



SCIENTIFIC, TECHNICAL AND ECONOMIC
COMMITTEE FOR FISHERIES –
81st PLENARY REPORT
(STECF-PLN-26-01)

Final report pending publication numbers
for webpage release

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2026

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How to cite this report: *Scientific, Technical and Economic Committee for Fisheries (STECF) – 81st Plenary report (STECF-PLN-26-01)*, Publications Office of the European Union, Luxembourg, 2026, doi:XXXXXXXX, JRCXXXXXX.

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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 81st plenary from 9 to 13 March 2026.

81th PLENARY REPORT OF THE SCIENTIFIC, TECHNICAL AND ECONOMIC COMMITTEE FOR FISHERIES (PLEN-26-01)

9-13 March 2026

1. INTRODUCTION

STECF held its spring plenary on 9-13 March 2026 at the Quartier Leopold – building Emerald Court, Rue Joseph II 70, Brussels. The meeting was chaired by the STECF chair Raúl Prellezo and was held as a hybrid meeting.

2. LIST OF PARTICIPANTS

The meeting was attended in person by 28 members of the STECF and four JRC personnel. Six STECF members and four JRC personell attended online. 19 Directorate General Maritime Affairs and Fisheries (DG MARE) attended parts of the meeting physically or online. The STECF member Laura Uusitalo did not attend the plenary meeting.

Section eight of this report provides a detailed participant list with contact details.

3. INFORMATION TO THE PLENARY

STECF – change in membership and vice-chair

Alessandro Ligas will join the JRC as of 16 May 2026 and will thus resign from the STECF on that date. The Commission appointed Alessandro Orio as new committee member with data 16 May. The STECF unanimously elected Fabio Grati as new vice-chair to follow Alessandro Ligas.

Meetings 2026

The STECF was informed that the following meetings were cancelled by the Commission:

- EWG-26-04 Evaluation of joint recommendations on the Landing Obligation and Technical Measures, 18-22 May, virtual meeting
- MINI-PLEN 26-04, 16-17 June, virtual meeting

4. STECF INITIATIVES

No STECF initiatives were addressed.

5. ASSESSMENT OF STECF EWG REPORTS

5.1 EWG 25-13 Social Data in EU fisheries 2: analysis and evaluation Request to STECF

Request to the STECF

STECF is requested to evaluate the findings of the STECF Expert Working Group social report (ASOR) and make any appropriate comments and recommendations in view of its publication. Furthermore, STECF is requested to confirm the methodology used for the fisheries wages.

STECF comments

STECF acknowledges the substantial effort undertaken by the Expert Working Groups (EWG 25-02 and 25-13) and the supporting ad hoc contracts in preparing the first Annual Social Report (ASOR). The report represents the first systematic effort to enable the assessment progress toward the objective of social sustainability in EU fisheries, complementing the long-established Annual Economic Report (AER) and contributing to the integration of the environmental, economic and social pillars of the Common Fisheries Policy (CFP).

STECF notes that the ASOR compiles and analyses social data collected under the DCF/EU-MAP framework for fisheries, aquaculture and processing sectors for the years 2017, 2020 and 2023. In addition, STECF notes that an ad hoc data call on social variables was issued in 2025 to support the preparation of the ASOR. The report integrates multiple sources of information, including the mentioned Social Data Call, Economic data call and additional datasets provided by Eurostat, EMSA and EUMOFA, enabling a broader perspective on the social dimension of the sector.

STECF notes that the analysis combines quantitative indicators with expert-based qualitative interpretation, reflecting the complexity of social sustainability analysis and the limited availability of harmonised social indicators across Member States. STECF considers that this approach is appropriate given the current limited state of social data collection, but it also requires a high level of expertise and careful interpretation of the available information.

Comments on the outcome of the EWGs

STECF notes that given time and resource constraints, the analysis of the aquaculture and processing sectors in this first edition of the report is limited to a descriptive presentation of the available data, while the fisheries sector is analysed in greater depth. STECF notes that this represents a phased approach, with future ASOR editions expected to expand the analytical scope and integrate cross-sectoral perspectives.

STECF observes that the report outlines important trends in the EU fisheries workforce. In 2023, the EU fisheries employed an estimated 119,989 fishers aboard 53,260 active vessels. STECF notes that fisheries employment has declined 15% since 2017, with full-time equivalents (FTE) falling 25%. The workforce is ageing: the proportion of fishers over 40 rose from 65% to 71%, while those under 40 dropped from 31% to 26%, raising concerns regarding generational renewal and the long-term attractiveness of the sector. Regarding gender participation, the report indicates that employment is largely male (95%), with low (60%) or medium (29%) education levels dominating. Most fishers (86%) are national workers, though non-EU/EEA workers now represent 10% of the workforce.

Data issues and methodological considerations

STECF notes that the analysis highlights several caveats related to data availability, definitions and data provisions.

Although the quality of social data in terms of completeness and consistency with the Economic data call, appears to have improved between 2017 and 2023, the assessment of trends of key indicators remains challenging. Changes in national data collection approaches over time make it difficult to distinguish real structural developments from methodological effects (e.g. employment profile - owner, employee- by vessel size).

STECF notes that while the reporting framework allows the submission of combined variables (e.g. gender by age or nationality), Member States are not required to provide such combinations. As a result, the ability to analyse relationships between social variables remains limited. STECF observes that such combined variables would significantly improve the understanding of workforce structure and social dynamics within national sectors and at EU level.

STECF also notes that the definitions of several variables require clarification. In particular, the definition of employment status is not sufficiently explicit in the current guidelines (Guidance Document for the Social Variables¹ and the Economic Regional Work Plan 2025-2027²). Differences in interpretation among Member States complicate cross-country comparisons and may require data aggregation during data-processing, potentially reducing the analytical value of the dataset.

Regarding employment by age, STECF notes that the EWG considers that it would be beneficial to split the age class 40-64 into 40-54 and 55-64, as already suggested by EWG 22-14 and currently used by some Member States, to better capture ageing within the workforce. STECF notes that this adjustment has already been addressed in the Economic Regional Work Plan 2025-2027.

1 Available at https://datacollection.jrc.ec.europa.eu/documents/d/dcf/eumap_guidance_social

2 https://datacollection.jrc.ec.europa.eu/documents/d/dcf/econ_rwp_2025-2027

STECF notes that the definition of the education variable, while appropriate for standard formal education, does not fully capture the specific characteristics of education and training in the fisheries sector. Beyond conventional education levels, fishers are required to undertake mandatory training, which must be periodically renewed, and often participate in vocational training, resulting in a continuous, lifelong learning pathway that builds skills and professional capacity.

STECF also notes that data completeness varies across Member States, with some variables partially reported or classified as “unknown” for some Member States. STECF considers that this limitation should be explicitly acknowledged when interpreting the results. For example, the nationality variable reports significant percentage of unknowns for several Member States, which limits the robustness of the EU-level analysis of workforce mobility.

According to the EMFAF Regulation 2021/1139 art. 2 (14) small-scale coastal fishing’ means fishing activities carried out by (a) marine and inland fishing vessels of an overall length of less than 12 metres and not using towed gear as defined in point (1) of Article 2 of Council Regulation (EC) No 1967/2006 (28); or (b) fishers on foot, including shellfish gatherers. STECF notes that data collected under EU-MAP do not include fishers on foot, either in the fishing AER data call (associated to the vessels) or aquaculture data call. The omission of shellfish and seaweed gatherers from EU fishery statistics results in not only a lower number of total employment than in reality, but also in a substantial under-representation of women in the data, particularly in countries such as Spain, France and Portugal.

STECF notes that the report also identifies specific national data issues. For instance, data reported for Portugal were found to be incomplete, with a confirmed omission of a relevant number of individuals due to reliance on administrative records. This discrepancy affects EU-level trends.

STECF notes that Greece reported FTE by gender for 2017 in the social dataset, but no FTE data for 2017 were submitted in the Economic data call. Nevertheless, the ASOR reports different FTE trends, one based on the fleet economic database and one on the social dataset. As a result, the analysis reports different percentage changes in FTE trends depending on the data source used.

STECF notes that the analysis of wages in the report relies on a comparison between fisheries labour costs derived from the AER data call and labour cost indicators obtained from Eurostat. The approach adopted in the report appropriately recognises that the Data Collection Framework (DCF) records labour costs rather than wages, combining personnel costs and the estimated value of unpaid labour. For the purpose of cross-sector comparison, the report therefore uses Eurostat hourly labour cost data, which include both wage and non-wage components, and converts them into annual labour costs using national full-time equivalent working hours. While this methodology represents the closest available comparison with DCF labour cost data and it has been already used in the EU Blue Economy Observatory and published in recent papers on the wage attractiveness of the EU fishing sector (Guillen et al., 2025; Borriello et al., 2025), STECF notes that the resulting comparison should be interpreted with caution. In particular, the methodology assumes that the share between labour costs and wages is similar in fishing and other sectors. STECF notes that the

EWG highlighted how this assumption may affect the interpretation of the results as institutional arrangements in the fisheries sector, such as share-based remuneration systems, self-employment, or lower levels of non-wage benefits in small-scale fisheries, may lead to differences in labour cost composition that are not fully captured by this comparison. STECF considers that the presence of specific regulatory frameworks in the fisheries sector that reduce taxation and social security contributions on labour, could further contribute to these differences. STECF observes that these aspects highlight the importance of careful interpretation of cross-sector labour costs comparisons derived through this approach.

STECF conclusions

General conclusions

STECF concludes that the ASOR provides a valuable assessment of the social characteristics of the EU fisheries workforce, including employment, demographics, education, nationality, working conditions and generational renewal.

STECF concludes that several data and methodological limitations currently constrain the interpretation of results for trends. STECF concludes that providing more evidence of improvements in data collection for the Member States will increase the usability of the reports.

STECF concludes that based on the review by STECF the draft EWG report submitted to the plenary 26-01 were amended in the following sections: 2. Executive summary; 6. Social dimension of EU fisheries; 7. Social dimension of EU aquaculture, before its publication.

Conclusions on the social data call and data quality

STECF concludes that the current template of the data call cannot be simplified, as it allows for the reporting of combined variables.

STECF concludes that it would be beneficial convening an EWG every three years, aligned with the data call, to ensure data preparation and quality for EU-level analysis and comparability.

STECF concludes that continued efforts should be made to address inconsistencies in the data submitted by Member States and to further improve data completeness and reliability. In this context, STECF encourages the continued use of the Data Transmission Monitoring Tool (DTMT) by future EWGs using the data reported under the social data call to identify and address anomalies or inconsistencies in the reported datasets. STECF concludes that a specific ToR could be added for EWG 26-02 asking to upload and document the data issues identified by EWG 25-13 in the DTMT, following the DTMT guidelines.

Conclusions on the revision and clarification of definition of social data

STECF concludes that RCG_Econ should reinforce the inter-sessional group on social variables to further improve the definition and provision of social data. Areas where improvements are needed include:

- Reporting of data disaggregated by type of fishing activity (Small-scale coastal fleet; Vessels under 12 metres using active gears; Large-scale fleet; Distant-water fleet), as well as the provision of combined variables. Currently, Member States are not required to provide such information; however, variables combining characteristics such as gender and age, or nationality and employment status, would greatly improve the ability to analyse social patterns and labour dynamics within the sector.
- The introduction of an additional education-level category, namely vocational training, to improve the capacity of the report to assess professional training and workforce development, as already suggested by STECF (PLEN19-03).
- The definition of the variable “Full-time equivalent (FTE) by gender”, which is currently excluded from Table 5.2 of the Economic Regional Work Plan, pending further discussion and agreement within RCG_Econ.
- The introduction of a new fleet segment for social data collection, to enable the reporting of data on fishers on foot, which are currently not captured within the existing fleet segmentation. STECF suggests that RCG_Econ propose this additional segment for inclusion in the social data call.

Conclusions on the structure and methodological development of the report

STECF acknowledges that the ASOR applies sound methodological approaches to assess the social characteristics of European fisheries, including, for example, the comparison between fisheries labour costs per FTE and economy-wide labour cost indicators. However, further methodological refinement in future ASOR editions could be beneficial. In this regard, the work foreseen under EWG 26-18 Economics Methodologies will/may provide useful contributions to support such improvements.

Given that the social data call occurs on a three-year cycle, and considering the limitations associated to the current socio-demographic variables of the DCF to support social impact assessments and the generation of evidence on the social dimension through National

Fisheries Profiles³ and Fisheries Community profiles, additional expert groups in the intervals to address specific or emerging policy priorities could be beneficial

References

Guillen, J., Borriello, A., Carvalho, N., & Quatrini, S. (2025). Fishing for wages: remuneration gaps and attractiveness of the EU fisheries sector. *Maritime Studies*, 24(4), 69.

Borriello, A., Guillen, J., & Quatrini, S. (2025). Remuneration and attractiveness of EU blue economy sectors. *Marine Policy*, 178, 106720.

3 https://op.europa.eu/en/search-results?p_p_id=eu_europa_publications_portlet_search_executor_SearchExecutorPortlet_INSTANCE_q8EzsBteHybf&p_p_lifecycle=1&p_p_state=normal&queryText=national+fisheries+profiles&facet.collection=EUPub&startRow=1&resultsPerPage=10&SEARCH_TYPE=SIMPLE

5.2 EWG 25-14 Implementation of the Technical Measures Regulation

Request to STECF

STECF is requested to evaluate the findings of the STECF Expert Working Group meeting, as well as those of the associated ad hoc reports, and make any appropriate comments and recommendations. Furthermore, the STECF is requested to make suggestions on how to integrate those findings in the TMR implementation report to be prepared this year.

STECF comments

EWG 25-14 met from 20-24 October 2025, online. The meeting was attended by 23 experts with a broad range of expertise (economics and other social science disciplines, mixed fisheries modelling, and gear technologists), including four STECF members and three JRC experts. Additionally, two observers from different backgrounds were present.

STECF considers that the EWG adequately addressed the ToRs and has the following specific comments on the ToRs addressed by EWG 25-14:

ToR 1 – Review the outputs of the two ad hoc contracts (ad hoc contract no. 2590 and 2591) to determine suitability of data, code and model runs for use by the EWG.

STECF notes that the EWG reviewed and approved the objectives of the two ad hoc contracts commissioned to advance the framework for assessing the biological and economic impact of implementing technical measures in the two case studies outlined by EWG 24-16. The contractors successfully delivered tools enabling robust data quality control, standardised data-processing pipelines, testing of selectivity scenarios, on-year forecasting, and clear visualisation of outputs. Although the two case studies utilised different models, the adoption of a common visualisation framework (BioEcon) has harmonised the presentation of results across the Mediterranean and Atlantic frameworks. Substantial effort was also invested in integrating multiple data sources, including DCF data (FDI and AER data on landings, discards, fishing effort and economic data) and results from stock assessments, improving transparency and comparability.

STECF notes that the data tools and code developed under the ad hoc contracts were updated during and after the EWG meeting to reflect the group's decisions. The results of the EWG's work are presented under the section of comments to ToR 3.

ToR 2 – Select economic and social indicators for inclusion in the framework to assess the impact of the technical measures regulation. Extract selected indicators from available databases using full reproducible methods in R. Indicators will be included in model runs and outcomes discussed.

STECF notes that the EWG selected four economic indicators (Gross Profit, Gross Profit Margin, Gross Value Added and Break- Even Revenue) from the broader set of economic indicators provided annually in the AER. These indicators were chosen for their suitability in assessing short-term economic impacts of gear-based technical measures, considering the analytical objectives, the time horizon of the analysis, calculation feasibility, and data availability in the AER.

STECF notes that, in the context of the Bay of Biscay hake mixed fisheries case study, the EWG explored the social data submitted in response to the EU Social data call for the period 2017-2023. However, the analysis of fleet performance by gear or fishery was significantly hampered due to several data limitations, including (i) the inability to link variables consistently across years, countries, or fleets without additional assumptions, (ii) records not being assignable to specific fleet segments or fishing activities, (iii) the high level of aggregation in and (iv) limited meaningful coverage for some variables and fleet segments.

STECF notes that a comparison of full-time equivalent (FTE) and employment data submitted by France and Spain under the Economic Data Call and the Social Data Call revealed some inconsistencies, with some values higher in one dataset and lower in the other.

STECF observes that the EWG identified “financial security” (average wage relative to national minimum wage, under the working conditions category of wellbeing) as the most suitable quantitative social indicator for potential model integration, with labour costs potentially serving as a reasonable proxy for wages in the fisheries sector. Financial security is one of the indicators suggested by EWG 24-05 (Social Data in EU fisheries -see ToR 5.1 of this plenary report-) for pilot studies under the Member States Work Plans. STECF observes that EWG 25-02 (Social Data in EU fisheries 1: methodology and dissemination) and EWG 25-13 (Social Data in EU fisheries 2: analysis and evaluation) explored the use of wages and labour costs. The latest describes some methodological challenges that would benefit from debates between the EWG on social data and the RCGECON. STECF notes that because qualitative social aspects (e.g. relational or subjective well-being and identity) are difficult to incorporate into modelling exercises, quantitative modelling should be complemented by qualitative research methods (e.g. interviews, questionnaires or focus groups) to capture lived experiences and local realities.

STECF observes that the EWG provided a summary of the relevant bottom otter trawl selectivity studies for hake and other key species caught in the Bay of Biscay and Mediterranean mixed trawl fisheries, including gear characteristics (mesh size of the main net) and selection device specifications (type of device used and selectivity parameters such as L50 and selectivity range). These updated selectivity parameters, building on and revising information from EWG 24-16, were used to implement selectivity changes in the modelling framework. The EWG noted that selectivity parameters are not available for all species involved; therefore, only a subset of the species caught in the mixed fisheries could be incorporated in the models.

STECF notes that based on these studies, the EWG defined gear-based scenarios for modelling. For the Bay of Biscay, two scenarios were considered: (1) the mixed OTB_DEF fishery, including a 63 mm square-mesh codend with a 77 mm square-mesh panel (3 m x 1

m) placed in the bottom panel of the trawl in an attempt to improve hake selectivity, with overall selectivity derived by combining the characteristics of both gear components; and (2) the OTT_CRU Nephrops fishery, including an inverted selective grid with 13 mm bar spacing fitted in the top of the extension, which during selectivity trials, proved effective at excluding hake below the Minimum Conservation Reference Size (MCRS). The lowest selectivity estimates (least size-selective for hake) were applied to avoid underestimating bycatch in bottom-trawl fisheries. For the Western Mediterranean, the EWG considered increasing the square-mesh codend size from 40 mm to 45 mm, introducing a sorting grid for Norway lobster escapement, and using semi-pelagic doors to reduce fuel consumption in the OTB_DEF (demersal) and OTB_MDD/OTB_DWS (mixed and deep-water) métiers. Relative selectivity improvements for otter trawlers were calculated because combined selectivity estimates for the baseline and the most appropriate selective gear for targeting hake were not available.

ToR 3 – Identify, parameterise and run meaningful management scenarios, the finding of which will be discussed in terms of relevance to supporting future advice needs.

STECF observes that the EWG brought together the elements developed under the different ToRs by adapting the data tools and code produced under the ad hoc contracts (ToR 1) to represent the selected gear-based scenarios (ToR 2) within the modelling framework. The resulting simulations were presented using several indicators (catch, SSB, F, and recruitment), together with the economic indicators outlined under ToR 2, for the two hake demersal mixed-fisheries case studies. Social indicators were not considered due to time limitations during the meeting and the limited quality of the available data. A comprehensive summary of the scenario specifications, parametrisation, and results is provided under ToR 3 of the EWG report.

Bay of Biscay case study

STECF notes that the Bay of Biscay mixed fisheries case study, based on the ICES WGMIXFISH model, includes only four (hke.27.3a46-8abd, meg.27.7b-k8abd, hom.27.2a4a5b6a7a-ce-k8, whb.27.1-91214) of the original eight mixed-fisheries stocks, as age length keys (ALKs) were available only for those species. 19 fleets (defined by Member State and fleet segment) were identified as catching hake within the Bay of Biscay and were included in the one-year forecast projections.

STECF notes that separate selectivity assumptions were applied to each of the two gear-based scenarios for the Bay of Biscay mixed fisheries, in line with the initial model design: in scenario 1, selectivity is age-varying, reflecting the expected reduction in the capture of younger/smaller individuals while maintaining catches of older/larger fish, whereas in scenario 2 selectivity is assumed to be constant across ages as a simplifying modelling assumption.

STECF notes that an important limitation of the Bay of Biscay mixed fisheries modelling is that the métier operating within the case study do not correspond directly to the métier

described in the original gear selectivity study used to parametrise the first gear-based scenario. Therefore, some assumptions on how to implement the selectivity findings within the scenario had to be made by the EWG, which limits the comparability between the selectivity study and the scenario results. In addition, the scenario assumes that all OTB métiers in the case study use a 70–99 mm mesh size combined with the proposed selectivity device, which does not reflect actual fleet practices. Other limitations include the absence of modelled fleets representing stock catches outside the area, which partly reflects the inclusion of widely distributed stocks, as well as fleets accounting for unmodelled stock catches within the case study area.

Western Mediterranean case study

STECF notes that the Western Mediterranean mixed fisheries case study, based on BEMTOOL model, included the six species covered by the Western Mediterranean MAP, corresponding to eight stocks. 16 fleets (defined by fleet segment) were identified as catching hake within the Geographical Sub-Areas (GSAs, GFCM sensu) 9-10-11 and Effort Management Unit EMU2 and were included in the five-year forecast projections.

STECF notes that two selectivity assumptions were applied to the gear-based scenario for the Western Mediterranean mixed fisheries in line with the initial model design. Under scenario 1 (temporary selectivity), increased selectivity was assumed only for 2026, after which selectivity returned to baseline gear levels from 2027 onwards. Under scenario 2 (permanent selectivity), increased selectivity was assumed from 2026 onwards. In both cases, the compensation mechanism and the reallocation of effort from OTB_DWS/MDD to OTB_DEF were considered for 2025.

STECF notes that the Western Mediterranean mixed fisheries case study also showed a positive spillover effect, whereby improved selectivity in the trawl fleet generated indirect benefits for passive gears and polyvalent fleets, as competition for shared resources is reduced.

STECF notes that the overall results from the two case studies show only limited improvements, such as modest reductions in discards and slight increases in SSB, without any negative economic impacts. These outcomes reflect the fact that the scenarios focused on changes to a limited range of gears, which account for only a small proportion of total landings in the case study areas.

STECF notes that future work will aim to broaden the potential impact of selectivity modifications by developing scenarios that include a wider variety of gears and/or by creating more localised, regional case studies where such changes may have a stronger effect. In addition, incorporating a larger number of stocks would allow for a more complete representation of technical interactions across the fisheries. Nevertheless, the current findings help illustrate to fishers and end users the potential short term economic and biological impacts of selectivity changes, thereby reducing concerns about transitional costs and encouraging gear adoption.

ToR4 – Stakeholder engagement sessions with observers at the meeting shall be held to gather their perspectives on the utility and reality of the proposed framework to assess the biological, economic and social impact of the implementation of technical measures.

STECF notes that observer participation at the EWG was very limited, as the invitations to the Advisory Councils were sent too close to the meeting date. It was therefore decided to allow them to attend the entire meeting as observers, rather than only during the stakeholder session. The EWG noted that observers raised concerns about the short timeframe (one year prediction period) and the use of old data (2020–2022) in the economic assessments, reflecting that the work builds on the framework developed at previous EWGs.

ToR 5 – Discuss direction of future work, additional needs, stakeholder engagement, and advice needs. These discussions will include the development of longer-term forecasts; assessments on the impacts of spatial and temporal closures, and inclusion of social data.

STECF notes the need to enhance spatial resolution in future case studies to better capture local realities. The EWG suggested using the Regional DataBase and Estimation System (RDBES) data to assess the socio-economic impacts on fishing-dependent communities.

STECF notes that the EWG defined the need for the modelling to use medium- to long-term economic indicators as defined in the AER, namely Return on Fixed Tangible Assets (ROFTA) and current revenue in relation to break-even revenue (CR/BER), to evaluate long-term economic performance and capital efficiency. Future projections should also account for fleet turnover and capacity changes using Simple Capital Dynamics (SCD) models simulating vessel entry and exit. The EWG also noted a key limitation of the approach, namely its inability to account for the influence of subsidies and the incentives or disincentives they create.

STECF notes that the EWG identified 22 quantitative potential social indicators that capture aspects of quality of life and workload (days at sea per trip, hours worked per day, number of fishing trips), economic well-being (labour productivity and relative income of crew), working conditions and safety (vessel age, workplace accident rates, Minimum Required Crew per Vessel and mandatory safety training), and demographic sustainability (unionisation or cooperative membership, generational renewal index, new entrants into the sector, and level of professionalization). The spatial indicator, marine space use (competition for marine space) was identified to reflect external pressures on fishing activity and community access to resources.

STECF notes that data availability and consistency remain overarching issues for these social indicators and that most of them are suitable as outcome indicators in bioeconomic modelling scenarios, rather than as drivers within the models themselves. Some quantitative indicators related to fisher well-being, including economic conditions, quality of life, and workload, can in many cases be calculated directly from model outputs. In contrast, safety and working condition indicators, employment organisation indicators, generational renewal

indicators and marine space use are generally not explicitly modelled and are most effectively used for scenario screening, evaluation, and risk assessment when interpreting model results.

STECF notes that the EWG identified the further refinement, standardisation, and integration of these social indicators as an essential next step towards a holistic management framework that better reflects the needs and dynamics of fishing communities.

STECF notes that a longer time frame in bio-economic modelling has the advantage of capturing the possible effects of capital dynamics, by allowing fleet dynamics and structural changes to be represented. However, such models are subject to higher uncertainty, as biological and economic variables can fluctuate substantially and small errors in initial conditions may accumulate over time. STECF notes that the EWG identified a five-year prediction period as an ideal balance between minimizing uncertainty and providing meaningful insights for management and policy evaluation.

STECF notes that the EWG identified the need to strengthen the stakeholder engagement and proposed organising dedicated meetings with Advisory Councils and fishers to inform social, economic, and ecological trade-offs in the short term, and likely co-benefits in the longer term. In addition, incorporating fishers' experiential knowledge can to some extent support the interpretation and validation of model results and contribute to enhancing the social and economic realism of the model by capturing local practices and operational flexibility. The EWG suggested initiating small-scale participatory modelling pilots in areas most affected by changes in key landings, to guide additional qualitative data collection.

STECF suggests integrating the outcomes of EWG 25- 14, along with previous STECF EWGs (EWG 24-16, EWG 23-15), into the upcoming 2026 review of the implementation of the Technical Measures Regulation through an ad hoc contract to prepare an initial draft of the relevant sections, ahead of the summer plenary (STECF PLEN 26- 02).

The draft will include an overview and supporting figures illustrating the progress and evolution of technical measures implementation in EU waters, providing details of catch, effort and value potentially impacted. It will also present detailed findings and insights from the hake mixed- fisheries case studies in the Bay of Biscay and the Western Mediterranean, focusing on how selectivity changes are anticipated to influence catches, stock status, and both economic and demographic indicators.

STECF conclusions

STECF endorses the outcomes of EWG 25-14 presented during STECF PLEN 26-01, including the results of the two ad hoc contracts, and concludes that all ToRs were appropriately addressed.

STECF concludes that further progress was made in the development of a decision support tool to assess and visualize the short-term bioeconomic and social impacts of technical measures. Two hake mixed fisheries case studies were finalized, demonstrating a

transparent, reproducible, and regionally comparable toolset, now ready to be tested by a broader group of users to assess the clarity and usability of the result presentation.

STECF acknowledges the progress made in exploring available social data, however, concludes that their heterogeneity prevented effective integration into the model within the EWG timeframe. The indicator “financial security” (average wage relative to the national minimum wage) was identified as the most suitable quantitative social indicator for future integration, in line with what is suggested by EWG 24-05 for pilot studies under the Member States WPs. The EWG 25-13 provides data that may inform other indicators.

STECF concludes the next steps forward are to incorporate more stocks to better represent key species and their technical interactions, and to develop more impactful selectivity scenarios beyond the currently limited fleets with robust selectivity data. Additionally, ongoing efforts should focus on establishing a permanent dissemination platform, better conversion of length-based differences into age-based selectivity changes, and the development of long-term forecasting capabilities. Furthermore, integrating quantitative and qualitative social indicators will support a more holistic management framework, while continued stakeholder feedback remains essential to ensure the validity of the results and practical feasibility of the scenarios analysed. Ultimately, the performance of any model is constrained by the completeness and quality of the data on which it relies.

STECF concludes that improved spatial resolution, including port-level information, for example as available in the RDBES for the NAO area, or (incrementally) in the ICES Ecosystem Overviews (Kraan et al. 2025) and community profiles, would further support the analysis of local socio-economic dependence and community-level effects.

STECF acknowledges that some of the methodological considerations arising from the work of this EWG are also being addressed within the EWG Methods for West Med MAP stock assessment and effort group (see ToRs 7.3 and 7.4 of this plenary report). Ensuring alignment with the work requested from that group will therefore be beneficial, both to avoid duplication of work and to promote consistency across related advice processes.

References

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6.1 Outermost regions: Update of the STECF EWG 25-12 report to reflect the updated guidelines for the analysis of balance of the fleets below 12 m in length in the outermost regions (COM(2025)798 final)

Request to the STECF

STECF is requested to review the updated STECF EWG 25-12 report, which incorporates the results of three ad-hoc contracts carried out under the recently adopted guidelines for the analysis of balance for fleets below 12 m in the outermost regions (COM(2025) 798 final), and to provide a brief overview of the additional information and methodological updates introduced through this work.

STECF comments

STECF notes that the updated STECF EWG 25-12 report incorporates additional information and methodological updates from the three ad-hoc contracts concerning the calculation of the Stock at Risk (SAR) indicator, following the adoption of the new Commission guidelines for analysing fleet balance for vessels below 12 metres overall length in the outermost regions (OMRs) (COM(2025) 798 final).

STECF recalls that the SAR indicator was originally designed to identify how many biologically stocks at risk are significantly impacted by a given fleet segment in a specific year. As described in earlier STECF work (STECF EWG 13-28 and EWG 14-09) and Commission guidelines (COM(2014) 545 final), this biological indicator was identified to complement the Sustainable Harvest Indicator (SHI) and used in combination to assess whether vessels rely on overfished stocks or are involved in causing a high biological risk to a depleted stock.

Following the Commission guidelines COM(2014) 545 final, a “stock at risk” is defined as a stock: a) assessed as being below the Blim biological level; or, b) subject to an advice to close the fishery, to prohibit directed fisheries, to reduce the fishery to the lowest possible level, or similar advice from an international advisory body, even where such advice is given on a data-limited basis; or, c) subject to a fishing opportunities regulation which stipulates that the fish should be returned to the sea unharmed or that landings are prohibited; or d) a stock which is on the IUCN "red list" or is listed by Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

STECF recalls that the SAR indicator is calculated for each fleet segment (defined by the combination of Member State, fishing gear, and vessel length class) and that the methodology consists of two main steps: (1) identifying the stocks considered to be biologically at risk in a given year, based on the four criteria described above, and (2) determining which fleet segments exploit those stocks at risk to a significant extent.

Commission guidelines set out in COM(2014) 545 final include a fleet segment when either the stock at risk represented more than 10% of the catches of that fleet segment (“fleet threshold”), or the fleet segment accounted for more than 10% of the catches of that stock (“stock threshold”) (Table 6.1.1).

STECF observes that, recognising the specific characteristics of small-scale fisheries in the outermost regions, the Commission introduced temporary flexibility through COM(2024) 223 final, allowing alternative threshold values for fleet segments consisting of vessels below 12 m in length. Under this temporary approach, a stock at risk was considered to be “exploited by” a fleet segment if the stock represented more than 20% of the catches of that fleet segment, or the fleet segment accounted for more than 10% of the catches from the stock (Table 6.1.1).

STECF notes that, following the expiry of the temporary arrangement, COM(2025) 798 final introduced revised methodological guidance specifically tailored to fleet segments consisting of vessels below 12 m overall length operating in the outermost regions. Under the updated guidelines, a stock at risk is considered to be exploited by these fleet segments only when both of the following conditions are simultaneously met: the stock represents more than 20% of the landings of the fleet segment, and the fleet segment accounts for more than 10% of the total landings from that stock (Table 6.1.1). This modification replaces the previous “or” condition with a cumulative “and” condition. STECF observes that the updated (COM(2025) 798 final) guidelines introduce specific provisions for shared stocks exploited jointly with third countries. For stocks managed by RFMOs, the SAR calculation should rely on international catch or landings data whenever available. Where such information is not available, EU landings data may be used, complemented by any other relevant information. Furthermore, stocks that RFMOs classify as neither overfished nor subject to overfishing are not considered “stocks at risk” for the purposes of the SAR calculation, irrespective of whether any of the criteria for identifying stocks at risk are met.

STECF notes that the updated EWG 25-12 report incorporates international landings data where available. STECF notes that total international landings used by the three ad hoc contracts for the SAR calculation were used only for two stocks exploited by OMR fleets: blue marlin (*Makaira nigricans*) and acoupa weakfish (*Cynoscion acoupa*), based on RFMO information and updated data reported in the French fleet report submitted in 2025.

Table 6.1.1. Overview of SAR calculation methods. The method in bold has been used to update the STECF 25-12 report.

Landings data	Fleet threshold	AND / OR	Stock threshold	Guidelines
STECF	10%	OR	10%	COM(2014) 545 final
STECF	20%	OR	10%	COM(2024) 223 final
STECF	20%	AND	10%	COM(2025) 798 final

STECF + total international landings provided in the French fleet report	20%	AND	10%	COM(2025) 798 final
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Source: Own elaboration.

In line with these provisions, the updated EWG 25-12 report incorporates the SAR indicator recalculated for all relevant OMR fleet segments below 12 m using the revised methodology (Table 6.1.1).

STECF notes that the revised criteria provided in the guidelines COM(2025) 798 final have a decisive influence on the outcome of the SAR indicator values, as both conditions (10% and 20 %) must now be satisfied simultaneously, resulting in a significant decrease in the number of fleet segments identified as impacting or depending on stocks at risk (Table 6.1.2).

STECF observes that, in the updated report, for all ORs only a single fleet segment less than 12 m overall length (FRA-OFR-DFN-VL1012-GF-A which is operating in French Guiana) is identified as imbalanced according to the criteria for computing the SAR indicator in the 2025 guidelines COM(2025) 798 final including international catches.

STECF also notes that, when the indicator is computed using total EU landings rather than total international landings, three fleet segments (two in French Guiana and one in Martinique) are identified as imbalanced due to their interaction with one stock at risk (Table 6.1.2).

By contrast, STECF further notes that when the criteria are applied separately (i.e. when either condition is sufficient, following COM(2014) 545 final or COM(2024) 223 final), the number of fleet segments indicated to be imbalanced is substantially greater, with approximately half of the fleet segments indicating imbalance with respect to the SAR indicator (Table 6.1.2).

STECF notes that these methodological changes are a direct consequence of the revised Commission guidelines and have been transparently implemented in the updated EWG 25-12 report.

Table 6.1.2. SAR indicator calculated according to the criteria listed in Table 6.1.1. The colours are in line with those used in traffic light tables (Red = one or more stocks at risk, Greens = no stocks at risk landed/caught by the fleet segment (-1) or Stock-at-risk landed but not reaching the corresponding thresholds (0)).

Member State	OMR	Fleet Segment	2023			
			COM(2014) INITIAL CALCULATION	COM(2024) 20% THRESHOLD	COM(2025) DOUBLE CRITERIA	COM(2025) DOUBLE CRITERIA + INTL CATCHES
SPAIN	Canaria Islands	ESP-NAO-FPO-VL0010-IC--	1	1	0	0
		ESP-NAO-FPO-VL1012-IC--	1	1	0	0
		ESP-NAO-HOK-VL0010-IC--	0	0	0	0
		ESP-NAO-HOK-VL1012-IC--	6	6	0	0
		ESP-NAO-PMP-VL0010-IC--	0	0	0	0
		ESP-NAO-PS-VL1012-IC--	2	1	0	0
France	French Guiana	FRA-OFR-DFN-VL0010-GF--A	4	4	1	0
		FRA-OFR-DFN-VL0010-GF--L	3	2	0	0
		FRA-OFR-DFN-VL1012-GF--A	4	4	1	1
		FRA-OFR-DFN-VL1012-GF--L	1	1	0	0
	Guadeloupe	FRA-OFR-DFN-VL0010-GP--A	1	1	0	0
		FRA-OFR-DFN-VL0010-GP--L	0	0	0	0
		FRA-OFR-DFN-VL1012-GP--L	-1	-1	-1	-1
		FRA-OFR-FPO-VL0010-GP--A	1	1	0	0
		FRA-OFR-FPO-VL0010-GP--L	0	0	0	0
		FRA-OFR-FPO-VL1012-GP--A	0	0	0	0
		FRA-OFR-HOK-VL0010-GP--A	0	0	0	0
		FRA-OFR-HOK-VL0010-GP--L	0	0	0	0
FRA-OFR-HOK-VL1012-GP--A		0	0	0	0	
FRA-OFR-HOK-VL1012-GP--L		0	0	0	0	
FRA-OFR-PGO-VL0010-GP--A		-1	-1	-1	-1	
FRA-OFR-PGO-VL0010-GP--L		-1	-1	-1	-1	
FRA-OFR-PGP-VL0010-GP--A		1	1	0	0	
FRA-OFR-PGP-VL0010-GP--L		0	0	0	0	
FRA-OFR-PGP-VL1012-GP--L		-1	-1	-1	-1	
FRA-OFR-PS-VL0010-GP--A		0	0	0	0	
FRA-OFR-PS-VL0010-GP--L		0	0	0	0	
France		Martinique	FRA-OFR-DFN-VL0010-MQ--	0	0	0
	FRA-OFR-FPO-VL0010-MQ--		0	0	0	0
	FRA-OFR-HOK-VL0010-MQ--		1	1	1	0
	FRA-OFR-HOK-VL1012-MQ--		1	1	0	0
	FRA-OFR-PGO-VL0010-MQ--		-1	-1	0	0
	FRA-OFR-PGP-VL0010-MQ--		1	1	0	0
	FRA-OFR-PGP-VL1012-MQ--		1	1	0	0
	FRA-OFR-PS-VL0010-MQ--		1	0	0	0
	Saint Martin	FRA-OFR-FPO-VL0010-MF--	-1	-1	-1	-1
		FRA-OFR-HOK-VL0010-MF--	0	0	0	0
		FRA-OFR-HOK-VL0010-RE--	1	1	0	0
		FRA-OFR-HOK-VL1012-RE--	1	0	0	0
La Reunion	FRA-OFR-PGO-VL0010-RE--	0	0	0	0	
	FRA-OFR-PGP-VL0010-RE--	-1	-1	-1	-1	
	FRA-OFR-DFN-VL0010-YT--	0	0	0	0	
	FRA-OFR-HOK-VL0010-YT--	1	1	0	0	
Mayotte	FRA-OFR-HOK-VL1012-YT--	0	0	0	0	
	FRA-OFR-PGP-VL0010-YT--	0	0	0	0	
	PRT-NAO-HOK-VL1012-P2--	1	1	0	0	
	PRT-NAO-MGP-VL0010-P2--	0	0	0	0	
Portugal	Madeira	PRT-NAO-HOK-VL0010-P2--	1	1	0	0
		PRT-NAO-HOK-VL0010-P3--	2	2	0	0
		PRT-NAO-HOK-VL1012-P3--	1	0	0	0
		PRT-NAO-PGP-VL0010-P3--	0	0	0	0
	Azores	PRT-NAO-PS-VL0010-P3--	0	0	0	0
		PRT-NAO-PS-VL1012-P3--	0	0	0	0
		PRT-NAO-DFN-VL0010-P3--	0	0	0	0

Source. Own elaboration based on the results of the ad hoc contract.

STECF conclusions

STECF acknowledges the work performed under the ad hoc contracts to update the SAR indicator values for fleets less than 12 metres overall length in the ORs of France, Portugal and Spain.

STECF concludes that this work was completed in accordance with the 2025 Commission Guidelines (COM(2025) 798 final), and that the revised EWG 25-12 report includes SAR estimates consistent with these guidelines and incorporating the international landings provided in the 2025 French report. The results have been used to revise the relevant tables and associated text in the EWG 25-12 report.

STECF concludes that, according to the conditions and thresholds prescribed by the 2025 Commission Guidelines, only one out of 55 active fleet segments less than 12 m overall length in the ORs is indicated to be out of balance according to the SAR indicator.

STECF thus concludes that the revised methodology has significantly modified the perception of imbalance compared to previous assessment, as most segments previously assessed as out of balance are now considered in balance with regards to SAR.

6.2 CFP monitoring – for early advice by 20 March

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 comments

To address the agreed Term of Reference, the STECF ad hoc Expert Working Group (STECF-Adhoc-26-01) was convened between January and March 2026 to compile available assessment outputs and conduct the extensive analysis required to prepare the annual Common Fisheries Policy (CFP) monitoring report. The expert group presented a comprehensive report (STECF-Adhoc-26-01) accompanied by several detailed annexes to PLEN 26-01 providing:

1. Design-based indicators by ecoregions for the MED&BS.
2. Numerical retrospective and historical performance analysis of model-based indicators.
3. Plots overlaying model-based indicator input data and outputs.
4. Design-based indicators expressed as percentages.

The supporting electronic annexes include:

5. CFP monitoring protocols (Gras et al., 2026) as agreed by STECF PLEN 25-03 (STECF 2025b)
6. URL links to electronic annexes referring to the reports and stock advice sheets underpinning the analysis.
7. R material for processing the data and producing indicators for the Northeast Atlantic (NEA).
8. R material for processing the data and producing indicators for the Mediterranean and Black Seas (MED&BS).
9. R material for computing the EUW indicators.

The report and electronic annexes are available on https://stecf.ec.europa.eu/reports/cfp-monitoring_en.

STECF acknowledges that the report is clear and well laid out, comprehensively describing the analysis conducted by the experts and documenting the changes made to the approach since the previous report (STECF-Adhoc-25-01). STECF notes that the report duly follows the protocol agreed by PLEN 25-03 (STECF 2025b).

STECF further notes that this is the first year that the selectivity indicator (Vasilakopoulos et al., 2020; Mantopoulou Palouka et al., 2024) is reported, as suggested by PLEN 25-02 (STECF 2025a) and PLEN 25-03 (STECF 2025b). This indicator aims to monitor the “extent to which technical measures both at regional and Union level have contributed to achieving the objectives (...) and reaching the targets [of the Technical Measures Regulation]”. These objectives coincide with those of the CFP, with a particular focus on “optimizing exploitation patterns to provide protection for juveniles and spawning aggregations of marine biological resources”.

STECF observes that the CFP monitoring protocol defines three types of indicators based on individual stock assessments:

- design-based indicators: these indicators display the raw number of stocks that fulfil specified criteria (e.g. the yearly number of stocks below F_{MSY}), without applying any statistical model
- model-based indicators: these indicators are derived from a state-space model that averages the situation across stocks (e.g. the model-based indicator of F/F_{MSY} averages the F/F_{MSY} values across the different stocks considered).
- A selectivity indicator derived by estimating the median across all stocks for which a ratio F_{juv}/F_{adult} can be computed from stock assessment outputs.

The STECF-Adhoc-26-01 report sets out the results of the analyses separately for the NEA and the MED&BS (Sections 3 and 4, respectively). Based on these results, progress towards achieving MSY objectives is summarised below. In the report, “Northeast Atlantic” refers to stocks in FAO Area 27 inside and outside EU waters, and “Mediterranean & Black Seas” refers to stocks in FAO Area 37 inside EU waters. Additionally, at the request of Eurostat, an overview of all the stocks in European waters is also presented (Section 5 of the STECF-Adhoc-26-01 report).

For the NEA (FAO area 27), the most recently published ICES stock assessments carried out up to (and including) 2025 incorporating data up to 2024 were downloaded from the ICES website on 09 January 2026. For the MED&BS (FAO area 37), the information was extracted from the STECF Mediterranean Expert Working Group repositories comprising the most recently published assessments carried out up to 2025 with data up to 2024, and from the GFCM quantitative stock assessment online STAR files comprising the most recently published assessments carried out up to 2025 with data up to 2023 in most of the cases and up to 2024 in some cases. As in previous reports and due to the low number of stocks having

F and B estimates for 2024, the MED&BS dataset was trimmed by a year compared to the NEA, i.e. the time series used for the analysis stops in 2023.

Methodological considerations

Performance perception revision

In recent years, STECF has noted growing instability in model-based indicators. This is due to factors like changes in sampling frame, modifications in the assessment models used for stocks in the dataset, and the addition of shared stocks that are less influenced by the CFP. There are now more stock assessments available, which include stocks with different exploitation histories and with alternative assessment models, such as surplus production models (SPM, discussed in the next section).

STECF considers that, while monitoring the number of stocks for which stock assessments and estimated reference points are available is a relevant indicator of the coverage of the scientific advice, the systematic inclusions of new stocks in model-based and design-based indicators as soon as they meet the protocol criteria, might increase the instability of those indicators from one year to the next, and impair a consistent monitoring of the CFP performance.

STECF PLEN 25-03 requested two adjustments to the protocol and discussed their potential impact on the performance perception:

- use of the median instead of the geometric mean as aggregate function in model-based indicator: STECF considered that the median avoids any implicit assumption in the aggregation of stocks compared to the geometric mean and that the resulting indicators are less sensitive to lower values. In most cases, this has had a minor effect on trends, but some differences were still visible for a few indicators, yielding higher absolute values (e.g. F/F_{MSY} in NEA, B/B_{2003} in the MED&BS).
- standardisation of the biomass indicators: STECF requested JRC to standardise each stock biomass time series by its own mean before computing the indicator. This allowed to give similar weight to each stock in the aggregation (this was especially critical for category 3 stocks in which biomass is quantified with very different units). This has had more important effects for category 3 stocks and for the MED&BS (see STECF PLEN 25-03).

Scaling issues (shifts in absolute values) of model-based indicators

STECF PLEN 25-01 noted that the absolute values of model-based indicators (especially F/F_{MSY}) have varied across CFP monitoring exercises, as could be seen in the retrospective analysis of the STECF-Adhoc-26-01 report (annex 2). PLEN 25-01 also discussed the

different issues that could cause this issue. These include the recent change in protocol (since 2025) and changes in the dataset. Both remain largely valid. STECF notes that the STECF-Adhoc-26-01 report in its Section 7 provides historical performance and a retrospective analysis (annex 2) that provide insights on those issues.

More importantly, PLEN 25-01 noted that, while the latest revision of the protocol already clarified that only quantitative assessments with tuning indices (survey indices or, if not available, CPUE time series) could be included in the analysis, excluding catch-only assessment methods (Gras et al., 2026), this still encompasses a large diversity of methods. STECF notes, for example, that there are conceptual differences in F_{MSY} estimates from age-structured models (ASM) and from surplus production models (SPM). In that sense, STECF-Adhoc-26-01 report includes a sensitivity analysis to study the integration of stocks assessed with SPM. The results indicate that while trends in model-based indicators remain similar, the inclusion of SPM leads to lower F/F_{MSY} values. STECF observes that it is currently not possible to conclude whether those differences arise from (1) effectively different status of the stocks assessed with SPM compared to stocks assessed with ASM and/or (2) inconsistencies in reference points arising from the two families of models. STECF notes that the second case would imply that the reference points arising from the two families of models would correspond to different precautionary levels. STECF considers that further work is needed to clarify this point. However, STECF notes that, despite those differences, F_{MSY} arising from both ASM and SPM can be used as a reference point, given that F/F_{MSY} quantifies the distance to the management target in both cases.

STECF considers thus that while temporal trends are robust, the absolute values are not. Therefore, results should then be interpreted with caution, especially when comparing the values of F/F_{MSY} and B/B_{2003} to specific thresholds (e.g. comparison to 1).

STECF recalls that model-based indicators are averages of fishing mortality and biomass trends across stocks of very different sizes and landing volumes. Consequently, a small stock with low catches or biomass has the same weight in the model as a large stock. STECF also recalls that the CFP does not aim to achieve its MSY objectives on average (values that are monitored by model-based indicators) but to achieve these objectives for all stocks. Therefore, STECF considers that progress towards this objective is better monitored through design-based indicators.

Trends towards reaching the MSY objective in the Northeast Atlantic (NEA) and Mediterranean & Black Seas (MED&BS)

The overview below describes the trends in fishing pressure observed in the NEA and the MED&BS for the periods 2003 to 2024 and 2003 to 2023, respectively. It applies to the stocks with an analytical assessment (ASM and SPM) and with associated reference points included in the reference list (sampling frame) of stocks for these areas.

Overview of stock status with respect to reference points

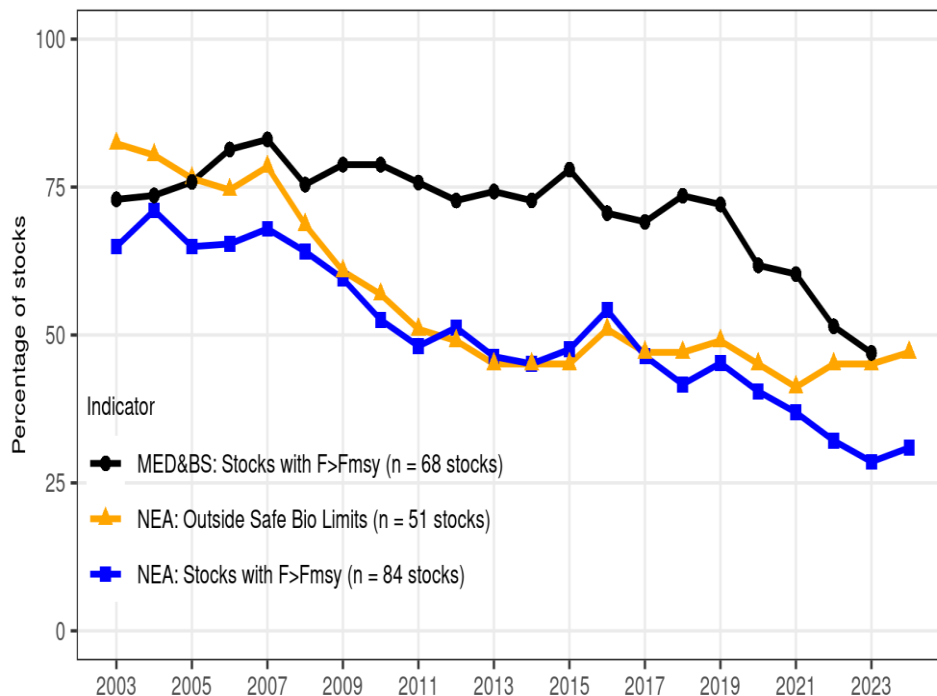
Northeast Atlantic (NEA)

The indicators provided in STECF-Adhoc-26-01 report show that in the NEA (both EU and non-EU waters), the status of stocks have significantly improved since 2003 (Figure 6.2.1) but that some stocks are still exploited above F_{MSY} and that the proportion of overfished stocks increased in the most recent years.

Among the stocks included in the analysis (Table 1 in STECF-Adhoc-26-01 report), the proportion of stocks with $F > F_{MSY}$ (blue line in Figure 6.2.1) has decreased from around 65% (2003) to 29% in 2023 and increased to 31% in 2024. The proportion of stocks outside safe biological limits (Figure 6.2.1 - $F > F_{PA}$ or $B < B_{PA}$, yellow line, Table 5 and 6 in the STECF-Adhoc-26-01 report), computed for 51 stocks for which both reference points were available, follows a similar decreasing trend: from 82% in 2003 to 41% in 2021. However, the proportion of stocks outside safe biological limits increased to 47% in 2024.

STECF observes a recent increase in both the trends of stocks outside safe biological limits and stocks with $F > F_{MSY}$ (Figure 6.2.1). STECF further observes that among the 84 category 1 and 2 stocks in the dataset, 46 stocks have a biomass reference point ($MSY B_{trigger}$) that are still set at B_{PA} , which is likely to be substantially lower than the biomass needed to sustain fishing at F_{MSY} (Winker et al., in Press).

Figure 6.2.1. Trends in stock status in the NEA (2003-2024) and in the MED&BS (2003-2023). Two calculated proportions (as percentage) are presented: blue and black lines show the proportion of stocks with $F > F_{MSY}$ in NEA (out of a total of 84 stocks) and MED&BS (out of a total of 68 stocks), respectively. The yellow line in shows the proportion of stocks outside safe biological limits ($F > F_{PA}$ or $B < B_{PA}$) in NEA (out of a total of 51 stocks).



Source: Own elaboration based on ICES data.

Overall, STECF observes that for the last known year (2024), of the 84 stocks considered, only 29% (24 stocks) were exploited below F_{MSY} and were considered be inside safe biological limits, suggesting that the objective in Art. 2.2 of the CFP⁴ has not been met (Table 6.2.1).

⁴ In order to reach the objective of progressively restoring and maintaining populations of fish stocks above biomass levels capable of producing maximum sustainable yield, the maximum sustainable yield exploitation rate shall be achieved by 2015 where possible and, on a progressive, incremental basis at the latest by 2020 for all stocks.

Table 6.2.1. Number of stocks with $F > F_{MSY}$, or $F \leq F_{MSY}$, 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 2024 in the NEA (both EU and non-EU waters). Unknown SBL refers to stocks whose status regarding SBL could not be assessed.

	Below F_{MSY}	Above F_{MSY}
Inside SBL	24	3
Outside SBL	11	13
Unknown	23	10

Source: Own elaboration based on ICES data.

STECF observes that the situation for NEA conceals a diversity of situations among ecoregions. For example, STECF observes that the proportion of overexploited stocks in the Celtic Seas (Figure 4 of the STECF-Adhoc-26-01 report), and the proportions of stocks outside safe biological limits in the Bay of Biscay & Iberian and in the Celtic Seas ecoregions (Figure 6 of STECF-Adhoc-26-01 report) seem to have deteriorated in the last year(s).

Mediterranean & Black Seas (MED&BS)

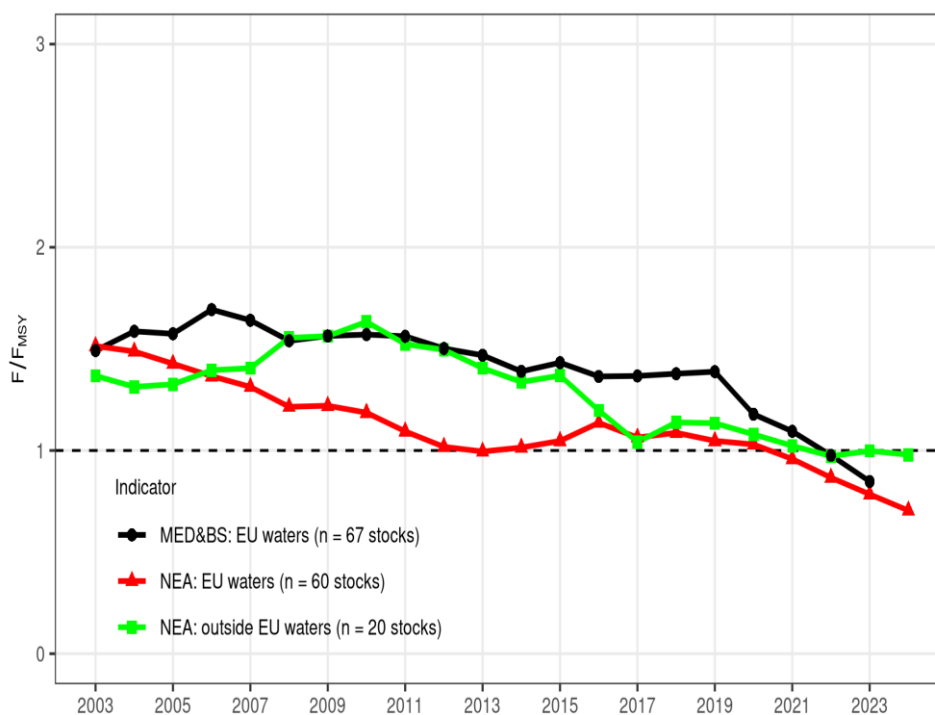
For the MED&BS, the number of stocks assessed and for which data are available has varied from year to year and assessment results for some stocks do not extend back to the earlier part of the time series.

STECF notes that Safe Biological Limit reference points are not available in the assessments performed for the Mediterranean stocks, so the analysis was restricted to comparisons to MSY . Among the stocks for which F_{MSY} was available (Table 21, in STECF-Adhoc-26-01 report), the proportion of overfished stocks has decreased from around 83% in 2007 to around 47% in 2023 (Figure 6.2).

Overall trends in the fishing pressure: Ratio of F/F_{MSY}

As agreed during PLEN 23-03 (STECF, 2023), STECF-Adhoc-26-01 computed the trends in fishing pressure using a state-space model as implemented in the R package JARA (Winker, Pacoureaux, and Sherley 2020), tailored to the needs of CFP monitoring. The model-based results for the NEA (inside and outside EU waters), MED&BS and for all EU waters are displayed in Figures 9, 12 and 24 of the STECF-Adhoc-26-01 report. Trends in the median values for F/F_{MSY} are summarised in Figure 6.2.2. over the time-series for the NEA inside and outside EU waters and for the MED&BS.

Figure 6.2.2. Three model-based indicators F/F_{MSY} are presented: red line which represents 60 stocks with appropriate information in the NEA EU waters; green line for 21 stocks also located in the NEA but outside EU waters; and black line for the 67 stocks from the MED&BS.



Source: Own elaboration based on ICES, GFCM and STECF data.

Northeast Atlantic (NEA)

In the NEA within EU waters, the model-based indicator of fishing pressure (F/F_{MSY} , based on 60 stocks with appropriate information – Figure 9 in the STECF-Adhoc-26-01 report) shows a gradual downward trend over the period 2003-2024 (Figures 6.2.2. and 6.2.1.), suggesting an overall decrease of the fishing pressure. This is consistent with the observed trends in the

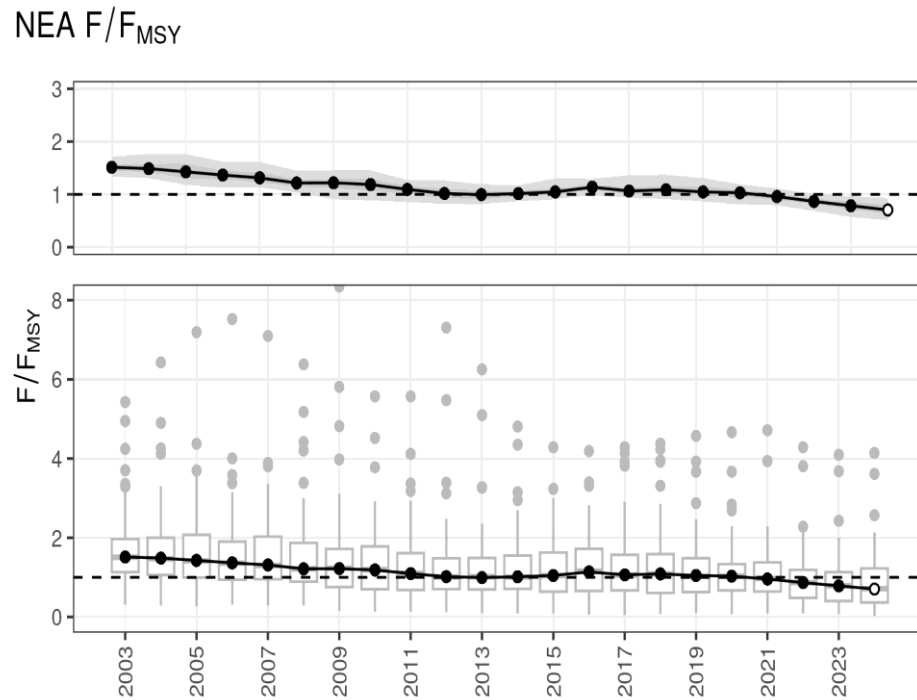
raw data (Figure 6.2.1.). STECF notes that while the indicator (median) value is below 1 in the last year, some stocks still have a very high F/F_{MSY} value (Figure 6.2.2.), and that despite this overall decrease, the proportion of overfished stocks has increased this year.

STECF also observes that the change of the aggregate function (see “scaling issues section” above), has produced a revision of the historical trend compared to last year’s CFP monitoring exercise, with a less pronounced decline in F/F_{MSY} during the 2010s, or even stability, leading to higher values at the end of the period. This is clearly visible in the historical performance analysis (Figure 35 of the STECF-Adhoc-26-01 report). STECF notes that the resulting indicator is consistent with the median of the raw data per stock (Figure 6.2.1.).

STECF also observes a notable difference between the trends for stocks assessed with SPM and stocks assessed with ASM (Figure 11 of the STECF-Adhoc-26-01 report). However, STECF observes that the number of stocks assessed with SPM has decreased compared to last year. Also, the use of the median as an aggregate function reduces the influence of SPM assessments. As a result, these assessments have little influence on the final indicator (Figure 11 of the STECF-Adhoc-26-01 report).

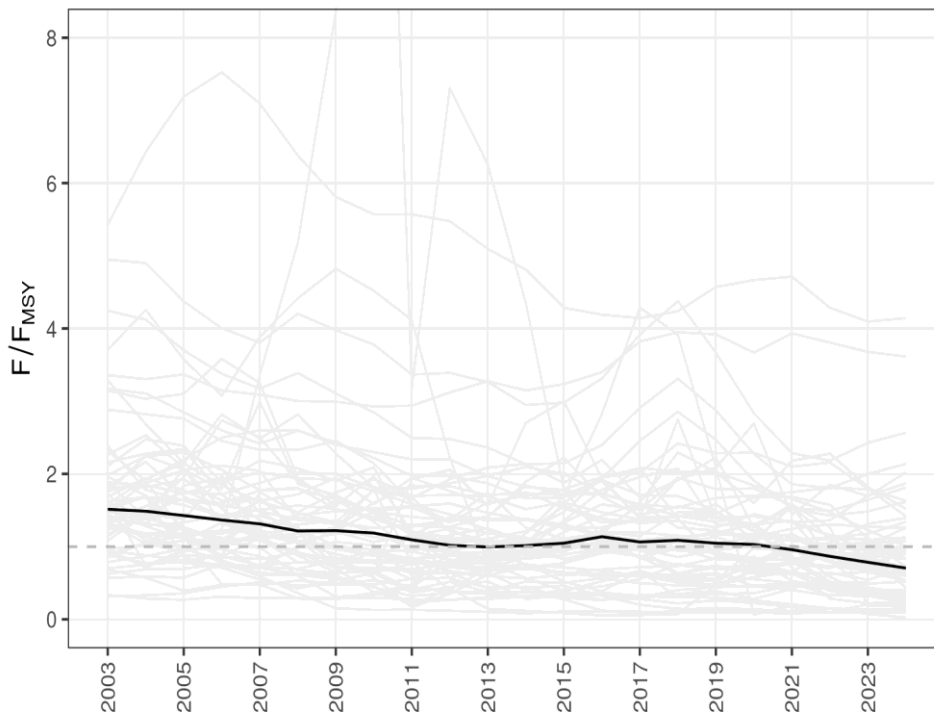
STECF also observes that, while the decreasing trend appears to be consistent among ecoregions (Figure 10 of the STECF-Adhoc-26-01 report), the absolute values are more heterogeneous, with the Greater North Sea ecoregion displaying higher fishing pressure.

Figure 6.2.1. Trend in model-based F/F_{MSY} in the NEA EU waters (based on 60 stocks - top panel). The dark line and points stand for the model-based indicator (as in Figure 6.2.2.) and the grey ribbon for the associated 95% confidence interval. The bottom panel displays the model-based trend in F/F_{MSY} (solid black lines and dots) while the boxplots show the distribution of the observed data. The range of the y-axis on the bottom panel was restricted to [0-8] to better see the trends, however one stock in 2010 has a F/F_{MSY} greater than 15.



Source: Own elaboration based on ICES data.

Figure 6.2.2. Observed trends in F/F_{MSY} for each stock in the NEA EU waters (60 stocks) as in Figure 6.2.2.. Each grey line corresponds to a single stock. The black line corresponds to the model-based indicator (Figure 6.2.2.). The range of the y-axis was restricted to [0-8] to better see the trends, however one stock in 2010 has a F/F_{MSY} greater than 15. The grey dashed line indicates the $F/F_{MSY}=1$ ratio.



Source: Own elaboration based on ICES data.

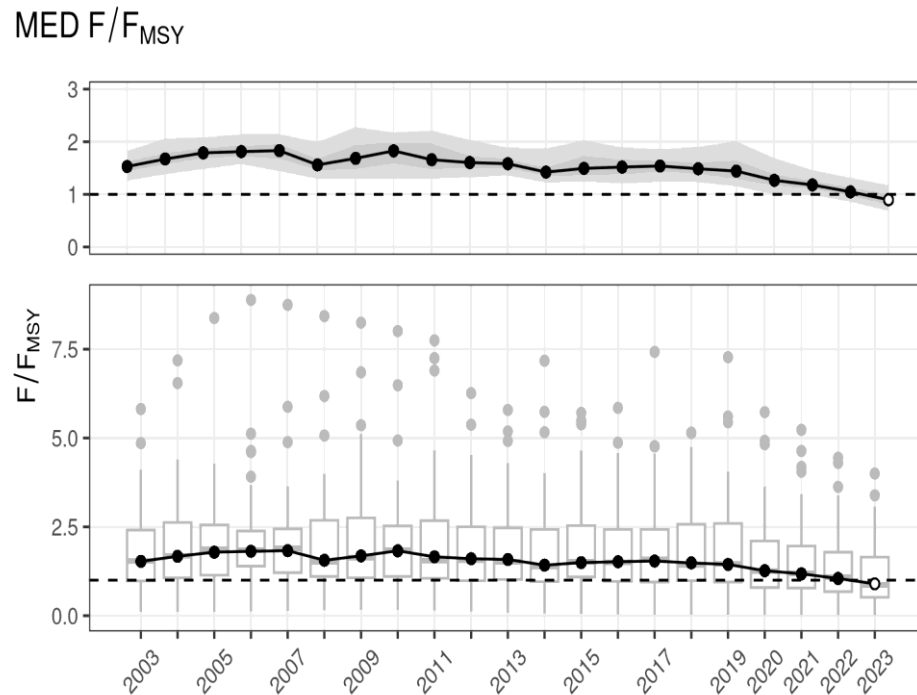
The same model-based indicator was computed by the STECF-Adhoc-26-01 expert group for an additional set of 20 stocks located in the NEA outside EU waters (Figure 2 in the STECF-Adhoc-26-01 report). A first decreasing phase occurred from 2010 to 2017, followed by a stable period since then (Figure 6.2.2.).

Mediterranean and Black Seas (MED&BS)

The results presented show a decrease of F/F_{MSY} in the MED&BS since 2011 and a sharp decrease since 2019 (Figures 6.2.2. and 6.2.3.). STECF notes that many regulations have been implemented during the same period (Western Mediterranean Multiannual Management Plan - Regulation (EU) 2019/1022; GFCM/43/2019/5) or a few years after (GFCM recommendations (GFCM/44/2021/20, GFCM/45/2022/7, GFCM/45/2022/8, GFCM/45/2022/6, GFCM/45/2022/5, GFCM/45/2022/4), which have settled effort regimes, catch limits for some species, fishery restricted areas for demersal stocks and trawlers

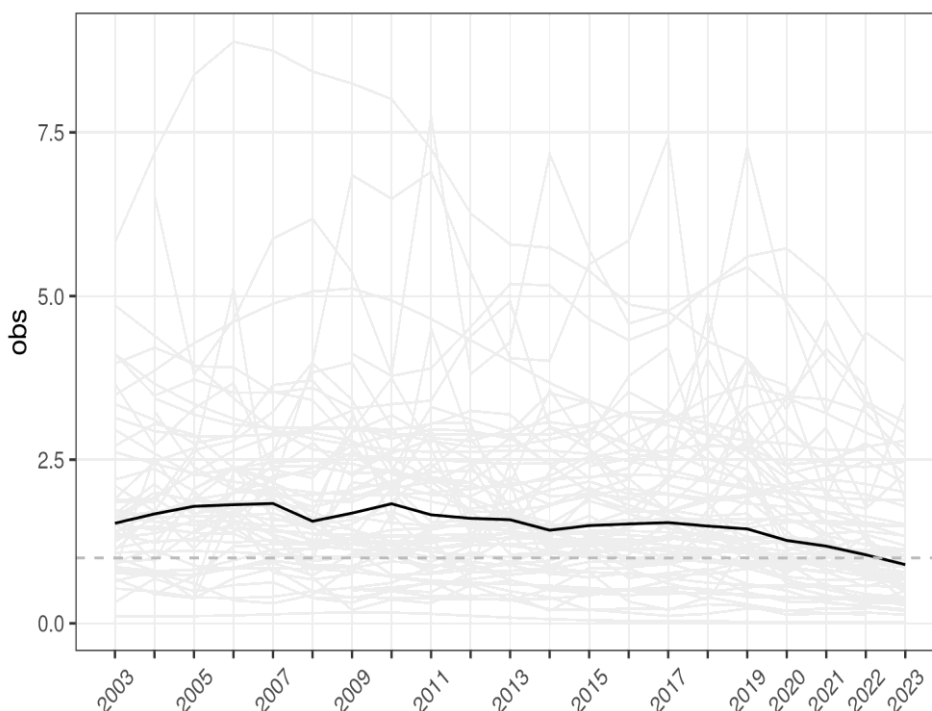
fisheries and were enforced by Regulation (EU) 2023/2124). These regulations might have contributed to this decrease of fishing mortality but they were likely enforced too late to be the sole driver of the decline in F since 2019. Meanwhile, STECF EWG 25-11 outlined a decrease of fishing effort in the trawler fleet that started before 2019 and could also have contributed to the decrease in fishing mortality. STECF is not in a position to completely explain the factors contributing to the decreasing trend in the indicator, however it is noted that the decrease in fishing mortality can also be observed in the raw stock assessment results (Figure 6.2.3). Moreover, compared to last year, STECF observes that this decrease may have led to an increase in biomass in recent years (see section “trends in biomass”). However, STECF notes that some stocks still have extremely high F/F_{MSY} values (Figure 6.2.4).

Figure 6.2.3. Trend in model-based F/F_{MSY} in the MED&BS (based on 67 stocks - top panel). The dark line and points stand for the model-based indicator and the grey ribbon for the associated 95% confidence interval (as in Figure 6.2.2.). The bottom panel displays the model-based trend in F/F_{MSY} (solid black lines and dots) while the boxplots show the distribution of the observed data.



Source: Own elaboration based on GFCM and STECF data.

Figure 6.2.4. Observed trends in F/F_{MSY} for each stock within the MED&BS. Each grey line corresponds to the result of one specific stock assessment. The black line corresponds to the model-based indicator (Figure 6.2.2.). The grey dashed line indicates the $F/F_{MSY}=1$ ratio.



Source: Own elaboration based on GFCM and STECF data.

STECF notes that the number of stocks considered in computing the indicator has varied over time, as some stocks have been added and others have been revised in terms of stock boundaries (e.g. covering more GSAs). The effect is especially visible in ecoregions where the number of stocks is limited (e.g. Black Sea, Figure 25 of the STECF-Adhoc-26-01 report).

As for the NEA, STECF observes that stocks assessed with SPM and ASM both display consistent trends, but with differences in absolute values. In the MED&BS, about one third of the stocks included in the indicator are assessed with SPM, therefore STECF considers that exploring further the cause of this scaling issue would be very relevant.

In conclusion, a decreasing trend in F/F_{MSY} seems to be taking place in the MED&BS. However, given the previously mentioned scaling issues, STECF considers that the order of magnitude as estimated by the STECF model-based indicator may be overly optimistic. Moreover, STECF highlights that many stocks still display extremely high F/F_{MSY} values (Figure 6.2.2.).

Trends in Biomass

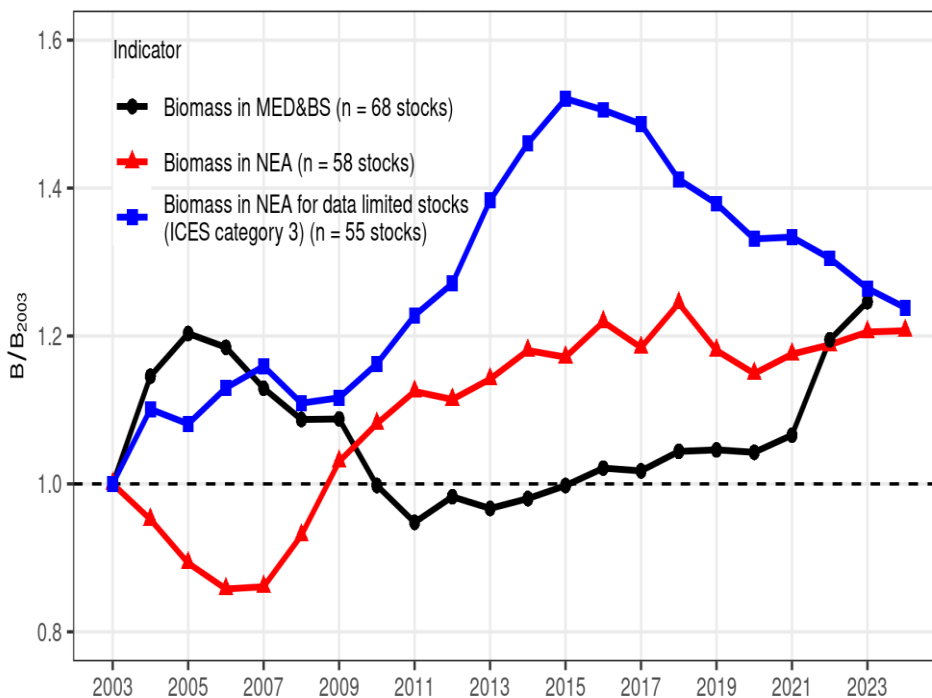
The model-based results for the NEA (EU waters), the MED&BS and for data-limited stocks in the NEA (ICES “category 3” stocks) are provided in Figures 14, 26 and 16, respectively, of the STECF-Adhoc-26-01 report. Trends in the median values for biomass over time are summarised in Figure 6.2.5 below.

As explained in the “methodological considerations” section, in this year’s release of the CFP monitoring report, stock biomass time series have been standardised by their means before applying the model, to ensure that each stock has the same weight in the aggregation. This has reduced the confidence intervals compared to previous years and produced smoother trends (see Figures 36 and 38 of the STECF-Adhoc-26-01 report).

The model-based indicator for the trend in biomass shows a general increase over time since 2007 in the NEA (EU waters only - Figures 14 of the STECF-Adhoc-26-01 report) for assessed stocks (ICES categories 1 and 2 stocks). However, STECF notes that this general increasing trend hides a diversity of situations among ecoregions and is largely resulting from a rapid increase in biomass in the Bay of Biscay & Iberia ecoregion and for widely distributed species. In comparison, there are signs of decline in the Baltic Sea and in the Celtic Seas (Figure 15 of the STECF-Adhoc-26-01 report). Furthermore, for data limited stocks from NEA (ICES category 3 stocks – Figure 16 of the STECF-Adhoc-26-01 report), STECF observes that after a stable period until 2012 and an increase till 2015, the recent trend suggests a decrease in biomass.

In the MED&BS, the change in the protocol (standardisation of stock biomass and change of the aggregate function) has led to a larger revision of the trend. STECF notes that the number of stocks included in the indicators varies over time, and care should be taken when analysing the indicator, especially at the beginning of the series. However, STECF observes that biomass seems to have been increasing since 2011, with a steeper increase since 2021. This steeper increase in recent years is consistent among almost all ecoregions, except in the Eastern Mediterranean where only four stocks are available (Figure 11 of the STECF-Adhoc-26-01 report).

Figure 6.2.5. Trends in the model-based indicators of stock biomass scaled to 2003. Three indicators are presented: red line for the NEA EU waters (58 stocks - categories 1 and 2); black line for the MED&BS (68 stocks); and blue line for data-limited stocks in the NEA (ICES category 3, 55 stocks).



Source: Own elaboration based on ICES, GFCM and STECF data.

Trends in Recruitment

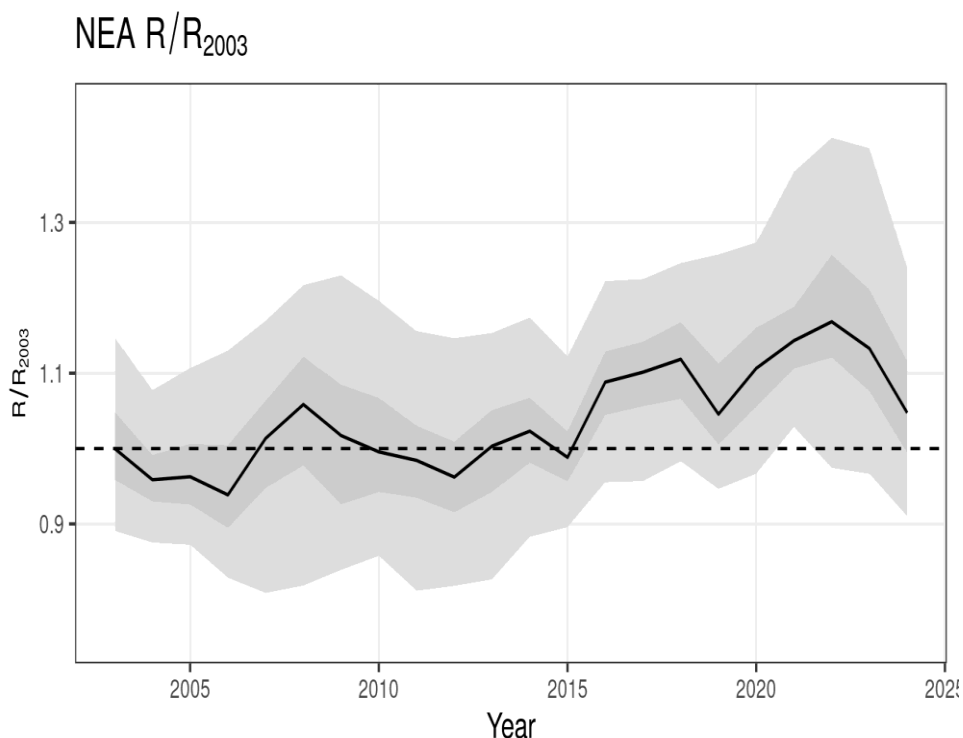
The model-based results for the trend in decadal recruitment in the NEA are given in Figure 17 in the STECF-Adhoc-26-01 report. This indicator aims to identify long-term trends of recruitment for all stocks and is calculated over a twenty-year moving average. For example, the decadal recruitment for 2019 for a single stock is the ratio between the average recruitment from 2010 to 2019 over the average recruitment from 2000 to 2009 (see Gras et al., 2026 for more details). In this regard, STECF notes that the absolute values of this indicator are not directly interpretable, and that only the direction of the trend can be meaningfully interpreted.

The model output values are presented in Figure 6.2.6. The average decadal recruitment indicator in the NEA shows a decreasing trend until 2011, followed by an inversion, with the maximum reached in 2022. However, the indicator has declined over the last two years. Given the smoothing nature of this indicator, such a decrease may signal important changes in recent years. STECF notes, for example, that lower recruitments have been reported for various stocks (Moyano et al., 2023; Wright, Dobby, and Fox 2024; Livdāne et al., 2025; ICES 2025; Grandremy et al., 2026), and that environmental change might have affected

stock productivity and consequently recruitment (Mildenberger et al., 2025; Ma et al., 2024). STECF notes that this recent decrease is visible across all ecoregions (Figure 18 of the STECF-Adhoc-26-01 report) and may have begun earlier in the Baltic Sea.

As in previous years, STECF suggests that the development of additional indicators (e.g. a smaller time window in the decadal recruitment) to detect short-term changes in recruitment would be valuable for identifying early signs of ecosystem change.

Figure 6.2.6. Trend in model-based decadal recruitment indicator scaled to 2003 in the NEA area (based on 59 stocks).



Source: Own elaboration based on ICES data.

Trends in Selectivity

STECF observes that for the first time, selectivity indicators were added in the STECF-Adhoc-26-01 report. The analysis is carried out separately for the NEA, MED&BS and for the combined dataset as an additional EU Waters indicator.

As requested by PLEN 25-03, the indicator is based on the ratio of the average fishing mortality affecting juveniles over the average fishing mortality affecting adults for each stock. For those stocks, a value less than 1 indicates that juveniles are less impacted than adults and values above 1 indicates the opposite. Then, for each stock, F_{juv}/F_{adult} is standardised by

its 2003 value, and the indicator is computed as the yearly median over the stocks. As such, the indicator informs on whether selectivity is better than in 2003 (value less than 1) or worse (value greater than 1), and whether this protection of juvenile fish is improving over time (decreasing trend of the indicator) or not.

It should be noted that, here and in the rest of the text, improvement or worsening of selectivity refers to the objective of further protection of juveniles promoted in the Technical Measures Regulation (TMR).

STECF notes that several data inputs are required to compute the selectivity indicators, in addition to the ones used to compute the design-based and model-based indicators described in this above sections. This includes the time-varying matrices of fishing mortality at age, and maturity at age. Those data were available for 29 stocks in the NEA (including category 1 and 2 from ICES), and 13 stocks in the MED&BS.

Given the limited number of stocks in the dataset, STECF suggests carrying out a leave-one-out analysis next year to check the sensitivity of the indicators to the different stocks.

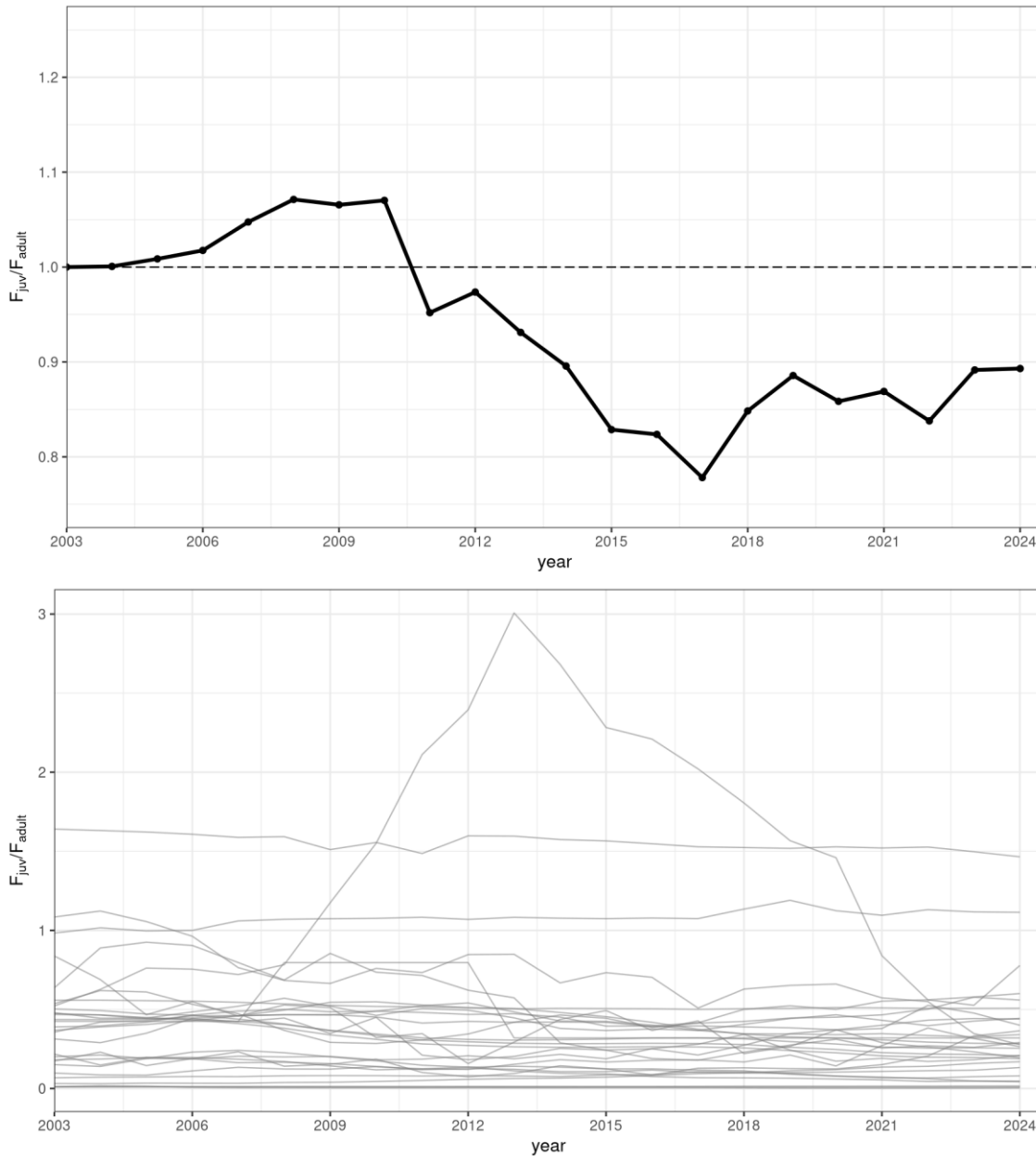
Northeast Atlantic waters (NEA)

The selectivity indicator suggests a deterioration of selectivity until 2010, followed by an improvement until 2017, and then a stable or slightly deteriorating trend since then (Figure 6.2.7.).

STECF observes that three stocks display very high F_{juv}/F_{adult} ratios, suggesting a very poor selectivity for those stocks: anf.27.3a46, whg.27.6a and mon.27.78abd.

STECF notes that this indicator is derived from the outputs of stock assessments, which are based on the best available scientific estimates of discarding patterns across fleets and stocks. These estimates inherently incorporate variability arising from several factors, including natural variation in haul composition, fisher behaviour and sampling programme execution. This variability is accounted for through standardized sample-raising procedures applied by national Member State experts and international stock assessor but can still affect the estimation of F_{juv} . STECF observes, for example, that the enforcement of the landing obligation might have had a temporary effect on the correct execution of the sampling program and consequently might have influenced the estimation of F_{juv} for some stocks and, therefore, the estimation of the indicator.

Figure 6.2.7. Trend in selectivity indicator (top panel) scaled to 2003 in the NEA area (based on 29 stocks). For the indicator, a value less than 1 indicates that the selectivity has improved compared to 2003 and a decreasing trend indicates that selectivity is improving. Grey lines (bottom panel) correspond to the ratio F_{juv}/F_{adult} for each stock included in the indicator. In the stock-specific plot, a value less than 1 indicates that juveniles are more protected than adults and a decreasing trend indicates that selectivity is improving.



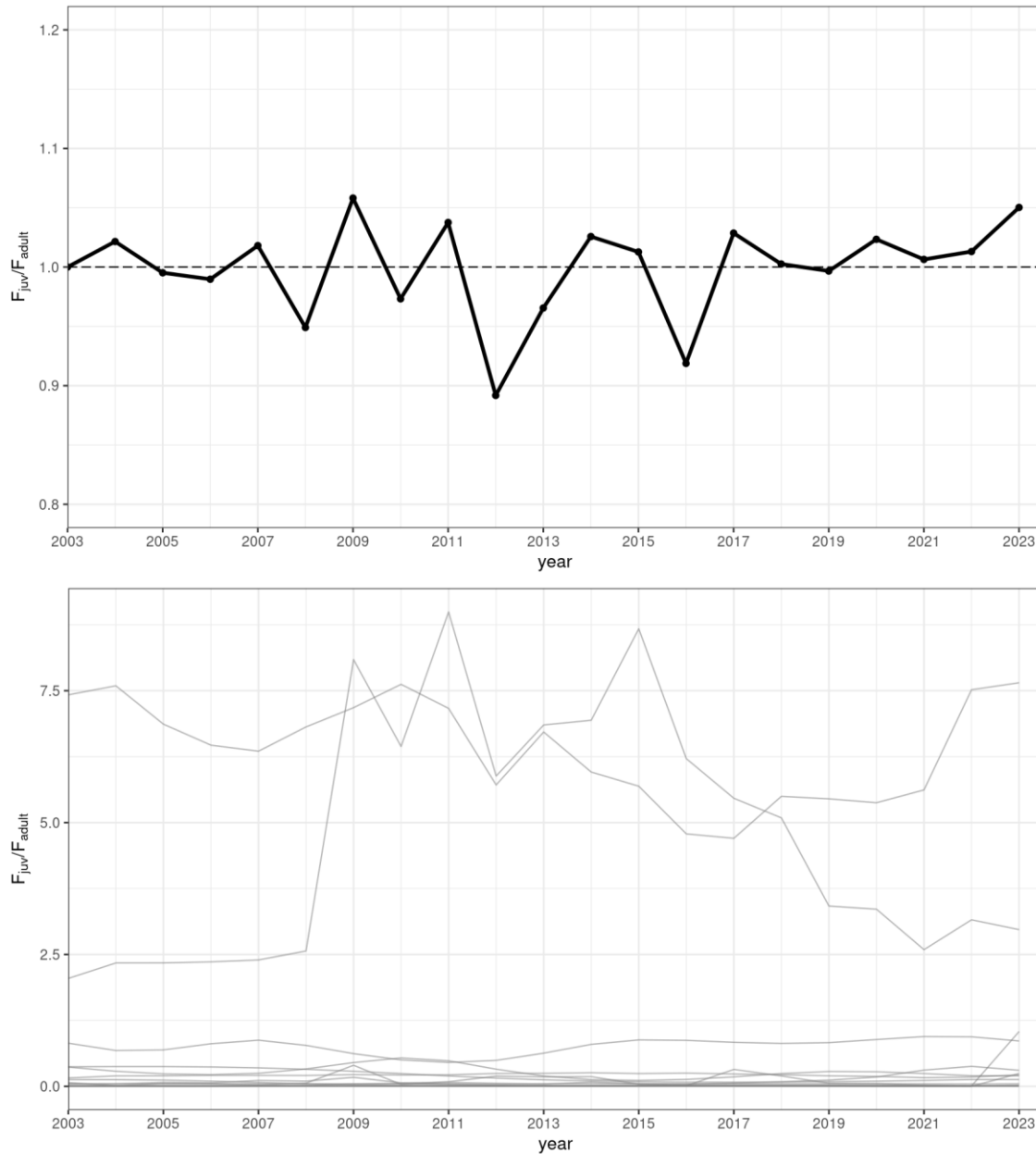
Source: Own elaboration based on ICES data.

Mediterranean and Black Seas (MED&BS)

The selectivity indicator does not show any improvement in the selectivity in the MED&BS area, and perhaps even a deterioration in the last years (Figure 6.2.8.). This deterioration in the last year is especially true for two stocks: red mullet in GSA 1 and red mullet in GSA 19, which had very low $F_{\text{juv}}/F_{\text{adult}}$ ratios over the period, and especially in 2003. Consequently, an increase in 2023, even of small magnitude, had important effects when standardising by the 2003 value. STECF observes that there are currently few stocks included in the selectivity indicator in the Mediterranean area (13 stocks), so that the indicator can be sensitive to changes in a few stocks.

STECF observes that two stocks display very high $F_{\text{juv}}/F_{\text{adult}}$ ratios, suggesting a very poor selectivity for those stocks: hake in the Strait of Sicily and hake in the Adriatic. However, STECF notes that, as reported in the STECF-Adhoc-26-01 report, those two stocks have complex stock assessment models with many age classes (26 for hake in the Strait of Sicily and 13 for hake in the Adriatic) and they assume dome-shaped selectivity. This results in a large number of older age classes having very small fishing mortalities and this has a large influence in the computation of F_{adult} .

Figure 6.2.8. Trend in selectivity indicator (top panel) scaled to 2003 in the MED&BS area (based on 13 stocks). For the indicator, a value less than 1 indicates that the selectivity has improved compared to 2003 and a decreasing trend indicates that selectivity is improving. Grey lines (bottom panel) correspond to the ratio F_{juv}/F_{adult} for each stock included in the indicator. In the stock-specific plot, a value less than 1 indicates that juveniles are more protected than adults and a decreasing trend indicates that selectivity is improving.

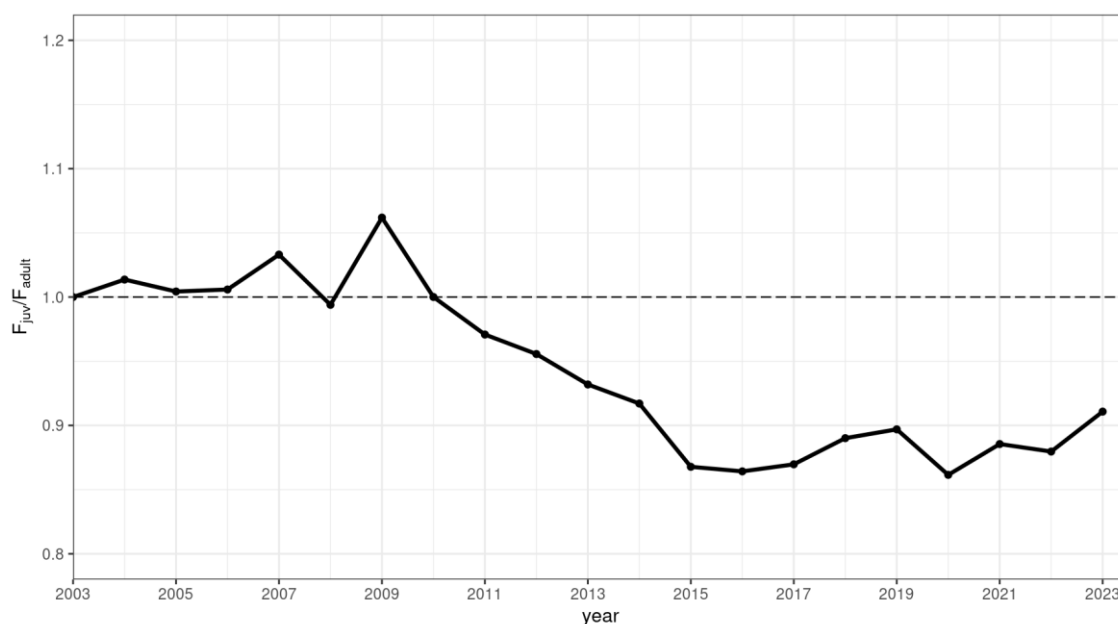


Source: Own elaboration based on GFCM and STECF data.

EU waters

The indicator was also applied to a combination of the two datasets (NEA and MED&BS), and the resulting indicator represents a compromise between the two previous ones. It indicates a slight overall improvement in selectivity from 2009 to 2015, followed by stabilisation or even a slight deterioration in recent years (Figure 6.2.9).

Figure 6.2.9. Trend in selectivity indicator scaled to 2003 in European waters (based on 13 stocks in the MED&BS and 29 in the NEA). A value less than 1 indicates that the selectivity has improved compared to 2003 and a decreasing trend indicates that selectivity is improving.



Source: own elaboration based on ICES, GFCM and STECF data

Coverage of the scientific advice

Coverage of biological stocks by the CFP monitoring

The analyses of progress in achieving the MSY objective in the NEA includes all stocks with advice provided by ICES that are at least partially inside EU waters. According to the ICES database accessed for the analysis, ICES provided scientific advice for 255 biological stocks (247 last year) included in EU waters (at least partially). Of these, 147 stocks (58% - 49% last year) are data limited (ICES categories 3-6, Table 6.2.1).

Table 6.2.1. 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 (Gras et al., 2026). Therefore, the numbers are higher than those used in the CFP monitoring analysis.

	1	2	3	4	5	6
Arctic Ocean	3	1	2	0	1	0
Azores	0	1	1	0	1	0
Baltic Sea	7	3	6	0	0	0
Bay of Biscay & Iberia	15	7	15	0	7	3
Celtic Seas	27	2	15	1	10	9
Greater North Sea	27	7	11	2	9	3
Iceland, Greenland and Faroes	21	1	4	0	2	1
Widely	8	1	8	0	3	10
TOTAL	108	23	62	3	33	26

Source: Own elaboration based on ICES data.

The present CFP monitoring analysis for the NEA is focused on stocks with a TAC, and for which estimates of fishing mortality, biomass and reference points are available. As detailed in the STECF-Adhoc-26-01 report, not all indicators can be calculated for all stocks in all years. In the STECF-Adhoc-26-01 report, at least one design-based or model-based indicator could be computed for 84 stocks with analytical stock assessments (ICES categories 1 and 2 stocks), and 55 data-poor stocks (category 3) (Table 2 in the STECF-Adhoc-26-01 report). All together, these stocks represent a large share of catches. However, STECF notes that there is still a significant number of biological stocks in EU waters that are excluded from CFP monitoring analysis.

In the MED&BS, STECF notes that, despite the recent increase in the number of stocks available, there is still a need to increase the coverage of stocks in the CFP monitoring analysis to increase the representativeness of the indicator values.

Coverage of TAC regulation by scientific advice

STECF notes that 159 TACs (combination of species and fishing management zones) in the EU waters of the NEA are derived using the agreed sampling frame (Gras et al., 2026), and that this figure has slightly decreased compared to last year. 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. Therefore, the ad hoc group computed an

indicator of advice coverage, where a TAC is covered by a stock assessment when at least one of its divisions matches 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 159 TACs are covered, at least partially, by stock assessments that provide estimates of F_{MSY} (or a proxy), 50% by stock assessments that have B_{PA} , and 16% are covered by stock assessments that provide estimates or proxies of $MSY B_{trigger}$ (Table 18 of the STECF-Adhoc-26-01 report).

STECF notes that, using this index of TAC coverage, some TACs can be considered as covered if they relate to: (i) part of a given management area, (ii) several assessments contributing to a single TAC (e.g. Nephrops functional units in the North Sea) or (iii) a scientific advice that spatially overlaps or extends beyond the TAC area (e.g. whiting in the Bay of Biscay). Such an approach overestimates the spatial coverage of advice (i.e. the proportion of TACs based on a single and aligned assessment) and means that many TACs are still not covered by scientific advice based on F_{MSY} reference values.

STECF conclusions

STECF concludes that the analyses presented in the STECF-Adhoc-26-01 report complies with the agreed protocol and provides a comprehensive and informative overview of the performance towards achieving the MSY objectives of the CFP.

Regarding the progress made in the achievement of F_{MSY} in line with the CFP, STECF concludes that while the results indicate a reduction in overall fishing mortality in the NEA over the whole period, the results in 2024 suggest an increase in the number of overfished stocks as well as an increase in the number of stocks outside safe biological limits since 2021. Furthermore, this overall decline in the fishing pressure conceals a diversity of situations across ecoregions, and an even greater diversity at the stock level, with some stocks still being subject to very high levels of fishing pressure. STECF concludes that in the MED&BS fishing mortality has shown a declining trend since 2007, with a more pronounced decrease since 2019, and the decline in fishing mortality has contributed to a reduction of the number of overfished stocks.

Regarding biomass, STECF concludes that following a recovery that began in 2007, biomass in the NEA appears to be stable. STECF concludes that this stability conceals a diversity of situations, with a large increase in biomass in some areas and signs of decline in the Baltic Sea and the Celtic Seas. STECF concludes that there are signs of biomass recovery in the MED&BS.

STECF concludes that there are signs of declining recruitment in the NEA in recent years, particularly in the Baltic Sea.

STECF concludes that several stocks remain in a state of overfishing and/or outside safe biological limits in both the NEA and the MED&BS. Thus, it can be concluded that the CFP objective that aims to ensure that all stocks are above biomass levels capable of producing the MSY, has still not been achieved.

STECF acknowledges the recent increase in the number of stocks included in the analysis, however, STECF concludes that for many stocks, key reference points are yet to be defined. STECF therefore supports the ongoing work in ICES, GFCM and STECF EWGs to further increase the number of stocks with such key reference points. This is even more important since the coverage has slightly decreased compared to last year.

STECF concludes that the absolute values of model-based indicators have proved to be affected by several factors (“scaling issues”), including changes in the composition and structure of the dataset and minor adaptations to the protocol. STECF concludes that, while temporal trends are likely to be robust to these scaling issues, the absolute values of model-based indicators should be interpreted with caution.

STECF concludes that further work would be needed to better understand the scaling issues arising from the use of different assessment models (SPM vs ASM). Still, F_{MSY} arising from the two families are the management target, and that consequently, in both cases, F/F_{MSY} quantifies the distance to the management target.

STECF concludes that the modifications to the protocol (aggregate function and standardisation of biomass) requested by PLEN 25-03 have also affected the perspective on trends. While maintaining stability in the protocol facilitates the uptake of the indicators by end-users, STECF acknowledges that occasional revisions of the protocol may be necessary to reflect scientific progress or to address specific methodological issues.

STECF concludes that the new selectivity indicator provides valuable information to monitor the progress towards the protection of juveniles. STECF concludes that this protection appears to have increased in earlier years in the NEA but is now stable or deteriorating. The situation seems to be stable or deteriorating in the MED&BS, though this increase seems to be driven mostly by two stocks. STECF concludes that effort should be made to increase the data availability and extend the coverage of the indicator.

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6.3 Report on Aquaculture

Background provided by the Commission

DG MARE is currently developing an official “Vision 2040” for fisheries and aquaculture; work is ongoing and existing material is mostly preparatory or advisory rather than a final Commission document. This short DG MARE report will provide an updated EU-level economic snapshot of aquaculture to support that process and the DG MARE policy agenda outlined in the Note on Policy Strategy on Aquaculture in the Context of the European Ocean Pact.

Based on the latest DCF/EU-MAP economic data call, the experts are requested to analyse and comment on the economic performance of the EU aquaculture sector as a whole using 2023 data (and 2024 data if available in time). The analysis should remain at EU aggregate and main segment level only (marine finfish, marine shellfish, freshwater, algae) and not include country-by-country chapters.

Background documents are published on:

<https://stecf.ec.europa.eu/document/88958e93-cfa3-4193-9450-118132ac2b0f>

Request to the STECF

STECF is requested to evaluate the ad hoc contracts reports and make any appropriate comments and recommendations.

Summary of the information provided to STECF

One background document was supplied to STECF: an ad hoc contract report entitled “EU Aquaculture: Short Economic Overview and Outlook to 2040” (Nielsen, *et al*, 2026). The report was produced by a group of seven experts. It draws on DCF/EU-MAP economic data collected under the 2025 ad-hoc data call, supplemented by FAO data, and covers the period 2017-2023. The report is structured around an Executive Summary, EU aquaculture overview, structure of the EU aquaculture sector, EU aquaculture sector growth potential, and two annexes on data coverage and the terms of reference.

STECF comments

STECF notes that the report is an ad hoc contract deliverable prepared specifically as an input to the Commission’s Vision 2040 process and is distinct from the regular biennial STECF Aquaculture Economic Report (most recently STECF EWG 24-14). STECF further notes that the report involved independent data imputation and quality checks hence some

indicators may not be directly comparable with those published in previous STECF Aquaculture Economic Reports.

STECF acknowledges the substantial analytical effort undertaken by the group of experts in preparing this report within a condensed timeframe and under a focused Terms of Reference. The breadth of economic evidence compiled, covering all four main aquaculture segments at EU aggregate level and incorporating a structured forward-looking analysis, provides a valuable and timely contribution to the Commission's policy development work on Vision 2040.

STECF has the following specific comments on the report:

EU-level overview and data coverage

STECF notes the report's methodological approach of building EU aggregates from DCF/EU-MAP submissions supplemented by FAO data, with imputations applied transparently where Member State data were missing or incomplete. The methodology for imputing missing values for sales volume, turnover, number of enterprises, employment and FTE is described in Annex 1 of the ad hoc contract report and is consistent with approaches used in previous STECF Aquaculture Economic Reports (e.g. EWG 24-14).

STECF notes that data coverage remains uneven across Member States and segments. In particular, freshwater aquaculture data gaps persist for several landlocked Member States, and algae data submitted under DCF are limited to two countries (Spain and Ireland), severely constraining the reliability of EU-level aggregates for this segment. STECF notes commentary that Member States continue to improve the completeness and timeliness of DCF submissions, particularly for the algae and freshwater segments, to strengthen the evidence base for future policy assessments.

STECF notes that there was unreliable data for Italy on FTE and endorses the expert decision to re-estimate Italian FTE values based on hours worked, in line with the approach used in EWG 24-14.

STECF notes the report's view that DCF data collection and reporting for the algae and freshwater segments should be strengthened to allow for robust future economic analysis. STECF notes that the ad hoc report acknowledges the limited DCF coverage for both segments but does not itself call for corrective action. In this context, STECF draws attention to the fact that many Member States may be applying the reporting thresholds permitted under Commission Delegated Decision (EU) 2021/1167, Chapter II, Article 7(a–c), which exempt certain activities from mandatory reporting. While the use of these thresholds is permitted, their widespread application results in significant gaps in EU-level aggregates, particularly for algae and freshwater. STECF notes that the ad hoc report explicitly acknowledges that, given the growing policy importance of the algae sector as reflected in the Strategic Guidelines for a more sustainable and competitive EU aquaculture 2021–2030 (COM(2021) 236) and the Communication Towards a Strong and Sustainable EU Algae Sector (COM(2022) 592) Member States were asked to make an extra effort to provide data on the macroalgae and microalgae segments for this data call. STECF further notes that, prior to Commission Delegated Decision (EU) 2021/1167, freshwater aquaculture reporting

was voluntary, and that while it is now compulsory for activities above the threshold, data gaps for several Member States persist.

Comments on the main findings at EU and segment level

EU level

STECF notes the report's principal finding that EU aquaculture production has continued to decline in volume from 1.17 million tonnes in 2021 to 1.12 million tonnes in 2023 while nominal turnover has increased from EUR 4.21 billion to EUR 4.95 billion over the same period. This divergence reflects price-driven revenue growth rather than genuine expansion of productive capacity, a finding consistent with the evidence presented in EWG 24-14.

STECF notes the continued erosion of profitability indicators across the sector. EBIT declined from EUR 777 million in 2022 to EUR 733 million in 2023, and the EBIT margin fell to 11.8%, its lowest value in the period covered. GVA margins have also compressed from 36.8% in 2021 to 32.8% in 2023, indicating that production costs are rising faster than revenues. ROI declined to 7.8% in 2023, which is substantially below the 14% recorded in 2017. These trends signal a deteriorating operating environment and raise questions about the sector's long-term investment capacity.

STECF notes that employment continued to decline from 72 252 persons in 2022 to 68 079 in 2023, representing a 20% reduction relative to the 2009 peak of 85 522. The structural concentration of both production and economic value in four Member States (Spain, France, Greece and Italy), which together account for approximately two-thirds of EU output and 64% of turnover, remains a salient feature of the sector. STECF acknowledges the report's observation that the gradual decline in the number of enterprises reflects the closure of less competitive operations rather than consolidation into larger, more efficient units, given that production volumes are also declining.

Marine finfish

STECF notes that the marine finfish segment, while contributing approximately 25% of EU production volume, accounts for close to 50% of total sector value, reflecting the capital-intensive and higher-value nature of this segment. STECF notes with concern the significant weakening of economic performance in 2023: ROI fell to 0.5% from 3.7% in 2022, and the seabass and seabream sub-segment reported negative EBIT (-14.9%) and ROI (-11.1%). The deterioration is attributed to the convergence of lower market prices following the 2022 inflation-driven peak with persistently high feed and energy costs and intensifying competition from non-EU Mediterranean producers. STECF notes that Atlantic bluefin tuna remains the most profitable sub-segment, with an EBIT margin of 36.1% and ROI of 42.4% in 2023. Irish salmon continues to operate under persistent negative profitability, reflecting structural biological and spatial constraints.

Freshwater aquaculture

STECF notes that freshwater aquaculture (predominantly rainbow trout and common carp) accounts for approximately 27% of EU production volume and employs around 35% of the sector's workforce, underscoring its social importance particularly in Central and Eastern Europe. STECF notes that trout production has declined from 182 000 tonnes in 2021 to 148 000 tonnes in 2023 driven by feed and energy cost pressures, water temperature stress and competition from imports. Carp production also contracted, falling to 48 600 tonnes in 2023. However, STECF notes a partial profitability recovery in 2023 for both sub-segments as farmgate prices rose, with ROI for trout improving to 8.1% and for carp reaching 19.3%. STECF draws attention to the report's appropriate cautionary note regarding data quality and comparability issues for several Member States in this segment.

Shellfish aquaculture

STECF notes that the shellfish segment, representing approximately 49% of EU aquaculture production volume, showed a contraction in physical output of 6.7% between 2021 and 2023, while total turnover increased by 18.7% to EUR 1.535 billion. STECF notes with concern the sustained decline in ROI from 24.4% in 2021 to 18.9% in 2023, indicating that rising costs and environmental pressures are eroding margins despite price gains. The mussel sub-segment in particular is under pressure from climate-driven stressors, including marine heatwaves, harmful algal blooms and invasive species (notably the blue crab *Callinectes sapidus*), with employment declining sharply in Spain (-33.5%) between 2021 and 2023. STECF notes the positive performance of the clam sub-segment, which recorded exceptionally high ROI (210% in 2023), though cautions that these values may partly reflect low capital asset bases mechanically inflating ratio-based indicators.

Algae aquaculture

STECF notes that the algae sector remains nascent at EU scale, with DCF data covering only Spain and Ireland. Despite exponential growth in production volume between 2021 and 2023 (+5,500% in DCF-reported data), absolute volumes remain very small and both macroalgae and microalgae sub-segments report negative EBIT and ROI. STECF acknowledges the report's use of FAO data to supplement DCF coverage and notes that the long-term market projections cited (up to EUR 9.3 billion by 2030) remain highly uncertain given current structural and regulatory barriers.

Comments on the forward-looking chapter and structural constraints

STECF considers the forward-looking chapter (Chapter 4 of the ad hoc report) to be a valuable contribution to the Vision 2040 process and endorses the conceptual framework distinguishing between intra-marginal productivity improvements (efficiency gains within existing farms) and extra-marginal expansion (access to new space and licences). This distinction is analytically useful and clearly communicated.

STECF endorses the identification of the following as key structural constraints requiring policy attention: (i) the dominance of small and microenterprises limiting economies of scale and technology adoption; (ii) persistent barriers related to spatial planning, licensing timelines and administrative complexity; (iii) capital access constraints, particularly for smaller operators; (iv) increasing competitive pressure from non-EU producers in open global seafood markets; and (v) rising climate and environmental risks affecting production stability across all segments.

STECF notes the chapter's observation that despite substantial EMFF/EMFAF financial support (totalling EUR 2.2 billion across the two programming periods), the European Court of Auditors (European Court of Auditors, Special Report 25/2023, paras. 27–42) found that project uptake has been low and leverage effects limited, with production volumes continuing to stagnate. STECF notes the experts' recommendations that future EMFAF disbursements be more explicitly linked to measurable structural outcomes, including reductions in time-to-permit, increases in the number of new licences, measurable production volume growth, and reductions in nutrient emissions per tonne produced.

STECF notes the chapter's argument that EU aquaculture policy has disproportionately focused on intra-marginal improvements through R&D and farm subsidies while extra-marginal expansion remains blocked by administrative and spatial constraints. STECF notes the expert's assessment that addressing spatial planning barriers, streamlining licensing procedures, and providing long-term site security are preconditions for any substantial increase in EU aquaculture production capacity. This is consistent with previous STECF advice on the sector.

STECF notes the discussion of nutrient credit systems as a potential policy instrument to link fed finfish farming with extractive species such as mussels and macroalgae.

STECF conclusions

STECF concludes that the ad hoc contract report adequately addresses the ToRs and provides a sound and timely EU-level economic overview of the aquaculture sector to inform the Commission's Vision 2040 for Fisheries and Aquaculture.

As the ad hoc report involved independent data imputation and quality checks some indicators may not be directly comparable with those published in previous STECF Aquaculture Economic Reports. STECF concludes that any differences between the ad hoc report and previous STECF Aquaculture Economic Reports are clearly flagged when this report is cited alongside or in conjunction with other STECF aquaculture outputs. STECF further suggests that the Commission use the next DCF data call to invite Member States to review and correct their submissions where inconsistencies have been identified, with a view to ensuring alignment across all STECF aquaculture reporting.

STECF concludes that Member States should report as comprehensively as possible, where they are required to, in future aquaculture data calls, particularly for the algae and freshwater segments.

STECF concludes that the data issues identified in this report, in particular the reliability and consistency of FTE data across Member States, should be examined as a priority at the next Aquaculture EWG (EWG 26-12). Where possible, Member States should ensure that their 2026 submissions are aligned with data previously submitted under the social data call and the 2025 ad hoc data call, unless more up-to-date data are available. Data submitted as part of the 2026 Aquaculture data call will then constitute the most up-to-date and authoritative dataset for the sector and should serve as the basis for future STECF aquaculture economic analysis.

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6.4 Socio-economic assessment of the closure for common dolphins in the Bay of Biscay

Background provided by the Commission

Winter strandings of dolphins and small cetaceans on the coasts of the Bay of Biscay have been a recurring problem for the fishing sector and for our societies at large. Incidental catches in fishing nets, along with natural mortality, diseases, and disorientation, have been significant contributors to the strandings of dolphins and other small cetaceans in the Bay of Biscay.

In response to this situation, France declared emergency measures (Article 13 of the Common Fisheries Policy) in January 2024 and adopted a four-weeks closure for all EU vessels and third countries fishing with the same gears in the Bay of Biscay. Consequently, the South South-Western Waters Members States Group adopted two joint recommendations aiming at prolonging the closure in 2025 and 2026. The EC then adopted the relevant delegated acts^{5, 6}.

Characteristics of the closure:

- Area: French waters up to the outer limit of the exclusive economic zone of France within ICES Subarea 8.
- Period: between 22 January and 20 February in 2024, 2025 and 2026.
- Fleet affected: vessels above 8 metres carrying on board pelagic trawls (PTM, OTM), bottom pair trawls (PTB), purse seines (PS), set (anchored) gillnets (GNS), trammel nets (GTR) or combined gillnets and trammel nets (GTN).

The objective of the request is to assess the socio-economic impact of the closure to the fishing fleets affected, also in relation to the type of conservation measure as described in Article 7(2)(e) of Regulation 1380/2013. This work is supported by the report of an ad hoc contract.

Background documents are published on:

<https://stecf.ec.europa.eu/document/88958e93-cfa3-4193-9450-118132ac2b0f>

5 [Commission Delegated Regulation \(EU\) 2024/3089](#) of 30 September 2024 amending Regulation (EU) 2019/1241 as regards measures to reduce incidental catches of common dolphin (*Delphinus delphis*) and other small cetaceans in the Bay of Biscay.

6 [Commission Delegated Regulation \(EU\) 2025/2593](#) amending Regulation (EU) 2019/1241 of the European Parliament and of the Council as regards the prolongation of the measures to reduce incidental catches of common dolphin (*Delphinus delphis*) and other small cetaceans in the Bay of Biscay.

Request to the STECF

1. **Summarise the main findings and conclusions** of the ad hoc report “*Closure for common dolphins in the Bay of Biscay*” (Miren Altuna-Etxabe, 04.03.2026). The summary should recap in particular the description of the fishing fleets potentially affected by the closure, the assessment of fleet behaviour and the socio-economic impact of the closure.
2. **Review and provide comments on the methodology applied**, including an assessment of the scenarios tested and the robustness of the model assumptions, in particular (i) the proxy used for vessels with a length greater than 8 metres (ii) the removal of one third of Q1 landings due to lack of monthly resolution; and (iii) the assumption that any difference observed in landing value is attributable to the one-month closure. Assess whether the choice of the 15 selected segment-gear combination is appropriate to evaluate the effect of the closure.
3. **Discuss and provide comments on the results obtained**, including:
 - a) The extent to which the observed compensation patterns -at the first quarter, annual level and through activity in other areas- can be considered reliable.
 - b) The contributing factors to the observed compensation patterns, including potential shifts in catch composition, increases in market prices, increases in fishing effort and displacement of fishing activity. Comment on the commercial species contributing most to those patterns and discuss whether they can be related to fishing opportunities’ variations and the status of the stocks.
 - c) The likelihood that the observed compensation patterns may persist beyond 2024.
 - d) The reasons why compensation patterns were not observed in four segment-gear combinations.
 - e) The relationship between segment-gear combinations and their estimated contribution to incidental catches or bycatch rates.
 - f) The extend to which the observed compensation patterns -such as displacement and increase in fishing effort- could indirectly affect the level of incidental catches of the NE Atlantic common dolphin population.
 - g) Whether the one-month closure would be socio-economically sustainable in the long-term.
4. **Recommend possible ways to** (i) address the identified shortcomings; and (ii) further develop the socio-economic analysis (e.g. using additional information, databases, new reference years, or testing additional scenarios).
5. **AOB**
 - a) Provide an estimate of the number of vessels for each segment-gear combination.

Summary of the information provided to STECF

STECF was provided with an ad hoc contract report (No. 2601) which includes detailed analyses based on Fisheries Dependent Information (FDI) and Annual Economic Report (AER) data. In addition, the ad hoc contract also reviewed a number of documents, and some of them were also provided to STECF as background information: These include five documents provided by SWWAC, providing various stakeholders feedbacks on the impact of the 2024 closure; During the plenary week, STECF was also provided with a public report by IFREMER (in French), published in October 2024, estimating the economic impacts of the closure using individual vessels data (logbooks and VMS) (Guyader et al., 2024).

1. Ad hoc contract report

The ad hoc report presents analyses of available FDI and AER data averaged over the three-year period 2021–2023 (before the closure in 2024) and for the year 2024 (the only available year in the FDI dataset after closure). AER data for 2024 were not available at the time of analysis as these will be released later in 2026.

Two versions of the ad hoc report were produced. The first version used publicly available FDI data. As some landings are removed or aggregated to comply with Member State confidentiality rules, these data are incomplete and resulting in missing total tonnage values for certain strata.

The second version used the full FDI database, which includes all landings without confidentiality related removals. The summary presented below is based on the second version, as it provides a more complete dataset.

The analysis covers ICES Divisions 8abd (Bay of Biscay) and includes seven gear categories affected by the closure (PTM, OTM, PTB, PS, GNS, GTR, and GTN). Only vessels with an overall length equal or above 10 metres and that were active during the first quarter (Q1) of the years 2021–2023 and 2024 were included.

Landings (in total tonnage) were converted into landings values (income), calculated as landings multiplied by price. Three price options were applied:

- Nominal value in euro, corresponding to the FDI price data.
- The real value in euro (RLV), where nominal prices are adjusted with average inflation by Member State (based on Consumer Price Index (CPI)), with 2025 as the base year, using the same methodology as is done in the AER (e.g. EWG 25-07).
- Constant price value, where a single average real price across years was applied to remove interannual price variability.

These three value measures were first used to assess changes in income before and after the closure and to evaluate the potential influence of price changes.

In the economic assessment a diversity of economic indicators using RLV as basis was computed. The analysis was conducted by merging FDI catch data (Table A) with AER fleet segment data (FS table). This was done by combining several FDI variables (country, fishing technique, and vessel length) to create a new variable, “fleet segment–gear”, which aligns with the AER fleet segments.

Both FDI and AER datasets provide information by fleet segment, defined by country, fishing technique, and vessel length. The analysis was performed at the fleet segment–gear level, which is only available in the FDI database. To ensure comparability, it was assumed that all segment–gear combinations within a given AER fleet segment have the same economic characteristics.

As a first step, fishing segments-gear type combinations potentially affected by the closure measure were identified as those operating in ICES divisions 8abd, using gears affected by the closure, with vessels >10 m length, where the income affected by the closure (one third of the real value of their Q1 landings) accounted for at least 1% of their annual RLV in the Bay of Biscay in any of the three years preceding the closure (2021–2023) and with data available before (2021-2023) and after (2024) the closure.

Then, the merged dataset was used to analyse changes in fleet activity before the closure (average for 2021–2023) and after the closure (2024), in terms of revenue and costs. A multi-year average was calculated for 2021–2023 and compared with the 2024 values.

To identify segment-gear combinations with differences in estimated values before and after the closure, a multi-step process was applied, looking at positive or negative differences between the RLV estimates (without minimal threshold, i.e. any difference is accounted for):

- Step 1: RLV in Q1 2024 were compared with the average Q1 RLV for 2021–2023. A positive difference was interpreted as indicating that the effects of the closure were compensated during Q1.
- Step 2: If a negative difference was observed in Step 1, annual RLV for 2024 were examined. If the total annual value in 2024 exceeded the average for the reference period (2021–2023), it was assumed that any losses were compensated over the full year.
- Step 3: If a decrease in RLV was still observed, trends in RLV in other fishing areas (ICES Subareas 6 and 7) were analysed. If an increase in RLV was observed in these areas in 2024 compared with 2021–2023, it was assumed that losses within the closure area were compensated by fishing activity elsewhere. If negative differences remained, the corresponding segment–gear combinations were considered to be negatively affected by the closure, at annual level.

The segment–gear combinations considered to be negatively affected by the closure after Step 3 that exhibited strong interannual fluctuations (based on the contractor’s judgement) in their Bay of Biscay landings, were assumed to be influenced primarily by factors other than the closure and were excluded from further analysis.

For the remaining segment–gear combinations, an economic impact assessment was conducted. Four analytical scenarios were applied based on changes in RLV.

- Scenario 1 (historical one-third of Q1): As a proxy for a one-month closure, one third of the average Q1 landings for 2021–2023 was removed, assuming that landings were evenly distributed across the three months.
- Scenario 2 (Q1 2024 vs. historical Q1): Landings in Q1 2024 were compared with the average Q1 landings for 2021–2023. Any observed changes in 2024 were assumed attributed to the closure.
- Scenario 3 (annual comparison): Total annual landings in 2024 were compared with the average annual landings for 2021–2023. All differences were assumed attributed to the closure.
- Scenario 4 (annual and multi-area comparison): Scenario 3 was extended to include multiple fishing areas, allowing the assessment of changes across different regions.

Economic impacts were assessed using a set of standard indicators: revenue, gross value added, gross profit, net profit, salaries, employment, energy consumption, and number of vessels. The report then presents the results of the analysis based on this approach.

1.1 Results of the analyses in the ad hoc report

1.1.1 Selection of fishing fleet segments potentially affected by the closure

Initially, 69 segment–gear combinations were identified as potentially affected by the closure, mostly belonging to France (52) and Spain (12). The remaining combinations were from Germany (1), Denmark (1), Lithuania (1), the Netherlands (1), and Poland (1).

The fleet segment–gear combinations from Germany, Denmark, Lithuania, the Netherlands and Poland were excluded from further analysis as they mainly operate in the Celtic Sea and the west of Scotland (less than 8% of annual RLV is obtained from the Bay of Biscay).

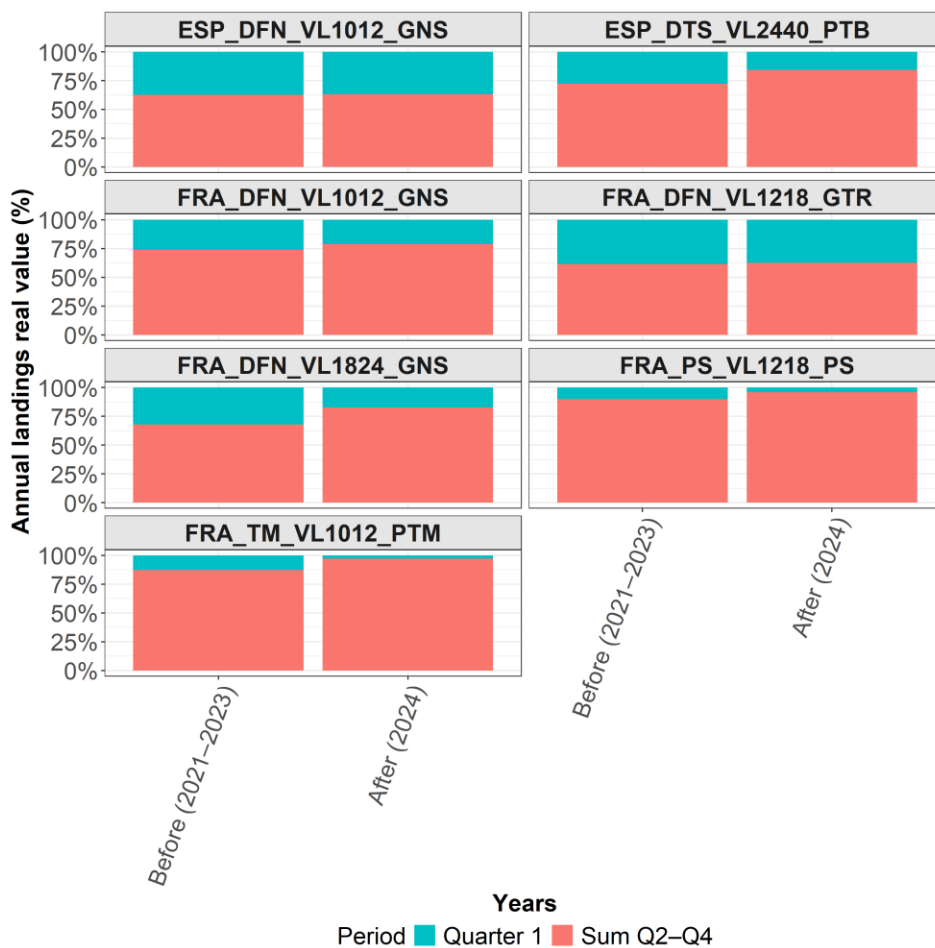
From the remaining segment–gear combinations, 14 were excluded as they did not report any landings in 2024.

As a result, 50 segment–gear combinations from France (40) and Spain (10) were retained for further analysis.

Based on the three-step approach described above, eight segment-gear combinations could have compensated in Q1, 15 could have compensated in the rest of the quarters and three could have compensated by increasing their activity in other areas. From the remaining segment-gear combinations, 17 showed high interannual variability and the decrease in landings value was attributed to usual activity patterns. The remaining seven segment-gear combinations showing reductions in RLV when comparing 2024 with the 2021-2023 average (Figure 6.4.1) were interpreted as the segment-gear combinations being unable to

compensate for the impact of the closure, and thus, indicating potential impacts of the closure.

Figure 6.4.1. Proportion of annual Bay of Biscay landings real value by segment–gear combination for the seven segments showing reductions in RLV when comparing 2024 with the 2021–2023 average, comparing the pre-closure period (2021–2023) and the post-closure year (2024). Each bar represents 100% of annual landings for a given segment–gear, partitioned into Q1 and the sum across Q2–4.



Source: *ad hoc contract (No. 2601)*'s report (Figure 39).

1.1.2 Economic assessment (scenarios 1 to 4)

For the seven segment–gear combinations previously identified as unable to compensate for the impact of the closure, an economic impact of the closure was assessed using the economic indicators listed above.

Results of the socio-economic analysis for the different scenarios (Figure 6.4.2) can be summarised as follows:

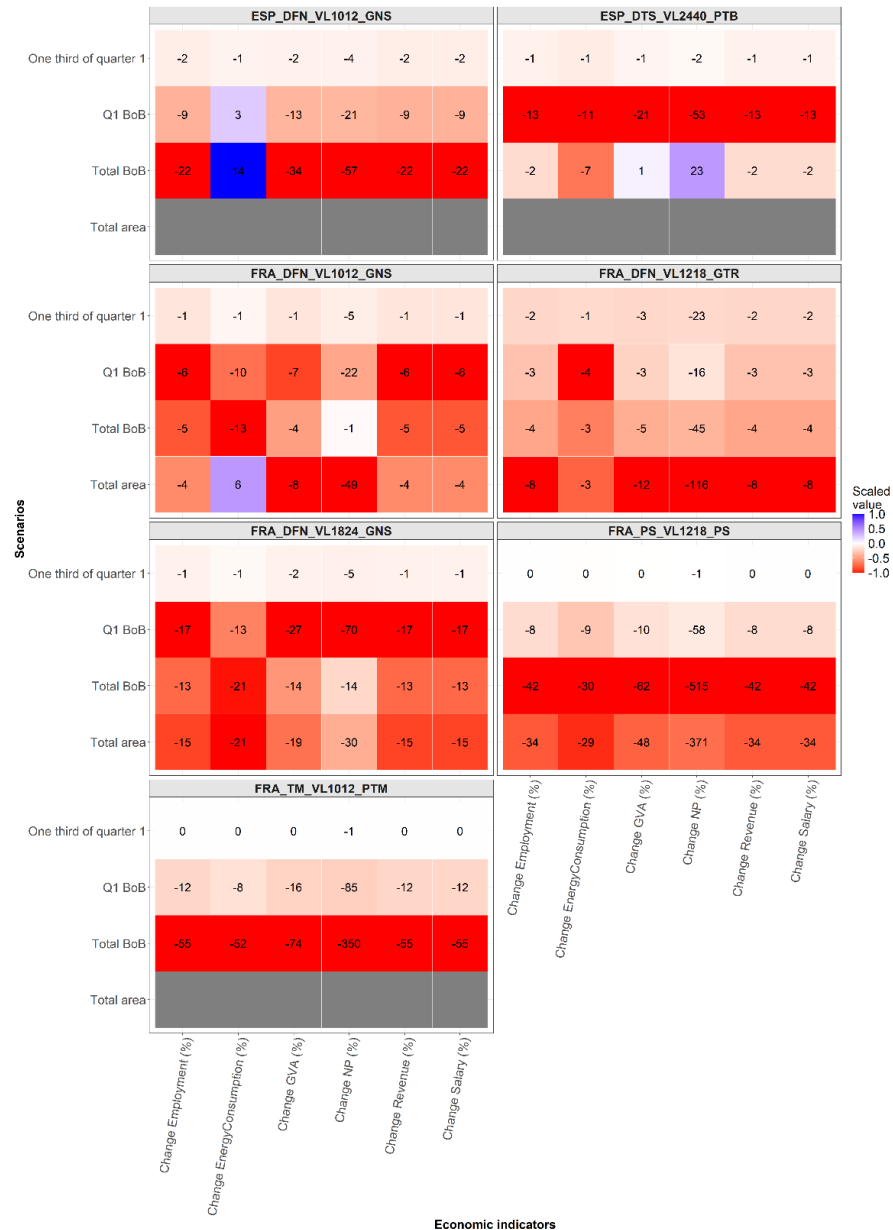
Scenario 1 (historical one-third of Q1): All segment–gear combinations show losses, as the scenario assumes the removal of one third of Q1 landings.

Scenario 2 (Q1 2024 vs. historical Q1): Some segment–gear combinations show positive developments in economic indicators, as Q1 2024 values are higher than the average for 2021–2023.

Scenario 3 (annual comparison): When the analysis is extended to the full year, further improvements are observed. Many segment–gear combinations show higher values in 2024 compared with 2021–2023.

Scenario 4 (annual and multi-area comparison): When the analysis includes all fishing areas (including ICES Subareas 6 and 7), seven segment–gear combinations analysed show losses over the full year.

Figure 6.4.2. Relative variation of economic indicators for the seven not compensated segment-gear combination under each scenario, compared with the 2021-2023 base case. Indicators included: Revenue (euro), Gross Value Added (GVA, euro), Net Profit (NP, euro), Salary (euro), Employment (number of FTEs), and Energy Consumption (litres). Scenarios: Scenario 1: Historical one-third of Q1 (2021–2023), Scenario 2: Q1 2024 vs. historical Q1 (2021–2023), Scenario 3: Annual 2024 vs historical annual (2021–2023), and Scenario 4: Annual 2024 across multiple areas vs. historical annual across multiple areas. Colours represent scaled percentage changes by indicator and segment-gear, and the numbers inside the cells show the unscaled percentage change for each indicator, scenario and segment-gear combination.

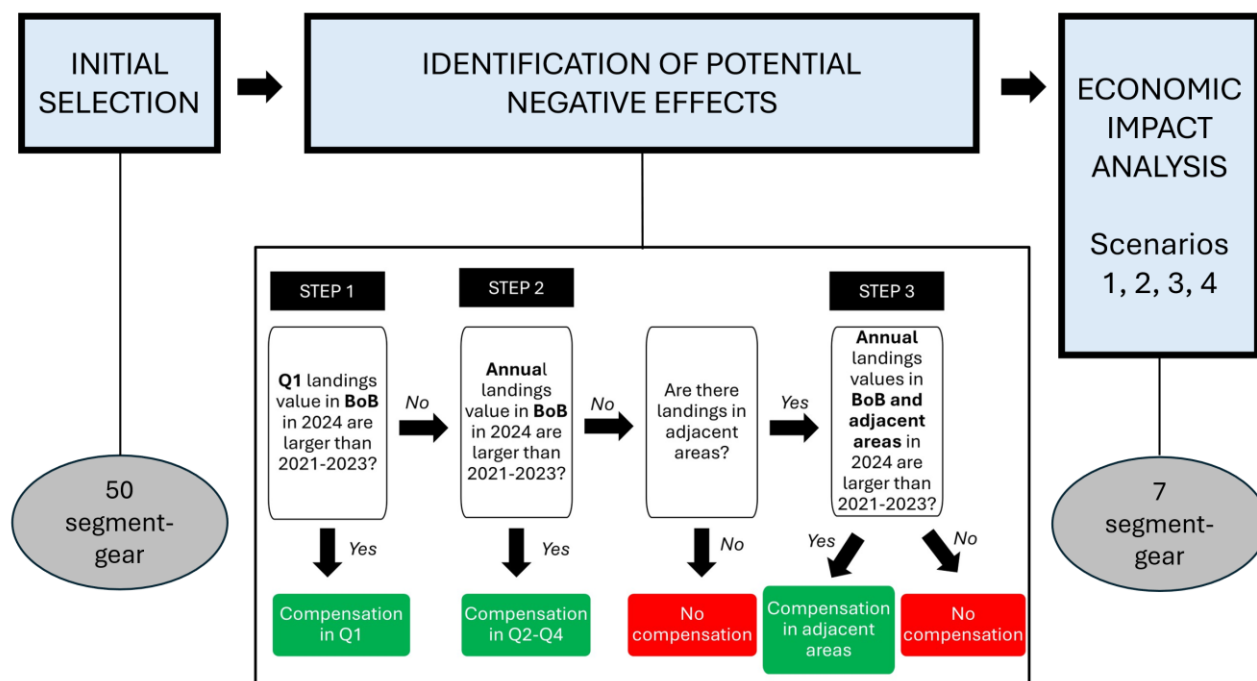


Source: ad hoc contract (No. 2601)'s report (Figure 38).

1.2 Summary of the results

Overall, the ad hoc report concluded (see Figure 6.4.3 for a summary of the methodology followed and main results) that there are a wide range of segment-gear combinations responses to the 2024 dolphin-related closure. Some fleets could have been able to compensate for the loss of activity in Q1 by increasing landings weight and/or value of key species during the two non-closure months of the quarter. Other segment-gear combinations maintained their overall performance by shifting effort to later quarters within the Bay of Biscay, while a third group adapted by redirecting activity to other fishing areas. In contrast, after excluding the segment-gear combinations with high interannual variability, several segment-gear combinations showed declines in RLV, indicating limited capacity to adjust their behaviour or redistribute effort in response to the closure. However, the ad-hoc also acknowledged several limitations in the interpretation of the results, arising from data resolution, simplified assumptions and interactions with factors other than the closure.

Figure 6.4.3. Summary of the methodology followed, and main results produced by the ad hoc contract report (No. 2601) for the economic analysis of the impact of the dolphin's closure.



Source: Own elaboration.

The following points stated in the ad hoc report summarise the main patterns observed across segment-gear combinations.

1.2.1. Segment-gear combinations that could have compensated for the closure impact with more amount and/or more valuable landings in Q1.

- ESP_DFN_VL1012_GTR appears to have compensated for the closure impact in Q1 through higher RLV of common sole.
- FRA_HOK_VL1824_GNS appears to have compensated for the closure impact in Q1 through higher RLV of European hake.
- FRA_PMP_VL1012_GTR appears to have compensated for the closure impact in Q1 through higher RLV of common sole.
- ESP_PGP_VL2440_GNS appears to have compensated for the closure impact in Q1 through higher landed weight (tonnes) and the unit value (euro/tonnes) of anglerfish.
- FRA_DFN_VL1824_GTR appears to have compensated for the closure impact in Q1 through higher unit value (euro/tonnes) of high-value species such as common sole, brill, and European seabass, together with increased landings weight (tonnes) of brill, white angler, and common cuttlefish.
- FRA_HOK_VL1012_GTR appears to have compensated for the closure impact in Q1 through higher unit value (euro/tonnes) of high-value species such as European seabass, together with increased landings weight (tonnes) of Senegalese sole, black seabream, and common cuttlefish.
- FRA_DFN_VL1012_GTN appears to have compensated for the closure impact in Q1 through higher landings weight (tonnes) of European seabass and common sole.
- FRA_TM_VL1218_PTB appears to have compensated for the closure impact in Q1 through higher landings weight (tonnes) of European seabass and Atlantic mackerel.

1.2.2. Segment-gear combinations that could have compensated for the closure impact with more amount and/or more valuable landings in the rest of the quarters.

- ESP_HOK_VL2440_PS and ESP_PS_VL2440_PS appears to have compensated for the closure impact at an annual level through higher RLV of small pelagic species, particularly European anchovy and sardine.
- ESP_PS_VL1218_PS and ESP_PS_VL1824_PS appears to have compensated for the closure impact at an annual level through higher RLV of small pelagic species, particularly European anchovy.

- FRA_DFN_VL1012_GTR appears to have compensated for the closure impact at an annual level through higher RLV of common spiny lobster.
- FRA_DFN_VL1824_GTN appears to have compensated for the closure impact at an annual level through higher RLV of anglerfish.
- FRA_DTS_VL1012_OTM appears to have compensated for the closure impact at an annual level through higher RLV of sardine.
- FRA_DTS_VL1824_OTM appears to have compensated for the closure impact at an annual level through higher landings RLV of albacore and Atlantic bluefin tuna.
- FRA_FPO_VL1012_GTR appears to have compensated for the closure impact at an annual level through higher landings RLV of spinous spider crab.
- FRA_TM_VL1824_PTM appears to have compensated for the closure impact at an annual level through higher landings RLV of albacore and sardine.
- FRA_TM_VL2440_PTM appears to have compensated for the closure impact at an annual level through higher RLV of European hake and albacore.
- FRA_DTS_VL1824_PTM appears to have compensated for the closure impact at an annual level through higher landed weight (tonnes) and unit value (euro/tonnes) of Albacore and higher landings weight (tonnes) of Spinous spider crab.
- FRA_HOK_VL1012_GNS appears to have compensated for the closure impact at an annual level through higher landings weight (tonnes) of gilthead seabream, European seabass and black seabream.
- FRA_MGP_VL1218_PTM appears to have compensated for the closure impact at an annual level through both, higher landed weight (tonnes) and unit value (euro/tonnes) of sardine.
- FRA_PS_VL1824_PS appears to have compensated for the closure impact at an annual level through higher landed weight (tonnes) of Atlantic chub mackerel.

1.2.3 Segment-gear combinations that could have compensated for the closure impact with more amount and/or more valuable landings in other areas:

- FRA_DFN_VL1218_GNS appears to have compensated for the closure impact by shifting activity to other areas, through higher landings weight (tonnes) of common spiny lobster and spinous spider crab.

- FRA_DFN_VL2440_GNS appears to have compensated for the closure impact by shifting activity to other areas, through higher landings weight (tonnes) of blackbellied angler and higher unit value of European hake.
- FRA_TM_VL1218_PTM appears to have compensated for the closure impact by shifting activity to other areas, through higher landings weight (tonnes) of tuna species – particularly Atlantic bluefin tuna and albacore.

1.2.4. Segment-gear combinations that showed a decrease in landing values between 2024 and previous years but presenting a high inter-annual variability in the landings profile:

ESP_HOK_VL1824_GNS, ESP_HOK_VL1824_PS, FRA_DTS_VL1012_GNS, FRA_DTS_VL1012_GTR, FRA_DTS_VL1218_OTM, FRA_DTS_VL1218_PTM, FRA_FPO_VL1012_GNS, FRA_MGO_VL1012_GTR, FRA_MGP_VL1824_OTM, FRA_MGP_VL1824_PTM, FRA_PGP_VL1012_GNS, FRA_PGP_VL1012_GTR, FRA_PGP_VL1218_GTR, FRA_PS_VL1012_PS, FRA_TM_VL1218_OTM, FRA_TM_VL1824_PTB and FRA_TM_VL2440_PTB.

1.2.5. Segment-gear combinations that do not seem to have compensated:

- ESP_DFN_VL1012_GNS does not appear to have compensated for the closure impact, with decreases in the RLV of surmullet, European hake and Atlantic mackerel.
- ESP_DTS_VL2440_PTB does not appear to have compensated for the closure impact, with decreases in the RLV of Atlantic mackerel.
- FRA_DFN_VL1012_GNS does not appear to have compensated for the closure impact, with decreases in the RLV of pollack, spinous spider crab.
- FRA_DFN_VL1218_GTR does not appear to have compensated for the closure impact, with decreases in the RLV of turbot, European seabass and white angler.
- FRA_DFN_VL1824_GNS does not appear to have compensated for the closure impact, with decreases in the RLV of common sole, European seabass, pollack, White angler and European hake.
- FRA_PS_VL1218_PS does not appear to have compensated for the closure impact, with decreases in the RLV of gilthead seabream and sardine.
- FRA_TM_VL1012_PTM does not appear to have compensated for the closure impact, with decreases in the RLV of meagre, European seabass, black seabream, Mediterranean horse mackerel and sardine.

1.3. Other documents analysed by the ad hoc contract

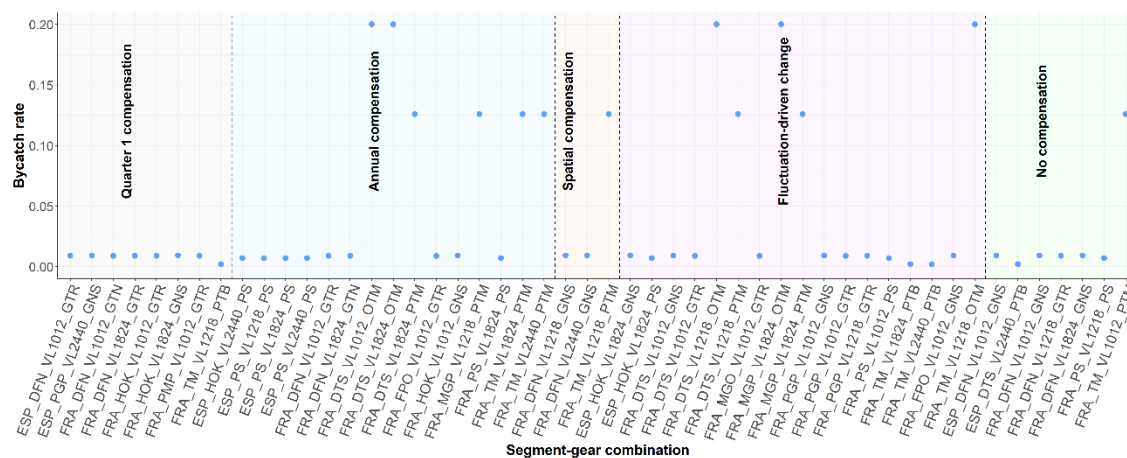
The contractor was also tasked with reviewing and summarising information from recent published studies on (i) estimates of common dolphin strandings in the Bay of Biscay before and after the closure, and (ii) any other biological effects on the biomass of key commercial fish stocks.

1.3.1 Bycatch, bycatch rates and strandings

The contractor reviewed the recent advice by ICES (ICES, 2025) which provided total annual bycatch and bycatch rates estimates for 2024 for 39 endangered, threatened, and protected species across 109 combinations of species, ecoregion, and fishing gear in 11 ecoregions.

The contractor related bycatch rates with the economic analysis summarised above. Pointing out that ICES' highest estimated bycatch of common dolphin in the Bay of Biscay was attributed to pelagic pair trawls (PTM, Figure 6.4.4), the contractor noted that one of the fleets with highest bycatch rates (FRA_TM_VL1824_PTМ) appeared able to compensate for the impact of the dolphin-related closure at the annual scale, whereas the second PTM fleet (FRA_TM_VL1218_PTМ) did not compensate for the effect.

Figure 6.4.4. Bycatch rates of each segment-gear combination. Background colours indicate the five fleet-response groups identified in the analysis: compensation within quarter 1, compensation at annual scale, compensation through spatial displacement, natural fluctuation, and no compensation. Dashed vertical lines mark the boundaries between groups.



Source: ad hoc contract (No. 2601)'s report (Figure 43).

The report also showed the bi-weekly stranding estimates from winters preceding the closure (2020–2021, 2021–2022, 2022–2023) and those following its implementation (2023–2024, 2024–2025, 2025–2026), published by the French government. The contractor noted that no consistent pattern emerged that could be attributed to the closure, as interannual variability remained high.

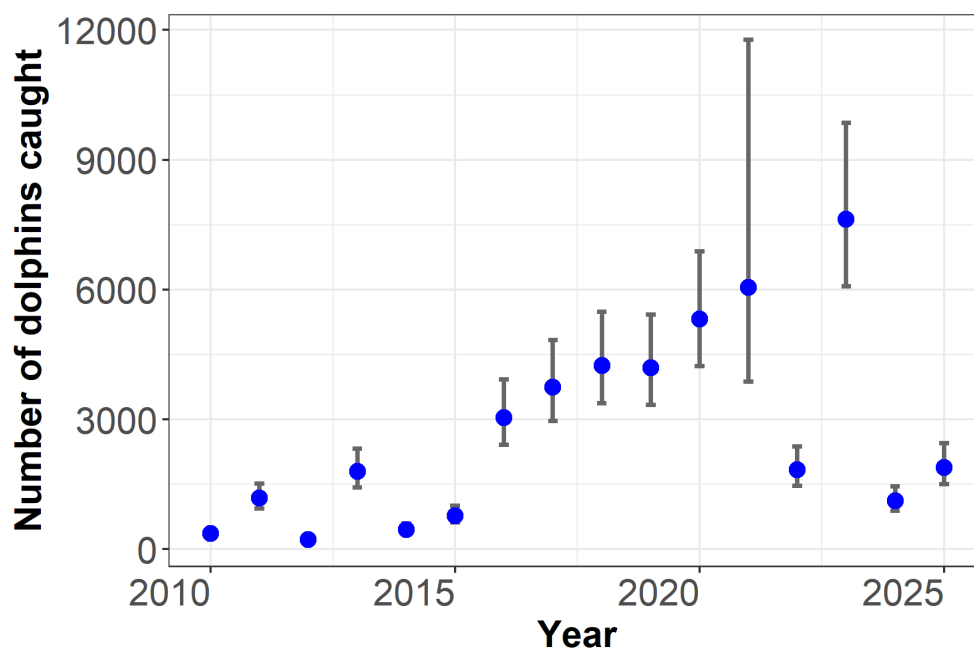
1.3.2. Incidental catch estimates before and after the closure

As underlined in the documents and by the contractor, the strandings are not a direct indicator of bycatch, as these vary following weather and drift conditions. As such, bycatch estimates are calculated using an inverse drift back calculation model, that infer bycatch quantity and timing from stranding and oceanographic models. The results are presented in the Pelagis scientific report (Peltier et al., 2025), provided to the contractor.

This technical assessment confirmed that incidental capture remained the primary cause of death for common dolphins stranded along the French Atlantic coast, with 69% of examined individuals showing evidence of bycatch and 81% of necropsied animals confirmed as having died in fishing gear in the winter 2024-2025. Estimated incidental catches decreased though in 2024 and 2025 compared with the high levels observed between 2016-2021 and 2023 (Peltier et al. 2025). For winter 2024-2025, approximately 1,900 dolphins were estimated to have died in fishing gear, lower than the long-term average of around 4,700 annual deaths for 2017–2023 (Figure 6.4.5). Winter 2024 showed a similar reduction.

Although recent years suggested a downward trend (Figure 6.4.5), the authors cautioned that this pattern cannot directly be interpreted as evidence of closure effectiveness, due to uncertainties inherent in drift-based mortality reconstruction, heterogeneous drift conditions and environmental variability, changes in carcass drift probability, or other ecosystem-level processes rather than a direct effect of the management measure (Peltier et al.,2025).

Figure 6.4.5. Annual estimates of common dolphin bycatch from 2010 to 2025, shown as point estimates with vertical error bars representing the 95% confidence interval (lower and upper bounds).



Source: *ad hoc contract (No. 2601)'s report (Figure 45) based on Peltier et al. (2025).*

1.4. Other reports presented to the plenary

The South Western Waters Advisory Council (SWWAC) provided five documents presenting economic impact assessments of the closure, prepared by different sector organisations:

OPPAO (Offshore Fishing Producers' Organisation of Ondarroa). According to OPPAO, the closure affected one pair of trawlers within their association. Based on data from the same period over the previous three years, the estimated loss in landings was 156 tonnes. After accounting for subsidies provided by the Spanish government, the remaining economic loss was estimated at EUR 669,235, reflecting both lost sales value and fixed costs.

OPESCAYA (Inshore Fishing Producers' Organisation of Bizkaia). OPESCAYA identified five vessels using trammel nets and targeting anglerfish as the most affected fleet segment. Based on historical data, the estimated loss was 125 tonnes, corresponding to approximately EUR 1,500,000 in value. The organisation noted that these vessels would face difficulties relocating to alternative fishing grounds with similar availability of target species. OPESCAYA also suggested that the closure could be lifted for vessels equipped with electronic monitoring systems or onboard observers, allowing the collection of data on dolphin bycatch.

MAREYAGE (French fish processing and wholesale sector). This document presents a study based on surveys of 35 fish processing companies, assessing the impact of the closure on the French processing sector. Across seven fish auctions in southern Brittany, respondents reported an average 44% decrease in purchase volumes between 22 January, and 20 February 2024 compared with the same period in 2023. Reduced supply led to a decline in volumes available to wholesalers, with one third of respondents reporting revenue losses exceeding 30%. As a result, 36.4% of companies implemented partial unemployment schemes. Although first-sale prices increased during this period, respondents indicated that these increases were moderate (+15% in Brittany and +8% along the Atlantic coast) and could not be fully passed on to customers. All respondents also reported a decrease in demand for French products.

OPEF (Organisation of Fishmongers and Shellfish Sellers of France). This study combines financial analysis and interviews with companies in the French wholesale and retail seafood sectors, complemented by statistical data on the seafood market and company financial performance (number of companies not specified). The results indicate that reduced supply led to increased raw material prices along the Atlantic coast. However, these price increases could not be fully transferred to consumers, resulting in reduced cash flow for companies. The reduced diversity of available products could not be compensated by imports or aquaculture. From a social perspective, the report describes a perceived lack of support from public authorities within the fishmonger sector and concerns about changes in consumer behaviour, including reduced demand for fish products.

Capacités SAS Cellule Mer. This study evaluates the short-term economic impact of the temporary fishing closure in the Bay of Biscay (22 January–20 February 2024) for gears associated with dolphin bycatch risk. The analysis is based on three main datasets: the VISIOMer market database (FranceAgriMer), vessel activity data (SACROIS), and economic data from the Ecopêche database accessed via the Centre d'Accès Sécurisé aux Données. Using historical data from 2019–2022, the study identified a reference population of 338 fishing vessels affected by the closure and 622 downstream companies that had purchased fish from these vessels.

The results indicate that the closure generated short-term economic losses for fishers and reduced fish supply across the value chain, including auctions, wholesalers, and retailers. However, the study emphasises that these impacts should be interpreted with caution. The analysis covers only a one-month period, and overall economic outcomes depend on factors such as financial compensation, redistribution of fishing effort during the rest of the year, and market adaptation. Therefore, the study primarily identifies short-term economic pressures rather than long-term structural impacts.

2. Report from IFREMER

During the plenary meeting STECF was made aware of a public report from IFREMER that also assesses socio-economic impacts of the closures in 2024 (Guyader et al., 2024). The Commission included it as a background document during the plenary week. This analysis was conducted in September 2024 and includes data up to August 2024 and cannot thus be directly compared with the ad hoc report delivered to STECF.

IFREMER assessed the consequences of the 2024 closure in the Bay of Biscay for the French fleets on the basis of weekly summaries, a format initially developed to monitor in close-to-real-time the impact of Covid lockdown. These summaries compile effort, landings weight, landings value data from individual vessels logbook data into weekly estimates of various economic indicators. Analyses of trends are thus conducted at different scales: (i) only for the vessels that have stopped activity during the closure and have applied to State's compensation scheme; (ii) the same analyses for the other vessels assigned as «mainly active in the Bay of Biscay » but not stopped during the closure; (iii) same as (ii) but only for a panel of vessels identified as having been active over several years, for clearer analyses of trends; (iv) all vessels from the Bay of Biscay (i+ii); (v) all vessels active in the North East Atlantic ecoregion.

2024 data were compared with corresponding averages over 2022 – 2023, looking at weekly trends, and thus aggregated and cumulated at various scales: (i) before /during / after closure period (weeks 4 to 7), (ii) month, (iii) Q1 (January-march), and (iv) until summer for potential compensation effects (January-August). Results are presented for vessels below and above 12 m, respectively, and then detailed by fleet segment.

In order to put these recent developments into perspective, inter-annual trends covering the period from 2012 to 2024 are also described. The report then includes specific analysis for some key species (hake, sole, monkfish, pilchard, octopus, pollack, ...) trying to disentangle the closure effects from other effects linked to e.g. quota availability.

287 vessels applied for compensation schemes and were thus considered affected by the closure. They represented in 2023 20% of the Bay of Biscay/Iberian fleet in number of vessels, 28% of fishing days, 50% of landings weight and 40% of landings value. 30% of these 287 vessels were between 8 and 10m, and another 30% were between 10 and 12m.

Globally, their estimated loss during the closure itself (weeks 4 to 7) represented around 4,600 tonnes and EUR 16 million compared with the average for 2022-2023. The results do, however, show a reduction in deficits over the January-August period compared with the January-March period. Over that period, the tonnage deficit has remained significant (-9,578 tonnes, -27% compared with the average value for 2022-2023), but the loss in value was only 11% (-EUR 12.8 million) due to a price effect of +22%.

Key results by fleet segment are available in figures 60 and 61 of the IFREMER report (page 67), highlighting this compensation effect over the first half of the year. The 18–24 m gillnet fleet ultimately emerges as a net beneficiary, with a +3% increase in landed value despite a moderate price effect (+4%), followed by the 12–18 m and 10–12 m fleets (–2%), and then the 24–40 m gillnet fleet (–11%), trawlers over 18 m (–11%), and 8–10 m gillnetters (–19%). The declines are more pronounced for trawlers under 18 m (–21%) and purse seiners (–42%), which are the most dependent on sardine.

STECF comments

STECF notes that the ad hoc report provided to STECF addressed all the ToRs of the ad hoc contract. STECF has the following comments related to each ToR of the plenary.

ToR 1 – Summarise the main findings and conclusions

The main findings and conclusions of the ad hoc contract report have been summarised in the previous section. STECF observes that as no social data or information, apart from employment, was used in the analyses in the ad hoc report, STECF will refer to these studies as economic assessment in its comments.

STECF notes that the ad hoc report provides a comprehensive assessment of the economic effects of the winter closure implemented to reduce incidental catches of common dolphins in the Bay of Biscay at segment-gear combination level. As summarised above, the analysis identifies segment-gear combinations potentially affected by the closure based on their dependency to the Bay of Biscay during the first quarter, the use of regulated gears, vessel length classes, and a minimum dependency threshold on the closure period. Then, for the identified segment-gear combinations, an economic impact assessment is presented.

STECF observes that the first draft of the ad hoc contract report included analyses of the publicly available data (FDI and AER). Due to confidentiality reasons, France set a threshold of five vessels per métier/segment for publicly available FDI data (EWG 25-10). The second version of the report included all FDI data, without any confidential records removed, which allowed the contractor to identify 50 instead of 15 possible segment-gear combinations affected by the closure.

The assessment distinguishes several potential response patterns at segment-gear combination level, including compensation within the first quarter, compensation at the annual level, compensation through activity in other areas, and absence of compensation. This behavioural classification is used to screen fleets and to isolate those for which observed changes could be interpreted as potential closure effect.

The economic impact analysis focuses on non-compensated segment–gear combinations, estimating relative impacts on revenue, gross value added, profits, employment and energy consumption. The results indicate that persistent economic impacts are concentrated in a limited number of fleet segments (ESP_DFN_VL1012_GNS, ESP_DTS_VL2440_PT B, FRA_DFN_VL1012_GNS, FRA_DFN_VL1218_GTR, FRA_DFN_VL1824_GNS, FRA_PS_VL1218_PS and FRA_TM_VL1012_PTM), while the majority of segment-gear combinations appear able to mitigate short-term losses on an annual basis.

STECF understands that the term “compensation” is used in the ad hoc contract report to describe observed economic outcomes that are compatible with adaptive fleet behaviour following the closure, such as temporal reallocation of activity, spatial displacement to other areas, or changes in catch composition and prices. It does not imply the absence of impacts of the measure, nor does it indicate that the closure had no effect on fishing activity during the restricted period. Rather, the concept of compensation is applied as an analytical screening tool to distinguish fleet segments whose annual economic performance appears resilient from those showing persistent negative economic outcomes, while acknowledging that attribution of these negative outcomes to the closure remains subject to uncertainty given data limitations. STECF underlines also that these analyses were conducted at quarterly and fleet segment level, providing aggregated and average estimates but without distinguishing between individual vessels, as is otherwise the case in the IFREMER report.

Comparison with the IFREMER report

STECF notes that a throughout comparison between the IFREMER report (Guyader et al. 2024) and the ad hoc report cannot be made, primarily due to differences in fleet segmentation. While the ad hoc report applies the standard DCF segmentation framework, the IFREMER analysis relies on ad hoc aggregations derived from vessel-level data, which limits direct comparability between the two reports. STECF further notes that the IFREMER report is only focused on French fleets.

STECF observes that there are other several key distinctions between the two reports. The IFREMER report defines its pre-closure period as average in eight months (January-August) 2021–2023, while the ad hoc report utilizes the whole year average for the 2021–2023 timeframe. Furthermore, the IFREMER report extends its analysis up to August 2024, whereas the ad hoc report encompasses the entire year of 2024.

Even considering these distinctions between these two reports, STECF notes consistent results between them are found for small and medium passive-gear fleets (‘Filets 8–12 m’ and ‘Filets 12–18 m’ in the IFREMER report), corresponding to DCF segments, FRA_DFN_VL1012_GNS, FRA_DFN_VL1218_GTR and FRA_DFN_VL1824_GNS, as well as for specific trawl and purse-seine components of the ‘Chaluts <18 m’ and ‘Senne’ fleets,

notably FRA_TM_VL1012_PTM and FRA_PS_VL1218_PS, where both analyses identify a non-compensated impact of the closure.”

However, STECF notes non-correspondence between both results is observed for several large trawl and purse-seine segments, including FRA_TM_VL1824 and FRA_TM_VL2440 within the IFREMER’s ‘Chaluts ≥18 m’ fleet. While IFREMER reports substantial short-term reductions for these fleet components during the closure period, the ad hoc report does not identify a net attributable impact, as these segments show evidence of temporal recovery later in the year, spatial displacement of activity to other areas, and/or compensation through price and catch-composition effects. STECF notes that the spatial displacement of activity identified at the DCF segment level is not necessarily valid at the level of individual vessel level.

STECF observes that the IFREMER report included information on the compensation payments the French government provided to fishers affected by the closures. Those analyses show that at the global level, the payments were in the range of order of the estimated value losses in the IFREMER assessments. They are, however, also in the range of the losses assessed by the ad hoc report.

STECF notes that analyses on price effects are included in both reports. In the IFREMER report price effects could be analysed in a more detailed approach as data on a daily / weekly basis could be used. Both reports show that prices increased after the closure which compensated some of the losses of the closure.

ToR 2 – Review and provide comments on the methodology applied.

STECF observes that the evaluation of economic impact relied on existing FDI data until 2024 and AER data until 2023.

Comments on the assumptions of the analysis

STECF notes that the fishing segments gear type combinations potentially analysed were those including vessels exceeding 10 metres in length. STECF notes that this was used as a proxy for the >8 m criterion (those affected by the closure) because the FDI data do not allow reliable identification of vessels between 8 and 10 m. STECF notes that this may lead to an underestimation of the number of affected vessels by the dolphin-related measure, particularly among small-scale passive-gear fleets - as also shown in the IFREMER report which states that vessels between 8 and 10 m represent 30% of the total number of affected vessels.

STECF observes that a deeper analysis of these segment–gear combinations would be required to assess the extent to which the years used as reference are representative of typical fishing activity. Recent years have been characterised by substantial structural and

operational changes across several fleets, including variations in fleet size, activity levels and fishing opportunities, which may affect the stability of baseline conditions. As a result, observed differences between reference and post-closure periods should be interpreted with caution, as they may partly reflect broader temporal dynamics rather than effects attributable to the closure alone.

STECF notes that some segment–gear combinations were excluded from further analysis due to high inter-annual variability in landings, which makes it difficult to distinguish potential effects of the closure from normal fluctuations in fishing activity. This exclusion was applied as an expert-based screening criterion rather than on the basis of a predefined quantitative threshold and should therefore be interpreted as a precautionary measure to avoid over-attribution of observed changes to the closure.

Conversely, as illustrated in Figure 6.4.1, several segment–gear combinations identified in the ad hoc report as potentially affected by the closure—such as ESP_DFN_VL1012_GNS and FRA_DFN_VL1218_GTR—exhibit only limited variation in RLV between the pre- and post-closure periods. This classification, therefore, reflects the screening methodology applied in the absence of quantitative thresholds and should not be interpreted as evidence of a significant economic impact attributable to the closure.

STECF notes that the assumption that one third of Q1 landings corresponds to the closure period is reasonable given quarterly data resolution but implicitly assumes uniform fishing activity within Q1, which may not hold for all fleets as can also be seen in the week-based IFREMER report.

STECF observes that for several segment-gear combinations, the respective AER data was not available on the same level of resolution. In the AER data, some segments are clustered to avoid segments with less than three vessels. The ad hoc analysis assumed that all vessels in a segment-gear combination have the same revenues and costs as the AER segment in which they are included, which is a simplification.

STECF notes that the ad hoc report did not take Member States compensation payments into account, which may have an impact on the economic performance as well as on the fishing behaviour. Compensation payments in France were conditioned to vessels staying at port during the closure. These vessels were specifically identified and analysed in the IFREMER report, but not in the ad hoc report. This implies that ad hoc report scenarios such as “compensating effects in other areas” is to be understood at segment-gear combination level but cannot be interpreted as that the individual vessels affected by the closure have moved to a different area during the closure, as also investigated in the IFREMER report.

STECF notes that results attributing observed difference in landing value to the one-month closure provide useful bounds but may over-attribute effects where changes are also driven by quotas, stock dynamics, prices, weather conditions or environmental variability.

Comments on the assessment of the scenarios

STECF notes that the use of four scenarios is a thorough investigation performed by the contractor as it allows comparison between different assumptions and gives a range of possible impacts. However, results should be interpreted carefully because each scenario depends on simplified assumptions.

Scenario 1 (historical one-third of Q1) is useful as a theoretical baseline. However, as the overall objective is to assess the one-month closure, assuming homogeneous distribution of the landings among the whole quarter can be misleading. Scenario 2 (Q1 2024 vs historical Q1) provides a more direct comparison but has the same limitations as Scenario 1.

STECF notes indeed that because the FDI dataset only provides quarterly data, the study assumes for scenarios 1 and 2 that landings are evenly distributed within the quarter and removes one third of Q1 landings to represent the one-month closure. This is a practical solution but may not reflect the real variability in fishing patterns and may also confound seasonal changes with closure impact. STECF acknowledges that in many fisheries, catches are not evenly distributed across months, and some months may be more productive than others, as also shown in the week-based analyses presented in the IFREMER report. As a result, the estimated loss could be either overestimated or underestimated depending on the real distribution of fishing activity. This assumption should therefore be considered a simplification, and the results should be interpreted as approximate rather than precise measurements.

Scenario 3 (annual comparison) captures the overall yearly effect but may include changes unrelated to the closure.

Scenario 4 (annual and multi-area comparison) is valuable because it considers the possibility that fleets moved to other fishing areas to compensate for the closure. However, as this analysis is performed here at aggregated segment-gear combination level, and not at vessel level, which implies that e.g. changes in outcomes in regions other than Bay of Biscay may not necessarily arise from changes in the individual vessels affected by the closure, but from vessels from the same segments but operating in other areas.

STECF notes that scenarios 3 and 4 of the economic assessment are based on the relative difference of the economic indicator on a yearly basis (only for the Bay of Biscay and for the Bay of Biscay and adjacent waters, respectively). While these two scenarios provide a comparison at a broad spatial-temporal scale, they do not rely on any assumption regarding the distribution of the landings within the closure period.

However, STECF considers that having four scenarios, each with their own assumptions and limitations, help provide complementary results.

ToR 3 – Discuss and provide comments on the results obtained

STECF notes that the initial choice of the 64 segment-gear combinations potentially affected by the closure was based on the proportion of landings in one third of the first quarter relative to the total landings in the Bay of Biscay in the first quarter. Of those, 14 were excluded because they did not report any landings in the Bay of Biscay in 2024, making it impossible to compare pre- and post-closure conditions. STECF considers that the selection of the remaining 50 segments is appropriate.

STECF notes that the analysis attempts to account for compensation in other quarters and areas, provides results using different price options and excludes segment-gear combinations with high interannual variation. However, STECF considers that it is still difficult to isolate the closure effect from these drivers, and that therefore, the extent to which the results are attributable to the closure cannot be determined. STECF observes that the differences between the two periods can also be affected by variability in quotas, stock availability, environmental conditions, other management measures, market prices or weather conditions.

STECF notes that these limitations are also mentioned in the ad hoc report, where caution is advised when interpreting the results. Furthermore, the ad hoc report notes that considering these limitations absence of impact cannot be discarded for the segment-gears that showed positive differences in the economic indicators.

STECF notes that the analysis conducted in the ad hoc report made a number of assumptions in how the data was processed and outcomes were interpreted. These assumptions were required due to the spatial and temporal resolution of the available FDI and AER data. STECF highlights that these assumptions may affect the precision of the assessment provided in the ad hoc report.

STECF notes that the contractor did not define a threshold for the analyses of differences in landings value (with the three price options). The assessment deals with a lot of uncertainties and assumptions and by defining a threshold to distinguish between true negative differences and usual fluctuations, small differences would not have been treated the same as larger differences.

STECF observes that based on the results presented, the closure appears to have limited economic impact for many fleet segments, particularly those that were able to compensate. However, some segment-gear combinations appear more vulnerable to the closure, particularly those that cannot shift fishing activity easily. Also, compensation strategies such as increased effort later in the year may not always be feasible in the long term due to fish seasonality, quota limits, operational costs, or regulatory constraints.

Comments on the persistence of observed compensation patterns

STECF notes that compensation patterns identified at Q1, annual and spatial levels are plausible, particularly for larger trawl and purse-seine fleets with greater technical and spatial flexibility. However, reliability varies across segments, and some patterns may reflect interannual variability rather than tactical adaptation.

STECF notes that given that 2024 is the first year of implementation, there is high uncertainty regarding the persistence of observed compensation patterns. STECF considers that they cannot be assumed to continue under different biological, market or regulatory conditions. STECF notes that performing future similar analyses regarding the 2025 and 2026 closures may provide further insights on the persistence of compensation patterns.

STECF notes that with the information available it is not possible to answer the question on why compensation patterns were not observed in some segment-gear combinations.

Comments on the relationship between segment-gear combinations and their estimated contribution to incidental catches or bycatch rates

STECF notes that the ad hoc report provides information on the development of the number of strandings and estimates of bycatch based on stranding of dolphins over the last years. As stated in the ad hoc report the scientific assessment (Peltier et al. 2025) and the governmental bulletin cannot link strandings to the closures as several factors influence this (e.g. drift patterns or mortality at sea). The numbers of estimated bycatches back calculated from the strandings, and the reverse drift models were, however, lower in 2024 and 2025 than the years before the implementation of the closure, and Peltier et al. (2025) consider it likely that the 2025 closure may have stopped a mortality peak.

STECF observes that incidental bycatch remains, as Peltier et al. (2025) state, the primary cause of death for common dolphins stranded along the French Atlantic coast. ICES assessed bycatch rates in an advice of 2025, and those rates were presented in the ad hoc report. The gear category OTM has the highest bycatch rates 0.2 BPUE (bycatch per unit effort), while PTM has a rate of 0.128 BPUE (Figure 6.4.4).

ToR4 – Recommend possible ways to i) address the identified shortcomings; and (ii) further develop the socio-economic analysis

STECF notes that, despite methodological differences between the ad hoc and IFREMER reports, certain correspondence patterns emerge in their findings, while acknowledging that results are not directly comparable. This demonstrates the utility and value of the data available in established EU databases such as the FDI. However, proposed improvements (see below) would further improve the possibilities to analyse especially economic impacts of spatial management measures.

STECF observes that new FDI and AER data to assess the impact of the closure in 2025 will be available by 2026 (FDI) or 2027 (AER). In addition, STECF has been made aware that French studies for the 2025 closure similar to this presented here for the 2024 closure have been prepared and would be made publicly available in a near future.

STECF notes that the IFREMER report included some information on the geographical distribution of the fleet which shows how far specific fishing communities may be affected by the closures. STECF notes that other options to be assessed from the social perspective could also be the average crew by fleet segment.

STECF notes that data of the distribution of the financial compensation provided by Member States and the conditions at which this financial support is granted, will improve any future analysis.

STECF notes that in the PLEN 25-01 report STECF proposed a stepwise process to improve the ability to assess socio-economic impacts of especially area or seasonal closures. Core of that approach would be a data call to Member States to provide existing data in a different level of resolution and a better link to fleet segments. STECF notes that the proposed approach aims to harmonise data preparation and improve data quality and comparability across Member States, thereby facilitating a more consistent assessment of fleet dependency and behavioural responses to the closure. This framework could support the application of bioeconomic models if a longer-term or counterfactual perspective is required, while also improving descriptive analyses of economic indicators through better access to VMS and logbook data.

ToR 5 – AOB. Provide an estimate of the number of vessels for each segment-gear combination.

STECF notes that this cannot be answered from the ad hoc report. However, the IFREMER report, which is based on individual data, shows that the vessels affected by the closure only represent a fraction of the total number of vessels within each segment of the French fleet.

STECF conclusions

STECF concludes that, based on the relative importance of first-quarter landings in the Bay of Biscay, 50 segment–gear combinations were identified as potentially exposed to the closure and therefore considered relevant for the subsequent behavioural screening and impact assessment.

STECF concludes that according to the ad hoc report, seven segment-gear combinations (ESP_DFN_VL1012_GNS, ESP_DTS_VL2440_PTB, FRA_DFN_VL1012_GNS, FRA_DFN_VL1218_GTR, FRA_DFN_VL1824_GNS, FRA_PS_VL1218_PS and FRA_TM_VL1012_PTM) show lower real value of landings (RLV) over the year and in all

areas in 2024 than in the reference period before the closure (2021-2023) and all of them showed lower economic indicators in 2024 compared to the reference period under the four scenarios tested.

STECF concludes that the term “compensation” used in the ad hoc report should be used solely as a descriptive classification of observed economic outcomes and cannot not be fully and directly interpreted as evidence of absence of impact, as proof of adaptive effectiveness, or as establishing any causal relationship between the closure and the observed changes, given the underlying assumptions, data constraints, and attribution uncertainties. As a result, STECF cannot conclusively address most of the detailed requests in the Terms of Reference.

STECF concludes that as since FDI data are only available at quarterly resolution, it was not possible to analyse changes at the level of individual months during the closure period. Similarly, the unit of analysis being the “segment-gear combination”, it is not possible to interpret the impact at the level of individual vessels or home port.

STECF concludes that given the absence of data, from the ad hoc report it is not possible to assess how far compensation payments were sufficient to cover these losses. Further analyses would be necessary to assess how long vessels stayed in port in the month of the closures and which vessels did not take the compensation payments and may have fished outside the closed areas. STECF notes that the numerical values supporting the analysis are not included in the ad hoc report. STECF therefore considers that an annex documenting the values and the associated coding would be useful to ensure transparency and traceability of the assessment.

Despite the limitations mentioned above, and although the ad hoc contract and the IFREMER report used different approaches, periods, and data sets, STECF concludes that their results are still somewhat comparable.

STECF concludes that, as in other assessments of fishery’s closures, further improvements in the availability, resolution and consistency of FDI, AER and social data would enhance the capacity to assess the socio-economic impacts of time-area measures. STECF recalls its previous proposal to strengthen data availability and comparability in order to improve the analysis of fleet dependency and behavioural responses to closures (PLEN 25-01). Enhanced data could support more robust assessments of economic impacts and fleet responses, while reducing reliance on simplifying assumptions and improving the interpretability of observed changes. STECF considers that, while this approach improves the robustness of the assessment, it also highlights the need for clearer quantitative criteria or additional data to better characterise variability if future analyses are requested.

Finally, STECF concludes that assessing the social impacts of closures on fishers, the supply chain and communities would require systematic and structured additional research and data.

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6.5 Assessment of a Joint Recommendation for high-survivability exemption for the Baltic salmon

Background provided by the Commission

Based on Joint Recommendations from BaltFish assessed by the STECF there have been time-limited 3-year exemptions from the landing obligation on grounds of high survivability for Baltic salmon since the entry into force of the landing obligation for Baltic salmon on 1 January 2015 (Commission Delegated Regulations (EU) 1396/2014, 2018/211, 2021/1417 and 2024/1296). The current exemption runs out on 31 December 2026. BaltFish submitted a Joint Recommendation to reconduct the current exemption in the exact same terms for another 3 years (2027-2029). At first glance it seems that the conditions have not changed.

Background documents are published on:

<https://stecf.ec.europa.eu/document/88958e93-cfa3-4193-9450-118132ac2b0f>

Request to the STECF

The European Commission requests the STECF to assess the Joint Recommendation from BaltFish to grant an exemption from the landing obligation for Baltic salmon on grounds of high survivability which is identical to the existing exemption.

Summary of the information provided to STECF

The Commission Delegated Regulation (EU) 2024/1296, concerning a survival exemption from the landing obligation for salmon in the Baltic Sea for the period 2024-2026, at article 3 (Exemption from the landing obligation for salmon with high survival rates) defines the provisions for the exemption as follows:

1. The landing obligation provided for in Article 15(1) of Regulation (EU) No 1380/2013 shall not apply to salmon caught in the Baltic Sea with one of the following devices:

(a) all trap nets; with the exception of the following categories:

(i) pound nets;

(ii) pontoon traps unless they are:

- fitted with an attached pontoon knotless bag to which salmon is channeled without being lifted above the water surface, or*
- combined with a water hold in the fishing vessel where the salmon is directly placed; the water hold shall be filled with water and be large enough to hold and keep immersed in the water all the salmon coming from the trap;*

(b) fyke nets.

2. The exemption provided for in paragraph 1 shall, for each Member State concerned, apply to a maximum of 8 % of the total annual catches of salmon in, respectively, ICES subdivisions 22-31 and ICES subdivision 32.

3. When discarding salmon caught with trap nets and fyke nets, the salmon shall be released immediately back into the sea.

The Joint Recommendation (JR) of the BaltFish High Level Group (HLG) on the Derogation from the landing obligation in the Baltic Sea establishing a discard plan for salmon in the Baltic Sea (ICES Subdivisions 22-32) was made available to the PLEN 26-01.

The JR was accompanied by five annexes:

Annex I - Information related to the BaltFish JR on the derogation from the landing obligation for salmon in the Baltic Sea, submitted by the Ministry of Agriculture and Forestry, Finland and Ministry of Rural Affairs and Infrastructure, Sweden. In this Annex, Sweden and Finland provide supplementary details on their national salmon management systems to clarify how the landing-obligation exemption for salmon is implemented and to describe its effects in terms of discard rates and the estimated mortality of both wild and reared salmon.

Annex II – Scientific paper on survival and injuries of wild Atlantic salmon released by coastal fishers from pontoon traps: Ruokonen, T.J., Suuronen, P., Pulkkinen, H., Erkinaro, J., 2022. Natural Resources Institute Finland. Release mortality of wild Atlantic salmon in coastal pontoon-trap fishery in the northern Baltic Sea. Fisheries Research 252
<https://doi.org/10.1016/j.fishres.2022.106336>

Annex III - Scientific paper on the effect of emptying techniques of a pontoon trap on mortality of Atlantic salmon: Ruokonen, T.J., Pulkkinen, H., Mäntyniemi, S., Erkinaro, J., 2023. Effect of the trap net emptying method on release mortality of Atlantic salmon estimated by a Bayesian system model. Aquaculture, Fish & Fisheries, 3:366–379.
<https://doi.org/10.1002/aff2.115>

Annex IV - Scientific paper on the Survival of Atlantic salmon captured in and released from a commercial trap-net: Siira, A., Suuronen, P., Ikonen, E., Erkinaro, J., 2006. Survival of Atlantic salmon captured in and released from a commercial trap-net: Potential for selective harvesting of stocked salmon. Fisheries Research 80, 280-294.
<https://doi.org/10.1016/j.fishres.2006.03.028>

Annex V – Results of a study carried out by the Swedish University of Agricultural Sciences, Department of Aquatic Resources (SLU Aqua), Institute of Freshwater Research, Drottningholm, on the mortality of wild Baltic Sea salmon (*Salmo salar*) after capture and release (discard) in different types of fishing gear, including Pontoon-traps. Östergren, J., Blomqvist, C., Dannewitz, J., Palm S., Fjälling, A., 2020. Discard mortality of salmon caught in different gears. SLU ID: SLU.aqua.2020.5.5-2

The scientific information submitted to PLEN 26-01 appears to be substantively unchanged compared with that provided in the context of the most recent STECF evaluation of the same exemption request.

Information provided to STECF 26-01 did, however, include new comments (dated

16/01/2026) of the Baltic Sea Advisory Council (BSAC) Executive Committee members on the amendments to the BaltFish draft Joint Recommendation regarding a derogation from the landing obligation in the Baltic Sea establishing a discard plan for salmon in the Baltic Sea (ICES Subdivisions 22-32).

Previous STECF evaluations

A high-survivability exemption for salmon caught in trap nets in the Baltic Sea has been in place since 2015 (Commission Regulations 1396/2014). Following an initial extension in 2018 (Commission Delegated Regulation (EU) 2018/211), the exemption was extended again in 2021 and broadened to include pontoon traps fitted with a knotless bag (pontoon-trap knott-less or KL) through Commission Delegated Regulation (EU) 2021/1417 and finally the Commission Delegated Regulation (EU) 2024/1296.

STECF notes that requests for a high survivability exemption for Baltic salmon have been assessed in previous plenary meetings and expert working groups

STECF notes that requests for a high survivability exemption for Baltic salmon have been assessed repeatedly in previous plenary meetings and expert working groups (STECF PLEN 14-02, STECF EWG 20-04, PLEN 22-03, PLEN 23-01 and PLEN 23-02.)

PLEN 14-02 concluded that direct mortality seemed to be low in traps, fyke nets and trap nets (typically less than 10%).

EWG 20-04 noted that, despite some studies launched after 2014, robust quantitative evidence on post-release survival remained limited. In particular, data for pontoon traps were scarce at that time, and although a pontoon trap fitted with a KL bag might be less harmful than traditional designs (Östergren et al., 2020), the available evidence was too limited to confirm this conclusively. STECF therefore concluded that there was not enough information to determine post-release survival for all gear types and fishing practices covered by the proposed exemption. After this assessment, a high-survival exemption for salmon was nevertheless included in Commission Delegated Regulation (EU) 2021/1417 and was applicable until 31 December 2023. The 2021 exemption covered “salmon caught with fyke nets, pound nets and all other types of trap nets, except pontoon traps without an attached KL bag” (Article 3). It also required that, by 1 May 2023, Member States with a direct management interest submit additional scientific evidence to enable an assessment of the representativeness and quality of survival estimates for salmon caught in pound nets and pontoon traps equipped with a KL bag, including post-release mortality information (Article 4).

Additional evidence was submitted and PLEN 22-03 concluded that the supporting information was mostly of good quality and followed most of the ICES guidelines on carrying out discard survival experiments. However, some missing data (discard rate) and flaws (missing uncertainty estimates, missing control experiment) prevented STECF from drawing definitive conclusions on the pros and cons of each gear and on the overall effect of the exemption on the respective salmon populations. STECF reiterated that immediate mortality

in trap/fyke nets is usually <10%, but this couldn't be assumed for creels/pots or pound nets. For pontoon traps, results were not definitive. STECF noted that KL bags can reduce mortality only if used correctly, while poor handling and harsh conditions can erase benefits. Data for pontoon traps with salmon directly emptied into a water hold in the fishing vessel (WH) were insufficient. PLEN 22-03 concluded that more data was needed on discard volumes (by fishery and salmon type, i.e. wild or reared, multi-sea-winter or one-sea-winter) and on monitoring/control/enforcement to assess stock impacts, as well as a rationale for the proposed 8% threshold.

PLEN 23-01 found that the evidence submitted at that time suggested release mortality is higher in pontoon trap WH than in pontoon-trap KL. Although mortality estimates for pontoon-trap KL differ across studies, results indicate that they are probably higher than in other trap gears. STECF also noted that the additional issues highlighted in PLEN 22-03 (evidence on discard rates, the rationale for the 8% threshold, and how the exemption would be controlled and enforced) were not specifically addressed in the new information provided by BaltFish.

PLEN 23-02 found that the new supporting document had satisfactorily addressed the outstanding points raised in PLEN 22-03 and PLEN 23-01. The STECF estimated a release mortality of 24% for pontoon traps used with a WH and 13% for pontoon traps fitted with a KL. For salmon taken in other trap nets and fyke nets, earlier STECF assessments indicated mortality below 10%.

STECF also noted that the updated JR relied on self-reported discard data by fishers as the best available evidence. STECF considered salmon discard rates in the exempted gears to have been relatively low in comparison to many other European fisheries, although the reported <1% had likely been an underestimation. Even if such discard rates are underestimated, STECF considered it likely that the landing obligation exemption has a low overall mortality impact. The additional mortality from the exemption was expected to have remained low given an estimated 75–80% post-release survival.

STECF noted that the 8% threshold had been intended as a cap to limit potential future increases in discards beyond current levels. Control and enforcement measures had not been expected to fully verify compliance with the landing obligation (including the current exemption); direct at-sea observation (observers/cameras) would have been preferable, though difficult to implement in these fisheries.

STECF comments

STECF notes that the management systems applied in Finland and Sweden are described in detail in the background documents and largely reflects what has already been noted in previous STECF evaluations.

STECF notes that the Baltic Sea salmon is managed by two management units, reflecting the diversity of genetically distinct stocks: salmon in the ICES subdivisions 22–31 and salmon in the subdivision 32. Fisheries are mixed (targeted and non-targeted) and occur at sea and, to a less extent, in rivers using various gears.

Since 2022, targeted commercial salmon fishing has been banned in the Baltic Main Basin south of 59°30'N due to poor stock status. The closure was expanded in 2024 to south of 63°30'N (including SD 30) in response to the weak Ljungan stock, then set back to 59°30'N in 2025 following the stock's recovery. Targeted fishing is therefore mainly limited to SD 29N–31 (May–August, within four nautical miles from the baseline) and is allowed throughout SD 32. Quotas are allocated accordingly: SD 22–31 is shared among all Baltic Member States, while SD 32 is shared between Estonia and Finland.

Fishing peaks during the spawning migration (June–July), and widespread seal predation has driven the uptake of seal-safe trap designs, including stronger netting, entrance barriers, and pontoon traps.

Catch control

Both in Finland and Sweden, salmon fishing is tightly regulated through strict landing checks, pre-notification requirements, Finland's salmon tagging system, and enforcement of seasonal closures and limits on the number of trap nets. The Ministry of Agriculture and Forestry in Finland and the Ministry of Rural Affairs and Infrastructure in Sweden report that infringements of rules are rare.

In both countries, all released reared salmon smolts should be fin-clipped and can thus be identified in the catch.

In Sweden, each fisher must report catches of both wild and reared salmon, and in 2025 around 53% of the total catch came from wild stocks.

In Finland, scientific surveys highlight that 76% of caught salmon were of wild origin. This large sample gives the most recent estimate of the share of wild salmon in the coastal fishery along the Finnish coast.

STECF notes that, once the allocated salmon quota has been exhausted, pontoon traps often remain in the same fishing areas to target other species. This raises a significant concern that salmon may still be caught during this period, even if no catches are reported. Moreover, a system relying primarily on self-reporting (logbooks) rather than direct inspections makes it difficult to verify and may reduce incentives for fishers to report any salmon catches. STECF 14-01 (part 2) reminded that adequate monitoring and surveillance is a key requirement of any high survival exemption. STECF suggests that additional details on how compliance is checked would be relevant information to support the request.

Catches and releases

STECF notes that under the 2025 regulatory regime, total commercial salmon catches in Finland are estimated at about 12,850 fish. A substantial share of the catch is taken with pontoon traps, which reduce seal predation. In 2025, around 62% of salmon caught under both quotas were taken with pontoon traps. Salmon caught with pontoon traps accounted for around 87% of total catches in the Gulf of Finland and 45% in the Gulf of Bothnia. Total

commercial salmon catches in Sweden were about 10,200 fish in 2025. In 2026 the catches are likely to decrease further due to decreasing fishing opportunities for salmon in ICES subdivisions 29N-31 by 27 %.

STECF notes that in both countries, the number of salmon released under the current exemption is very low. This is largely because national rules are in place for the trap-net fishery that aim to minimise unavoidable catches and discarding in areas and periods where salmon fishing is prohibited. Occasional salmon bycatches in coastal fisheries targeting other species like whitefish must be released when the fisher has no salmon quota remaining, ensuring the TFC system works properly. In Finland in 2025, 159 salmon were released in the commercial trap-net fishery, representing a 2.2% discard rate relative to a total trap-net catch of 7,189 salmon. All these releases came from the Main Basin quota, as no salmon were released in the Gulf of Finland fishery. In Sweden, commercial fishers reported releasing 179 salmon in 2023 (162 wild), 419 salmon in 2024 (43 wild), and 42 salmon in 2025 (26 wild). Relative to total salmon catches over 2023–2025, the overall discard rate ranged from 0.4% to 2.7%. In Sweden, trap-net fisheries targeting other species (e.g., whitefish, herring) are allowed only in areas and periods when salmon bycatch is expected to be low, typically early or late in the season; where bycatch risk is high, all coastal trap-net fishing is prohibited. In addition, all reared salmon smolts must be fin-clipped, allowing reared salmon to be distinguished from wild salmon, and fishers are required to report both wild and reared salmon.

STECF notes that salmon catches are strongly seasonal, with an initial peak of large multi-sea-winter adults, which are of particular importance to stock productivity, followed by a smaller peak of one-sea-winter salmon and, subsequently, bycatches in other fisheries, notably the whitefish fishery. Wild salmon are known to begin their migration earlier in the year than reared salmon (Siira et al., 2006). Given the small wild salmon population concerned, STECF considers that a better understanding and quantification of salmon landed and discarded across the different fisheries is needed. This would, for example, be necessary to verify that quotas are not primarily taken up by landed wild multi-sea-winter salmon, which migrate earlier, while released salmon consist mainly of reared or one-sea-winter individuals, which are caught later and are generally smaller compared to multi-sea-winter (de Eyto et al., 2015), and with a more male biased sex-ratio (Chaput, 2012). STECF observes that multi-sea-winter appears to contribute to the resilience of stocks and to be more affected by anthropogenic pressures (Piou et al., 2015).

STECF notes that salmon quotas, both individual and regional, are typically only exhausted later in the season (from late June into July), when the catch is dominated by individuals below the MCRS.

Mortality and survivability

STECF notes that during fishing, the pontoon trap's fish chamber remains submerged. When the trap needs to be emptied, the chamber is lifted above the water surface using air-filled pontoons. Thus, two main techniques are used to retrieve salmon from pontoon traps:

- In a standard emptying procedure, fish collected in the chamber are directed into a fibreglass chute and then discharged into the boat. Depending on how quickly the operation is carried out, fish confined in the chute may be exposed to air for several minutes, while also jumping and struggling intensely.
- In the alternative method, salmon are transferred into an on-board water tank using a lifting bag made of knotless mesh (the so-called “Vittjanpåse”). As the pontoon trap’s fish chamber is raised toward the surface, the fish slide into the submerged lifting bag, which is then hoisted onto the vessel.

STECF notes that recent papers (published in 2022 and 2023) were provided to complement the results of older studies on salmon mortality/survivability. STECF also observes that those two papers had already been provided to support the previous exemption request (background documents of PLEN 22-03 and PLEN 23-01).

STECF notes that Ruokonen et al. 2022 analyzed the survival and injuries of wild Atlantic salmon released by coastal fishers from pontoon traps. The mortality of salmon released from pontoon traps was estimated at a maximum of 24–31%. Multi-sea-winter salmon suffered higher mortality than one-sea-winter salmon. Most salmon recaptured after being tagged appeared visually in good condition, but injuries were observed.

STECF fish from traps in the Bothnian Sea emptied with an emptying chute showed more injuries (32% of the total fish) than those emptied with a lifting bag noted across areas/conditions in the study (17% of the total fish).

STECF notes that Ruokonen et al. 2023 evaluated the effect of emptying techniques of a pontoon trap on mortality of Atlantic salmon. The estimated mean post-release mortality was 24% for salmon released from traps emptied with a chute, compared with 13% for salmon released from traps emptied with a lifting bag. Moreover, salmon emptied via a chute showed more injuries and longer air exposure, likely driving the higher mortality. Overall stock impacts are limited because only few salmon are currently released in the coastal fishery.

Ruokonen et al. 2023 also found that lifting-bag handling poses a safety risk for fishers: it is heavy to handle large number of salmon and may be risky and non-ergonomic for fishers.

STECF notes that Östergren et al. 2020 studied the discard mortality of salmon caught in different gears and found that 80–85% of fyke-net caught and released radio-tagged salmon were detected in the rivers, thus indicating low discard mortality rates. STECF notes that for pontoon traps, recent results collectively indicate that there is an immediate mortality of around 20% in the Traditional Pontoon trap, while there is a zero immediate mortality in the Modified design (with “Vittjanpåse”). Using the traditional handling technique, total discard mortality from pontoon traps was estimated to range from 47% to 88%. With a modified design of the Pontoon trap (attached net bag, “Vittjanpåse”) the total discard mortality was reduced (to 17–63%) when the fish was correctly/gently handled. However, Dalälven 2019 found a post release mortality of 60% and 27% for Traditional and Modified Pontoon traps, respectively.

STECF notes that the modified Pontoon trap with the knot-less net bag (“Vittjanpåse”) attached, may be less harmful than traditional traps because fish remain in the water (not

lifted or dumped into the boat), reducing stress, air exposure, and injuries.

STECF also notes that Siira et al. 2006 analyzed the survival of Atlantic salmon captured in and released from a commercial trap-net (composed by leader net, wings, chambers, and fish bag). About half of the migrating salmon in the Baltic Sea are reared fish that could be harvested. Mean maximum capture-and-release mortality was 11% (range 4–21% across groups). Population-level cumulative mortality during the Gulf of Bothnia spawning migration was below 5% and would likely remain low after initial releases if effort is limited and handling is careful. STECF notes that, according to the authors, trap-net captured and released Baltic salmon generally shows high survival, with no clear change in migration behavior after release.

Based on the evidence provided, STECF notes that survivability after their release from fyke nets and traditional trap-net designs appears generally higher than from pontoon trap fisheries under traditional emptying practices, particularly when fish can be removed individually with minimal air exposure and careful handling.

A summary of the study results mentioned is provided in Table 6.5.1.

Table 6.5.1. Scientific studies of salmon mortality.

Reference	Gear	Max Mortality (%)
Ruokonen et al. 2022	Pontoon trap-Chute	31
Ruokonen et al. 2022	Pontoon trap-Lift bag	24-25
Ruokonen et al. 2023	Pontoon trap-Chute	24
Ruokonen et al. 2024	Pontoon trap-Lift Bag	13
Siira et al. 2006	Commercial trap-net	4-21
Heggberget et al., 1993; Erkinaro et al., 1999; Thorstad et al., 1998	Commercial trap-net	1-11
Östergren et al. 2020	Fike net	15-20
Östergren et al. 2020	Pontoon trap-Chute	47-88
Östergren et al. 2020	Pontoon trap-Lift Bag	17-63
Dalälven 2019	Pontoon trap-Chute	60
Dalälven 2019	Pontoon trap-Lift Bag	27

Source: Own elaboration.

STECF observes that since 2014, Baltic salmon returning to Swedish and Finnish rivers have repeatedly shown signs of poor health, including skin hemorrhages, Ulcerative Dermal Necrosis-like lesions and ulcers often followed by fatal fungal infections. These observations span a wide geographic range, pointing to a common underlying driver that is likely linked to the marine phase of the life cycle, although the causes remain unclear and quantitative mortality estimates are lacking. Tagging studies further suggest that even fish that appear healthy may be in compromised condition, as unusually low upstream passage rates were

recorded in some years.

In this context, STECF would consider that post-release survival may be influenced not only by fishing and handling practices (e.g., air exposure, injuries, stress), but also by the broader background of reduced fish condition. In other words, survival outcomes may partly reflect a general weakness of the stock in certain years, which can make salmon more vulnerable to additional stressors associated with capture and release.

From the studies attached to the JR, it appears that with the modified pontoon trap and when appropriate handling procedures are applied, average survival ranges around 70–75%.

Over 2023–2025, recorded releases were approximately 66–287 salmon in Finland and 42–419 in Sweden, and these low levels are expected to persist as both Member States plan to keep their current management approaches. Studies provided indicate discard mortality of roughly 13–24%. Applied to recent discard rates (about 1.9% for Finland and Sweden combined discard rate), this implies an estimated mortality effect of the exemption of approximately 12–91 wild salmon.

Stakeholder's opinions

STECF notes that the BaltFish consulted the Baltic Sea Advisory Council (BSAC) on the envisaged Joint Recommendation during December 2025 – January 2026. STECF notes the BSAC Executive Committee members' comments on the amendments to the BaltFish draft Joint Recommendation regarding a derogation from the landing obligation in the Baltic Sea establishing a discard plan as regards salmon in the Baltic Sea (ICES Subdivisions 22-32).

The opinions of the different stakeholders can be summarized as follows:

- Federation of Finnish Fisheries Associations (FFFA): supports extending the landing-obligation exemption (2027–2029) for salmon in trap- and fyke-nets, arguing it is science-based and necessary for coastal fisheries in the Gulf of Bothnia.
- Baltic Salmon Fund & Baltic Salmon Rivers Association: strongly opposes any extension; consider release mortality unacceptably high, suspect under-reporting of discards (due to incentives and low controllability), and argue real impacts are worse than official data suggest.
- European Anglers Alliance (EAA): conditional position - only accept a derogation if it includes time/area limits to avoid high release mortality (citing high upper mortality estimates) and much stronger at-sea control (landing checks alone don't verify compliance).
- WWF: accepts exemptions only when clearly justified for conservation/stock diversity (e.g., protecting weak stocks), but prefers spatial/temporal regulation that avoids releasing fish in the first place; calls for stronger at-sea enforcement, end-of-season use only, removing gear after quotas, consideration of bycatch quotas, and further study of seal-damage mortality and gear design factors.

STECF notes that three out of four opinions were not fully supportive of the landing obligation exemption requested under this ToR.

STECF conclusions

STECF concludes that the scientific information provided in the JR largely overlaps with that submitted for previous STECF evaluations of the same exemption request (PLEN 22-03, PLEN 23-01 and PLEN 23-02).

STECF concludes that the conditions remain unchanged compared to those underlying the previous exemption and, as such, that the previous STECF conclusions remain valid.

STECF concludes that discard rates for the gears covered by the exemption are likely to be low and that the 8% cap appears likely to be safely met.

STECF expects the mortality impact to remain limited given the reported 70–75% post-release survival of the gear concerned by the exemption.

STECF reiterates previous conclusions from PLEN 22-03, 23-01 and 23-02 that the use of pontoon traps ensures relatively high salmon survival rates only when appropriate handling practices are applied, namely when pontoon traps are either fitted with a knotless bag that guides salmon without lifting them above the water surface, or used in combination with an onboard water hold into which salmon are placed directly.

STECF concludes that, as the early phase of the spawning migration is dominated by large wild females, while grilse and, to a variable extent, reared salmon become more prevalent later in the season, a delayed opening of the fishery could help to protect the most valuable reproductive component of the run and allow greater exploitation of later-migrating reared salmon.

STECF concludes, based on the Swedish and Finnish management frameworks, the reported discard levels, and the available evidence on mortality/survival rates, that the continuation of the proposed derogation is unlikely to have a detectable adverse impact on the status of the Baltic salmon stocks, provided that discards remain well below the 8% cap and the required handling conditions are effectively implemented for high post-release survival.

STECF has previously observed that controlling discards under exemptions to the landing obligation is challenging with traditional control methods. This is particularly true for methods that focus on the landing side of the fishing process, (i.e., the types of control measures mainly listed in the JR).

STECF observes that control, enforceability and stronger monitoring measures at sea are the key elements raised during stakeholder consultation in the framework of BSAC.

STECF suggests that a better quantification of catch composition across different fisheries would be informative to understand how the fishery might be impacting stock productivity.

This should consider the marked seasonality of catches and the different migration timing, in order to assess whether quotas are primarily filled by wild multi-sea-winter salmon, while released fish consist mainly of reared or one-sea-winter salmon.

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6.6 Derogation for boat seines in certain territorial waters of Spain (Catalunia)

Background provided by the Commission

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

A general condition for all derogations is that the fishing activities concerned are regulated by a management plan in accordance with Article 19 of the Med Reg. According to paragraph 5 of Article 19, the measures to be included in the management plan shall be proportionate to the objectives, the targets and the expected time frame and shall consider:

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

Commission Implementing Regulation (EU) No 464/2014 granted a derogation from article 13(1) of the Mediterranean regulation as regards the minimum distance from the coast and the minimum sea depth for boat seines fishing for sand eel (*Gymnammodytes cicerelus* and *G. semisquamatus*) and gobies (*Aphia minuta* and *Crystallgobius linearis*) in the Spanish territorial waters of Catalonia. Based on STECF assessments in PLEN 21-01 and PLEN 18-01, this derogation was extended twice. The derogation was further extended by Commission Implementing Regulation (EU) 2024/2726 in 2024, based on the STECF opinion of PLEN 24-02, until 2 July 2026.

In October 2025, the Spanish authorities submitted draft management plans accompanied by technical documents.

Background documents are published on:

<https://stecf.ec.europa.eu/document/88958e93-cfa3-4193-9450-118132ac2b0f>

Request to the STECF

STECF is requested to review the reports available on the boat seines fishery provided to support the Spanish request to renew the derogation (e.g. monitoring reports). The STECF is also requested to present its findings and make appropriate comments with respect to the conservation and management requirements/objectives stipulated by Council Regulation (EC) No 1967/2006 ("MedReg") and by Regulation (EU) No 1380/2013.

In particular, STECF is requested to:

- Advise and assess whether the documents transmitted by Spain contain adequate elements in terms of:
 - o 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 IX of Regulation (EU) 2019/1241.
 - 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).
 - o 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 Regulation (EU) No 1380/2013 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.
 - o Other aspects
 - § Quantifiable indicators for periodic monitoring and assessment of progress in achieving the objectives of a management plan.
- Suggest additional recommendation to improve the monitoring of this fishery.

More specifically, STECF is requested to advise and comment on whether the documents provided contain adequate and up-to date scientific and technical justifications ensuring that the conditions of the MedReg are still fulfilled, in particular that:

- There are particular geographical constraints, such as the limited size of the continental shelf along the entire coastline;
- The fishery has no significant impact on the marine environment;
- The fishery involves a limited number of vessels and does not contain any increase in the fishing effort with respect to what is already authorized by Member States;
- The fishery cannot be undertaken with another gear;
- The fishery is 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 fishery does not interfere with the activities of vessels using gears other than trawls, seines or similar towed nets;
- The fishery is 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 fishery does not target cephalopods;
- 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 of a technical report and three scientific reports annexed to this.

In the technical report there is a specific section that includes the “Draft Order of the Management Plan of the modality of the sonsera”, prepared after the process of technical and participatory review carried out within the Co-Management Committee. The report incorporates the adaptations to respond to the current state of the resource, ensure the sustainability of the activity and give continuity to the co-management model that has governed the fishery during the last years. Its content reflects the consensus reached among all the areas represented (fisheries sector, scientific community, environmental organizations and administration) and constitutes the formal proposal that is raised for processing and assessment by the European Commission in the framework of the renewal procedure of the Plan and the regulatory exception applicable to this modality.

The first Scientific Report supporting the management plan for boat seine, prepared by the Catalan Research Institute for Marine Governance (ICATMAR) outlines the implementation of the management plan for artisanal fishing with boat seines, known locally as "sonsera," in Catalonia from 2020 to 2023. The plan, including contributions from by ICATMAR, fishers, scientists, NGOs, and the fisheries administration, was monitored using data from official

statistics, fisher's daily reports, and monthly onboard sampling. The fishery involves 26 boats operating from six different ports targeting sand eels and gobids. Landings from this fishery are used for direct human consumption. The report focuses on the biology of the target species and notes that fishing over Posidonia meadows is prohibited. Overall, the report details the adaptive management and continuous monitoring efforts to ensure the sustainability of the artisanal fishery and its environmental impact.

The second Scientific Report, prepared also by the Catalan Research Institute for Marine Governance (ICATMAR) outlines the implementation of the management plan in the years 2024 and 2025. It summarizes data collected in that period, including the size composition of the catches, as well as information on by-catch.

The third scientific report entitled “Management recommendations for the fishery of the sonsera”, also prepared by the Catalan Research Institute for Marine Governance (ICATMAR), relies on the previous monitoring reports and is part of the process of reviewing and renewing the existing management plan. It provides the scientific basis for assessing the effectiveness of the plan and, where appropriate, proposing adjustments to the management measures currently in place.

STECF comments

STECF has the following comments related to each of the elements outlined in the ToRs:

Description of the fisheries

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

The two scientific reports produced by ICATMAR cover the periods 2020-2023 and 2024-2025, respectively. The report of the 2020-2023 period was previously submitted and evaluated by STECF PLEN 24-02. It provides exhaustive information on the biology of sand eels, *Gymnammodytes cicerelus* and *G. semisquamatus*, and gobids, *Aphia minuta*, *Crystallogobius linearis*, and *Pseudaphya ferreri*, including length-weight relationships and length frequency distributions. In addition, results were presented on the reproductive biology of sand eels, including information on the spawning season, estimates of size at first maturity, etc. The 2024-2025 report updates the previous one and compares recent data to past years. The species' biological characteristics remain largely consistent with earlier findings. However, no sand eel biological samples were obtained during the reproductive period (December and January) in 2024-2025 due to fishery closures.

An assessment of *G. cicerelus* stock was previously performed using a Multi-Annual Generalized Depletion (MAGD) model (Maynou et al., 2021). Model output indicated a strong fluctuating pattern of recruitment. Moreover, Maynou et al. (2021) found that the sand eel fishery is characterized by hyperstability i.e. catches can be maintained at high levels despite shrinking stock (Maynou et al., 2021). of CPUEs, meaning 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.

No assessment is available for *G. semisquamatus* and for gobids, while the assessment of *G. cicereus* was not updated in the 2024-2025 report. For gobids, however, 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).

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

Both reports include information about the fishing fleet, as well as the exploitation pattern. A consistent number of a maximum of 26 artisanal vessels, based in six fishing ports along the central and northern Mediterranean coast are involved in the fishery. The primary target species are two species of sand eel, *G. cicereus* and *G. semisquamatus*, along with small gobies like *A. minuta* (transparent goby), *C. linearis* (crystal goby), and occasionally *P. ferreri* (Ferrer's goby). Vessels in this fishery engage in daily fishing activities, with all landings destined for fresh consumption, taking advantage of the high commercial and gastronomic value of the target species in the region.

The management plan (MP) foresees the use of vessels smaller than 10 metres in overall length (LOA), with engine power less than 75 kW. The specific boat seine fishery (Sonsera) primarily targets sand eel for most of the year, with a smaller number of vessels targeting gobies, mainly in winter. The MP establishes annual and monthly catch quotas aimed at ensuring the sustainable exploitation of the fishery's target stocks. Annual quotas are based on historical landings. Although this may suggest sustainability, there is a lack of strong scientific backing since current assessments of the target stocks are not available.

The co-management protocol requires the closure of fisheries when landings drop below 50% of the monthly quota to promote stock sustainability. STECF notes that the management system has functioned efficiently in this regard, resulting in the closure of the fishing season in August for both 2024 and 2025.

However, STECF notes that the annual quotas currently in place are now substantially higher than actual catches, even when considering the average landings over the last ten years and therefore, their role on fisheries management has been substantially limited.

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

Historical data shows marked fluctuations in sand eel landings. Following the implementation of MP in 2014, regulatory measures led to a reduction in average annual catches from 322 tonnes (2002–2013) to 218 tonnes (2014–2019). During the 2024 and 2025 fishing seasons, the sand eel fishery experienced significantly reduced catches, with total landings reaching 38 tonnes in 2024 and 24 tonnes in 2025. Data on CPUE and effort (fishing days) cover the

period 2002-2023 (highly fluctuating without clear trends) and no relevant information has been included in the updated 2024-2025 report. However, it is mentioned that the sand eel fishery closed in August of both 2024 and 2025, consistent with the co-management protocol that mandates closure when less than 50% of the annual quota is landed to protect stock sustainability.

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 of Regulation (EU) 2019/1241.

Monthly and annual length frequency distribution for the target species are provided covering the period 2020-2025. Regarding sand eel, it can be observed that the mean size increases throughout the fishing season. However, in some months, a portion of the catches includes specimens below the size at first maturity. Regarding Length Frequency Distributions (LFDs) of *A. minuta* and *P. ferreri* no annual or monthly trends are observed.

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

Annual income for this fishery and average price of sand eel (€/kg) have been provided for the period 2002-2025. The average first-sale price significantly increased from 1.80 €/kg in the early period to 39.13 €/kg in 2025. No data is available for gobies. Apart from the value of the sand eel landings, the MP does not include other quantitative information on the social and economic characteristics of the fishery or the likely socio-economic impact of the proposed 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).

Each vessel's daily fishing activity was closely monitored as every haul was geo-referenced, and detailed data on depth, time, and by-catch were recorded by fishers using specially designed logbooks. The maps comparing the spatial distribution of fishing activity (geographical position of 1,108 hauls from logbooks during 2020-2022) and seagrass meadows locations along the coast indicate that the "Sonsera" fishery does not impact seagrass meadows, particularly *Posidonia oceanica*, and other vulnerable habitats, such as coralligenous habitats and maërl beds. According to the 2020-2023 scientific report of ICATMAR, the hauls of the "Sonsera" fishery occur in very shallow waters near the coast (from 4 to 15 metres for the fleets of Arenys de Mar and Blanes, and from 5 to 30 metres for the fleets of Sant Feliu de Guíxols, Palamós, and L'Estartit), on sandy bottoms. In some cases, hauls are conducted close to seagrass meadows but not directly over them. In the 2024-2025 report it is mentioned that the fleet consistently complied with the Management Plan, particularly regarding the prohibition of fishing over *P. oceanica* meadows and the allowable by-catch levels.

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 Regulation (EU) No 1380/2013 and quantifiable targets, such as fishing mortality rates and total biomass.

The management plan aims to ensure the conservation and sustainable exploitation of target stocks. Annually, the Co-management Committee, composed of representatives from the fishing sector, administration, NGOs, and the scientific community, jointly decides on the fishing season opening and initial quotas. Quota allocation is progressive, with smaller quotas at the start of the season (when individuals are smaller) and larger quotas as the season progresses, never exceeding the total annual quota. Monthly quotas are distributed per boat and per day to effectively regulate fishing effort. The sandeel fishery is also regulated by a seasonal closure from mid-December to March 1, coinciding with the species' spawning period. Performance monitoring is conducted monthly, using a three-reference-point control system: (a) Target, i.e. Expected monthly catch, (b) Alert (75%), i.e. If catches fall below 75% of the expected monthly quota, the next month's quotas are reduced to their half, (c) Limit (50%), i.e. If catches fall below 50% of the expected monthly quota, the fishery is closed for the following month, though experimental scientific observation may continue.

Following the precautionary principle, several adjustments to the above management plan are submitted after the process of technical and participatory review carried out within the Co-Management Committee. These adjustments focus on strengthening the protection of the reproductive period, reducing annual catch quotas (base them on the last 10-year average catch, rather than historical highs), and making the exploitation pattern more flexible and responsive to objective biological indicators, such as the mean size at first maturity (L_{50}). In general, the updated plan focuses on operational population parameters rather than MSY targets. STECF notes that for the last five years the fishery has not reached the current annual quota set at 141 tonnes.

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.

In the updated MP the tolerance for by-catch is adjusted from 3% to 10%, while maintaining a strict absolute cap of 5 kg per day (article 5.3). It is claimed that this change corrects an operational issue where the very low daily quotas (30 kg) made a 3% limit impracticable to manage. In general, the "Sonsera" is highly selective. The use of echo-sounders facilitates selective fishing operations, minimizing non-target species.

The average by-catch percentage by weight relative to sand eel catch is very low (2.25% average for 2020–2023). Discards were remarkably low, being 4% in 2024 and 1% in 2025, in terms of number of individuals. The most abundant species in sand eel fishery by-catch was amberjack, *Seriola dumerilii*, for the period 2021-2024 and red mullet (*Mullus barbatus*) in 2025.

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

The MP is based on an adaptive framework that includes catch quotas and temporal closures aimed at achieving sustainable exploitation of the fishery's target stocks. It also considers biological and abundance index indicators that are considered to align with the plans' objectives and targets. This necessitates ongoing monitoring in the coming years, including analysis of CPUE data trends for the target species. Such an analysis, which would also help to assess the effects of the fishery closures, has not been integrated in the 2024-2025 report.

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.

Landings are monitored monthly by analyzing each vessel's daily catches. If landings in any month fall below specified thresholds, quotas for the following month are reduced either by 50% or closing the fishery, depending on which threshold was breached. Additionally, if the scientific monitoring would show a decreasing tendency of the stock status indicators, the fishery will be closed on October 31, to guarantee protection of spawners. Potential closures aiming to protect the spawning biomass are also foreseen in case the average monthly catch size meets or exceeds the L₅₀ threshold.

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 observes that the management plan prohibits fishing over seagrass meadows and rocky bottoms, restricting the use of "Sonsera" to sandy and muddy bottoms exclusively. The plan does not include any additional conservation measures aimed at progressively reducing discards, which however are at very low levels.

Other aspects

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

The landings are monitored monthly, analysing information of daily landings per boat. 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. Besides, the MP mentions that a seasonal closure aiming to protect the spawning biomass can be considered if the average monthly catch size meets or exceeds the L₅₀ threshold.

In its previous assessment (PLEN 24-02), STECF acknowledged that a scientific assessment was also applied for the primary target stock (*G. cicereus*), which enhances the

management's resilience against biases in fisheries CPUEs. Such an assessment, however, is not presented for the 2024-2025 period.

Suggestions for additional recommendations to improve the monitoring of this fishery

STECF proposes the accomplishment of regular assessments for the main target stock (Mediterranean sand eel, *G. cicerelus*) (no assessment for the last two years was presented) and also examine the feasibility of extending the assessments to include other target species, despite these species being caught in lower quantities. STECF suggests maintaining control of fishing efforts and strictly monitoring of CPUE trend to ensure sustainable harvesting and prevent undetected declines in population.

The poor levels of CPUEs and catches in 2024 and 2025, led to close the fishery as soon as in August but the basis upon which this decision was undertaken cannot be fully determined from the current regulations of the MP. STECF suggest that the basis for fishery season closures should be better established in the MP.

There are particular geographical constraints, such as the limited size of the continental shelf along the entire coastline

The species targeted by the “Sonsera” fishery exclusively inhabit shallow waters, typically within 3 nautical miles from the coast. Vessels belonging to this fishery must operate within this distance when targeting *G. cicerelus* and *A. minuta*. Sand eel species inhabit sandy habitats along the Catalan coast at depths ranging from 6 to 16 metres, where they are typically fished. Gobies species are found over muddy-sandy bottoms, with *A. minuta* primarily exploited at depths between 7 and 12 metres in the Southern fishing grounds.

The fishery has no significant impact on the marine environment

The data provided in the 2020-2023 report (fishing activity maps vs seagrass meadows) support the fact that the “Sonsera” fishery does not impact seagrass meadows, in particular *P. oceanica*, and other vulnerable habitat, such as coralligenous habitat and maërl bed. This is also mentioned in the most recent 2024-2025 report, although no relevant data has been provided.

The fishery involves a limited number of vessels and does not contain any increase in the fishing effort with respect to what is already authorized by Member States

The maximum number of authorized vessels using “Sonsera” is 26. This limit and the list of authorized vessels are included in the MP.

The fishery 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 nm distance from the coastline using boat seines with small meshes at the codend.

The fishery is subject to a management plan and carry out a monitoring of catches as requested in Article 23

The MP adheres to standard monitoring practices and the precautionary approach. This includes daily reporting of catches to the co-management committee, exclusive sale of catches through official auction channels at home ports and adjusting quotas or closing the fishery according to fishery and biological indicators. The co-management committee, consisting of representatives from industry, scientists, NGOs, and fisheries administrations of both the Autonomous and Central Governments, manages fishing activities. This committee is responsible for monitoring the sustainability and profitability of the fishery by implementing effort limitations on the number of authorized boats, fleet activity, and setting annual catch limits. It also reviews TAC levels annually based on the previous season's results and imposes new TACs as necessary at the start of the following season. Additionally, the committee coordinates scientific monitoring and assesses compliance with management measures, suggesting appropriate sanctions in cases of non-compliance. It defines the schedule and locations for sampling, both on board boat seiners and upon vessel arrival at port. The committee also organizes regular inspections at sea, fish auctions, and retail markets, and checks all landings against the recorded daily catches.

The vessels concerned have a track record of more than 5 years

To be authorized for this fishery, vessels had to demonstrate that they had operated with this gear for more than five years during the period from 2000 to 2010.

The fishery does 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 overlap with those of other small-scale fisheries using passive gears. However, interactions between "Sonsera" vessels and other fleets are limited due to the lack of competition for target species. Additionally, the use of "Sonsera" does not damage other gears in the same area.

STECF notes that bycatch of "Sonsera" fishery may include some species (e.g., sparids, red mullet) that are generally targeted by set trammel nets, gill nets, or longlines. Nevertheless, the impact of the "Sonsera" fishery on the abundance of these resources is rather negligible due to the small number of individuals caught per fishing operation and the limited number of

vessels involved in this fishery. For instance, in the 2021-2024 period, red mullet represented 4% of the overall low (<5%) total by-catch volume.

The fishery is 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 Article 5.3 of the MP establishes that the by catch of species other than the targets of the Sonsera fisheries shall be less than 10% 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 by fishing trip. As described above, in the period 2020-2023 the overall bycatch fraction represented less than 3.2% in weight of the total catches in the fishery targeting sand eels, and 6.6% in the bycatch targeting transparent goby. In the 2024-2025 period, Mediterranean sand eel dominated the landings, and discards represented 4% and 1% of the total catch in 2024 and 2025, respectively.

The fishery does not target cephalopods

A few cephalopod species have been recorded as bycatch in the sand eel fishery including: *Loligo vulgaris*, *Octopus vulgaris*, *Sepia officinalis*, and some species from the Sepiolidae family. No cephalopod species were reported as by catch in the transparent goby fishery. Considering the limited by catch of cephalopod species (around 7% of the total by-catch of the sand eel fishery in the 2021-2024 period) and the generally low quantity of by-catch overall, it can be concluded that the “Sonsera” fishery does not target cephalopods.

The fishery is highly selective and have a negligible effect on the marine environment

As previously mentioned, the bycatch in the "Sonsera" fishery is very low. Additionally, no other adverse effects on the marine environment have been reported for this fishery. It operates in sandy and muddy bottoms, avoiding sensitive habitats such as seagrass meadows, coralligenous habitats, and maërl beds, which further minimizes environmental impact.

The fishery does not operate above seagrass beds of, in particular, *Posidonia oceanica* or other marine phanerogams

The MP prohibits conducting the “Sonsera” fishery over seagrass meadows. As shown by maps generated from logbook data, this fishery is not carried out on sea bottoms characterized by the presence of seagrass meadows, particularly *P. oceanica*.

STECF conclusions

STECF concludes that the draft Management Plan (MP) includes appropriate elements for monitoring and managing the activities of the "Sonsera" fishery in Catalan waters.

STECF concludes that the conditions for granting derogations from EC Regulation 1967/2006, Articles 9 and 13, regarding minimum mesh size, distance from the coast, and minimum depth in Spanish (Catalan) waters, are met as the target species cannot be caught with other fishing gears.

STECF considers that the adjustments made in the updated management plan to include further adaptive management measures will improve the sustainability of the sand eel fisheries.

STECF suggests enhancing the scientific monitoring of the fisheries through regularly updated assessments (missing for the most recent period), at least for the main target species (Mediterranean sand eel), following previously applied approaches, such as the Multi-Annual Generalized Depletion -MAGD model-, or other relevant methods.

STECF concludes that, in the absence of an updated stock assessment for sand eel, CPUE remains a key indicator for evaluating the status of the resource. STECF therefore stresses the importance of maintaining comprehensive CPUE monitoring throughout the fishing season

STECF concludes that according to the gear characteristics and fishing practice (low towing speed and hand operations), this fishery is highly species-selective, resulting in minimal bycatch and discards.

STECF concludes that the current annual quota system has limited management relevance: quota levels remain substantially higher than actual catches because the resource has declined markedly over the past 10 years, so quotas no longer reflect current stock productivity.

The early fishery closures in 2024 and 2025, triggered by poor monthly catches, appear to be appropriate precautionary measures to protect the remaining spawning population. However, the methodology for implementing these closures lacks full clarity. Therefore, STECF suggests that the MP should explicitly define the criteria and decision framework for such early closures.

Considering that environmental factors play an important role on sand eel abundance, STECF acknowledges that even small increases in fishing effort could significantly intensify removal rates from the fishery, posing challenges in directly detecting corresponding declines in population numbers through CPUE statistics, due to hyperstability. Therefore, STECF concludes that Spain should continue monitoring the fishing effort, ensuring it remains at minimal levels without any increase.

References

Maynou F., Demestre M., Martín P., Sanchez P. (2021). Application of a multi-annual generalized depletion model to the Mediterranean sand eel fishery in Catalonia. *Fish. Res.*, 234, <https://doi.org/10.1016/j.fishres.2020.105814>.

Scientific, Technical and Economic Committee for Fisheries (STECF) – 76th Plenary Meeting Report (PLEN-24-02). Publications Office of the European Union, Luxembourg, 2025, ISBN 978-92-68-23030-5, doi:10.2760/1035959, JRC140570.

6.7 Spanish Management Plan for boat dredges in Catalonia

Background provided by the Commission

The evaluation of national management plans prepared in line with the Mediterranean Regulation (Regulation (EC) No 1967/2006) and the CFP is a recurrent task for the STECF. The management plan for boat dredges (“rastel de cadenes”) in Catalonia (Spain) were previously assessed by the STECF during Plenary 16-01, Plenary 18-01, and more recently during plenary 25-03.

In February 2026, the Spanish authorities submitted a new proposal for the management plans for boat dredges, accompanied by technical documents.

In view of facilitating STECF work, the Commission asked Spain to that complement the information provided for STECF assessment in PLEN 25-03 and answer the different recommendations of STECF

Background documents are published on:

<https://stecf.ec.europa.eu/document/88958e93-cfa3-4193-9450-118132ac2b0f>

Request to the STECF

ToR 1: Building on previous STECF reports, including STECF PLEN 24-02, 25-02 and 25-03, assess the new information provided for the management plan and whether it answers the recommendations and guidance on how to obtain improved scientific/technical supporting material for each of the plans.

ToR 2: Advise and assess whether the new management plan for boat dredges contain adequate elements in terms of fisheries description, safeguards and conservation measures as well as any other aspects deemed relevant in the context of Regulation (EC) No 1967/2006 (the Med Reg).

Summary of the information provided to STECF

STECF received a document named “Informe_Justificativo_PGDE_febrero_2026”. This document responds to the European Commission and STECF PLEN 25-03 conclusions and contains a second version of the Management Plan for the boat dredge fishery targeting shellfish in Catalan waters. This document is, to a large extent, identical to the management plan submitted in October 2025 and reviewed by the STECF during PLEN 25-03. It includes an explanatory section describing the modifications implemented in response to the comments and recommendations received, followed by the updated text of the management plan incorporating those amendments. This summary focus mainly on the updated information.

The updated report proposes a set of technical measures to improve monitoring and management; all agreed with the Catalan Research Institute ICATMAR. Specific measures are introduced for venus clam (*Chamelea gallina*) and purple dye murex (*Bolinus brandaris*), both identified as key reference species within the scope of the plan. For venus clam, the closure of the natural bank is maintained, and the pilot exploitation phase is extended under a restrictive effort regime, limiting activity to a single daily haul of up to 20 minutes and one fishing day per vessel per week. The management framework specifies a continuous monthly monitoring of landings and stock evolution and ensures the application of the precautionary approach.

For *B. brandaris*, the updated plan expands the previous monitoring design by extending the population analysis to include catches from other fishing gears operating within the same scope (i.e. trammel nets and bottom trawls based in La Ràpita), together with a joint analysis of sales notes. This approach provides an estimation of total removals and fishing pressure exerted on the stock. In addition, a specific closure for this species is introduced during May and June, corresponding to its main reproductive period. This measure has been formally agreed and unanimously supported by the sector and integrated in the draft Order.

The revised plan also introduces an obligation to carry out assessments at the end of each fishing season, using the information and methods available at a time, without specifying the body responsible for carrying out these assessments. While quantitative biological reference points are not yet available due to data limitations, the plan recognizes this gap and foresees their progressive definition through the enhanced scientific monitoring program.

The document informs the Commission of a voluntary no-fishing area for towed gears, established by the fishing sector, covering about 130 hectares (around 9% of the authorized area) and is identified as a biologically relevant nursery area. It is reported for information purposes only and not incorporated into the provisions of the plan, while being highlighted as an example of sector commitment and co-responsibility.

The revised management plan includes the text defining each article of the proposed Order, which was not included in the previous version

STECF comments

STECF has the following comments related to each of the ToRs:

ToR 1 – Assessment of new information and response to STECF recommendations

STECF acknowledges that the revised management plan addresses several of the suggestions formulated in PLEN 25-03 and has the following specific comments:

In PLEN 25-03 STECF concluded that Spain's monitoring of the Management Plan for boat dredges only partly addresses the issues identified in PLEN 18-01. While the monitoring of the plan provides more detailed information on fishing effort, revenues, and landings, it still omits key elements for the main target species, including CPUE trends, catch composition

and length-frequency distributions of the main target species, stock assessments, discard survival rates, and detailed economic indicators.

STECF acknowledges the inclusion of CPUE values for the main species captured in the period 2021–2025 in the new version of the Management Plan submitted to PLEN 26-01. However, the revised version does not address several other key gaps previously identified, namely catch composition and length-frequency distributions of the main species captured, stock assessments, discard survival rates, and detailed economic indicators.

STECF concluded that the new management plan includes adequate elements regarding the description of the fisheries, as well as trends in vessel numbers, fishing effort, incomes, species-specific landings, length-frequency distributions of the main target species. However, STECF also concluded that the plan lacks essential components, including information on the stock status of these resources, and quantifiable management targets, such as reference points for fishing mortality or biomass.

STECF notes that the information submitted to PLEN 26-01 indicates that a sufficiently robust time series of biological and fisheries data (e.g. biomass, size structure, recruitment rates, fishing mortality) is not currently available to allow the establishment of quantitative reference points in a robust manner. Nevertheless, the plan acknowledges the need to define such reference points and foresees their progressive development through the proposed scientific monitoring program. STECF further notes that the plan does not provide details on the time frame for the collection of the data required for the development of these reference points, nor does it define the methods to be applied.

STECF concluded that the management plan submitted did not define specific measures to achieve and maintain the MSY objective.

STECF notes that the management plan submitted do not define specific measures to achieve and maintain the MSY objective. STECF acknowledges that sufficiently robust time series may not yet be available for some species, however, the plan does not set out a timeline for the development of the necessary indicators, nor does it describe a roadmap for their progressive establishment through the proposed monitoring activities.

STECF acknowledges the proposal for a closure for *Bolinus brandaris* during its main reproductive period. Although its contribution to achieving and maintaining the MSY objective cannot be quantitatively demonstrated in the absence of an evaluation framework, the measure introduces an element aimed at reducing fishing pressure during its reproductive period.

STECF concluded that the reopening of the Venus clam bank should strictly follow the monitoring program proposed by Spain to ensure sustainable exploitation of this bivalve.

STECF notes that the new version of the management plan confirms that the reopening of the Venus clam bank will strictly follow the monitoring program proposed by Spain to ensure sustainable exploitation of this bivalve, in line with PLEN 25-03 conclusion.

STECF acknowledges that the updated management plan includes the text defining each of the articles in the proposed Order, which was not included in the previous version.

STECF acknowledges Spain's communication that a no-fishing area for towed gears exists within the scope of the management plan. This area has been established on a voluntary basis by the fishing sector and cannot be formally incorporated into the regulatory provisions of the Plan, as it falls outside the regulatory scope of the management plan.

TOR 2 – Advise and assess whether the updated boat dredges Management Plan contain adequate elements in terms of fisheries description, safeguards and conservation measures as well as any other aspects deemed relevant under the Mediterranean Regulation (EC) No 1967/2006

STECF acknowledges the extension of the monitoring programme for one of the target species *B. brandaris*. In addition to the previously planned sampling activities (i.e. data collection on size distribution, length–weight relationships, CPUE and BPUE), the proposal now includes the assessment of catches from other fishing gears operating within the scope of the plan, namely the trammel net fleet and the bottom trawl fleet based in La Ràpita. To this end, bi-monthly sampling of commercial *B. brandaris* catches from these fleets will be carried out. Furthermore, the proposal foresees an integrated analysis of sales notes, jointly considering landings declared by the dredge fleet and those reported by the trammel net and trawl fleets, thereby providing more robust and realistic information on the population status of *B. brandaris* and the level of exploitation to which it is subject.

STECF acknowledges the introduction of a new conservation measure through the voluntary implementation of a specific closure for *B. brandaris* during its main reproductive period. This measure, which has been incorporated into Article 10 of the draft Order, establishes a two-month closure (May and June) applicable to the fishery and explicitly prohibits the commercialization of the species during this period, requiring any incidental catches to be immediately returned to the sea. The timing of the closure may be adjusted by the competent authority, following consultation with the Management Plan Monitoring Committee, based on biological, environmental, social, and economic considerations.

STECF notes that previous reports (EWG 15-16, PLEN 18-01 and PLEN 25-03) highlighted the lack of survivability estimates for discarded individuals of the target species; however, as acknowledged in the evaluation of joint recommendations on the landing obligation (EWG 24-04), available studies, although referring to different areas and, in some cases, slightly different gears, provide relevant evidence. In particular, studies from nearby regions with comparable seabed characteristics and similar dredge gears consistently report high survival rates (>90%) for *C. gallina*, including for the discarded fraction (Anjos et al., 2018; Bargione et al., 2023), suggesting that high survivability is likely also applicable to the fishery concerned, while dedicated studies would still be required to confirm this assumption.

STECF notes the inclusion of an obligation to carry out specific technical assessments related to fishing effort at the end of each fishing season, as incorporated into Article 12 of the draft Order. STECF notes that, although the document does not specify the data to be collected, the assessments to be undertaken, or the methodologies to be applied, the text states that “the corresponding assessments will be carried out using the information and methods available at that time, with the aim of determining the status of the stocks and other aspects relevant for management”.

STECF notes that most of the catches correspond to two crustacean species and one cephalopod species. According to Regulation (EC) No.1967/2006, “dredge” means gears conceived to catch bivalves, gastropods or sponges. It also states that to be taken under the exception of fishing under the 3 miles distance from the coast with such gear, catch of species other than shellfish should not exceed 10% of the total catches by weight at the time of the landing. EWG 15-16 noted that the management plan forwarded to EWG 15-16 understood shellfish as catches different to molluscs, crustaceans and echinoderms “*based on an interpretative document forwarded by EC in August 2014*”. Assuming that those types of organisms are considered shellfish, the management plan submitted to PLEN 25-03 and the updated version submitted to PLEN 26-01 shows that monthly landings by year do not exceed 10% of the total weight, fulfilling the condition for the exception.

STECF notes that, to be in line with Mediterranean Regulation EC (1967/2006), Article 6.2 of the draft plan states “Catches of different species of molluscs, crustaceans and echinoderms may not exceed 10% of the total catches by weight at the time of landing”. However, as also noted by EWG 15-16 and PLEN 18-01, this is a different wording from “catch of species other than shellfish should not exceed 10% of the total catch in weight (Art. 13(1) of the regulation)”.

STECF conclusions

STECF concludes that the revised Management Plan for boat dredges in Catalonia shows progress in addressing previous comments provided by STECF, notably through improvements in the description of the fisheries (i.e. CPUEs for most relevant species captured), the clarification of the regulatory framework, and the enhancement of monitoring for key reference species.

STECF concludes that the proper implementation of the 2026–2030 monitoring plan will contribute to a more representative understanding of the fishery, given that not only *C. gallina* and *B. brandaris* species, but also other relevant species (in terms of high landings) are projected to be monitored, supporting an improved management.

STECF concludes that, although the updated plan foresees the establishment of quantifiable management targets and indicators, it does not define the specific reference points, the time frame for the collection of the data required for their development, nor the methods to be applied. In addition, the plan does not define specific measures to achieve and maintain the MSY objective.

References

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Anjos, M., Pereira, F., Vasconcelos, P., Joaquim, S., Matias, D., Erzini, K., & Gaspar, M. (2018). Bycatch and discard survival rate in a small-scale bivalve dredge fishery along the Algarve coast (southern Portugal). *Scientia Marina*, 82(S1), 75-90. <https://doi.org/10.3989/scimar.04742.08A>

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

7.1 GFCM-STEFC hake benchmark

Background provided by the Commission

DG MARE has consulted STECF in early 2025 on the possibility of launching a benchmark process for the Mediterranean hake in the Western Mediterranean. Agreement was reached to rather revert to the GFCM for the launch of a benchmark for the Mediterranean hake stock in GSA 1-2-5-6-7, in conjunction with STECF through a joint ad hoc group. The first data preparation meeting was held 24-28 November 2025 and it was attended by 30 experts from Algeria, France, Morocco, Spain, Italy, DG MARE, two STECF members, and the external reviewer was Jim Iannelli (NOAA).

The summary of this first meeting is the following:

The main objective of the meeting was to review, discuss, and analyse the input data necessary for the forthcoming benchmark assessment scheduled for early 2026. The session considered recent evidence on stock structure based on findings from the TRANSBORAN and MED_UNITS projects, reviewed Spanish fisheries and MEDITS data, and examined the implications of management measures in the western Mediterranean. A comprehensive workplan was agreed upon to ensure data harmonization and preparation, including biological analyses, validation of fisheries and survey data to establish a database with monthly data resolution for GSA 1, GSA 5, GSA 6, and GSA 7 (including historical information by GSA wherever possible), and studies on recruitment. Multiple assessment scenarios were proposed, and remaining uncertainties regarding stock configuration will be addressed during the benchmark assessment session.

The core discussion revolved around the stock boundaries and what is the correct level of GSA merging, if any. This work has been pushed as a priority for the second meeting (planned for 14 – 17 April). This second meeting will need to be a second data preparation meeting, while the date of the actual benchmark is still not foreseen.

In order to avoid advice duplication for this stock from STECF and GFCM, MARE has the expectation that STECF would use the outcomes of the joint benchmark to provide an updated advice to be used in the Council Fishing Opportunities (of 2027. For this the benchmark would need to be completed and endorsed by SAC and STECF before September 2026).

Request to the STECF

STECF is requested to continue to follow in depth the benchmark work, to secure a sound scientific result that it can then endorse.

On the basis of this background, of the data preparation meeting report and the reporting by the STECF members that have represented the Committee in the preparation meeting, STECF is requested to:

TOR1

- Revise the work done in the hake data preparation meeting, assess the available evidence tabled in support of splitting the GSA. This task will also receive the support of two ad hoc contracts that will look into technicalities.
- Advise on the adequacy and robustness of the proposed roadmap for the second data preparation meeting
- Identify the STECF appropriate expertise needed for the 2nd data prep meeting (14-17 April).
- Mandate to the STECF committee members the scientific and technical position of STECF and define the role of its members in this joint meeting and the benchmark. This might include STECF defining the pre-conditions/elements to accept the benchmark's outcome as well as the aspects the benchmark process should look at during the 2nd GFCM data preparation to ensure all the elements are properly considered ahead of the benchmark. This also includes STECF to design the STECF experts attending the 2nd GFCM data preparation meeting and then the benchmark, STECF should also identify if additional ad hoc might be needed. Tasks under this ToR might feed into EWG methodology after the GFCM 2nd data prep and before the benchmark.

Summary of the information provided to STECF

GFCM WGSAD Data Preparation Meeting – European Hake (GSAs 1, 5, 6 & 7)

A hybrid meeting was held at FAO headquarters in Rome, 24–28 November 2025, attended by 30 experts from Algeria, France, Morocco, Spain, Italy, DG MARE, JRC, STECF, and the GFCM Secretariat. The goal was to prepare input data for a benchmark stock assessment of European hake (*Merluccius merluccius*) in GSAs 1, 5, 6 and 7 scheduled for 2026.

Stock structure findings

Two major research projects informed the discussion on whether hake in this region constitutes one stock or several. The MED_UNITS project (using genetics, otolith shape, and microchemistry) suggested a single western Mediterranean stock extending even beyond GSAs 1–7, though sampling gaps in GSA 1 limited conclusions there. The TRANSBORAN project focused on the Alboran Sea and found meaningful genetic and otolith microchemistry differences between GSA 1 and GSA 6, with the Almería-Orán front acting as an oceanographic barrier limiting connectivity. Scientists at the meeting additionally proposed that the Ibiza Channel separates GSA 5 from GSA 6, based on spatial distribution, survey indices, length structures, and recruitment patterns. IEO and ICATMAR formally proposed treating GSA 1, GSA 5, and GSAs 6+7 as three separate stock units.

Assessment scenarios proposed

The group agreed to explore multiple stock configurations and modelling approaches, ranging from the current combined GSA 1-5-6-7 model to fully separated assessments by GSA. Priority platforms include the existing a4a model and Stock Synthesis (SS3), with higher-priority scenarios running sex-structured, multi-fleet configurations. SPiCT and RTMB were also flagged as potential supplementary tools.

Workplan agreed

The group committed to building a monthly-resolution database covering all four GSAs, including historical data where available. Key tasks include biological parameter estimation (growth, maturity, sex ratio, natural mortality), harmonization of fisheries-dependent and MEDITS survey data, recruitment analysis across GSAs, and investigation of MEDITS design changes that may affect index consistency. A dedicated data call will be launched to support this.

Next steps

The benchmark session originally planned for February 2026 was postponed to 13–17 April 2026 and will serve as a second data preparation meeting where the workplan outputs will be reviewed and finalized before full assessment modelling begins.

Main conclusions according to the ad hoc Scientific Support to STECF on Genetic Evidence and Stock Structure of Western Mediterranean Hake (ad hoc contract n° 2618)

The genetic evidence indicates:

1. No spatial barriers to gene flow in the Western Mediterranean target areas GSA1, 5,6 and 7. Specifically:

- 1.1. TRANSBORAN showed no significant genetic differentiation at neutral SNPs (see Annex 1 on what a neutral SNP is and is used in this studies) among sample collections from the North and South Alboran, Algeria, North Tunisia and North Spain (Table 4c), with the exception of M´Diq and Roquetas.
 - 1.2. MED_UNITS showed no genetic differentiation using all SNPs among sample collections from GSA1a, 5b, 6a-c, and 7 (Fig. 1.5.1.14).
2. Multiple stock units in the Western Mediterranean based on the genetic diversity at non-neutral loci, exclusively performed in TRANSBORAN (Table 4d; Figure 2c; Figure 3c), namely:
 - 2.1. Alboran Sea, which may include several adjacent GSA areas, namely GSA1 and GSA3 but also the western Algeria (GSA4) – No genetic differentiation at neutral and non-neutral loci found between North and South Alboran (except for Roquetas and M´Diq) and Ghazaouet (GSA4-west). However, samples in this group were genetically distinct from those in Atlantic as well as in North Tunisia and North Spain at non-neutral loci. GSA2 was not sampled in any of the projects.
 - 2.2. Northern Spain (GSA6) – No genetic differentiation at neutral and non-neutral loci between Torrevieja and Castellón, but these two samples were genetically distinct at non-neutral loci from those in Atlantic as well as in the Alboran Sea and North Tunisia.
 - 2.3. Northern Tunisia (GSA12) and eastern Algeria (GSA4) - No genetic differentiation at neutral and non-neutral loci among Tabarka, Gulf of Tunis and Annaba. These three samples were genetically distinct at non-neutral loci from those in Atlantic, in the Alboran Sea and North Spain.
 3. The lack of samples from other areas in the Alboran Sea and the analysis of SNP loci without discriminating neutral vs. non-neutral loci may have led to the signal of overall genetic homogeneity across GSA1a, 5b, 6a-c and 7 in the MED_UNITS project. Given the results from the TRANSBORAN, there is strong evidence to support the separation of GSA1 from GSA5b, 6a-c and 7, considering GSA1 as part of a wider Alboran Sea stock. As no samples were obtained for GSA5 and 7 in the TRANSBORAN, no other comparisons can be made directly. However, the contractor recommends the re-analysis of the MED_UNITS dataset by separating the SNP loci into neutral and non-neutral loci, as there may be other locally adapted populations within this area that are not detected in the project. In alternative, demographic independence among these areas can also indicate if there are multiple demographic stocks despite the observed genetic homogeneity.
 4. Both the TRANSBORAN and the MED_UNITS projects surveyed a small number of SNP loci, 209 and 665 loci, respectively. Given that the genome size of *M. merluccius* is ~715 Mbp, the set of SNPs in each case covers only a small fraction of the whole genome diversity. Therefore, some of the inconsistency in results between projects concerning the locations (or GSAs) sampled in both studies may be due to the stochasticity in the fraction of genetic diversity surveyed in each project. Increasing the number of SNPs (and thus the fraction of genome diversity sampled) would provide increased consistency and robustness in the patterns of genetic structure between projects and for the species.

Main conclusions according to the ad hoc scientific support to STECF on population structure of Western Mediterranean Hake in support of the benchmark process (ad hoc contract nº 2617)

1. Basin-scale structure: Atlantic and Mediterranean hake populations are clearly differentiated, with most genetic studies (including neutral SNPs) indicating limited gene flow beyond the area contiguous to the Strait of Gibraltar (west Alboran Sea, W GSA1 and GSA 3).

2. Mediterranean internal structure: Within the Mediterranean (excluding the Alboran Sea described below), neutral SNPs did not show differentiation. Therefore, stock delineation should be approached cautiously, considering other markers, including non-neutral genetic markers, life-history markers, fishery and survey information as well as ecological information, and recognizing possible source–sink dynamics, and the risk of local depletion, if management units encompass partially independent populations. Whole-genome analyses from the MedUnits project indicate genetic differentiation between Western, Central, and Eastern Mediterranean regions. Several studies based on life-history markers and reviewed in the MedUnits project (e.g. otolith shape, microchemistry) suggest sub-structure within the Mediterranean. However, high-resolution sampling (e.g., MedUnits) revealed continuous spatial gradients rather than discrete boundaries using the same markers. This indicates that population structure may be clinal, making it difficult to identify clear stock limits.

2.1. Alboran Sea: The Alboran Sea appears to function as a transition zone between Atlantic and Mediterranean populations, with evidence of Atlantic genetic introgression and possible north–south substructure. Some connectivity of the Alboran Sea might exist with contiguous areas, particularly GSA1 with southern GSA 6 and GSA3 with western GSA4. However, the Almería-Orán front seems to act as a natural barrier, limiting the area where this connectivity occurs to the eastern extremes of the Alboran Sea. Several studies of larval dispersal at the surface and at depth demonstrate this front acts as a natural barrier to dispersal. Given that the bulk of the biomass seems to be concentrated in the area where populations clearly differentiate from the remaining Mediterranean, managing this area as a separate stock is defensible. Possible north–south sub-structuring (otolith shape and microchemistry, morphometry, meristics, parasites) in the Alboran Sea, potentially linked to the separate influence of Gulf of Cádiz vs N Atlantic African populations influencing the Spanish Mediterranean and the North Mediterranean African populations, respectively. Because transition zones may vary interannually, additional sampling across cohorts is recommended to confirm this substructure.

2.2 Western Mediterranean: In the Western Mediterranean excluding the Alboran Sea (described above), whole genome analysis showed no significant differences between GSA 5, 6, and 7. Given that otolith analysis from the MedUnits project showed clinal variation within the Mediterranean instead of separate cluster and that Transboran did not cover areas 5 and 7, no evidences from the two projects suggest spatial separation between these two areas.

3. Data gaps: The Data Preparation Report for the benchmark assessment of European hake in GSAs 1, 5, 6 and 7 refers to additional analyses evaluating stock structure, but their detailed results are not included in the document. These missing analyses reportedly include “spatial modelling and recruitment indicators derived from surveys and commercial data (e.g., CPUE trends, MEDITS indices by length class, recruitment phenology, spatial distribution)”. Given that these analyses may provide critical evidence on demographic independence, accessing their results is likely critical in order to establish the stock limits within the Western Mediterranean Sea.

STECF comments

STECF has the following comments related to each ToR:

ToR 1.1 – Revise the work done in the hake data preparation meeting, assess the available evidence tabled in support of splitting the GSA. This task will also receive the support of two ad hoc contracts that will look into technicalities.

STECF recalls its conclusion from PLEN 24-03 that the studies available at that time regarding the definition of European hake populations within the Mediterranean Sea basin were consistent with previous findings. These studies supported the GFCM 2019 benchmark, during which European hake in GSAs 8-11 was benchmarked, while European hake in GSAs 1, 5, 6 and 7 provided the basis for advice (GFCM, 2019).

New and more detailed revisions from the TRANSBORAN (Hidalgo et al., 2024) and MED_UNITS (Spedicato et al., 2022) projects showed that evidence of differentiation in GSA 1 albeit genetic connectivity of GSA 1 with GSAs 3, 4, and 6 was also found. These projects used a multidisciplinary approach based on analysis of genetics, otolith microchemistry and oceanographic factors. Nevertheless, STECF notes that there’s an unquantified level of uncertainty in the projects' conclusions due to: (i) the projects not being designed to address the scenarios defined by the benchmark workshop, (ii) sampling being focused on a small portion of the genome, and (iii) current results being based on existing biomass levels (if the biomass of hake increases the spatial distribution may expand and different connections between populations may be detected).

STECF acknowledges that the alternative scenarios have different levels of support from the three reports (Hidalgo et al., 2024, Spedicato et al., 2022 and GFCM, 2025). Nevertheless, STECF notes that some scenarios partly supported by the evidence were not considered, such as the aggregation of GSAs 1, 3 and 4 or the existence of a single stock in the Western Mediterranean.

One of the major incentives to split GSAs is the concern that local depletion could be missed due to the spatial scale of the assessment. However, STECF notes that the implementation of local management measures is already possible, while methodologies based on partial fishing mortality (F) computed from a single stock assessment and survey indices, can be used to support the design of such measures.

STECF notes that, as a general rule, the two possible strategies (aggregating GSA or fragmenting GSA) are not equivalent with regards to the associated risks of stock mismanagement. In fact, one of the most important aspects characterizing the concept of stock is that it can be considered a virtually and demographically 'closed' unit for which immigration/emigration phenomena are negligible (i.e. if they exist, they do not have a significant implication in the population dynamics). Considering further that the Mediterranean is a closed basin for most stocks, the validity of this assumption is much less plausible in a fragmented scenario than in an aggregated one.

STECF recalls its comment from PLEN 25-03 that changes to the current stock assessment process (e.g., major changes to the assessment method or configuration of stock units that may substantially alter the estimated productivity or management of the stock) must be tested through Management Strategy Evaluation (MSE) simulations. This is necessary to evaluate their impact on stock management and their robustness to the miss-specification of assumptions, following recent literature on best practices for spatial management and stock unit setup (e.g., Cadrin, 2023; Goethel et al. 2024).

ToR 1.2 – Advise on the adequacy and robustness of the proposed roadmap for the second data preparation meeting

STECF notes that the workplan is from November 2025 and as of this plenary meeting in March 2026, STECF does not have information about the progress achieved on these tasks.

With regards to estimating population level processes at GSA level as requested in the roadmap, e.g. life history parameters, these results need to be analysed with care. If the population's process is not at the GSA level, these results can be spurious (potentially biased) since only part of the process will be observed. However, the estimated parameters are likely to show differences across GSAs which may be interpreted as supporting the GSA level population setup, while in fact may result in a mismatch between the process and the spatial scope of the estimation. STECF suggests that samples from commercial fishing and MEDITS surveys should be used. Using samples from commercial fishing only risks introducing bias in life-history parameters.

ToR 1.3 – Identify the STECF appropriate expertise needed for the 2nd data prep meeting (14-17 April).

STECF bureau has already started the identification of the expertise needed for the 2nd preparatory meeting. This should include experts on population structure and stock assessment process including benchmarking exercises.

ToR 1.4 a) – Mandate to the STECF committee members the scientific and technical position of STECF and define the role of its members in this joint meeting and the benchmark. (check commission decision)

In accordance with Commission Decision 2016/C 74/05, STECF members can support Commission services by participating in regional and international meetings in their capacity as group members. When acting as a formal representative of the STECF, members are bound by the STECF Rules of Procedure⁷, which mandate that members convey the collective views and adopted opinions of the Committee. In this role, members must refrain from expressing personal views or interpreting existing positions in a manner that exceeds the established consensus of the STECF.

However, these documents do not explicitly specify the role of STECF members when invited to participate as independent experts, in which case the participant contributes based on their individual expertise, skills, and experience rather than in a representative capacity. Since many participants may fulfil dual roles, STECF recommends that experts clearly indicate when they are speaking on behalf of the STECF or when they are providing their personal expert opinion. Where relevant, this distinction can be reflected in the written documentation.

STECF notes that representing the STECF is only possible if a formal nomination is made by the Commission and a STECF formal opinion exists.

STECF further notes that experts contributing to scientific discussions within the framework of a regional or international meeting do so as part of a collective deliberative process and are not individually responsible for the final outcomes of the meeting. The resulting outputs reflect the conclusions of the group rather than the views or inputs of any single participant.

ToR 1.4 b) – STECF defining the pre-conditions/elements to accept the benchmark’s outcome

STECF recalls its previous comments (PLEN 25 03). STECF considers that if changes in the current stock assessment process (e.g., major changes to the assessment method and/or configuration of stock units that may substantially alter the estimated productivity or management of the stock) are going to be made, they should be tested through simulations in a MSE, to evaluate their impact on the management of the relevant stock(s) and their robustness to miss-specifications of assumptions.

STECF suggests that the above decision should be conveyed to GFCM and the benchmark chairs as soon as possible, to allow the organization of the process and engagement of experts in time.

⁷ https://stecf.jrc.ec.europa.eu/documents/d/stecf/2025-10-10_stecf-rules-of-procedure.

STECF is aware that capacity and time limitations to setup the MSE algorithm and carry out this analysis may exist. STECF suggests, if necessary, having intersessional work to provide this analysis. This information will be used to support the final decision about the use of a new stock assessment configuration to provide scientific advice under the STECF supporting framework to the implementation of the multiannual plan.

ToR 1.4 c) – Aspects the benchmark process should look at during the 2nd GFCM data preparation to ensure all the elements are properly considered ahead of the benchmark.

The GFCM report of the Data preparation meeting for a benchmark assessment of European Hake in GSAs 1, 5, 6 and 7 included a detailed workplan including the data collection and analysis should be made interseasonally as inputs for the following meeting. If successful in delivering the datasets described, the work plan will deliver most of the necessary elements to complete the benchmark process.

STECF suggests the compilation of environmental information to support the modelling of dependent environmental processes.

STECF suggests data processing to be structured to allow for the testing of several stock configurations.

ToR 1.4 d) – STECF to design(ate) the STECF experts attending the 2nd GFCM data preparation meeting and then the benchmark,

The potential candidates to attend the 2nd GFCM data preparation meeting and then the benchmark as STECF members will be communicated to the Commission.

ToR 1.4 e) – STECF should also identify if additional ad hoc might be needed.

If required by GFCM an ad hoc contract to run the MSE analysis may be needed.

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Annex. Neutral SNPs in the Context of Fisheries Stock Identification

Single Nucleotide Polymorphisms (SNPs) are single–base-pair differences in DNA sequences among individuals of the same species. They are widely used in fisheries science to investigate population connectivity and to support the identification of management relevant units.

From an evolutionary perspective, SNPs can be broadly classified according to whether their variation is neutral or influenced by selection. This classification does not depend on whether a SNP is in a coding or non-coding region, nor on whether it has a known biological function, but rather on how its frequency changes across populations and generations.

Neutral SNPs

A SNP is considered neutral when its variation is not affected by natural selection. In this case, differences between populations are primarily shaped by demographic and stochastic processes, such as:

- genetic drift,
- population size and historical fluctuations,
- isolation and connectivity,

- levels of gene flow.

Neutral SNPs can occur anywhere in the genome, including inside genes. Calling a SNP neutral does not imply that it has no function, but simply that its variation among populations is not driven by selective advantages or disadvantages.

In fisheries applications, neutral SNPs are particularly valuable because they reflect reproductive connectivity and shared demographic history. They are therefore commonly used to:

- detect genetically distinct populations,
- assess connectivity among them,
- identify barriers to gene flow.

Because of this, neutral markers provide a basis to determine whether different groups of a species behave as demographically independent units, often associated with reproductive isolation.

SNPs potentially influenced by selection

Some SNPs exhibit patterns of differentiation that cannot be explained by demographic processes alone and suggest the influence of selection or other non-neutral processes. These SNPs often display strong differences between populations living under different environmental conditions, although the exact biological mechanism is not always known.

In many cases, the SNP itself is not responsible for adaptation but is located close to a region of the genome involved in adaptive processes.

In the context of stock identification, SNPs potentially under selection can provide complementary information by highlighting:

- possible local adaptation to environmental conditions (for example temperature, salinity, or oxygen levels),
- biologically meaningful differences among population components,
- recent divergence that may not yet be visible using neutral markers.

Adaptive differences do not necessarily mean that populations are reproductively isolated. For this reason, these markers alone are usually not sufficient to define independent populations.

Integrating both types of markers in stock assessment

Modern genomic studies often combine neutral and non-neutral SNPs to obtain a more complete picture of past, ongoing and potential future processes.

Neutral SNPs are commonly used to assess demographic independence and connectivity, while SNPs influenced by selection can provide additional information about environmentally associated differentiation.

From a fisheries management perspective, this distinction is critical:

- neutral genetic structure reflects past and/or ongoing patterns of gene flow and demographic independence,
- adaptive genetic signals provide information on environmentally associated differentiation and may be useful for monitoring potential future changes in connectivity.

7.2 EWG on Apprehending, assessing and predicting climate change impacts on international fisheries

Background provided by the Commission:

In the PLEN 25 01 STECF acknowledged the critical importance of incorporating climate change considerations into the management of fisheries resources within the framework of RFMOs. STECF suggested considering a phased approach to this topic where the first phase would be taking stock of the current scientific knowledge and the procedures employed by RFMOs (phase 1), followed by a discussion to identify which questions that can be addressed expediently to support DG MARE's needs (phase 2). The final phase was suggested to focus on developing a process to enact this advice (phase 3).

STECF suggested that the first phase to be carried out intersessionally and reported in the STECF Plenary. The JRC has taken on this work and has completed a review to address the points below that were drafted in STECF PLEN 25-01.

Phase 01 – Take stock of scientific findings on impact and mitigation of climate change in fisheries management in RFMOs

- a. Compile a snapshot of the current state of the art knowledge on climate change for each of the listed RFMOs.
- b. Compile current scientific approaches capturing the potential effects of climate change on each of the RFMO's fisheries and fish stocks.
- c. Compile the current data collection and scientific processes in each of the RFMOs addressing climate change impacts.
 - i. Highlight the EU contribution to these processes and EU's role in defining policies.
- d. Compile current procedures used in each of the listed RFMOs that contribute to accounts for impacts of climate change
- e. Do a literature review regarding climate change impacts in fisheries targeting species managed by RFMOs.

STECF suggested that the first phase to be carried out intersessionally and reported in the STECF Plenary. The JRC has taken on this work and reported on progress to the STECF during the November 2025 plenary meeting. STECF concluded that the three-phase approach proposed in PLEN 25-01 remains valid, with Phase 1 needing completion before starting subsequent phases.

STECF concludes that Phase 1 should be finalized using the methodology outlined in their report and incorporating, where feasible, the suggestions provided in the STECF-PLN-25-03, section 7.3. STECF concludes that the review would be effectively complemented by a series of semi-structured interviews with key members of the Scientific bodies as detailed in the previous section. This work could be carried out as an ad-hoc contract in full coordination with the authors of Phase 1 report.

STECF suggested the following timeline for the three phases:

Phase 1 – Take stock of scientific findings on impact and mitigation of climate change in fisheries management in RFMOs - completed by PLN 26-01

Phase 2 - Considering outcomes of phase 1, discuss research questions that needs to be addressed and decide on the method to achieve the product described in phase 3 - During PLN 26-01.

Phase 3 – Design a science-based approach for the integration of climate considerations into fisheries management to be promoted by the EU in RFMOs – Timing to be decided during PLN 26-01.

Request to the STECF

The STECF is requested to:

1. Review the intersessional work (report) done by JRC: Review of climate change integration in Regional Fisheries Management Organizations (RFMOs) – Phase 1
2. Based on the findings and outcomes of the report on climate change integration in RFMOs, the STECF is invited to discuss and draft the Terms of Reference for an Expert Working Group.

Summary of the information provided to STECF

The report “*Review of climate change integration in Regional Fisheries Management Organizations (RFMOs) – Phase 1*” were revised and completed following PLN 25-03 comments. It provides a snapshot of the current state of knowledge on how 11 RFMOs (from the RFMOs listed in the PLN 25-01) currently incorporate climate change considerations into their scientific and management processes.

The RFMOs covered include five tuna and other highly migratory fish stocks:

1. the Commission for the Conservation of Southern Bluefin Tuna (CCSBT),
2. the Inter-American Tropical Tuna Commission (IATTC),
3. the International Commission for the Conservation of Atlantic Tunas (ICCAT),
4. the Indian Ocean Tuna Commission (IOTC),

5. Western and Central Pacific Fisheries Commission (WCPFC).

and six non tuna RFMOs

1. the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR),
2. the Northwest Atlantic Fisheries Organisation (NAFO),
3. the North Pacific Fisheries Commission (NPFC),
4. the South East Atlantic Fisheries Organisation (SEAFO),
5. the South Indian Ocean Fisheries Agreement (SIOFA),
6. the South Pacific Regional Fisheries Management Organisation (SPRFMO).

After a systematic presentation of each RFMO structure, mission and strategy with regards to climate change, the authors compare the incorporation across RFMOs using seven dimensions (table 6 of the report):

- Legal/Policy recognition of climate change (CC)
- Dedicated scientific research on CC
- Climate integration in advice
- Climate and ecosystem indicators
- Roadmaps and Workplans
- Institutional integration and governance
- Data collection

The authors explore the integration of CC considerations for a selection of specific stocks in more details (Annex 1). They thus find that RFMOs are at varying stages of integration, from formally recognizing the importance of considering climate change and the planning of future actions; to having endorsed a full plan of action where climate change is fully embedded in policy and implementing, at least in some cases, in scientific advice. They also note that some joint efforts to share best practices and common methods, particularly between tuna RFMOs.

Across the reviewed RFMOs CC is increasingly being incorporated into fisheries governance through a combination of policy recognition, scientific research, and evolving management frameworks. Most organizations have institutionalized climate change as a standing agenda item in their scientific or commission meetings and developed dedicated work plans, vulnerability assessments, or task teams to examine climate impacts on fisheries resources and marine ecosystems. Scientific efforts focus on improving environmental monitoring, developing ecosystem and climate indicators, conducting vulnerability assessments, and integrating climate considerations into analytical tools such as stock assessments, species distribution models, and Management Strategy Evaluation (MSE). Overall, the RFMOs demonstrate a shared transition toward climate-informed and ecosystem-based fisheries management, although the degree of implementation varies across organizations and many initiatives remain at the development or testing stage.

The authors concludes that the report provides a basis for establishing and designing options for a science-based EU approach to integrating climate considerations into scientific advice and fisheries management which the EU promotes in RFMOs. They suggest that a dedicated expert working group could provide a structured platform to guide further work. Such a group

could be tasked with (1) further assessing advances across RFMOs, (2) conducting a more detailed examination of implementation at the stock level, (3) identifying persistent challenges and highlighting priority areas for future actions.

STECF comments

STECF has the following comments related to each ToR.

ToR 1. Review the intersessional work (report) done by JRC: Review of climate change integration in Regional Fisheries Management Organizations (RFMOs) – Phase 1

The review produced by JRC provides a good compilation of how climate change is considered in governance, frameworks and procedures in the 11 RFMOs identified by DGMARE and of which EU is a member.

STECF acknowledges that the JRC review provides a comprehensive overview of how climate change considerations are currently addressed across the RFMOs examined. STECF considers that this work successfully fulfils the objectives of Phase 1 by establishing a clear baseline of existing practices. STECF considers however, that valuable science, novel insights and RMFOs-specific pathways towards the integration of climate change into advice also lie in the perimeter of other RFMOs: NEAFC and GFCM. DGMARE enquired about the opportunity to expand phase 1 to include also NEAFC and GFCM and will liaise directly with JRC about it.

ToR 2. Based on the findings and outcomes of the report on climate change integration in RFMOs, the STECF is invited to discuss and draft the Terms of Reference for an Expert Working Group.

As requested by the phase 2 of the adopted approach, STECF considers that the identification of targeted research questions is a necessary next step to ensure that future work on climate change integration responds effectively to DGMare needs.

STECF suggests the following overarching question “how to ensure that the scientific advice of RFMO bodies is robust to account for changes and uncertainties introduced by climate change”, which can then be operationalized by specifying the following topics:

1) Methods:

- What are the different approaches to integrate climate change considerations in RFMO scientific advice, and how to select appropriate ones depending on the context (fishery, stock, habitat, knowledge of the influence of environmental drivers on stock dynamics, and data)?

2) Data, monitoring and projection

- Which data are needed for the different approaches cited above?

- What should be the priorities for data collection?
- Which projections of environmental variables (including spatial and temporal scales) shall be used depending on the purpose (typically MSE operations)?
- What should be the priority in terms of development of new projection tools?

3) Governance questions

- What are the good practices identified in the RFMOs reviewed to ensure that the climate change topic is addressed systematically and appropriately?
- What are the good practices identified in the RFMOs reviewed to engage efficiently and fairly with the stakeholders about the climate change topic?

A detailed plan/draft version of a potential technical document to reply to questions related with the integration of climate change in RFMO's management practices, is proposed as a separate document submitted to the Commission.

Depending on the level of details expected by DGMARE in the final document, three options are suggested to complete it: (i) an ad hoc contract, (ii) intersessional work by the JRC (depending on JRC resources), or (iii) an expert working group. In all cases, experts with experience in RFMOs would be involved in the preparation of a working version of the document on which they can provide feedback and contributions.

STECF considers that a very detailed and prescriptive end-product is not desirable, as it would potentially duplicate the work achieved by scientists working for the different RFMOs, and that the objective should rather be to provide general guidance highlighting effective practices implemented in some of the reviewed RFMOs or recorded in targeting literature (existing published reviews of approaches to integrated climate change considerations in fisheries management, e.g. (but not limited to): Bahri et al, 2021, ICES, 2023, Bessel-Browne et al., 2025, Bryndum-Buchholz et al, 2021).

STECF also notes that the semi-structured interviews that were suggested to take place intersessionally to engage with RFMOs representatives have not been completed. Considering that the JRC engaged with RFMOs representatives (through informal solicitations) to produce their report, such interviews are not deemed necessary for the time being and could be considered for Phase 3.

STECF conclusions

STECF concludes that phase 1 is completed.

STECF suggests moving to Phase 2 by initiating a dialogue with DGMARE about the scientific advice topics and potential research questions to be answered, and how, based on the technical document proposed.

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7.3 TORs for EWG Methods for West Med MAP stock assessment and EWG effort group

Background

These TORs were developed and discussed in STECF Bureau meeting of 13 February.

Summary of the information provided to STECF

A list of points discussed between Bureau, the chairs of the EWGs (stock assessment and effort evaluation) and the Commission were provided.

STECF comments

STECF observes that the current implementation of Reg. EU 2019/1022 (WestMed MAP) and related annual Fishing Opportunities (latest Reg EU 2026/266) introduces a level of complexity that cannot be fully captured by the existing modelling frameworks applied in the STECF EWGs on the evaluation of the WestMed MAP. Important assumptions are made that imply that there is a degree of uncertainty surrounding the accuracy of projections (see also ToR 7.4 of this plenary report).

STECF notes that EWG 25-11 identified that it would be preferable to base assumptions on the intermediate year in the short -term forecasts on Member States' declarations of compensation mechanisms (CMs), to allow for a more accurate status quo assessment. This approach could enable testing of CMs in context, focusing on those considered "evaluable" (see ToR 7.4 of this plenary regarding "evaluability" of CMs). STECF further notes that remedial measures, triggered when a stock has biomass levels under B_{lim} , will further impact on the intermediate year assumptions as additional management measures are introduced and compensation mechanisms cannot be applied to the specific stock area.

STECF highlights that timely access to disaggregated spatial data (VMS/AIS + logbooks by commercial category) is a critical prerequisite for improving the robustness of effort regime evaluations (see suggested timeline in PLEN 25-03). Additionally, STECF notes that in the future such issues could be solved if in the FDI data call spatial data were made available by Member States at a finer spatial resolution (c-square 0.01x0.01), as a standardized data call for VMS+logbook data towards Mediterranean Member States is not currently in place.

STECF notes that, as suggested by PLEN 25-03, ad-hoc contracts should be considered in advance of the STECF EWG on Effort regime evaluation in the West Med, for modelers to run scenarios ahead of the EWG to allow discussing results during the EWG.

STECF finally discussed the draft ToRs for EWG 26-03. These will be submitted to the Commission and published on the registration page for EWG 26-03 once finalised.

7.4. Evaluation of “Ad-hoc contract on West Med MAP compensation mechanism” in support of PLEN 26-01 and EWG Methods for West Med MAP stock assessment and effort group

Background

These TORs were developed and discussed in STECF Bureau meeting of 13 February.

Background documents are published on:

<https://stecf.ec.europa.eu/document/88958e93-cfa3-4193-9450-118132ac2b0f>

Summary of the information provided to STECF

STECF was provided with an ad hoc contract report (no. 2615) to address the following needs for information and ToRs:

The overall objective of the contract was to carry out a one-off, scientifically robust appraisal of the West Med MAP compensation mechanism as implemented under the most recent fishing opportunities regulations (EU Regulations 2024/259 and 2025/219), with a focus on:

- Mapping and classification of conservation measures used so far and those to be used in the current year (e.g. changes in selectivity, different types of temporal and permanent closures, closures below 800 m, use of flying doors, etc.), in terms of their impact on fishing mortality, catches and stock status; and
- Deriving science-based guidance on evaluability of compensation measures and for transparently documenting the assumptions required for their use in West Med effort-management scenarios and intermediate-year simulations.

This work should build explicitly on STECF’s qualitative evaluations of individual compensation criteria and on the existing mixed-fisheries and spatial modelling frameworks used in West Med MAP assessments (e.g. ISIS-Fish, SMART, BEMTOOL and IBIS-type mixed-fisheries models) and address the data and methodological limitations already identified by STECF.

The ad hoc contract had the following ToRs:

ToR 1 – Information

Based on the information provided by Mare (D1) on the measures actually implemented by MSs till 2025 (included) under a compensation mechanism, classify each measure into broad types (selectivity, temporal closure, spatial closure, depth closure, gear/doors, etc.) to facilitate subsequent modelling and comparison.

ToR 2 – Assessing “evaluability”: which measures can be quantified and what would be their effect on the reduction of F, partial F, and on level of catch.

Based on STECF’s previous comments on the compensation mechanism (e.g. Table 6.9.4 in PLEN-24-02 and section 6.7 in PLEN-25-02), develop a typology of measures according to their “evaluability”:

Measures for which direct or indirect quantitative evaluation is feasible (e.g. mesh-size).

Measures for which only semi-quantitative evaluation is possible (e.g. strong evidence of effort displacement but incomplete data);

Measures that are, at present, only amenable to qualitative assessment due to lack of data, models or conceptual limitations (e.g. measures in areas with no survey coverage below 800 m).

For each type, specify:

The minimum data requirements (e.g. VMS/AIS, spatially resolved landings, MEDITS or other surveys, gear-specific selectivity data);

The modelling tools that could realistically be used (e.g. ISIS-Fish for spatial closures in EMU1; SMART for EMU2; IBIS-type mixed-fisheries or other bio-economic models as used in the different West Med effort EWGs).

Produce a matrix (measure x evaluability x model x data) that clearly indicates which measures could be evaluated quantitatively towards the objective of the MAP (changes in F, and/or fishing Days), which not, under which assumptions, which data is needed, with which model and with which limitations.

STECF comments

Comments on the ad hoc report and main findings

STECF observes that the ad hoc report addresses its ToRs and provides a structured appraisal of the evaluability of compensation measures (CMs). STECF considers that the report offers a useful conceptual framework for understanding which CMs can be assessed quantitatively and under which conditions.

STECF observes that the ad hoc report provides an overview table of the CMs listed in the suite of annual EU regulations setting fishing opportunities (see Table 7.4.1). The last version of CMs is stipulated in Article 8 of Council Regulation (EU) 2026/266 of 26 January 2026 fixing for 2026 the fishing opportunities for certain fish stocks and groups of fish stocks applicable in the Mediterranean and Black Seas.

As requested by the ToRs, the report classified the CMs into categories (which are: selectivity, permanent or seasonal closure area, temporal closure, minimum conservation

reference size MCRS, gear modification/substitution, permanent cessation) and into three Quality “Q” categories depending on their “evaluability”, defined as the possibility to estimate an effect of the measure on the target fishing mortality. A summary of these three quality categories is (see the report for a more detailed description)

Class Q1 (Quantitative): Validated relationships between the fishing mortality and the management plan exist AND all required data are available. Fishing days equivalent to the measure can be estimated for compensation.

Class Q2 (Semi-quantitative): Validated relationships exist BUT required data are incomplete. Fishing days cannot be estimated.

Class Q3 (Qualitative): Neither validated relationships nor sufficient data exist. Fishing days cannot be estimated.

Table 7.4.1. CMs published since 2023, classified by category (SEL=selectivity; CA=permanent or seasonal closure area; TC=temporal closure; MCRS=minimum conservation reference size; GM=gear modification; PC=permanent cessation), where X depends on the number of compensation measures, Y depends on the period of the year during which the measure is applied, Z depends on the percentage of the fleet applying the measure and W depends on the implementation of the same measure in 2025.

Category	Condition	Compensation	Application	Timeframe	Regulation	Publication	STECF
SEL	4 a	Baseline * 0.35	Vessel	Year	2023/195	New	EWG 2301
SEL	4 b	Baseline * 0.35	Vessel	Year	2023/195	New	EWG 2301
SEL	4 c	Baseline * 0.35	Vessel	Year	2023/195	New	EWG 2301
CA	4 d	Baseline * 0.35	Vessel	Year	2023/195	New	EWG 2301
MCRS	4 e	Baseline * 0.35	Vessel	Year	2023/195	New	EWG 2301
CA	4 f	Baseline * 0.35	Vessel	Year	2023/195	New	EWG 2301
MCRS/SEL	1 e	Baseline * X	Vessel	Year	2024/259	Modified	PLEN 2402
MCRS/SEL	1 f	Baseline * X	Vessel	Year	2024/259	New	PLEN 2402
CA/TC	1 h	Baseline * X	Vessel	Year	2024/259	New	PLEN 2402
CA	1 i	Baseline * X	Vessel	Year	2024/259	New	PLEN 2402
CA	1 j	Baseline * X	Vessel	Year	2024/259	New	PLEN 2402
GM	1 k	Baseline * X	Vessel	Year	2024/259	New	PLEN 2402
CA/TC	1 l	Baseline * X	Vessel	Year	2024/259	New	PLEN 2402
GM	1 a	2024/259 * Y *Z	Vessel	Month	2025/2019	New	PLEN 2502
SEL	1 b	2024/259 * Y *Z	Vessel	Month	2025/2019	Modified	PLEN 2502
SEL	1 c	2024/259 * Y *Z	Vessel	Month	2025/2019	Modified	PLEN 2502
CA	1 d	2024/259 * Y *Z	Vessel	Month	2025/2019	New	PLEN 2502
TC	1 e	2024/259 * Y *Z	Vessel	Month	2025/2019	Modified	PLEN 2502
TC	1 f	2024/259 * Y *Z	Vessel	Month	2025/2019	Modified	PLEN 2502
CA	1 g	2024/259 * Y *Z	Vessel	Month	2025/2019	New	PLEN 2502
CA	1 h	2024/259 * Y *Z	Vessel	Month	2025/2019	New	PLEN 2502
CA	1 c	2024/259 * Y *Z *W	Vessel	Month	2026/266	Modified	-
TC	1 d	2024/259 * Y *Z *W	Vessel	Month	2026/266	Modified	-
TC	1 e	2024/259 * Y *Z *W	Vessel	Month	2026/266	Modified	-
CA	1 f	2024/259 * Y *Z *W	Vessel	Month	2026/266	Modified	-

CA	1 g	2024/259 * Y *Z *W	Vessel	Month	2026/266	modified	-
CA	1 i	2024/259 * Y *Z *W	Vessel	Month	2026/266	new	-
CA	1 m	2024/259 * Y *Z *W	Vessel	Month	2026/266	new	-
PC	1 n	2024/259 * Y *Z *W	Vessel	Month	2026/266	new	-

Source: ad hoc contract (No. 2615)'s report (Table 1 in page 6).

Selectivity improvement-related measures

STECF observes that for CMs based on selectivity, it is generally possible to obtain an explicit quantification of effort levels that would result from changing fishing-mortality-at-age, if selectivity curves, F-at-age data and data on fleet activity are available, and all other factors are assumed unchanged (e.g. catch limits). STECF observes that changes in selectivity (e.g., mesh-size changes with known selectivity curves) are generally implemented after documented field-testing in the context of technical modifications to the gear.

Table 7.4.2. Summary table for anticipating effects of selectivity-related CMs

Aspect	Content
Rationale	Assessed shift in selectivity ogive → reduced \square_a (e.g. juvenile mortality) → modification of partial F-at-age
Quantifiable Catch?	Yes (age-structured simulations)
Quantifiable $\Delta \square_{\square\square}$?	Yes (partial F-at-age)
Data required for Q1	Selectivity ogive; Age-Length Key; Growth relationship; age-based stock assessment outputs; Size composition data; Disaggregated Fishing effort data, or (e.g. VMS + Logbook by commercial category); Economic data by commercial category (Fuel cost, Price at market, etc.)
Q2	Same as for Q1, but at a lower spatial and/or temporal resolution (e.g. aggregated VMS/Logbook data -> FDI at 0.5 csquare + quarter resolution)
Q3	Same as for Q2, but without one or more input datasets
Models	Applied: ISIS-Fish; BEMTOOL; IAM, SMART
Assumptions	<ul style="list-style-type: none"> • Robust selectivity curve • Depending on whether the model is individual-based or fleet segment-based, the parameterisation of effort behaviour must be robust.
Limitations	Potential interaction with catch limits
Evaluability level	From Class Q1 (Quantitative) to Class Q3 (Qualitative), depending on data availability

Source: Own elaboration.

Spatial closures in waters under 800 m in depth

STECF observes that while biological data availability is generally sufficient for waters under 800 m in depth, which are covered by scientific surveys, the ability to model fleet behavior depends on a variety of factors that ultimately can significantly affect forecast uncertainty. Fisheries data is generally available as fleet segment aggregation. Disaggregated data (particularly VMS and logbooks) would be essential to better capture fishing vessel adaptation, but in practice individual vessels-based data are rarely available to STECF. Simulation-testing of spatial restrictions usually require considerable coding effort and running time, which is further increased when several runs are required to capture uncertainty ranges adequately. Fisheries models should include modules capable of estimating not only revenues but also the costs associated with changes in the distribution of fishing effort. Besides, the likely feedback resulting from displacing the effort on other components of the stock and ecosystems need to be captured if simulating on longer time horizons (e.g., change in CPUEs).

STECF remarks that the ability to capture effects of any spatial restrictions also depends on the size of the closed areas. Several areas in the CMs are rather small compared to underlying biological/ecological processes, and species' connectivity and dispersal outside the closed area remains unknown for most of the species, as noted by e.g. EWG 25-11.

Table 7.4.3. Summary table for anticipating effects of spatial closures (permanent or seasonal in shallow waters) CMs.

Aspect	Content
Rationale	Spatial redistribution of effort → change in spatial F distribution → change in the F_a for the stock
Quantifiable Catch?	Yes (via spatial models)
Quantifiable F?	Yes (if spatial effort + spatial catch + stock distribution available)
Data required for Q1	High-resolution VMS/AIS; Logbook data by commercial category; Scientific Surveys; Economic data by commercial category (Fuel cost, Price at market, etc.)
Q2	Same as for Q1, but at a lower spatial and/or temporal resolution (e.g. aggregated VMS/Logbook data -> FDI at 0.5 csquare + quarter resolution)
Q3	Same as for Q2, but without one or more input datasets
Models	Applied: ISIS-Fish (EMU1); SMART (EMU2)
Assumptions	Effort allocation and effort displacement modelled correctly; Realistic submodel for Spatial Revenues, Spatial Costs and related GVA; constant stock availability
Limitations	Displacement uncertainty; Model sensitivity high; Long simulations Required
Evaluability level	From Class Q1 (Quantitative) to Class Q3 (Qualitative), depending on data availability

Source: Own elaboration.

Spatial closures in deep-sea waters (i.e. >800 m in the Med)

STECF notes that, beside difficulties already listed for closures in shallower waters, a serious limitation of estimating potential effect of closed areas in deep sea waters is the lack of information on resource availability, composition and distribution from fishery-independent surveys.

Table 7.4.4. Summary table for anticipating effects of spatial closures (permanent or seasonal) in deep waters

Aspect	Content
Rationale	Spatial redistribution of effort → change in spatial F distribution → change in the F for the stock
Quantifiable Catch?	Yes (via spatial models based on Logbook or FDI data)
Quantifiable F?	Generally, no, due to lack of survey data
Data required for Q1	Not possible (scientific surveys lacking)
Q2	High-resolution VMS/AIS; Logbook by commercial category or FDI data; Economic data (Fuel cost, Price at market, etc.)
Q3	Same as for Q2, but but without one or more input datasets
Models	Applied: ISIS-Fish (EMU1); SMART (EMU2)
Assumptions	Effort allocation and effort displacement are modelled correctly
Limitations	Displacement uncertainty; Model sensitivity high; Long simulations required; Lack of survey coverage below 800 m
Evaluability level	Class Q2 (Semi-Quantitative) unless survey data become available

Source: *Own elaboration.*

Temporal closures to fisheries

STECF notes that fishery-independent surveys are collected at a specific time of the year and will therefore not be representative of the population and fisheries dynamics occurring within a year. The effects on fleet adaptation and skipper's behavior will also blur the effort to F relationship, if any, by possibility for seasonal effort reallocation, price and market dynamics, seasonal species population abundance fluctuations, species traits such as their ability to disperse, etc.

Table 7.4.5. Summary table for anticipating the effects of temporal closures CMs

Aspect	Content
Rationale	Effort reduction during closure period → change in temporal F distribution → change in the F for the stock
Quantifiable Catch?	Yes (via temporal models based on Logbook or FDI data)
Quantifiable F?	Possible according to survey data, but see Assumptions
Data required Q1	Not useful with the available set of models
Q2	High-resolution VMS/AIS; Logbook or FDI data; Scientific Surveys; Economic data (Fuel cost, Price at market, etc.)
Q3	Logbook or FDI data
Models	Applied: ISIS-Fish; BEMTOOL; SMART
Assumptions	Effort allocation and effort displacement are modelled correctly
Limitations	Displacement uncertainty; Model sensitivity high; Long simulations required;
Evaluability level	Class Q2 (Semi-Quantitative)

Source: Own elaboration.

Gear substitution measures

STECF notes that the potential effect of the switch from using OTT (otter twin trawl) to using OTB (bottom otter trawl) has potentially far-reaching effects, but, for some innovative gear features and specifications (such as lighter gears), the availability of real observations to condition the models with estimates of such possibly beneficial effects can be limited. STECF further recalls that, as noted by PLEN 24-02, modifications such as flying doors or mid-water doors, and low-contact otter boards are also disconnected from initial aim of CMs (the protection of juveniles and spawners of target stocks).

Table 7.4.6. Summary table anticipating the effects of gear substitutions CMs

Aspect	Content
Rationale	Change in catchability coefficient (q)
Quantifiable Catch?	Indirect through simulation (as in general data are limited to experimental trials)
Quantifiable F?	Possible according to survey data, and only if empirical q change available, but see Assumptions
Data required Q1	High-resolution VMS/AIS; Logbook by commercial category or FDI data; Scientific Surveys ; q estimates; size composition data
Q2	Same as for Q1, but without q estimates and/or size composition data
Q3	Same as for Q2, but but without one or more input datasets
Models	Applied: ISIS-Fish; BEMTOOL; IAM, SMART;
Assumptions	Linear relation between gear efficiency and F
Limitations	Sparse empirical validation;
Evaluability level	Class Q1 (Quantitative), Class Q2 (Semi-Quantitative) or Class Q3 (Qualitative)

Source: Own elaboration.

MCRS-related measures

STECF notes that MCRS-related changes assume that an increase in MCRS shifts the effective retention ogive, potentially reducing fishing mortality on younger ages. However, unless accompanied by changes in gear selectivity or effort to effectively reduce the catches of small fish, discarding may simply replace retention onboard and landing (e.g. PLEN 23-01). Then, depending on discard survival and skipper’s behavior, including compliance, total fishing mortality will likely not decrease proportionally.

Table 7.4.7. Summary table for anticipating the effects of MCRS increases CMs

Aspect	Content
Rationale	Retention change; discard shift; potential reduction of F_a
Quantifiable Catch?	Yes (retained catch)
Quantifiable F?	Yes, under the assumption that the survival rate for not retained specimens is known
Data required Q1	High-resolution VMS/AIS; Logbook by commercial category or FDI data; Scientific Surveys; q estimates; Size composition of discard and catch data; discard survival; ALK
Q2	Same as for Q1, but without q estimates and/or size composition of discard and catch data
Q3	Same as for Q2, but but without one or more input datasets
Models	Applied: ISIS-Fish; BEMTOOL; IAM, SMART;
Assumptions	Full compliance; Known survival rate
Limitations	No guarantee of fishing mortality reduction if not associated with selectivity modification; Sparse empirical validation
Evaluability level	Class Q1 (Quantitative), Class Q2 (Semi-Quantitative) or Class Q3 (Qualitative)

Source: Own elaboration.

Permanent cessation measures

STECF notes that permanent cessation corresponds to the reduction of the overall fishing capacity in terms of number of vessels, which is intended to reduce F . However, if the remaining vessels obtain additional fishing days as the result of reallocation (if not already constrained by other days limits), then F should not be expected to decrease. Rather, there is a risk that F could even increase, as it is plausible that the most efficient vessels remain in the fishery and catch more fish per additional fishing days than the vessels that left the fishery.

Table 7.4.8. Summary table for anticipating the effects of permanent cessation CMs

Aspect	Content
Rationale	potential reduction of F_a
Quantifiable Catch?	Yes (but with a high level of uncertainty linked to the definition of fishing capacity)
Quantifiable F ?	Yes (but with a high level of uncertainty linked to the definition of fishing capacity)
Data required Q1	High-resolution VMS/AIS; Logbook by commercial category or FDI data; Scientific Surveys; Size composition of discard and catch data; List of vessels to be scrapped
Q2	Same as for Q1, but without a list of vessels to be scrapped
Q3	Same as for Q2, but without one or more input datasets
Models	Applied: ISIS-Fish; BEMTOOL; IAM, SMART;
Assumptions	The relative importance of fleet segments, i.e. the structure of the fleet capacity is stable (Remaining fishing vessels are redistributed across all fleet segments proportionally)
Limitations	Not necessarily linked to a reduction in fishing mortality if, in a system based on effort quotas, total activity remains constant
Evaluability level	Class Q2 (Semi-Quantitative) or Class Q3 (Qualitative)

Source: Own elaboration.

Comments on the results about what is measurable at Quality Q1 and what will never be measurable at Q1.

STECF agrees with the ad hoc report observations that, conditional on data availability, “evaluability” can correspond to class Q1 in the case of CMs related to selectivity improvements, permanent spatial closures, gear substitution, and MCRS increases. STECF agrees that for the spatial closures in deep sea waters and for the permanent cessation, it is not possible to evaluate their effect fully the way they are defined in the fishing opportunities (FO) EU Reg 2026/266 Article 8.

STECF observes that the ad hoc report provides useful insights regarding how to anticipate the “evaluability” of a combination of measures (i.e. the scenarios to be simulated and evaluated), which therefore enables anticipating what may be possible to conclude depending on Member States CMs implementation.

STECF observes that the availability of high-resolution VMS/AIS and logbook by commercial category or FDI data are key input data to obtain a Q1 evaluation across all the CMs categories. However, the application of FDI data is still limited by their low spatial and temporal resolutions (0.5 degree c-squares by quarter in Table H and I). The potential increase of the spatial and temporal resolutions of these FDI products (e.g. 0.01 c-square, monthly rate), would represent a valuable and technically feasible way to better support most of the models.

Uncertainties brought by the compensation mechanisms and cumulative effects

PLEN 25-03 concluded that reducing fishing effort appears to be needed to reach F_{MSY} for all stocks but notes that the models assume a linear link between effort and mortality. STECF concluded that simulations from EWG 25-11 indicate that additional remedial measures including selectivity enhancements, MCRS change, and closure areas can contribute to reducing fishing mortality.

STECF notes how the ad hoc report findings recalls that the CM assumes that a biological gain from implementing a management measure can offset the fishing mortality increase that would result from allowing additional fishing days as stipulated by the compensation mechanisms.

It should thus be ensured that the increase in mortality due to additional effort does not exceed the reduction in mortality needed to achieve the West MED plan target of reaching F_{MSY} for the most vulnerable stocks in respective EMU.

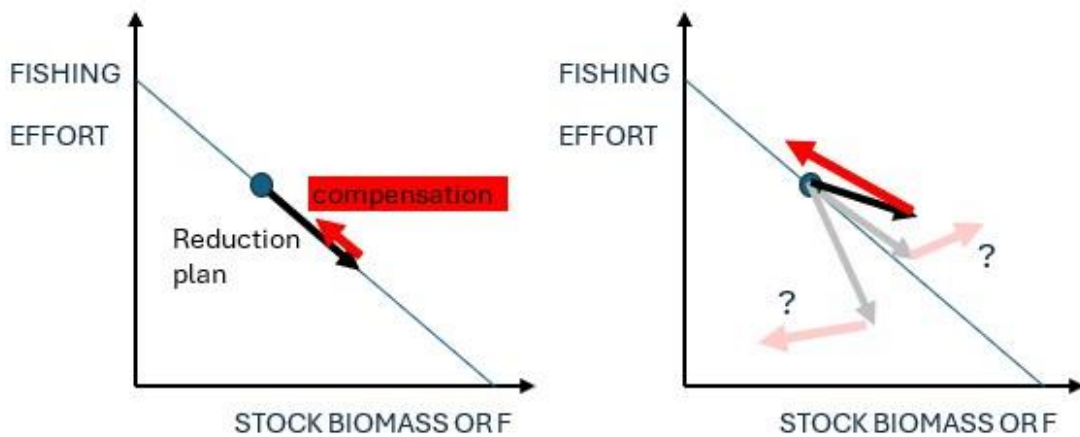
STECF notes that following the WestMed MAP in 2025 has resulted in advising further reduction of the effort to achieve F_{MSY} .

The fishing effort reduction needed to reach F_{MSY} is driven by the “most vulnerable stock” limiting the fishing opportunities of any other stocks. Some CMs would, in theory, compensate for possible excessive effort reduction in case the MSY management target would be overshoot because of previous years measures or implementation of good practices by Member States (e.g. with delayed positive effects felt during the “intermediate year”). STECF also observes that implementing CMs would come with the spirit of contributing to ensure compliance with the required reduction.

However, based on the ad hoc report findings, STECF notes that, in practice, CMs are adding extra uncertainty on the direction and effect that the reduction of effort would result in (see Figure 7.4.1 for hypothetical situations).

It could be anticipated that a combination of compensatory measures makes the net outcome unpredictable, with potential risk for reaching out to unwished states (e.g. SSB below SSB_{lim}). STECF notes that the CMs were not originally designed to be “evaluable”, as the initial priority was likely to incentive the sector to adopt good practices (Council Regulation (EU) 2026/266 of 26 January 2026 preamble 14). Also, the way the CMs are implemented in the simulated scenarios often prevents the possibility of disentangling the individual effect of each CMs. This affects the interpretation of the simulations’ outputs.

Figure 7.4.1. left: An expected effect of reducing effort on stock biomass or F if a linear E-F relationship holds, with likely effect of implementing a compensatory measure granting some fishing days back; right: Hypothetical alternative situations that could result from cumulative effects arising from blurred E-F relationships and uncertain and non-evaluable CMs effects.



Source: Own elaboration.

STECF recalls that, as found by PLEN 25-03, relationship between F and fishing effort non-linear (or inverse, or U-shaped) effort-F relationships could arise from effort displacement, fleet behavioral adaptation, selective fishing, double-counting with catch limits, or additive treatment of interacting measures, etc.

STECF EWG 25-11 updated the relationships between fishing effort and fishing mortality in EMU 1 and EMU 2 using the most recent stock assessment results from EWG 25-09 (Fbar by species) and the corresponding time series of deployed effort by gear from the 2025 FDI data call.

STECF notes that no consistent linear relationship across GSAs and stocks was observed for any gear. When examined separately by GSA, relationships were generally weak and sometimes inverse. STECF reminds also that these relationships are difficult to analyze for nets and hooks, as effort expressed in days does not properly reflect the true level of deployed effort by such gears. These findings indicate that F-E dynamics are gear- and area-specific, likely influenced by differences in selectivity, temporal patterns of effort, local ecological conditions, and potential changes in catch efficiency during the effort reduction period. This would imply that the level of compensation of any CM should theoretically be adapted to each gear and area.

STECF further notes that controllability issue can arise, for example explicitly clarifying the implementation context of the Regulation (EU) 2019/1241 that the mesh size in both the codend and the extension piece should be the same and defining the total length of the codend “sensu stricto” and extension (see PLEN 25-03), would overcome possible inconsistencies among Member States and ensure a more effective selection .

STECF further notes that remedial measures should be applied according to Article 6 of the West Med MAP (Regulation (EU) 2019/1022), which could be tested by the very same tools

deployed by the EWG Effort Regime. STECF previously concluded that MCRS and seasonal closures could be considered and notes that permanent closures are more effective in reducing fishing mortality than seasonal ones. However, STECF notes that they might lead to fishing effort reallocation that could affect other stocks.

STECF conclusions

Despite the evidence for “evaluability” levels provided by the ad hoc report, STECF concludes that, given no consistent or strong linear F–Effort relationships, or in case the right resolution in data is lacking or not made available on time, anticipating the effect of compensatory measures comes with large uncertainties. No strong relationship was previously found across all GSAs, gears or stocks, confirming that reductions in fishing days do not yet automatically translate into proportional reductions in fishing mortality for various reasons (PLEN 25-03). These relationships require continued monitoring and should inform future effort-level testing in the bioeconomic models.

In addition, implementing CMs in combination and with various specifications from a year to the next (as summarised in Table 7.4.1) could also end up with effects difficult to model and therefore anticipate.

STECF concludes that it is in theory scientifically feasible to evaluate the compensation mechanisms as defined in 2026 FO regulation for West Med, given the available modelling tools and conditioned to the data availability, for most of the CMs features needed, except for evaluating fully the effects of permanent cessation and spatial closures in deep-sea, or seasonal closures. STECF concludes that what is missing/misaligned is the timing of getting the data on time to do this evaluation on time for advising on next year’s effort levels.

STECF concludes that the planning of the scientific advice process is to be revised and streamlined (see ToR 7.3 this plenary). As highlighted previously the STECF EWG 25-11 and PLEN 25-03 reiterated that a different approach should be implemented within the STECF framework for the evaluation of management plans, where more time is dedicated to running the scenarios and testing optimization processes, while an STECF EWG could be dedicated to the discussion of results.

STECF concludes that a simplification or a reduction on the flexibility in arranging a wide range of CMs in the FO legislation would ease the evaluation of them, and therefore, anticipate unwanted effects that could hinder the achievement of the MAP objectives.

7.5. Update on Guidelines for the data transmission monitoring tool and way forward on the assessment of data transmission issues

Request to the STECF

DTMT guidelines and assessment cycle were revised and applied in 2025. The 2025 ad-hoc contracts on outstanding DTMT issues resulted in clearing the DTMT backlog and some guidance improvements. STECF EWG 25-16 analysed the improvements and amended the DTMT guidance for 2026.

STECF is requested to approve the amended DTMT guidance.

The modifications relate to severity levels and adding new cases in the decision tree.

Summary of the information provided to STECF

The current version of the DTMT guidelines was provided in an editable document by JRC, including amendments proposed by the EWG 25-16. In addition, a separate document containing the EWG report sections with proposals for amendments was provided.

STECF comments

STECF notes that the DTMT guidelines and assessment cycle were revised and applied in 2025. Based on input from ad-hoc contracts and EWG 25-16, improvements and suggested amendments were made to the DTMT guidance for 2026.

STECF agrees with the suggested re-definition of the severity level of the data issue (LOW, MEDIUM, HIGH), focusing on whether the issue affects the EWG's ability to fulfil its ToRs.

Regarding the EWG 25-16 suggestion to include a standard end-user comment "*The data was successfully resubmitted, and the issue could be closed.*", STECF suggests using the "End User Comment" column rather than "End User Check" column, as the latter column contains a drop-down menu with a limited number of options.

STECF notes that the EWG 25-16 proposed additions to the decision tree, relating to cases where:

- issues that have been acknowledged by the Member States, with a commitment of correction and resubmission, but these corrections have not occurred or have only been partially completed;
- the issues listed in the DTMT have been corrected and the data were resubmitted, but a new issue is identified during the review of the dataset.

STECF agrees with these additions, as those cases occurred and were not covered in the previous version of the guidance.

STECF notes that a dedicated annex for the EWGs on Social Data is missing in the current version of the guidance, therefore this annex was drafted during the plenary meeting to be included in the guidance.

Way forward

STECF notes that the JRC has provided updates on the functioning of the DTMT:

- For the EWGs related to data calls, access will be granted to one or two experts and the JRC focal from the EWG to download previous issues and add new issues concerning that data call;
- The EWGs reviewing data transmission issues (DTi) will also be provided access during the EWGs so that the assessment outcome can be directly entered in the DTMT platform;
- A new feature will be implemented (by September 2026) for the upload of DTi compiled from that dedicated EWG in the template Excel file by an expert during the EWG.

STECF conclusions

STECF concludes that the revised DTMT guidance will improve the evaluation of the data transmission issues and that it should be used in the upcoming EWGs related to data calls.

STECF concludes that the addition of a dedicated annex for the EWGs on Social Data will aid the reporting of the social data transmission issues.

STECF concludes that the technical updates of the DTMT platform provided by the JRC will improve the efficiency of the handling of data transmission issues.

7.6. ToRs for ad-hoc contracts on guidelines for WP/AR quality annex evaluation

Request to the STECF

STECF 25-03 endorsed the EWG 25-16 recommendation to prepare guidance for evaluation of quality annexes to the DCF work plans and annual reports in 2026. Consequently, MARE drafted the ToRs for ad-hoc contracts and submits them for consultation with the STECF plenary.

Summary of the information provided to STECF

The draft Terms of Reference (ToR) for the development of guidelines on the STECF evaluation of EU Member States quality annexes to work plans (WP) and annual reports (ARs) were provided to STECF by the Commission. The ToRs outline the work for ad hoc contract experts with a requirement to present the evaluation criteria in a form of a table, with accompanying general assumptions and instructions. The document requires that where applicable, assessment guidelines should provide a reference to end-user quality frameworks and how they should be reflected in the Member States quality annexes. It also requires providing at least three examples of the use of suggested evaluation criteria based on national WPs submitted

STECF comments

STECF observes that the quality annexes of the national WP are describing processes of data collection in details and are useful tool to share detailed methodologies with the end users improving transparency of the data collection processes across the EU Member States. However, as such these documents don't ensure the quality of the data collected. The sample size and sample rates are defined and reported in the tables of the national WPs and ARs, therefore not subject to this assessment.

STECF conclusions

STECF concludes that the ToRs proposed by the Commission are in line with previous STECF suggestions and represent an important step towards harmonised evaluation of the data collection processes across the EU Member States. However, STECF concludes that additional assessment criteria related to minimum sample sizes and sample rates would strengthen the evaluation of the quality of the data collected.

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.

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