target threshold by vessel will incentivise an increase in fishing intensity and fishing efficiency, in order to maintain high catches and avoid cuts even at low stock biomass. Additionally, since only the most efficient vessels might remain in the fishery, their catch rates would not be directly comparable anymore with the historic baseline for TAC thresholds. The baseline should be defined for each vessel, in order to account for individual differences in efficiency.

STECF notes that the new MAP did not specifically address this point. Nevertheless, Maynou et al. (2021) draw attention to the fact that the harvesting capacity of this fishery is indeed high, and that the MP must continue to tightly control fishing effort. Furthermore, STECF notes that the main target stock is now monitored with a scientific stock assessment, making the management more robust to bias in fisheries CPUE's

TOR 2.1 Derogation to the distance from the coast (Article 13 – Paragraphs 5, 9 and 10)

- *There are particular geographical constraints, such as the limited size of the continental shelf along the entire coastline.*

The species exploited by the Sonsera fishery almost exclusively inhabit shallow waters, mostly within 3nm from the coast. The boats involved in this fishery are required to operate within the 3nm when targeting *G. cicerelus* and the transparent goby *A. minuta*. Sandeel species live on sandy habitats along the Catalan coast over a limited depth range and are fished usually at depths between 6 and 16 metres. The gobies species are located over muddy-sandy bottoms. *A. minuta* is mainly exploited in depths between 7 and 12 meters in the Southern fishing grounds, while *C. linearis* inhabits a deeper range between 30-50 meters and it is mainly distributed towards Northern Catalonia.

- *The fisheries have any significant impact on the marine environment.*

The evidence provided (fishing activity maps vs seagrass meadows) supports the fact that the "Sonsera" fishery does not impact seagrass meadows, in particular *Posidonia oceanica*, and other vulnerable habitat, such as coralligenous habitat and maërl bed.

- *The fisheries involve a limited number of vessels and do not contain any increase in the fishing effort.*

The maximum number of authorized vessels using Sonsera is 26. This limit is included in the MP.

- *The fisheries cannot be undertaken with another gear.*

The fisheries cannot be undertaken with another gear and operations need to be carried out very close to the coast, in shallow waters within the 3 miles stripe.

- *The fisheries are subject to a management plan and carry out a monitoring of catches as requested in Article 23.*

Control follows the rules of standard monitoring and the precautionary approach, including, among other, the daily reporting of catches to the co-management committee, the sale of catches exclusively through the official channel of auction at the home ports, and reducing the quota or even stopping the fishery during the season if catch per unit effort is perceived to decline excessively.

A Co-Management Committee composed by representatives of the industry, scientists, NGOs and fisheries administration of the Autonomous Government and the Central Government has the function of managing the fishing activities. This Co-Management Committee is responsible to monitor the sustainability and profitability of the fishery by implementing effort limitations in number of authorised boats, fleet activity and fixing annual catch limits. It has also the responsibility of revising every year the TAC levels based on the results of the previous fishing season and to impose new TACs as necessary at the start of the following fishing season.

The Committee also coordinates the scientific monitoring and the assessment of the compliance with the enforced management measures, and also suggests appropriate sanctions in case of non-compliance. It defines the time schedule and places where samplings will be conducted, both on board boat seiners and upon arrival of vessels to port.

The Committee also organizes regular inspections at sea, at fish auctions and retail markets, as well as the checking of all the landings based on the documents where daily catches are recorded.

- *The vessels concerned have a track record of more than 5 years.*

The authorised vessels had to demonstrate that they operated with such gear for more than 5 years in the period 2000-2010.

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

The operation area of the Sonsera fishery can spatially overlap with those of other small-scale fisheries. However, the interactions between Sonsera boats and other vessels can be considered limited as there is no competition regarding target species. Moreover, the use of the Sonsera does not damage other gears set in the same area.

STECF notes that by-catch of Sonsera may include some species (i.e. sparids, red mullet) that constitute the target of trammel nets, gill nets or longlines. Nevertheless, the impact of the Sonsera fishery on the abundance of these resources can be considered negligible, given the small number of individuals caught per tow and the limited number of vessels involved in the Sonsera fishery.

- *The fisheries are regulated in order to ensure that catches of species mentioned in Annex IX of Regulation (EU) 2019/1241 with the exception of mollusc bivalves, are minimal.*

The Art. 5.3 of the MP establishes that the by catch of species other than the targets of the Sonsera fisheries shall be less than 3% of the total catch in weight (1% in the case of regulated species), and in any case they shall not be larger than 5 kg for fishing trip.

As described above, the bycatch in weight in the period 2017-2019 represented less than 1% of the total catches in the fishery targeting sand eels, and 4.6% in the bycatch targeting transparent goby; but 50% in the fishery targeting crystal goby.

STECF notes that transparent goby and crystal goby fisheries have marginal interest in the MP Therefore, bycatch contribution represent very small quantities in absolute values.

STECF notes that no experiments were conducted to validate post-release survival on by catch species.

- *The fisheries do not target cephalopods.*

Three cephalopods are observed in the by catch of the sand eel fishery: common squid, *Loligo vulgaris*, common octopus, *Octopus vulgaris*, and cuttlefish, *Sepia officinalis*. They represent, respectively, 0.5, 1.0 and 0.9% of the by catch in weight.

In the fishery targeting crystal goby, three cephalopod species are reported in the by catch: common octopus, horned octopus, *Eledone cirrhosa*, and musky octopus, *E. moschata*. These three species account for less than 2% of the by catch in numbers.

No cephalopod species is reported as a by catch in the transparent goby fishery.

Considering the limited by catch of cephalopods species and the general small quantity of by-catch caught, it can be concluded that the Sonsera fishery do not target cephalopods.

2.2 Derogation to the minimum mesh size (Article 9, paragraph 7)

- *The fisheries are selective and have a negligible effect on the marine environment.*

The by catch of both the fisheries targeting sand eels and gobids can be considered negligible (around 2% in weight); no other adverse effect on the marine environment are reported.

- *The fisheries do not operate above seagrass beds of, in particular, *Posidonia oceanica* or other marine phanerogams.*

The MP does not allow to perform the Sonsera fishery over seagrass meadows. As shown by the maps produced using the logbook data collected from 2012 to 2019, the “sonsera” is not used on sea bottoms characterized by the presence of sea grass meadows, in particular *Posidonia oceanica*.

STECF conclusions

STECF concludes that the plan contains suitable elements for the monitoring and management of activities of the Sonsera fishery in Catalonia waters.

STECF concludes that the conditions for granting the derogation from EC 1967/2006 article 9/13 in terms of minimum mesh size and distance and minimum depth from the coast in waters of Spain (Catalonia) are met.

STECF acknowledges that a novel approach has been performed to assess and monitor the stock status of the sand eel, *G. cicereus*, stock, which represents the main target of the Sonsera fisheries. STECF encourages similar attempts to improve the scientific monitoring of other target species, including options for implementing scientific surveys in the area, allowing for a fishery-independent abundance index to be used for the evaluation of stock status.

STECF acknowledges that relatively small increases of fishing effort could rapidly increase the rate of removals from the fishery, but the corresponding decrease in population numbers would be difficult to detect from CPUE statistics due to hyperstability (Maynou et al., 2021). Therefore, the harvesting capacity of this fishery is high, and the MP must continue to tightly control fishing effort.

References

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6.13 Review of national management plans for shore seines in Croatia (GSA 17)

Background provided by the Commission

In March 2021 the Croatian Administration has expressed its intention to adopt a new management for shore seines. This plan envisions the renewal of the derogations from EC 1967 / 2006 article 4 and 13 in terms of fish above Posidonia beds, distance and minimum depth from the coast, which is currently granted with the Regulation (EU) 2018/1586 of 22 October 2018. The current derogation will expire on 26 October 2021.

Background documents are published on the meeting's web site on: <https://stecf.jrc.ec.europa.eu/plen2101>

Request to the STECF

TOR 1. Advise and assess whether the management for shore seines targeting transparent goby in the waters of Croatia contains adequate elements in terms of:

1.1. The description of the fisheries

- Biological characteristics and state of the exploited resources with reference in particular to long-term yields.
- Description of the fishing pressure and measures to accomplish a sustainable exploitation of the main target stocks.
- Data on catches (landings and discards) of the species concerned, fishing effort and abundance indices such as catch-per-unit-effort (or CPUE).
- Catch composition in terms of size distribution, with particular reference to the percentage of catches of species subject to minimum sizes in accordance with Annex III of the MEDREG29.
- Information on the social and economic impact of the measures proposed.
- Potential impact of the fishing gear on the marine environment with particular interest on protected habitats (i.e. seagrass bed, coralligenous habitat and maërl bed);

1.2. Objectives, safeguards and conservation/technical measures

29 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.

- Objectives that are consistent with the objectives set out in Article 2 and with the relevant provisions of Articles 6 of CFP30 Regulation and quantifiable targets, such as fishing mortality rates and total biomass.
- Objectives for conservation and technical measures to be taken in order to achieve the targets set out in Article 15 of Regulation (EU) No 1380/2013, and measures designed to avoid and reduce, as far as possible, unwanted catches.
- 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 gradually eliminate discards, taking into account the best available scientific advice or to minimise the negative impact of fishing on the ecosystem.

1.3. Other aspects

- Quantifiable indicators for periodic monitoring and assessment of progress in achieving the objectives of the plan in line with Art 2 of Commission Implementing Regulation (EU) 2018/1586 of 22 October 2018 2018/1586.

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

2.1 Derogation to the distance from the coast (Article 13 – Paragraphs 5, 9 and 10)

- There are particular geographical constraints, such as the limited size of the continental shelf along the entire coastline;
- The fisheries have any significant impact on the marine environment;
- The fisheries involve a limited number of vessels and do not contain any increase in the fishing effort;
- The fisheries cannot be undertaken with another gear;
- The fisheries are subject to a management plan and carry out a monitoring of catches as requested in Article 23;
- The vessels concerned have a track record of more than 5 years;
- The fisheries do not interfere with the activities of vessels using gears other than trawls, seines or similar towed nets;
- The fisheries are regulated in order to ensure that catches of species mentioned in Annex IX of Regulation (EU) 2019/124131 with the exception of mollusc bivalves, are minimal
- The fisheries do not target cephalopods.

2.2 Derogation to the minimum mesh size (Article 9, paragraph 7), only if requested in the Croatian shore seines plan for some specific gears:

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

31 Regulation (EU) 2019/1241 of the European Parliament and of the Council of 20 June 2019 on the conservation of fisheries resources and the protection of marine ecosystems through technical measures, amending Council Regulations (EC) No 1967/2006, (EC) No 1224/2009 and Regulations (EU) No 1380/2013, (EU) 2016/1139, (EU) 2018/973, (EU) 2019/472 and (EU) 2019/1022 of the European Parliament and of the Council, and repealing Council Regulations (EC) No 894/97, (EC) No 850/98, (EC) No 2549/2000, (EC) No 254/2002, (EC) No 812/2004 and (EC) No 2187/2005

- The fisheries are highly selective and have a negligible effect on the marine environment; and
- The fisheries do not operate above seagrass beds of, in particular, *Posidonia oceanica* or other marine phanerogams.

2.3 Derogations related to *Posidonia oceanica* beds based on Article 4(5):

- The fishing activities concerned fulfil the requirements of Article 4 of Regulation (EC) No 1967/2006.

Summary of the information provided to STECF

STECF was provided with three documents to inform its review:

- Management plan for shore seine nets fishing in the republic of Croatia

The Management Plan (hereafter, MP) refers to shore seine net fisheries in Croatia and is based on the scientific data of the Institute of Oceanography and Fisheries, the fishery-related data collected within the DCF and logbook data collected by the Ministry of Agriculture – Directorate of Fisheries. The MP covers 2 groups of shore seines: small mesh size shore seines for Atherinidae "oližnica" (mesh size 10-14 mm), and shore seines for picarel "migavica" and "girarica" (mesh size 50 mm diamond or 40 mm square). These two types of shore seines differ only for some minor technical characteristics. In particular, in migavica the net orientation is T90, while in girarica the orientation of the net is standard.

Derogations are requested related to fishing over the sea grass beds (mainly *Posidonia*), minimum mesh size for oližnica (10 mm) and minimum required distance from coast or depth. The MP applies to all fishing vessels using shore seines along the eastern Adriatic coast in the inner and territorial waters of the Republic of Croatia within the area of 500 m off the coast and shall be applied for a period of five years from the date of adoption of the Plan by the Croatian Government.

The MP excludes another fishery, shore seine of large mesh size for greater amberjack "šabakun", from the present requests for derogations and management actions, because data for this gear are still preliminary and Croatia plans to update this MP when adequate information is available.

(1) Management instruments

The management instruments foreseen by this Management Plan are described. They include permanent cessation of fishing activities through the buy-off of fishing licenses, temporary suspension of fishing activities, limited number of authorizations granting fishing rights only to those fishing licences holders that have a historical record of fishing activity, spatial and temporal restrictions, increase of mesh size for picarel shore seine, fishing effort management in terms of maximum fishing days and allowed fishing grounds, emergency measures in cases when monitoring results show that the objectives are not being achieved as planned (effort reduction and spatial restrictions).

(2) Objectives and definitions

The MP foresees the following main objectives: to regulate the traditional activity of shore seine fishing in a rational and systematic manner and ensure sustainable catches; to ensure that the additional biological and socio-economic data required as a basis for diagnostic analysis of this fishing activities are available and sufficient; to ensure the stability of the catch and defined biological reference points for the target species for each shore seine type.

(3) Control and surveillance

The MP foresees control and surveillance of shore seine net fishing paying particular attention to monitoring of the spatial and temporal restrictions of the use of shore seine nets, and in order to enforce strict control, all authorised vessels are equipped with VMS or GPRS tracking device and logbook.

(4) Socio-economy

The MP provide some information on revenues, highlighting that the traditional fisheries with these gears are operated by smaller scale family-owned businesses that are important from the economic side, but also play an integral role in the local communities and have identifiable cultural and historic characteristics.

(5) Trends in LPUE

Trends in LPUE are provided as average for the periods 2008-2013 and 2018-2020 for each type of shore seine.

(6) Picarel shore seine

The MP provides the following information for picarel shore seine: gears' design, fleet, fishing area and season, catch and target species, biological characteristics of target species, biological reference values, protected habitats and *Posidonia oceanica*.

The request of derogation for picarel shore seine refers to the continuation of the derogations from Article 13(1) first subparagraph, and Article 4(1) of Mediterranean Regulation.

(7) Small mesh size shore seines

The MP provides the following information for sand smelt shore seine: gear constructions, fleet, fishing area and season, catch and target species, biological characteristics of target species, biological reference values.

The request of derogation for sand smelt shore seine refers to the continuation of the derogations from Article 13(1) first subparagraph, and Article 9(3) of Mediterranean Regulation for fishing with mesh size at least of 10 mm.

(8) Annexes

Annex 1 - List of authorised landing places for shore seines;

Annex 2 - Maps of fishing grounds;

Annex 3 - Results of a scientific monitoring for picarel shore seine and sand smelt shore seine;

Annex 4 - A study on codend mesh size selectivity for picarel in eastern Adriatic Sea boat seine fishery based on sea trials and computer simulations;

Annex 5 – A study aimed at comparing the catch composition for picarel shore seine in relation to NATURA 2000 sites

Annex 6 – Information on the socio-economic impact

- A letter from the Croatian Ministry of Economy and Sustainable Development

The Croatian Ministry of Agriculture asked to the Ministry Directorate for Nature Protection of the Ministry of Economy and Sustainable Development if an environmental assessment was needed in order to assess the impact of the shore seine nets fishing in the republic of Croatia. This document is the reply letter of the Ministry of Economy and Sustainable Development to the Ministry of Agriculture, where it is stated that it is not necessary for this management plan to carry out a strategic environmental assessment procedure.

- A document from the Croatian Ministry of Economy and Sustainable Development

Official document of the Croatian Ministry of Economy and Sustainable Development stating that this management plan is in line with the environmental and ecological requirements of Natura 2000 network in Croatia.

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

STECF notes that a previous version of the management plan for shore seine in Croatia was examined by STECF in PLEN-16-01. Its conclusion had been that the plan contained most of the elements prescribed by the regulation. The main shortcomings were the absence of quantifiable targets, harvest control rules and remedial actions.

TOR 1.1. The description of the fisheries

- *Biological characteristics and state of the exploited resources with reference in particular to long-term yields*

STECF notes that the biological characteristics of the picarel (*Spicara smaris*) and sand smelt (*Atherina boyeri*) in terms of preferential habitat, size at first sexual maturity, spawning period, growth, length-weight relationship, trends in average length and weight, trends in landings have been provided. Some biological characteristics have been provided

also for the bogue (*Boops boops*), which is the second target catch species of picarel shore seines.

STECF notes that the MP reports that picarel shore seine catch is dominated by 3-year-old specimens, having median length of 13.3 cm referring to *Spicara smaris*. However, this seems to be in contradiction with a graph included in Annex 3, where the fraction of 2-years-old specimens is higher than the one of the 3-old-specimens. The growth parameters used to assign size-classes to age-classes are not known.

STECF notes that the trend of picarel average lengths over the last 25 years is stable, while the trend in average weights is increasing. The comparison of such trends is used in the MP to highlight the stability of picarel population.

Y/R analyses are presented providing an estimate of F_{msy} , based on the logistic model of the selectivity of picarel shore seine. The MP reports that F_{cur} (0.37) is lower than F_{msy} (0.60), and the percentage of virgin biomass is 40.0% for F_{cur} and 73.0% for $F_{0.1}$. Y/R analyses for sand smelt shows that F_{cur} (0.32) is lower than F_{msy} (1.00), and the percentage of virgin biomass is 64.0% for F_{cur} and 85.0% for $F_{0.1}$.

STECF acknowledges the attempt to provide a stock assessment, but notes that the Y/R analysis is not well documented and it is not clear how this analysis has been performed. Input data and methods for Y/R analysis and reference points should be clarified. STECF notes also the boundaries of the picarel stock are unknown.

STECF notes finally that the stock status has been estimated including only catches from shore seines, although the MP states that picarel may sporadically also be caught by other fishing gear (gillnets and hooks). STECF understands however that such gears do not have substantial catches for these species.

- *Description of the fishing pressure and measures to accomplish a sustainable exploitation of the main target stocks*

STECF notes that the MP includes a detailed description of the active shore seine fleets and characteristics of the different fishing gears.

STECF notes that the total number of authorized vessels (70) for fishing with shore seines is smaller than the total number of issued licenses for this fishing gear (87). The authorised vessels are allowed to use other gears (i.e., demersal trawl, set nets, other set gears) and only 53% of the total fishing days by these vessels have been spent in shore seine fishing. The MP explains that this is because only license holders that have a historical record of catch were authorized to use shore seines. In addition, the authorization is linked to one area in order to prevent effort reallocation between areas. The 70 authorized vessels are split between 65 vessels for migavica and girarica (large mesh shore seine for picarel) and 5 for oližnica (small mesh shore seine for sand smelt).

Type of shore seine	No authorisations	Average GT*	Average kW*
migavica and girarica	65	4.16	45.60
oližnica	5	1.62	30.68

* Average values per vessel calculated by STECF from the total values provided in the MP

In the MP reviewed in PLEN 16-01 the estimated number of authorized vessels for fishing with shore seines (127 for picarel shore seine and 5 for sand smelt shores seine) was smaller than the total number of issued licenses for the fishing gear (498 for picarel shore seine and 20 for sand smelt shore seine). In 2018, a national authorization process further reduced the number of vessels authorised to use picarel shore seine (65 vessels), while the number of vessels authorised to use sand smelt shore seine remained the same as the one estimated in 2017 (5 vessels).

STECF notes that a number of measures of control of fishing effort are planned in the MP, but not clearly detailed: permanent cessation of fishing activities to reduce capacity by means of a buy-off of fishing licenses; temporary suspension of fishing activities based on the exploitation status of the target species; fishing rights granted only to those fishing licences holders that have an historical record of fishing activity; spatial and temporal closures of areas identified as spawning and/or nursery areas of target species; and additional closures for each of the shore seine types.

Fishing outside the permitted areas or periods may result in the revocation of the authorization.

STECF notes that the installation of a VMS tracking device will be a pre-condition to authorization for all vessels regardless of vessel size.

Selectivity studies are presented to show the increase in selectivity due to the larger mesh size adopted by the picarel shore seine in 2018 (50 mm diamond or 40 mm square mesh instead of the 24 mm traditionally adopted by Croatian shore seines targeting picarel). The study shows a significant increase in L50 from the original 24mm diamond mesh (8.62 cm total length TL) to the 40mm square mesh (17.83 cm TL). No L50 is reported for the 50mm diamond mesh, but looking at the selectivity curves it should be similar to the one of the 40mm square mesh. In addition to the improved selectivity of picarel shore seine, the MP states that the peculiarity of this fishery is that the net is pulled at a much lower speeds compared to trawling and average haul duration is often shorter than typical trawl haul. Referring to Herrmann et al. (2016), the MP states that because of this, the fish are less exhausted than they would be in a typical trawl haul, which increase the ability for small fish to swim out and escape from the net during the haul back procedure.

STECF notes that no selectivity studies have been provided for oližnica (small mesh shore seine for sand smelt).

- *Data on catches (landings and discards) of the species concerned, fishing effort and abundance indices such as catch-per-unit-effort (or CPUE)*

STECF notes that catch and effort data have only been provided for the last two fishing seasons. Longer time series of data would be required to monitor the trends in the fishery over several years.

STECF notes that catches are characterized qualitatively and quantitatively, for each shore seine type, but results for sand smelt were based on 4 hauls only.

In order to limit catch of non-target species, the MP limits the maximum by-catch for both types of beach seine (targeting picarel and sand smelt) to 30% of the total weight at landing. MP reports that total landing for this gear was 98 t in 2018/19 and 142 t in 2019/20, while total landing of sand smelt beach seine was 1,8 t in 2018/19, and 2,6 t in 2019/20. STECF notes that this information does not match with the landings reported in Annex 6 (Socio-economic impact) which are the following: picarel shore seine 126.7 tons in 2018 and 102.7 tons in 2019; sand smelt shore seine 5.9 tons in 2018 and 6.1 tons in 2019, plus an additional 2.4 tons of vessels using both gears in 2019. These differences are substantial, both in magnitude and in trends. STECF advises that landings data should be consistently reported across different sources of information.

Logbook data indicate that: for the picarel beach seine the main target species (*Spicara smaris*, *Spicara flexuosa*, *Spicara maena*, *Boops boops*, *Oblada melanura* and *Sarpa salpa*) represented 72% of the catches in 2018-2019 fishing season and 70% in the 2019-2020 one, with picarel as dominant species with over 65% of total weight of targeted species; for the sand smelt beach seine the target species (*Atherina boyeri* and *Atherina hepsetus*) represent over 90% of the catches.

STECF notes that the retained by-catch (i.e., all the species retained onboard in addition to the ones reported in the previous paragraph) of the picarel beach seines observed through scientific monitoring included 45 species in both 2018-2019 and 2019-2020 fishing seasons.

STECF notes that the data collected through the scientific monitoring evidenced that for both types of beach seine the discarded portion included species that are returned, mostly alive, to the sea immediately after the shore seine is lifted on-board. However, no experiments were conducted to validate post-release survival.

Discards did not include elasmobranchs, cephalopods or sensitive species. Discarded fraction for picarel shore seine represented 1.43% of the total catch.

Abundance indices have been provided as the average LPUE (kg per fishing day) for 2008-2013 and for 2018-2020.

Type of shore seine	average LPUE for period 2008-2013	average LPUE for period 2018-2020
migavica and girarica	58.8	51.6
oližnica	18.6	19.7

It is not clear why trends of LPUE have been provided aggregated by 2008-2013 and 2018-2020. STECF advises to provide LPUE disaggregated by year.

STECF notes that no qualitative and quantitative description of the discard has been provided.

Fishing effort in days at sea has been reported only for 2018 (6,149) and 2019 (6,828) in the Annex 6 (Socio-economic impact). STECF notes that fishing effort increased by 11% in 2019 compared to 2018.

- *Catch composition in terms of size distribution, with particular reference to the percentage of catches of species subject to minimum sizes in accordance with Annex III of the MEDREG*

STECF notes that size distributions of catches have been provided for the target species picarel *Spicara smaris*, bogue *Boops boops* and sand smelt *Atherina boyeri* based on scientific monitoring. None of these species are included in Annex III of the MEDREG (now Annex IX of EU Reg. 2019/1241). Comparing size distributions obtained in previous years with those of 2018-2020, a general increase in the modal size has been observed for all the three species. This shift towards larger size classes seems to corroborate the effect of the increased mesh size, from 24mm to 40mm, which was enforced by Croatian administration in 2018.

STECF notes that the size-range of all species (LT min and max) landed by the two types of shore seines are reported. STECF considers that it would be advisable to provide the actual size distributions of the landed species included in Annex III of the MEDREG, instead of the size ranges.

Landings of the picarel beach seine include the following species which are subject to minimum sizes (Annex III of the MEDREG and Annex IX A of the Regulation 2019/1241): *Dicentrarchus labrax*, *Diplodus annularis*, *Diplodus puntazzo*, *Diplodus vulgaris*, *Merluccius merluccius*, *Mullus* spp., *Pagellus acarne*, *Pagellus erythrinus*, *Pagrus pagrus*, *Sparus aurata*, and *Trachurus* spp. Most of these species are caught in small quantities, as displayed in the table below.

Picarel shore seine	2018-2019		2019-2020		MCRS (cm) from Annex IX (A) of Reg(EU) 2019/1241
Species	LT min-max (cm)	Weight (kg)	LT min-max (cm)	Weight (kg)	
<i>Dicentrarchus labrax</i>	33.5	3.28	40	0.51	25
<i>Diplodus annularis</i>	13.5-16.4	0.12	13.2	0.12	12
<i>Diplodus puntazzo</i>		1.71	11.8-28.0	0.83	18
<i>Diplodus vulgaris</i>	10.1-27.0	18.43	16.4-24.9	8.87	18
<i>Merluccius merluccius</i>		0.71	28.5-31.5	0.55	20
<i>Mullus spp.*</i>	12.0-30.1	84.29	7.2-29.4	63.50	11
<i>Pagellus acarne</i>	12.6-15.8	0.44	8.9-15.6	1.72	17
<i>Pagellus erythrinus</i>	12.5-31.5	29.29	11.1-35.6	19.96	15
<i>Pagrus pagrus</i>	22.5	0.17	31.7-35.6	0.31	18
<i>Sparus aurata</i>	21.5-30.0	2.59	20.5-38.4	3.33	20
<i>Trachurus spp.**</i>	12.5-24.1	20.86	21.8-38	4.30	15
Total		161.89		103.90	

* *Mullus spp.* includes *M. surmuletus* and *M. barbatus*

** *Trachurus spp.* includes *T. trachurus* and *T. mediterraneus*

STECF notes that the size of most species landed by picarel shore seine is greater than the MCRS. Some specimens of *Diplodus puntazzo*, *Diplodus vulgaris*, *Mullus spp.*, *Pagellus erythrinus* and *Trachurus spp.* are below MCRS, but from the MP is not possible to estimate the number of specimens. For *Pagellus acarne*, all the landed specimens are smaller than the MCRS (17 cm).

STECF notes that landings of *Mullus spp.* represented 7-9% of the total picarel shore seine landings in weight, and those of *Pagellus erythrinus* made up about 2-3% of total landings in biomass. STECF notes that the fraction of species having MCRS on the total landings in biomass ranges from 13.5% (2018-2019) to 15.4% (2019-2020).

STECF notes that landings of the sand smelt beach seine included only seven species, among which only *Sparus aurata* have a minimum size (1.41% of the total landings in weight).

- *Information on the social and economic impact of the measures proposed*

A study on the economic impact of beach seines in 2018 and 2019 is presented.

	2018	2019
No vessels	72	75
Fuel cost (Euro)	170,117.28	161,948.19
Landing value (Euro)	697,527.65	732,135.10

STECF notes that the fleets combine several kinds of fishing gears during one year, the revenue generated by each of them individually is not sufficient for economic sustainability, and on the average is about 4,000 Euro for seine nets. Although the total revenue realized by the shore seine fleet does not represent a significant share in the total commercial fisheries in Croatia (1.25% in 2019), their importance is more expressed in the dependency of local communities on fishers who rely on fishing grounds near the coast.

The average number of fishers involved in each shore seine vessel is 2-3 and Estimated number of engaged fishers is 170, with additional 50 persons working from shore and as unemployed family workers.

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

Some fishing grounds which were allowed as part of the 2017 MP are overlapping with NATURA 2000 sites, and are to be closed to fishing in this Management Plan. However, as this measure strongly reduces the fishing grounds for some fleets, Croatia is exploring the possibility to replace some of the existing fishing grounds outside the NATURA 2000 with the same number of fishing grounds inside the area of NATURA 2000. This study will be performed in the framework of a national Strategic Impact Assessment program, which will be launched in 2021.

STECF understands though that this announced measure would imply increase fishing in designated Natura 2000. The potential impact of this will have to be thoroughly evaluated and STECF is not able to comment further on this point.

The plan states that only 3.9% of *Posidonia* in the area covered by the Plan and 2.4% of *Posidonia* in territorial sea are affected by the shore seine fishing activity.

STECF notes that no details on the surface estimation methods nor maps of *Posidonia* and effort distribution are given in the MP, so STECF cannot assess the accuracy of these estimates.

ToR 1.2. Objectives, safeguards and conservation/technical measures

- *Objectives that are consistent with the objectives set out in Article 2 and with the relevant provisions of Articles 6 of CFP32 Regulation and quantifiable targets, such as fishing mortality rates and total biomass*

The general aim of this MP is to ensure the sustainability of biological resources, caught by shore seines, by maintaining them within the safe biological limits according to the scientific results of demographic data analysis and stock assessment of main target species in line with precautionary approach. The MP aims to ensure the improvement of information on catches, fishing effort and biological characteristics of target species and to provide relevant statistical information to contribute to the assessment of fishing activities.

From a socio-economic point of view, the MP has the objective of preserving the tradition of fishing with shore seines in a very limited area, where it represents an important cultural tradition and is therefore invaluable social and economic importance to the Republic of Croatia.

The MP was formulated based on the precautionary principle in terms of management and proposing biological reference points, in this case the Fmsy reference point estimated with Y/R analyses. Considering that the MP foresees several targets, priority is to ensure stable long-term trends of catches and mortality rates of target species.

STECF notes that it is not clear how reference points have been calculated, STECF cannot assess the robustness of the stock status or exploitation levels relative to MSY considerations. In addition, the tentative Y/R assessment states that the target species are exploited sustainably; however, STECF notes that catches and effort have increased to some extent between 2018 and 2019 according to information presented in the MP (+11% fishing effort, +30% landings for both shore seines; although catch data are not consistent with those presented in Annex 6), while average LPUE of picarel shore seine has decreased by 13% between the period 2008-2013 and 2018-2020.

In the absence of reliable catch and effort data provided as longer time series over several years it remains difficult to assess whether the fishery is likely exploited sustainably in accordance with CFP objectives, and a close monitoring of trends is advised during the next years of implementation of the plan.

STECF advises also trialling alternative data-limited stock assessment methods for a more robust perception of stocks' status.

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

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

Discard is very low for both type of shore seines, and scientific monitoring evidenced that the discarded species are returned to the sea mostly alive. However, no experiments were conducted to validate post-release survival and to support this assumption. The MP has the objective of reducing bycatch and discards to the minimum, although catches of species other than the main target species consist of 30% of the total landing weight in the picarel shore seine.

STECF notes that a consistent increase of the mesh size has been enforced since 2018 for the picarel shore seine fleet, which includes the 92% of vessels concerned by the plan. The increase in mesh size will improve the escapement of small individuals from the codend, but no information is provided on the potential mortality of fish escaping the net.

STECF notes that, as the composition of discard has not been provided, it is not clear if species having a MCRS are included in the discard.

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

STECF notes that the MP foresees several measures, but based on the provided information it is not clear whether they are proportionate to the objectives and targets. The overall priority is to maintain the stability of catches on the long-term based on the monitoring of the stock status through reference points (F_{cur} , F_{msy}). Additional measures are foreseen if such objectives would not been achieved, such as i) further reduction of fleet capacity; ii) expansion of spatial and temporal restrictions; iii) extension of temporal fishing bans; iv) catch limitations.

STECF notes that these actions are considered in the MP as emergency measures and are foreseen to be implemented only in case the objectives would not be achieved, but they are not detailed and quantified.

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

STECF notes that the general objectives and management measures are proposed, but safeguards to ensure that quantifiable targets are met are not defined. The MP does not define with any degree of precision which management actions should be taken in which conditions of fisheries and resources

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

STECF notes thus that the shortcomings identified in its 2016 evaluation have not been fully addressed.

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

STECF notes that discards are already very low and the MP aims at further lowering unwanted catches.

ToR 1.3. Other aspects

- *Quantifiable indicators for periodic monitoring and assessment of progress in achieving the objectives of the plan in line with Art 2 of Commission Implementing Regulation (EU) 2018/1586 of 22 October 2018 2018/1586.*

The MP includes measures for monitoring and evaluating the activity, in terms of fishing effort, catches and discards, selectivity of the fishing gear, and specific scientific surveys if necessary.

The plan states that control and surveillance of shore seine fleet, as well as the trade of fish, are planned to be performed by competent government bodies, in accordance with the Marine Fisheries Act and the applicable EU regulations.

ToR 2.1. Derogation to the distance from the coast (Article 13 – Paragraphs 5, 9 and 10)

- *There are particular geographical constraints, such as the limited size of the continental shelf along the entire coastline*

There are specific geographical constraints given both the distinct morphological structure of Croatian coast, comprising a long coastline including numerous islands and the spatial distribution of the target species, which is exclusively limited in certain specific sites and zones in the coastal areas at depths of less than 50 meters.

Therefore, STECF notes that fishing grounds are limited.

- *The fisheries have any significant impact on the marine environment*

Shore seine might have a low impact on the sea bottom, consisting of lateral wings, a belly and a bag. In shore seine fishing it is prohibited to haul a net while the vessel is in motion. Floating plastic and rubber objects can be placed on hauling rope so as to prevent that the main rope touches the bottom, as well as to prevent touching seagrass and/or getting caught in an obstacle.

In the Mediterranean, studies evaluating the effects of shore seining on Posidonia meadows are lacking, but STECF notes that information exist from other areas. A FAO technical paper (FAO, 2011) concluded that, based on empirical studies and dive surveys carried out in

South Africa, beach seining did not have a significant detrimental effect on the benthic flora and invertebrate fauna. In addition, experimental trials carried out in Mozambique with underwater cameras showed that the impact of shore seine foot rope on marine habitats, and in particular on seagrass meadows, strongly depends on the hauling force, water depth, net buoyancy and net height.

STECF considers that when assessing the impact of shore seines on benthic habitats, it is probably correct to assume that beach seines can be expected to have less of an impact than heavier gear such as trawl nets and dredges.

- *The fisheries involve a limited number of vessels and do not contain any increase in the fishing effort*

STECF notes that the derogation requested by Croatia involves a limited number of vessels (70), representing 0.87% of the total number of vessels and 0.61% of the total GT of all vessels in the Croatian fishing fleet.

STECF also notes that the MP includes a number of actions aimed at reducing the fishing effort, such as limitation of maximum number of fishing days, monetary incentives to fishers for the cessation of licenses, and limitation of the fishing effort overflow from one fishing zone to another.

- *The fisheries cannot be undertaken with another gear*

The MP states that this fishery cannot be undertaken with other gears, since only shore seines have the technical characteristics necessary to carry out this type of fishery.

- *The fisheries are subject to a management plan and carry out a monitoring of catches as requested in Article 23*

The fishery is subject to a management plan and the fleet activity is monitored in real-time through VMS, which is an obligation for all vessels regardless of their size. In addition, all vessels are equipped with e- or m-logbook.

- *The vessels concerned have a track record of more than 5 years*

All the vessels concerned by the MP have historical track record of more than five years.

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

The fishing activities concerned take place at a very short distance from the coast and, therefore, do not interfere with the activities of fishing vessels using other gears.

- *The fisheries are regulated in order to ensure that catches of species mentioned in Annex IX of Regulation (EU) 2019/1241 with the exception of mollusc bivalves, are minimal*

STECF notes that scientific monitoring shows that most of species mentioned in Annex IX A of the Regulation 2019/1241 are caught in small percentages (<15% of the total landed biomass).

STECF considers that only the fractions of the two species of red mullet together (7-9% of the total biomass) could be considered noteworthy. However, no size frequency distributions were presented for any by-catch species. Considering the small quantity of by-catch obtained by the boat seine fishery, it can be assumed that catches of the species mentioned in Annex IX A are kept to a minimum.

- *The fisheries do not target cephalopods*

STECF notes that cephalopods are not the target species of Croatian shore seines, as they account from 4% to 7% of the total landings in weight.

TOR 2.2. Derogation to the minimum mesh size (Article 9, paragraph 7), only if requested in the Croatian shore seines plan for some specific gears

A derogation from Art. 9(7) of MEDREG is asked for sand smelt shore seine oližnica, for which the minimum mesh size should be at least 10 mm.

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

STECF notes that the sand smelt shore seine oližnica shows a high species selectivity, including only seven species in landings and concerns only five vessels. The impact on the marine environment seems low as these shore seines are hauled through the water column without entering in contact with the seabed.

- *The fisheries do not operate above seagrass beds of, in particular, *Posidonia oceanica* or other marine phanerogams*

The sand smelt shore seine oližnica do not enter in contact with the seabed and the target species are mainly fished in the brackish waters, where small meadows of *Zostera nolti* can be sporadically found.

TOR 2.3 Derogations related to *Posidonia oceanica* beds based on Article 4(5)

- *The fishing activities concerned fulfil the requirements of Article 4 of Regulation (EC) No 1967/2006*

STECF notes that the shore seines concerned are regulated by a management plan, affect not more than 33 % of the area covered by seagrass beds of *Posidonia oceanica* within the area covered by the management plan and not more than 10 % of seagrass beds in the Croatian territorial waters.

STECF conclusions

STECF acknowledges the major improvements made in this MP compared with the one presented in 2016, regarding in particular selectivity improvements, and attempts to conduct exploratory stock assessments and reference points.

STECF concludes that the plan contains most of the elements prescribed by the regulations, but some shortcomings or imprecisions remain. In particular, longer time series of reliable catch and effort data would be needed to monitor fishery trends over several years. Also the MP does not specify clearly which management measures will be applied and how, and which remedial actions will be taken in case of signs of deterioration of the resources. STECF notes that it is also unclear how the reference points have been calculated, and advises trialling other alternative data-limited stock assessment methods.

STECF concludes that the MP contains the elements supporting the requests for derogations.

References

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

7.1 Preparation of EWG 21-05 on the evaluation of Joint Recommendations on the Landing Obligation and Technical Measures

Background provided by the Commission

After consulting the relevant Advisory Councils, Member States cooperating at sea-basin level may provide the Commission with joint recommendations requesting exemptions from the landing obligation. Where the STECF's advice is positive, the Commission adopts delegated acts implementing these joint recommendations into EU law, in accordance with Article 15(6) of the Common Fisheries Policy³³ (CFP). Where there is no multiannual plan for the fishery in question, article 15(6) of the CFP empowers the Commission to adopt delegated acts laying down on a temporary basis specific discard plans containing the exemptions. The six potential elements that can be contained in a discard plan are the following:

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

The temporary discard plans under Article 15(6) with a maximum of 6 years have expired in 2020 or will expire in 2021 and have been or should be replaced by provisions adopted under article 15(5) and specified in multiannual plans. Under the existing multiannual plans, provisions³⁴ specify that the Commission is empowered to adopt delegated acts

33 Regulation (EU) 1380/2013

34 Article 13, Regulation (EU) 2019/472 of the European Parliament and of the Council of 19 March 2019 establishing a multiannual plan for stocks fished in the Western Waters and adjacent waters, and for fisheries exploiting those stocks, amending Regulations (EU) 2016/1139 and (EU) 2018/973, and repealing Council Regulations (EC) No 811/2004, (EC) No 2166/2005, (EC) No 388/2006, (EC) No 509/2007 and (EC) No 1300/2008

34 Article 11, Regulation (EU) 2018/973 of the European Parliament and of the Council of 4 July 2018 establishing a multiannual plan for demersal stocks in the North Sea and the fisheries exploiting those stocks, specifying details of the implementation of the landing obligation in the North Sea and repealing Council Regulations (EC) No 676/2007 and (EC) No 1342/2008

34 Article 7, Regulation (EU) 2016/1139 of the European Parliament and of the Council of 6 July 2016 establishing a multiannual plan for the stocks of cod, herring and sprat in the Baltic Sea and the fisheries exploiting

following Article 18 of the CFP (Regionalisation procedure). Currently, most of the delegated regulations specifying the details of implementation of the landing obligation have been adopted by the Commission under the existing multiannual plans (Western Waters, the North Sea and Baltic). In 2021, the discard plan for certain demersal fisheries in the Mediterranean Sea will expire. Member States will submit two joint recommendations to request exemptions for beyond 2021: one covering certain demersal fisheries in the western Mediterranean Sea, and one joint recommendation covering certain demersal fisheries in the Adriatic Sea, Central and Eastern Mediterranean Sea on only *de minimis* exemptions³⁵, due to the absence of a multiannual plan for this area. While the legal basis is different³⁶, the scientific assessment process is identical to the cases listed above.

Article 15(5) does not stipulate a specific period of validity as was the case with Article 15(6).

STECF has reviewed the Joint Recommendations prepared by the regional groups of Member States annually since 2014-2020 on fisheries subject to the Landing Obligation in the subsequent year. STECF is requested through EWG 21-05 to review and evaluate the Member States' joint recommendations requesting either additional or continued (with additional scientific information as requested by STECF) exemptions for >2022 as well any new requests for exemptions.

Joint Recommendations on Technical Measures (Regulation)

STECF is also asked to evaluate JRs relating to technical measures. All amendments, supplements, repeal or derogations from technical measures will be based upon Article 15 of the Technical Measures Regulation (Regulation (EU) 2019/1241). The entry into force of this Regulation resulted in the introduction of the process of regionalization in numerous fields as far as technical measures are concerned. In this process, the regional groups should develop joint recommendations are assessed by STECF against the objectives and targets set out in Article 3 and 4 of the Technical Measures Regulation.

Main elements of the joint recommendations to be considered by STECF

Landing obligation - de Minimis and High Survivability

those stocks, amending Council Regulation (EC) No 2187/2005 and repealing Council Regulation (EC) No 1098/2007

34 Article 14, Regulation (EU) 2019/1022 of the European Parliament and of the Council of 20 June 2019 establishing a multiannual plan for the fisheries exploiting demersal stocks in the western Mediterranean Sea and amending Regulation (EU) No 508/2014

35 Under Article 15(7) CFP, the Commission may adopt delegated act laying down *de minimis* exemptions only. While no joint recommendation is formally required, the MS should however provide the scientific evidence justifying the exemptions.

36 Under Article 15(7) CFP, the Commission may adopt delegated act laying down *de minimis* exemptions only. While no joint recommendation is formally required, the MS should however provide the scientific evidence justifying the exemptions.

The main elements that STECF should continue to evaluate are the additional exemptions for *de minimis* or based on high survivability for species subject to the landing obligation.

In addition to any new exemptions, STECF should also review additional information supplied to support several of the exemptions granted for 2021 but with the provision that the Member States concerned should submit further data to the Commission by 1 May 2021 to allow STECF to further assess these exemptions.

Technical measures

Not foreseen currently (February 2021) but submitted joint recommendations on technical measures cover the following:

- Measures modifying the size and characteristics of fishing gear that MS may wish to implement in certain areas to increase selectivity and decrease the negative effects of the activity in the environment;
- Minimum Conservation References Sizes for recreational fisheries;
- Mitigation measures for bycatch of certain sensitive species, such as cetaceans or sea birds;
- Definition of the directed fisheries for each species and sea basin, with a deadline of August 2020.

Request to STECF

STECF is requested to discuss the ToRs and organisation of this EWG, which will be reviewed by written procedure and not the STECF PLEN 20-02.

STECF observations

Based on the discussions held at PLEN 21-01 with DG MARE, the following was agreed:

Draft Terms of Reference

STECF has reviewed the draft terms of reference provided by DGMARE for the assessment of exemptions and technical measures. These largely follow from the terms of reference for previous evaluations and STECF has no further comments. However, STECF notes that DGMARE has indicated that there will be an additional JR from the SWW Regional Group on directed fisheries. This follows from the original JR that was assessed by STECF at PLEN 20-03. This JR is not covered by the current terms of reference, so they need to be amended to cover this issue.

Expected Joint Recommendations

DGMARE has provided an overview of the expected Joint Recommendations emanating from the Member State Regional groups that EWG 21-05 will have to evaluate. The deadline for submission of these JRs is 1st May 2021. The expected JRs are summarised below:

- JRs from the NWW and SWW updating Delegated Act (EU) 2020/2015
- JR from the SWW on directed fishing relating to Article 27 of Regulation (EU) 2019/1241

- JR from the Scheveningen Group updating Delegated Act (EU) 2020/2014
- JR for certain demersal fisheries in the western Mediterranean Sea updating Delegated Act (EU) 2020/4
- Separate JRs for certain demersal fisheries in the Adriatic Sea, Central and Eastern Mediterranean Sea updating Delegated Act (EU) 2020/4
- JR on the revision of a high-survivability exemption for cod and plaice in the Baltic (to be confirmed updating Delegated Act (EU) 2018/306.
- JR for a new Delegated Act for turbot fisheries in the Black Sea (already received)
- JR for a new Delegated Act allowing for the use of more selective gears in the Baltic flatfish fisheries (to be confirmed)
- JR to establish a new discard plan for salmon fisheries in the Baltic replacing Delegated Act (EU) 2018/211 (to be confirmed)

Timelines and Process

DG MARE has provided a detailed timeline for the evaluation process by STECF and the transformation of the JRs into Delegated Acts. This is summarised below:

Procedural Process	Timetable in 2021	Comments
JR transmitted by MS to DGMARE	1 st May 2021	Submission as stated in Delegated Regulations
STECF EWG 21-05 evaluation of JRs	17-22 nd May 2021	Written procedure. No discussion STECF Plenary
Draft EWG report	31 st May 2021	To be confirmed with EWG chairs
Ad hoc contract STECF – finalisation of EWG report and STECF advice	2-8 th June 2021	24 May – 1 June 2021 DG MARE liaise with Member States and Chair EWG with feedback. Ad hoc contractor works on summary of feedback feeding into the EWG report
STECF final advice	29 th June 2021	Fixed date (if possible earlier, possibly as of 25 June)
Final MS JRs transmitted to DGMARE	2 nd July 2021	Two days for MS and DG MARE to finalize
Member State Expert Group	Between 5-8 th July 2021	Latest date possible (no experts meeting in August). Note however we may need to transmit documents (more) in advance
Adoption by the Commission	Between 29 th July – 20 th August 2021	No transmission possible to EP and Council between

		recess period 15 July – 20 August
2+2 scrutiny period by EP & Council	23 rd December 2021	For publication in OJ, SG does not transmit acts for publication after 23-12. Transmission to EP and Council need to be between 21 and 23 August.

Supporting information for MS Groups

Following from the STECF advice provided in 2020, several of the Member States Regional Groups have asked the Commission and STECF for further guidance in the preparation of Joint Recommendations and how to interpret the STECF advice. During February, STECF members attended meetings with the Member State Regional Groups in the NWW, SWW and Scheveningen Groups to present and explain the STECF advice from 2020. The types of information needed to support exemptions was discussed as well as the issue of disproportionate costs. The STECF advice provided under TOR 7.6 on disproportionate costs in PLEN 21-01 is timely and will be useful for Member States.

Next Steps

The next steps are as follows:

- DG MARE to update the Terms of Reference to include the directed fishing JR.
- DG MARE to circulate STECF advice on disproportionate costs to Member States Regional Groups
- Find a co-chair for EWG 21-05
- EWG chair to notify relevant experts

7.2 Preparation of EWG 21-07 on the review of the Technical Measures Regulation

Background

According to Article 31 of Regulation (EU) 1241/2019 on the conservation of fishery resources and protection of marine ecosystems through technical measures, the Commission is required to report, following evaluation by STECF, on the extent to which technical measures both at regional level and at Union level have contributed to achieving the objectives set out in Article 3 and reaching the targets set out in Article 4 of Regulation (EU) 1241/2019. The first report was due to be submitted on the 31 December 2020, with reports every three years thereafter.

To facilitate this, STECF was requested by the Commission to evaluate the performance of technical measures in line with Articles 31. This evaluation was carried out by EWG 20-02. While acknowledging the work carried out by EWG 20-02 with limited data, time and resources, STECF concluded that the EWG report did not provide all the information required for STECF to provide a fully comprehensive and informed response to all the terms of reference. Given that STECF will be requested to undertake an evaluation of the performance of the TCM every three years, STECF provided some considerations on how to proceed in the future as follows:

1. Define the scope for any future evaluations (e.g. is Article 31 specifically concerned with evaluating the performance of the measures in Regulation (EU) 2019/1241 in achieving the targets and objectives of that Regulation?).
2. Specify what is to be evaluated? From Article 31 it appears that evaluation of the performance of technical measures against objectives and targets is what is required but given the diversity and number of fleets/fisheries and technical measures in different regions, it will be impossible to examine and assess each and every measure. Decisions need to be taken regarding which aspects of the TCM regulation and which fisheries are a priority bearing in mind the data and resources available as well as the nature and likely impacts of the different fleets/fisheries. The expectations of what STECF can deliver should be realistic and achievable and be able to inform against the targets and objectives. A way forward could be to assess the extent to which the targets set in the current regulation are being achieved, using a gear and area approach. This could provide a risk-based analysis, highlighting where more detailed assessment of the effects of the current TMR is a priority.
3. Regarding the most appropriate and informative indicators and metrics to use, discussions during PLEN 20-03 showed that there is still so far, no single indicator to evaluate the full performance of technical measures, but different approaches used in complementarity may in the future provide a more holistic view of the paths towards the achievement of objectives and targets.

4. Which data sets are required to carry out the evaluations and who should provide this data?
5. In trying to assess the effectiveness of the measures included in the Regulation there is a need to assess the incentives for fishermen to adapt, adopt and buy-in to specific technical measures.
6. What is/are the appropriate forum/fora to undertake the evaluations? Would it be sensible to adopt a regional approach (i.e. different expert groups dealing with different regionally focused evaluations)?
7. Who should be involved? To evaluate the effects of technical measures requires knowledge of the regional fisheries, the stocks and the evolution of exploitation rates on the stocks and the extent to which various measures have been taken up in each region.

To address the above considerations, STECF identified there is a need to define the scope of future evaluations and to consider how best to convene a follow-up EWG meeting(s) involving the Commission, fisheries scientists gear technologists, data experts and regional fisheries experts (industry, academic, regional fisheries body or other expert disciplines).

An initial discussion took place in the December 2020 STECF Bureau meeting where the scope for future evaluations was discussed. It was agreed that a further discussion was needed during PLEN 21-01 on the appropriate way forward to address how best to plan for and carry out future evaluations. This would help to ensure going forward that the Commission is furnished with the information and tools to allow it to fulfil its obligations under Article 31 of the TCM regulation.

Request to the STECF

STECF is requested to discuss on the organisation of this EWG and clarify its objectives. Review of the relevant ad hoc contract supporting this EWG.

Considering that the next report on the implementation of Technical Measures Regulation is due in three years, STECF is requested to suggest the most coherent and consistent approach in the mid-term to achieve a complete assessment of the regulation, using as a starting point the previous work of EWG 20-02 and offering a holistic approach.

In particular, STECF is requested:

1. Identify the needs for the mid-term, and structure the EWG in the next three years
2. As a result of 1), propose concrete areas to be discussed in EWG 21-07
3. Identify the data needs to prepare the EWG
4. Consider the results of the ad-hoc contracts discussed under point 6.7 of this plenary and incorporate to the elements of this EWG.

STECF observations

1. Identify the needs for the mid-term, and structure the EWG in the next three years

STECF recalls that Article 31 of Regulation (EU) 2019/1241 defines the scope of the evaluation report as to assess:

- The extent to which technical measures both at regional level and at Union level have contributed to achieving the objectives set out in Article 3 and reaching the targets set out in Article 4. The report shall also refer to advice from ICES on the progress that has been made, or impact arising from innovative gear.
- The contribution of technical measures to optimise exploitation patterns. For that purpose, the report may include, inter alia, as a selectivity performance indicator for the key indicator stocks for the species listed in Annex XIV, the length of optimal selectivity (L opt) compared to the average length of fish caught for each year covered.

Based on this, STECF observes that the main requirement needed for structuring the evaluation exercise and the associated EWG is to establish and agree on a methodology and the appropriate indicators that can be used routinely to carry out the evaluation required by the regulation. Establishing and testing the methodology and indicators during EWG 21-07 will allow STECF to carry out the evaluation in a uniform way for the following reporting periods. This is a similar approach to the CFP Monitoring, Annual Economic Report and Balance Capacity EWGs.

2. As a result of 1), propose concrete areas to be discussed in EWG 21-07

STECF observes that one of the main issues identified by EWG 20-02 and PLEN 20-03 surrounded the appropriate indicator or suite of indicators needed to evaluate the full performance of technical measures. Based on the discussion at PLEN 20-03, the focus of the EWG 21-07 should be to test and refine different indicators needed to carry out these assessments as well as identifying the data and information that would be required. STECF has identified a range of indicators that could be used. These build on earlier work carried out in EWGs 18-15 and 20-02, as well as the paper published by Vasilakopoulos et al. 2020.

In this regard, PLEN 21-01 has developed a draft protocol, which defines the steps and possible indicators that will (a) facilitate assessment of the contribution technical measures have made to protecting juveniles; and (b) allow evaluation of the steps needed to optimise exploitation patterns (i.e. the selectivity) to minimise the fishing impact on exploited stocks (as an implicit requirement of the ecosystem approach to fisheries management). Focus should be on the stocks listed in Annex XIV of the Regulation (see Table 7.2.1 below).

ANNEX XIV

SPECIES FOR SELECTIVITY PERFORMANCE INDICATORS

North Sea	North Waters	Western	South Waters	Western	Baltic Sea	Mediterranean Sea
Cod	Cod		Hake		Cod	Hake
Haddock	Haddock		Whiting		Plaice	Red Mullet

Saithe	Saithe	Megrim		
Whiting	Whiting			
Plaice	Plaice			

Table 7.2.1 Species for assessment of selectivity performance included in Annex XIV of Regulation (EU) 2019/1241

The protocol for assessment developed by STECF and JRC at PLEN 21-01 envisages two steps as follows:

Step 1: Diagnosis of the current situation regarding the two objectives of protecting juveniles and to optimise exploitation patterns (i.e. the selectivity).

This is designed to create baselines of the current situation on catches of juveniles and exploitation patterns for the species listed in Annex XIV. This will allow the development of indicators for monitoring purposes against these parameters. The types of information identified to carry out this initial analysis are as follows:

- Current MCRS taken from the Regulation;
- Current age at first catch (t50) estimated from the current F at age (Ft) derived by fitting a logistic curve to the 3-year average fishing mortality at age, or using any alternative more appropriate approach if required;
- Current length at first catch (L50) estimated on average over the last 3 years (for Fishing mortality) or 5 years (for catch) from catch at length, or from stock assessment and F at length if available (e.g. from size-based assessments such as SS3). For stocks exploited by heterogeneous gears t50 and L50 could also be calculated for each the major fleet segments or at least for the less selective fleet segments;
- Current mean age in the catch (tmean) and if feasible mean length in the catch (Lmean), on average over the last 3 years. In addition, a theoretical L2mean related to the current fishing regime should be estimated (from Froese et al. 2016) from Fbar, Mbar and the growth coefficient K (from Fishbase if not easily available).
- Age at first maturity tm from the local literature if available or from FishBase otherwise, and tm50 from stock assessment data derived by fitting a logistic curve (if appropriate) to the fecundity at age;
- Length at first maturity (Lm), and length at 50% maturity (Lm50) from size-based stock assessment (if available)
- topt, tc_opt, Lopt and Lc_opt calculated according to Froese et al. (2016); and
- Fbar and Mbar estimates from ICES assessment, K from assessment if available, or from local literature or from Fishbase. It may also be possible to infer Lopt/Lc_opt using weights-at-age coupled with other standard stock assessment outputs.

From this information possible indicators that could be derived from this information are as follows:

- For the objective of protecting juveniles: either age-based indicators (e.g. t50/(tm or tm50) or length-based indicators (e.g. MCRS/(Lm or Lm50), and L50/(Lm or Lm50)); and
- For the exploitation pattern optimization: age (tmean/topt, and t50/tc_opt) or length ((Lmean or L2mean)/Lopt, MSR/Lc_opt, and L50 / Lc_opt).

STECF observes that such an extensive analysis should allow the EWG to identify which indicators can be calculated in practice, and which are most appropriate to establish baselines to monitor against. Age-based values are likely to be easier to estimate, while length-based indicators could be more informative/easier to communicate to non-scientists, as they link more directly to MCRS and mesh sizes regulations.

Between PLEN 21-01 and EWG 21-07 the best indicators need to be tested and finalised in advance of EWG 21-07. Indicators that have already been tested and shown to be sub-optimal in previous EWGs (e.g. catch-based) should be excluded with the focus on age-based indicators for which relevant data is more readily available.

This first step should be tested for several stocks where the data is readily available (possibly Mediterranean stocks where all the R FLStock objects are held by JRC) during PLEN 21-02.

Step 2: Establishing monitoring indicators to allow the assessment of trends related to the selectivity performance for the stocks specified in Annexe XIV. Based on the discussions at PLEN 21-01 the following candidate monitoring indicators were identified:

- length based indicators such as (Lmean/Lopt) and if feasible (i.e. from length-based assessment) L50/Lm50 (protection of juveniles), L50/Lc_opt (length at first catch optimisation), and Lmean/Lopt (exploitation pattern optimisation)
- Age-based indicators t50/tm50, t50/tc_opt, tmean/topt
- Fishing mortality-based indicators Fjuv/Fbar, $F < topt / Fbar$ or $F < topt / Ftopt$
- Results oriented indicator B/B0 and SSB/SSB0, referring to yield and biomass per recruit B/R and SSB/R values related to the F at age estimated in the frame of the last available stock assessment.

STECF observes that the aim should be to identify whether an indicator would succeed in both monitoring trends in selectivity (like an F-based indicator) and having a clear 'optimisation' reference point (based on the yield per recruit/Lopt logic). That would provide a 'S' and a 'Sref' point analogous to F and Fmsy, that would allow the operationalisation of selectivity as a secondary objective next to F in the ICES management context.

3. Identify the data needs to prepare the EWG

STECF observes that the data needs for (1) 'data-limited' length based per-recruit approach and a (2) 'data-rich' per-recruitment modelling based on the age-structured assessments will be different. Therefore, to facilitate the work of EWG 21-07 a data request should be made to ICES as soon as possible with a delivery date prior to the summer STECF plenary. This will allow data checks to occur before the plenary and allow reporting about the state of the data set to the Plenary. A description of data omitted, with reasons, should be included to allow the identification of missing data.

STECF observes that EWG 21-07 will need the R FLStock objects (or equivalent matrices in digital format) for the stocks that are included in Annex XIV of Regulation (EU) 2019/1241, excluding the Mediterranean stocks that are already held by JRC. The data required is:

- Fishing Mortality at age
- Natural mortality at age
- Stock numbers at age

- Catch at age
- Weight at age
- Maturity at age
- Partial Fs per fleet and/or metier where available

Based on the above the SSB, recruitment and Fbar can be deduced.

4. Consider the results of the ad-hoc contracts discussed under point 6.8 of this plenary and incorporate the relevant elements into the EWG.

STECF notes the request from DGMARE to consider the results of the ad-hoc contracts discussed under TOR 6.8 of this plenary (Revision and update of current information available on sensitive species) and incorporate the relevant elements into the terms of reference for EWG 21-07. This is discussed under TOR 6.8.

Next Steps

The next steps are as follows:

- STECF and JRC to formulate the data request to be sent by DGMARE to ICES
- Identify a chair(s) for EWG 21-07 and fix a date for the meeting
- STECF and JRC to work further on the selectivity protocol
- Carry out an initial analysis and testing of indicators during PLEN 21-02 for a limited set of stocks.
- Formulate the Terms of Reference for EWG 21-07 with input from STECF follow at Plenary 21-02.

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7.3 Preparation of EWG 21-10 on FDI I (Data issues and dissemination)

Request to the STECF

STECF is requested to discuss on the ToRs and on the organisation of this EWG.

Background

Two STECF Expert Working Groups on Fisheries Dependent Information (FDI) will be convened:

- 1) EWG 21-10 Data methodology and dissemination
- 2) EWG 21-12 Evaluation of Fisheries Dependent Information for European Fleets to review the data transmitted by Member States under the 2021 FDI datacall to judge whether data submitted is complete in terms of:
 - a. areas of fishing, types of fleet segment and gear operated and species identified;
 - b. type of data requested: capacity metrics, effort metrics, landings, discards and spatially disaggregated landings and effort.

In addition, the EWG is asked to map the data on fishing effort obtained from the call for spatially disaggregated data.

In considering the completeness of the data submitted the EWG is entitled to use external sources of data where necessary, as well as expert judgement.

Terms of Reference EWG 21-10 (Data methodology and dissemination)

Based upon the

- [STECF PLEN 20-02](#) conclusions on the ToR 7.4 preparation of the EWG 20-10 Fisheries Dependent Information;
- [STECF EWG 20-10](#) conclusions to establish common practices on e.g. use of confidentiality data records and dissemination tools, and the need to create methodology to partition numbers at length data from Tables C and D (aggregations according to sampling programs) to Table A (detailed catch table).
- The need stressed by the STECF PLEN 19-03 to develop a suite of methodologies for the dissemination of FDI data. Such methodologies should provide a visual and numerical indication of estimate robustness and coverage – in particular for discard estimates.

Considering that this EWG is very technical and will take place virtually, an **ad-hoc contract** will be put in place to prepare proposal for the methodology to create detailed

Table A and disseminate it providing visual and numerical indication on robustness and coverage estimated.

The STECF EWG is requested to:

1. Review approaches used by Member States responding to the FDI data call and if possible propose common best practice

Discuss and review the following:

1.1 Methods used by MS to partition biological sampling data to the level requested in Table A;

1.2 Review methods used by MS to define confidential cells;

1.3 Metier definitions used by MS;

1.4 Allocation of landings to c-squares using VMS/logbook data;

1.5 Coverage and methods used to estimate landings and effort data for vessels <10m;

1.6 Any other business (AOB).

2. Based on the ad hoc project proposal review methodology to assemble detailed Table A provided by the Member States, the biological data as well as access suitability of proposal to disseminate detailed Table A

2.1 Review methodology proposed to derive detailed Table A and its suitability;

2.2 Review and propose methods that incorporate numerical indication of estimate robustness and coverage of information provided in Table A (e.g. number of samples collected for discards data).

2.3 Discuss a possibility to transfer the biological data from Mediterranean and Black Sea data call into the FDI format/database

3. Test the compatibility between the data collected in the FDI database and the data provided for the Fleet Socio-Economic Data call

3.1 For 2017-2018 data, map fleet segments found in the FDI database to fleet segments found in the Fleet Economic database.

3.2 Compare sums of effort (days at sea) and landings (tonnes and values) between FDI and the dataset from the Fleet socio-economic data call by:

a. Country;

b. Fleet segment;

c. Gear type within fleet segment.

The experts are invited to prepare a presentation on their methodology in the respective Member State that will be given in the first days of the EWG.

Terms of Reference EWG 21-12 Evaluation of Fisheries Dependent Information for European Fleets

The STECF EWG is requested to:

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

- 4.1 As a matter of priority, the EWG is requested to ensure that all unresolved data transmission (DT) issues encountered prior to and during the EWG meeting are reported on line via the Data Transmission Monitoring Tool (DTMT) available at <https://datacollection.jrc.ec.europa.eu/web/dcf/dtmt>. Such issues should be reported in full within 2 weeks of the end of the EWG.
- 4.2 Review outputs of ad hoc contract that provides the catches, landings and discards, at a level of aggregation corresponding to the fleet, area and gear type as specified in each exemption of each discard plan for 2022.
- 4.3 Review data quality checks and produce National methodological chapters.

5. Provide landings and discards data for exemptions in discard plans

Based upon the previous work and method established in STECF EWG 20-10:

- 5.1 STECF is asked to provide figures for landings and discards in 2020, at a level of aggregation corresponding to the fleet, area and gear type as specified in each exemption of each of the discard plans for 2022.
- 5.2 STECF is asked to assess and if possible, provide percentages of discards estimates below and above MCRS at a level of aggregation corresponding to the fleet, area and gear type as specified in each exemption of each of the discard plans for 2022.
- 5.3 Where there is insufficient discard data for the above task, the STECF is asked to provide estimated catches (landings + discards³⁷) for 2020, if possible and enough data provided during data call.

6. Produce dissemination tables and maps of spatial effort and landings by c-squares

- 6.1 Discuss and agree the format of the biological data (FDI Tables C, D, E and F) and of the refusal rate data to be publicly disseminated (FDI Table B).
- 6.2 If GIS technical skills are available in the EWG, produce maps of effort and landings by c-square (to be inserted in the EWG report) for the following regions (as defined in COM-2016-134 for areas other than 'distant waters') and major gear types (as defined in appendix 4 of the data call):
 - a. Baltic; North Sea; North Western Waters; South Western Waters; Mediterranean and Black Sea; Distant waters³⁸
 - b. Trawls (except beam trawls) with mesh < 100mm; trawls (except beam trawls) with mesh ≥ 100mm; beam trawls with mesh < 120mm; beam trawls with mesh ≥ 120mm; seine nets; gillnets and entangling nets; dredges; hooks and lines; surrounding nets; pots and trap.

³⁷ 'Discards' are defined here as the fish/crustaceans thrown overboard.

³⁸ Defined here as waters not covered by the previously listed areas.

STECF comments

STECF notes that the proposed investigation and development of methods/suggestions listed in the TORs of EWG 21-10 do not need the recent data from the 2021 FDI data-call. Therefore, the virtual meeting can take place prior to deadline of the 2021 data-call. The information from the 2020 data-call (years 2015-2019) is suitable for the analysis required under ToRs 2 and 3.

STECF notes that DCF sampling programs are predominantly designed to provide the best possible estimates for stock assessments. Hereby Member States statistical sampling programs are developed for different strata from those requested in the FDI table A. Information about biological sampling and samples collected for the NAO OFR (North Atlantic Ocean and other fishing regions - not for the Mediterranean and Black Sea regions) can be found in the following tables in the FDI database:

- Table C NAO OFR Discards age data (number of samples collected for discards data)
- Table D NAO OFR. Discards length data (number of samples collected for discards data)
- Table E NAO OFR. Landings age data (number of samples)
- Table F NAO OFR. Landings length data (number of samples)

However, during the data call Member States are requested to partition discard estimates into a much lower resolution level for Table A. STECF notes that currently there is no common practice or guidelines to partition discard estimates into Table A. Member States do the partitioning of the discard estimates – to the best of their ability – in their own way. STECF encourages development of guidelines or suggestions for common practices for the partitioning of the discard estimates.

STECF also encourages the development of quality indicators for the information obtained from Table A proposed as part of ToR 2 of EWG 21-10. STECF reiterates (from STECF PLEN 19-03) the need to develop a suite of methodologies for the dissemination of the FDI data. Such methodologies will provide a visual and numerical indication of estimate robustness and coverage – in particular for discard estimates.

STECF notes that new métier definitions are currently being implemented (Liaison meeting 2020), and suggests that steps are taken during the EWG to ensure that these updated definitions are applied for the FDI data in the future.

STECF plenary urges to find a solution on how data for Med&Black Sea region, which have been dropped from FDI data call in 2020 could be obtained from the Med&Black Sea data call, thus avoiding double reporting. STECF suggests having a discussion of possible solutions during EWG21-10 if expertise is available. STECF understands that the issues preventing the transferring of MBS data into FDI are mainly linked to poor timing alignment in data availability and need between the two data calls, as well as institutional responsibility of who should be tasked with performing this transfer, rather than technical or data specification hurdles. STECF underlines that if these issues cannot be solved, it might be necessary to re-include Med and Black Sea into the FDI data call, as the current situation of missing data cannot be considered to be a satisfactory long-lasting arrangement.

STECF welcomes a comparability test between the data collected in the FDI database and the effort and landings data provided during the Fleet socio-economic data call. STECF also notes that EWG 20-11 on Balance/Capacity looked at this issue in 2020, and therefore suggests taking work done during EWG 20-11 into the account.

STECF proposes the EWG 21-10 to take place as a virtual meeting from 31 May until 4 June 2021.

STECF agrees that a 5 days ad-hoc contract is issued prior to the EWG 21-10, mainly to provide suggestions for the creation of detailed Table A and dissemination of the quality information associated with biological data in the Table A of the FDI data. The deadline for the interim outputs of ad-hoc contract should be 28 May 2021 with final updated proposal delivered by 10 of September.

STECF also endorses the ToRs proposed for the EWG 21-12. The ToRs and accompanied ad hoc contract are fully in line with previous FDI EWGs.

STECF conclusions

STECF agrees with the proposed TORs for the EWG 20-10 and EWG 20-12 and the proposed TORs for two ad-hoc contracts

7.4 Preparation of EWG 21-16 on Balance / Capacity

Background provided by the Commission

The Commission requests that an analysis of balance between fleet capacity and fishing opportunity be made using a standard approach across all EU fleet segments, based on DCF information and in line with the Commission Guidelines (COM (2014) 545). Where possible, evaluation should use data reference years 2011 to 2020.

Request to the STECF

An Expert group of the STECF (Chair, Dr John Casey), EWG 21-16, will be convened from 25 to 29 October 2021 to undertake the following tasks and report to the STECF.

1. Based on the data submitted by Member States under the 2021 DCF Economic data call and the most recent assessments and advice from relevant scientific bodies on stock status and their exploitation rates, compute values for the technical, economic and biological indicators specified in the European Commission Guidelines³⁹.

JRC will provide tabulated values (in the same format as the Member State indicator tables in the STECF 16-09 data table for all indicators as detailed in items i) to vi) below, covering all Member State fleet segments wherever the necessary data are available.

Values for the following indicators to be provided as specified in the 2014 Balance Indicator Guidelines⁴⁰:

- (i) Sustainable harvest indicator (SHI)
- (ii) Stocks at risk indicator (SAR)
- (iii) Return on investment (ROI) and/or Return on Fixed Tangible Assets (RoFTA)
- (iv) Ratio between current revenue and break-even revenue (CR/BER)
- (v) The inactive fleet indicators
- (vi) The vessel use indicator

For fleet segments for which the indicator values can be calculated, the Expert group is requested to present the trend over the last 5/6-year period.

2. The Expert group is requested to provide country chapters containing the following information for each Member State, in order to allow the STECF to issue an informed advice both as regard the balance situation of the fleet segments and concerning the quality of the assessment provided by the Member States in their national fleet reports and, where relevant, action plans:

³⁹ COM (2014) 545 final. Communication from the Commission to the European Parliament and the Council. Guidelines for the analysis of the balance between fishing capacity and fishing opportunities according to Art 22 of Regulation (EU) No 1380/2013 of the European Parliament and the Council on the Common Fisheries Policy.

⁴⁰ Id.

- a. Based on the biological, economic or technical indicator values and their recent trends as computed under task 1, provide an overview of whether, according to the Commission Guidelines (COM (2014) 545) fleet segments can be considered in or out of balance with their fishing opportunities.
 - b. For each fleet segment, compare the biological, economic or technical indicator values as computed under task 1 with the equivalent values and trends in the fleet reports submitted by the Member State under Article 22.2 and 22.3 of Regulation (EU) 1380/2013. Highlight any discrepancies between the Member State's assessment of balance between capacity and fishing opportunities and the Expert group's assessment based on the indicator values computed under task 1. Where possible, identify the reasons for such discrepancies.
 - c. Assess whether the fleet reports submitted by 31 May 2021 by the Member States under Article 22.2 and 22.3 of Regulation (EU) 1380/2013 provide a sound and comprehensive analysis of balance between fleet capacity and fishing opportunity of all EU fleet segments, based on DCF information, in line with the Commission guidelines COM(2014)545. This assessment should include an examination whether the annual report appropriately addresses previous STECF findings regarding discrepancies between the Member State's assessment of balance between capacity and fishing opportunities and the Expert group's assessment.
 - d. Comment on whether the measures in the new or revised action plans submitted with the fleet reports by 31 May 2021 are appropriately targeted, timebound and are likely to contribute to redressing the imbalance in the fleet segments concerned.
3. The Expert group is requested to list for the Outermost Regions of France (Réunion, French Guiana, Martinique, Guadeloupe, Saint-Martin and Mayotte), Portugal (Madeira and Azores) and Spain (Canary Islands), those fleet segments that according to the most updated set of data (2019 or later if available) for either the biological, economic or technical indicators in the Commission Guidelines, as computed by the STECF, were indicated to be out of balance with their fishing opportunities. The list should contain information on the fish stocks on which such segments rely and the fishing area to which such segments are attributed. Separate lists should be provided for each indicator. The fish stocks on which a fleet segment is reliant shall be determined by ranking the landings from all stocks caught by that fleet segment in descending order in terms of landings value and listing those stocks that account for at least 75% of the total value of the landings by that fleet segment. The Expert group is furthermore requested to provide a list of the fleet segments for which information available does not allow to calculate the above indicators and to indicate for which indicators what kind of information was not available.
 4. For each Member State, the Expert group is requested to list in the Annex to its report those fleet segments that according to the most updated set of data (2017 or later if available) for either i) the SHI or ii) the SAR, as computed by the STECF, were indicated to be out of balance with their fishing opportunities together with the fish stocks on which such segments rely and the fishing area to which such segments are attributed. Separate lists should be provided for each indicator. The fish stocks on which a fleet segment is reliant shall be determined by ranking the landings from all stocks caught by that fleet segment in descending order in terms of landings value and listing those stocks that account for at least 75% of the total value of the landings by that fleet segment. The area to which a fleet segment is attributed shall be given as FAO area 27, FAO area 37, OR and for other fishing regions (OFR).

STECF is requested to discuss the ToRs and on the organisation of this EWG.

Overview of discussions

DG MARE explained the rationale behind the ToRs to the EWG 21-10, pointing out that the main change to the ToR prescribed for the EWG 20-11 is the removal of the request to elaborate on the suitability and utility of indicators additional to those prescribed in Commission Guidelines (COM (2014) 545).

Two minor changes have been introduced:

- i) to place more emphasis on the requirement to highlight any discrepancies between member States' indicator values and those computed by the STECF (Item 2.b above) and
- ii) to indicate the information needed to compute indicator values for fleets in the Outermost regions (Item 3 above).

STECF notes the changes and will strive to ensure that all items of the ToRs are successfully addressed. In its PLEN 20-03 report, the STECF suggested that two biological indicators NOS and EDI are potentially useful additional indicators that can help Member States with fleet management. Hence STECF will continue to compute such indicators even though they are not prescribed in the Commission Guidelines (COM (2014) 545).

7.5 Preparation of EWG 21-17 on the evaluation of Work Plans for data collection and data transmission issues

Background provided by the Commission

The work plans from 2022 will be based on the revised EU-MAP and templates. COM services outside DG MARE will need to be involved early in the assessment to enable timely resubmissions, if necessary, so that final assessment is based on a complete STECF advice. The usual time constraints for WP decision adoption as every year will apply, but higher workload is expected.

Request to the STECF

STECF is requested to discuss on the ToRs and on the organisation of this EWG.

Based on EWG 20-18 findings (ToR 2), STECF is requested to recommend the most efficient assessment procedure for the October 2021 exercise, bearing in mind that the WPs will need to be very thoroughly checked and evaluated.

STECF observations

Based on the EWG 20-18 findings (cf. ToR 5.3 of this Plenary), STECF observes that the DCF Work Plans (WPs) for 2022 and beyond will be based on the new Multi-annual Programme for Data Collection (EU-MAP), new WP templates and be the first WPs to contain detailed information on survey and estimation design through the submission of the new Annexes 1.1 and 1.2 (quality reports). As the information provided through the submission of these annexes will be extensive, and in order to ensure that annexes are evaluated sufficiently, a separate assessment procedure for the data quality part of the WPs is needed specifically for 2021. The EWG 20-18 considered that an additional STECF EWG or ad-hoc contracts should be organised for the evaluation of these annexes. Considering that there is no scope for an additional EWG in 2021, however, STECF notes that the data quality reports would best be evaluated through specific ad-hoc contracts during the pre-screening phase (and when necessary, during the EWG). Since the methodological approach is seldom changed within a WP period, the EWG considered that this evaluation is most likely only needed once for the WPs 2022-2024.

STECF further observes that the regulation for the European Maritime, Fisheries and Aquaculture Fund (EMFAF) foresees an amendment to the DCF Regulation (EU) No 2017/1004 article 6, requesting that "*Member States shall submit to the Commission by electronic means their national work plans by 15 October*". STECF acknowledges that this amendment of the WP submission deadline (currently 31 October) increases the time available for STECF to evaluate the WPs.

STECF conclusions

STECF concludes that the time gained through the earlier WP submission deadline should be utilised for pre-screening of the WPs during the two weeks before the WP evaluation meeting (18-29 October 2021; EWG 21-17 takes place 1-5 November 2021), including the assessment of the data quality reports (Annexes 1.1 and 1.2 to the WPs). STECF notes that for the quality assessment, sufficient subject expertise for pre-screening and for the EWG is needed. Thus, potential experts should be contacted for availability well in advance.

7.6 Development of a common understanding on disproportionate costs

Request to the STECF

STECF is requested to discuss and develop a common understanding on the issue of disproportionate costs, when receiving exemption requests under the LO from MS for evaluation. STECF should also state the requirements needed for a justification of such exemptions.

Background

The landing obligation, Art. 15 of the basic regulation of the CFP, was introduced with the objective to reduce levels of unwanted catches and to gradually eliminate discards. Unwanted catches and discards constitute a substantial waste and negatively affect the sustainable exploitation of marine biological resources and marine ecosystems and the financial viability of fisheries. The landing obligation was implemented, however, with multiple exemptions (e.g. de minimis, high survivability, damage by predators) from the obligation to land all catches of species under catch limits or with MCRs in the Mediterranean. Those exemptions in many respects result in continuation of business as usual without a real reduction of bycatch and discards (Rihan et al. 2018). There is a strong incentive for Member States and the fishing industry to seek exemptions from the landing obligation rather than to change fishing practice to increase selectivity and reduce unwanted catches. The obvious risk with such exemptions is that unwanted catches are not reduced, are undocumented and can lead to catches that exceed agreed TACs.

The de minimis exemptions included under Article 15 which allow for the discarding of a small portion of unwanted catches under certain conditions have been frequently requested by Member States since the landing obligation was introduced in 2015. As reported on many occasions by STECF, the evaluation of requests for de minimis exemptions is problematic, particular around one of the conditions relating to "disproportionate costs" for handling unwanted catch:

"Art. 15 (5) c) provisions for de minimis exemptions of up to 5 % of total annual catches of all species subject to the landing obligation referred to in paragraph 1. The de minimis exemption shall apply in the following cases:

(i) where scientific evidence indicates that increases in selectivity are very difficult to achieve; or

(ii) to avoid disproportionate costs of handling unwanted catches, for those fishing gears where unwanted catches per fishing gear do not represent more than a certain percentage, to be established in a plan, of total annual catch of that gear."

The majority of requests for *de minimis* exemptions are based on disproportionate costs. STECF is requested to analyse and comment on these requests. Based on the STECF advice, the Commission accepts or rejects specific exemptions in the context of the overall Joint Recommendations submitted by the Member States to implement the landing obligation.

STECF has acknowledged that providing appropriate information to support *de minimis* exemption based on disproportionate costs is challenging, although necessary to allow for an evaluation to be carried out. The purpose of economic analyses to support a *de minimis* exemption is to understand the scale, or proportionality, of the challenges in terms of lost revenue faced by the group of vessels in complying with the obligation to land all catches of those species subject to the landing obligation.

In some cases, Member States put in a lot of effort to justify *de minimis* exemptions using such analyses of disproportionate costs (e.g. STECF PLEN 19-02, p. 63). Detailed information is provided to demonstrate that the potential increase in workload in terms of time and operational costs and that due to storage limitations vessels may be forced to cut short fishing trips causing loss of income. However, in such cases, STECF 20-04, most recently, has stressed that there is no way to objectively judge whether such costs are disproportionate. Simply presenting information showing that handling, storing and landing unwanted catches has an associated cost, is not sufficient in STECF's opinion to demonstrate that such costs are disproportionate. Logically, in line with the objectives of the landing obligation, priority should be given to improving selectivity and the introduction of avoidance measures to reduce the levels of unwanted catches and thus, reduce the costs for handling such catches. For other cases Member States have provided very little information to justify such exemptions. In these cases, STECF has advised that while it is intuitive that the costs are disproportionate, no quantitative information has been presented to demonstrate this to be the case.

In assessing exemptions, STECF has requested additional information to the data provided. However, it has become increasingly clear to STECF that there is no scientific methodology or reasons available to justify whether a certain level of additional costs is disproportionate or not. Even with very detailed calculations, Member States cannot judge at which level costs are disproportionate because there is no way of assessing objectively what level of costs constitutes disproportionate.

STECF observations

STECF has decided after critical responses from regional groups regarding the demand for extra data to support exemptions (e.g., for a JR by the Scheveningen Group on the flatfish fishery (BT2)) to discuss the development of a common understanding of what information is needed to support *de minimis* exemptions based on disproportionate costs.

Acknowledging the difficulties faced by Member States in providing supporting information to demonstrate disproportionate costs, STECF has revisited the original interpretation of 'disproportionate costs' made during the first STECF meeting on the landing obligation (STECF 13-23, p. 56-57). This stated:

"The TOR 2 also requested guidance on the second condition related to "disproportionate costs". Following additional interpretation of article 15.2.c.ii, there was consensus that the ToR request to formulate an appropriate metric and thresholds for "disproportionate costs" was somewhat misleading. There is in fact no need to identify and justify what disproportionate costs would be, because the full wording in the article suggests that disproportionate costs of handling unwanted catch are simply assumed when the unwanted catch of a specific fishing gear is below a certain percentage of the total catch of that gear, and that the percentage threshold would be established in a discard plan. The key question appears to relate to 'the percentage unwanted' and the EWG gave some thought to this. The general expectation appeared to be that the percentage would be relatively low, and one suggestion was for a figure in line with the de minimis allowance. It was, however, pointed out that the intention of the regulation was for the de minimis (5%) to be an overall value that a Member State was required to conform to, whereas this conditionality gave some flexibility for different gears to have different percentage discards."

Taking this interpretation, STECF suggests that it may be appropriate for Member States to follow the wording of Article 15 (5c) more closely. In addition to defining the fleets impacted and clearly describing the problem with supporting information, demonstrating the level of increased costs because of having to handle and store unwanted catches on board is also needed. Member States should also describe the relationship between the de minimis volume requested and the actual level of unwanted catches to put the proposed exemption in the context of the fishery and also the state of the stock for which the exemption is covering. This will allow an assessment as to whether risk of the exemption to the relevant stocks covered by the exemption is minimal.

STECF observes, that when describing the reasons for proposing the exemption, it would also be desirable for Member States to explain why selectivity cannot be increased to reduce the level of unwanted catches, this would help demonstrate the de minimis exemption is a last resort measure as improving selectivity is not possible. Where future selectivity work that is planned in the relevant fisheries and the exemption is a stop gap, this should also be highlighted.

STECF notes that no threshold for disproportionate costs exists at which exemptions would be justified. Nevertheless, STECF has highlighted that Member States provide very detailed costs for the handling of unwanted catch. In such case, STECF has made a value judgement as to whether the cost data provided make a persuasive case in support of the exemption - where a substantiated request with cost data was provided. While data on costs of handling unwanted catches are potentially valuable information in support of proposed exemptions from the landing obligation, STECF observes that such data need to be expressed in the context of the fisheries to which the exemptions are to apply. Previously for some proposed exemptions, costs of handling data have been provided that were not fishery-specific.

STECF re-iterates the observations of PLEN 19-01 that in terms of potential impacts on business performance if unwanted catch cannot be avoided and must be handled and stored on board, then the following impacts are likely:

- lower total fishing income per annum if fishing opportunity is restricted;
- fishing costs likely to increase relative to income (quota, fuel, crew, onshore costs);

- reduced economic productivity; and
- reduced profitability which is likely to increase pressure to reduce operational costs and limit investment;
- under a share payment system, crew wages per hour may decrease due to increased effort required for handling and storing.

STECF considers that the supporting evidence provided for cases put forward based on disproportionate costs should demonstrate these impacts are significant if the landing obligation is strictly enforced. Where possible they should be backed up with economic data.

STECF observes that the justification for de minimis exemptions based on disproportionate costs has varied considerably since the introduction of the landing obligation. In many cases there are exemptions where the de minimis volume covers only a proportion of the total unwanted catches and the costs for handling and sorting will remain regardless of whether the exemption is granted or not. Cost will still be incurred for handling the residual unwanted catches. In such cases it is hard to justify why a de minimis is needed.

STECF observes that there are other exemptions where the case is stronger because clear arguments are provided showing that (i) there are additional costs for handling unwanted catches over and above existing costs for handling catches on board and those costs are significant, (ii) improvements in selectivity are difficult (and especially if some selective devices are already in use) and (iii) the level of de minimis volume requested is small.

STECF observes there are examples of exemptions based on disproportionate costs where intuitively the exemption is justifiable (i.e. there is likely to be increased costs and increasing selectivity is not an option) because of the nature of the fishery and the morphology of the species for which the de minimis exemption is requested. However, the supporting information provided is deficient in that it does not describe the problem the exemption is required to solve or the relationship between the level of unwanted catches and the level of de minimis proposed. Put simply, STECF believes there is an issue based on expert judgement and knowledge of the fishery, but no evidence has been supplied to help STECF assess the proposal.

STECF conclusions

STECF concludes that regional groups should support requests for exemptions with the following information:

- Description of the problem – Why are the costs considered disproportionate. Why is selectivity hard to improve?
- The fleets and fishery involved – needs to include information for all Member States and include best available catch (landings plus discards) data
- Justification and supporting information – summary of relevant studies carried out
- Impact/risk of the exemption in the context of the fishery – showing the risk of granting the exemption in the overall context of the fishery regarding by catch species is low.

- Economic impact estimate: Characteristics of the vessels involved in the fishery, estimate of working time per day for handling the bycatch or necessary storage capacity, necessity for an extra person on board to handle the bycatch (may be not possible due to safety regulations), information on cost structure and revenues (specified for the respective fisheries or specific information about seasonality of the activities of the fleet involved in case exemptions are requested for specific times of the year) of involved fleet segments (e.g. personal costs compared to revenue, etc.). STECF is not expecting a very detailed calculation just a reasonable estimate where possible backed by available economic data.

References

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7.7 Presentation of the Gender equality, Diversity and Inclusion project (Ellen Johannesen, ICES)

Request to the STECF

Ellen Johannesen is the Coordinating Officer at ICES Secretariat and a PhD Candidate, part of a DFO Canada sponsored programme called Empowering Women for the UN Decade of Ocean Science for Sustainable Development, at the WMU-Sasakawa Global Ocean Institute, World Maritime University in Sweden. Her research is focused on understanding the role of gender in the practice of International Marine Science – with ICES as a case study. She is interested in understanding the barriers and exploring strategies to promote women in leadership positions. She is using a mixed-methods approach to develop the evidence base to document and understand why women are underrepresented in the decision-making parts of ICES, and focused on identifying solutions. She is working with the ICES community to start the conversations on how we can improve on gender equality, diversity, and inclusion.

Several STECF members supported the proposal of Ellen Johannesen making a presentation of her project to the STECF Plenary.

The presentation was very well received by the STECF, with numerous DG MARE and JRC staff attending. The presentation was followed by an intensive discussion and exchange. The current STECF (appointed in June 2019) has approx. 1/3 female membership and roughly 50% of the STECF meetings, plenary and Expert Working Groups, are chaired/co-chaired by female scientists. According to the Commission, the list of applications usually received in response to calls for STECF membership application is imbalanced toward male applicants. For future calls for application to STECF membership, the Commission could consider options such as reaching out to female scientists in a more targeted approach e.g. by circulating the call information to female marine scientists / their associations. The STECF bureau (DG MARE, JRC/secretariat, committee chair and vice-chairs) will elaborate on the possibility of gender, diversity and inclusion aspects to be incorporated into the STECF Rules of Procedures.

8. CONTACT DETAILS OF STECF MEMBERS AND OTHER PARTICIPANTS

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

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