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GENERAL FISHERIES COMMISSION FOR THE MEDITERRANEAN
COMMISSION GÉNÉRALE DES PÊCHES POUR LA MÉDITERRANÉE

Report of the twenty-first session of the

SCIENTIFIC ADVISORY COMMITTEE ON FISHERIES

Cairo, Egypt, 24–27 June 2019

Rapport de la vingt-et-unième session du

COMITÉ SCIENTIFIQUE CONSULTATIF DES PÊCHES

Le Caire, Égypte, 24-27 juin 2019

General Fisheries Commission for the Mediterranean
Commission générale des pêches pour la Méditerranée

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PREPARATION OF THIS DOCUMENT

This is the final report approved by the participants in the twenty-first session of the Scientific Advisory Committee on Fisheries of the General Fisheries Commission for the Mediterranean held in Cairo, Egypt, from 24 to 27 June 2019.

PRÉPARATION DE CE DOCUMENT

Le présent document est le rapport final adopté par les participants de la vingt-et-unième session du Comité scientifique consultatif des pêches de la Commission générale des pêches pour la Méditerranée tenue au Caire, Égypte, du 24 au 27 juin 2019.

ABSTRACT

The Scientific Advisory Committee on Fisheries (SAC) of the General Fisheries Commission for the Mediterranean (GFCM) held its twenty-first session in Cairo, Egypt, from 24 to 27 June 2019. The session was attended by delegates from 18 Mediterranean contracting parties, nine observers, representatives of the regional projects of the Food and Agriculture Organization of the United Nations (FAO), the GFCM Secretariat and invited experts. The Committee reviewed the work carried out during the 2018–2019 intersession, including within its four subregional subsidiary bodies (Subregional Committee for the Adriatic Sea, Subregional Committee for the Central Mediterranean, Subregional Committee for the Eastern Mediterranean and Subregional Committee for the Western Mediterranean) which all met during the intersession. In relation to the mid-term strategy (2017–2020) towards the sustainability of Mediterranean and Black Sea fisheries, the Committee welcomed progress made in multiple priority activities as well as cooperation with partners. Issues in relation to fisheries data quality and data collection were discussed. The implementation of the Regional Plan of Action for Small-Scale Fisheries in the Mediterranean and the Black Sea (RPOA-SSF) was also tackled. Furthermore, the Committee discussed on a future approach for the provision of advice and formulated advice on the status of fisheries and technical management measures – namely overall status of stocks and management of European eel *(Anguilla anguilla)* and red coral *(Corallium rubrum)* – as well as on interactions between fisheries and marine ecosystems and environment – namely: i) management of deep-sea fisheries and protection of vulnerable marine ecosystems (VMEs); ii) advances in the establishment of a network of essential fish habitats; iii) adaptation strategies for climate change and non-indigenous species; and iv) anthropogenic underwater noise. In line with the subregional approach and based on the conclusions of the four subregional committees, the SAC also provided specific advice for each subregion. In particular, attention was paid to: i) blackspot seabream *(Pagellus bogaraveo)* in the western Mediterranean; ii) demersal fisheries in the Strait of Sicily; iii) management of fisheries employing Fish Aggregating Devices (FAD); iv) small pelagic fisheries in the Adriatic Sea; v) demersal fisheries in the Adriatic Sea; and vi) deep-water red shrimps (*Aristeus antennatus* and *Aristaeomorpha foliacea*) in the central and eastern Mediterranean and proposals for fisheries restricted areas. Finally, the Committee agreed upon its work plan for 2019–2021.

RÉSUMÉ

Le Comité scientifique consultatif des pêches (CSC) de la Commission générale des pêches pour la Méditerranée (CGPM) a tenu sa vingt et unième session au Caire, Égypte, du 24 au 27 juin 2019. Ont participé à la session les délégués de 18 parties contractantes de Méditerranée, neuf observateurs, des représentants des projets régionaux de l'Organisation des Nations Unies pour l'alimentation et l'agriculture (FAO), le Secrétariat de la CGPM et des experts invités. Le Comité a passé en revue les travaux réalisés pendant la période intersessions 2018-2019, notamment dans le cadre de ses quatre organes subsidiaires sous-régionaux (Comité sous-régional pour la mer Adriatique, Comité sous-régional pour la Méditerranée centrale, Comité sous-régional pour la Méditerranée orientale et Comité sous-régional pour la Méditerranée occidentale) qui ont tous tenu des réunions durant la période intersessions. S'agissant de la stratégie à moyen terme (2017-2020) en faveur de la durabilité des pêches en Méditerranée et en mer Noire, le Comité s'est félicité des progrès réalisés dans le cadre de plusieurs activités prioritaires ainsi que de la coopération avec les partenaires. Il a en outre examiné des questions portant sur la collecte et sur la qualité des données sur les pêches. Le Comité s'est en outre penché sur la mise en œuvre du Plan d'action régional pour la pêche artisanale en Méditerranée et en mer Noire. Par ailleurs, le Comité a débattu sur une future approche concernant la fourniture d'avis et a formulé des avis sur la situation des pêches et sur des mesures de gestion techniques – notamment l'état général des stocks et la gestion de l'anguille d'Europe *(Anguilla anguilla)* et du corail rouge *(Corallium rubrum)* – ainsi que sur les interactions entre les pêches et les écosystèmes marins et l'environnement – notamment i) la gestion de la pêche en eaux profondes et la protection des écosystèmes marins vulnérables; ii) les progrès réalisés dans la mise en œuvre d'un réseau d'habitats essentiels aux ressources halieutiques; iii) les stratégies d'adaptation face au changement climatique et aux espèces non indigènes; et iv) le bruit anthropique en milieu marin. Conformément à l'approche sous-régionale mise en œuvre et à partir des conclusions des quatre comités sous-régionaux, le CSC a également fourni des avis spécifiques à chaque sous-région. Une attention particulière a été accordée à: i) la dorade rose *(Pagellus bogaraveo)* en Méditerranée occidentale; ii) la pêche démersale dans le canal de Sicile; iii) la gestion des activités de pêche faisant appel à des dispositifs de concentration de poissons (DCP); iv) la pêche de petits pélagiques en mer Adriatique; v) la pêche démersale en mer Adriatique; et vi) les gambons et crevettes rouges (*Aristaeomorpha foliacea* et *Aristeus antennatus*) en Méditerranée centrale et orientale ainsi que des propositions de zones de pêche réglementées. Enfin, le Comité est convenu de son programme de travail pour 2019-2021.

CONTENTS

TABLE DES MATIÈRES

APPENDIXES/ANNEXES

OPENING AND ADOPTION OF THE AGENDA

1. The twenty-first session of the Scientific Advisory Committee on Fisheries (SAC) of the General Fisheries Commission for the Mediterranean (GFCM) of the Food and Agriculture Organization of the United Nations (FAO) was held in Cairo, Egypt, from 24 to 27 June 2019. The session was attended by delegates from 18 Mediterranean contracting parties, nine observers, representatives of the FAO regional projects, the GFCM Secretariat and invited experts. The list of participants is provided in Appendix 2.

2. Ms Mona Mehrez, Deputy Minister, welcomed delegations on behalf of Mr Ezz el-Din Abu Steit, Minister of Agriculture and Land Reclamation of Egypt, hoping for fruitful discussions for the benefit of all Mediterranean countries. In recalling the important role of fisheries to ensure food security, job opportunities and economic benefits, she highlighted the need to take immediate action and have strategies and plans in order to improve the current situation. She concluded recalling the historical role of Egypt in the GFCM and in the work of the SAC as well as the importance accorded by her country to the fisheries sector.

3. Mr Jean-Marc Faurès, on behalf of the FAO Regional Representative for the Near East and North Africa, thanked the hosting country and recalled the significant challenges faced by the Mediterranean as well as the need to address them through sound management based on scientific advice. He highlighted the momentum reached and the progress made within the mid-term strategy (2017–2020) towards the sustainability of Mediterranean and Black Sea fisheries (mid-term strategy) and through MedFish4Ever initiatives, reiterating FAO's support for achieving the objectives therein.

4. Mr Alaa El-Haweet, SAC Chairperson, welcomed participants to Cairo and thanked colleagues from the General Authority for Fisheries Resources Development (GAFRD) for the excellent organization. He paid tribute to his predecessor, Mr Othman Jarboui, for the excellent work and recalled the intense agenda and unprecedented number of activities carried out during the SAC intersession.

5. On behalf of the GFCM Chairperson, Mr Abdellah Srour, GFCM Executive Secretary, also welcomed participants and thanked the hosting country for the excellent working conditions and organization offered to participants. After introducing delegates and observers, he reported on credentials and informed the participants of organizational arrangements.

6. The Committee adopted the agenda as attached under Appendix 1. The list of documents is reproduced in Appendix 3 and the opening speeches are included in Appendix 4.

INTERSESSIONAL ACTIVITIES OF RELEVANCE TO THE SAC, INCLUDING WITHIN THE FRAMEWORK OF THE MID-TERM STRATEGY

7. On the basis of document GFCM:SAC21/2019/2, the SAC Chairperson presented the technical activities carried out during the intersession, including 16 technical meetings, of which four benchmark assessment sessions, and a meeting of each of the four subregional committees. He made specific reference to the progress made in fisheries data collection and the application of quality indicators, as well as to select mid-term strategy activities, including scientific surveys-at-sea, bycatch monitoring programmes, the regional socio-economic survey, efforts to improve data collection on recreational fisheries and work related to small-scale fisheries (SSF). He further underlined progress made in relation to interactions between the marine environment and fisheries and the significant increase in activities related to the formulation of advice on the status of stocks. The High-level conference on MedFish4Ever initiatives, the Forum on Fisheries Science (Fish Forum) and the publication of *The State of Mediterranean and Black Sea fisheries* (SoMFi, 2018) were also important milestones during the intersession.

8. The Committee praised the remarkable work carried out. The delegate of Morocco underlined the huge strides made by his country in recent years, in particular regarding scientific research on

vulnerable species, also thanks to the funding received from a number of partners. He acknowledged the importance of discussing the sustainability of such actions once projects are concluded, stressing the need for increased direct involvement of CPCs.

NATIONAL REPORTS TO THE SAC

9. The GFCM Secretariat presented, based on document GFCM:SAC21/2019/Inf.5, a synthesis of the information contained in 14 national reports sent by Mediterranean countries. Compared to the previous reference year available, landings remained overall constant or with minor oscillations in six countries; a significant increase in landings was observed in Algeria (+15 percent), France (+11 percent), Greece (+9 percent), Malta (+27 percent) and Turkey (+32 percent), while a decrease was observed in Croatia (-5 percent), Cyprus (-17 percent), and Lebanon (-12 percent). Fleet size remained overall constant or with limited oscillations in most countries; a significant increase was observed in Albania (+10 percent) and Morocco (+14 percent), while a decrease was observed in Greece (-6 percent) and Slovenia (-22 percent). Data on bycatch reported by some countries mainly pointed to incidental catches of sharks and rays, some of which were included in the annexes of the SPA/BD Protocol, and sea turtles (26 individuals in 2018). Inputs on national spatial and other measures, research programmes and stock assessments carried out at the national level were also included in the reports, which are reproduced in Appendix 13.

10. Despite some gaps in the information provided and the fact that some countries were still failing to submit their reports in due time, these reports were still considered an important tool for the SAC as they allowed for an overview of fishing activities and catch information. The delegate of the European Union (EU [Member organization]) stressed how crucial it was to have a good understanding of incidental catches of vulnerable species, and supported increased focus on this issue. The Committee urged countries to continue making efforts to provide timely and complete information via the national reports e-tool.

11. Nonetheless, the Committee also noted that most of the information requested via the national reports was now also available to the GFCM through the Data Collection Reference Framework (DCRF), mainly, as well as other sources such as the stock assessment forms or the CoC national reports. It agreed to address these redundancies by improving the way information emanating from the national reports was presented to the SAC, possibly by integrating it to the reporting of data collected and submitted in line with the DCRF.

SUPPORT TO THE IMPLEMENTATION OF THE MID-TERM STRATEGY AND COOPERATION WITH PARTNERS

Major activities of the FAO Mediterranean regional projects

12. The most significant activities carried out by the FAO regional projects (AdriaMed, CopeMed II, EastMed and MedSudMed) during the intersession, including scientific cooperation, research activities, training programmes, as well as technical assistance (namely on stock assessment, support to fisheries monitoring, statistics and information systems) were presented on the basis of document GFCM:SAC21/2019/Inf.25. Detailed information on these activities could also be found in the annual report of the project coordination committees, available on their respective websites.

13. The Committee acknowledged the impressive work carried out by the FAO regional projects and welcomed their considerable efforts to support SAC activities, which resulted in optimised resources and improved achievements.

14. Delegations of all countries benefiting from regional projects' support thanked the donors and commended the significant contribution of the projects in fostering discussions to support fisheries management, promoting communication, enhancing capacity and gathering fisheries-related data, in line with the objectives of the mid-term strategy.

15. The delegate of the EU acknowledged the role of the regional projects, emphasizing that a qualitative analysis of their achievements and of CPC progress to address the SAC work plan would be important and that gaps and weaknesses still existing in the subregions should be better identified to improve future work.

Activities by other partners

16. The representative of OceanCare informed the Committee of recent activities relating to anthropogenic ocean noise and marine plastic debris. She mentioned in particular the Workshop on Anthropogenic Underwater Noise and Impacts on Fish, Invertebrates and Fish Resources (WKNOISE), jointly organized with the GFCM which, together with the Fish Forum 2018, had been illustrated at the UN level as efficient examples of interface between science and policy-making. In addition, she referred to the results of a study on marine plastic debris conducted in June 2018 along Italian coasts, the outcomes of which could be of potential interest for the SAC. She concluded in reiterating the active involvement of her organization in international action to halt plastic pollution.

17. The representative of the World Wild Fund for Nature (WWF) recalled the Science to Action initiative launched by his organization and aimed at embracing scientific research, fisheries and marine conservation through ecosystem-based planning. He explained how the increasing demand for space and marine resources called for participatory approaches to ensure marine spatial planning is prioritized in technical work and fishers effectively contribute in this context. He underlined that long-term funds were needed to ensure and support the participation of relevant stakeholders in the initiative and that results could inform the SAC and other relevant bodies.

18. The Committee acknowledged the advances made by partner organizations, including in support of the mid-term strategy, as positive examples of the participatory approach applied by the GFCM.

ISSUES RELATED TO FISHERIES DATA COLLECTION AND DATA QUALITY

19. The GFCM Secretariat referred to Recommendation GFCM/41/2017/6 on the submission of data on fishing activities in the GFCM area of application, highlighting the possibility for CPCs to propose ad hoc fleet segment aggregations to represent the activity of their fishing fleet by geographical subarea (GSA). The results of the feasibility phase for the implementation of quality indicators were presented together with the new data quality section on the DCRF online platform, where country-specific data quality assessment dashboards for each indicator were available. The GFCM Secretariat also reported on the harmonization of existing GFCM fisheries data requirements with the DCRF and on the need to align the list of fishing gear contained in the recommendation to the last version reviewed by the Coordinating Working Party on Fishery Statistics (CWP), for effort measurement purposes.

20. The delegate of the EU praised the important advances made in improving the overall quality of fisheries data to support the formulation of sound scientific advice. She expressed concern at the preliminary results of the feasibility phase which revealed potential issues with the quality of the data, in particular in the eastern Mediterranean. She suggested further investigating with concerned countries so to identify the elements hampering the collection and transmission of required fisheries data and then foresee specific technical assistance, as appropriate.

21. The delegate of Morocco recognized the importance of the work carried out, highlighting that for certain variables (e.g. socio-economics) information did not change from one year to another and therefore was not collected on a yearly basis. This should be taken into account when performing quality checks.

22. The delegate of Lebanon echoed previous comments on the recent progress made and reported that his country had recently improved its national data collection system, which was now more comprehensive and in line with DCRF requirements.

23. The GFCM Secretariat recalled that the feasibility phase was aimed at testing the application of quality indicators, increasing awareness among members about their data submissions and overcoming hurdles in the quality check mechanisms. Updated information was then provided on the recent upgrade of the DCRF online platform, namely the notification systems and data visualization tools to support data submission by CPCs as well as the integration of R-based tools to enhance the application of data quality indicators.

24. In stressing the importance of improving the quality of data submitted by CPCs, the Committee agreed to consolidate the application of quality indicators (timeliness, completeness, conformity, stability and consistency) to the data transmitted by CPCs through the DCRF online platform, including some of the data that were not initially foreseen in the feasibility phase.

25. The Committee suggested that Annex 3 of Recommendation GFCM/41/2017/6 "Effort measurement by fishing gear" be amended by including the table of fishing gear as revised by the CWP.

IMPLEMENTATION OF THE REGIONAL PLAN OF ACTION FOR SMALL-SCALE FISHERIES IN THE MEDITERRANEAN AND THE BLACK SEA (RPOA-SSF)

26. The GFCM Secretariat presented advancements towards characterizing SSF, reviewing first results from the testing of the matrix on the characterization of fishing activities, which was developed and revised in coordination with the Friends of SSF platform. Preliminary results showed the matrix to be a useful tool for assessing the scale of fisheries in a dynamic and objective way and identified vessel length, gear type, number of crew, ownership characteristics, length of fishing trip and disposal of catch as key variables emerging from this preliminary analysis.

27. Following the intervention by the delegate of the EU, who noted that endorsing the matrix based on this preliminary testing was premature, the Committee agreed to expand testing of the matrix at the subregional level using representative samples of national fleets, with a view to compiling information on a variety of SSF, analysing it together and extracting common characteristics that could be used to better describe the sector. The Committee stressed that the implementation of other RPOA-SSF activities should not be delayed by the testing but rather that these activities should move forward in parallel.

28. The GFCM Secretariat also presented, on the basis of the relevant appendix of document GFCM:SAC21/2019/2, an updated draft table of technical elements for the management of SSF. A first version of this table was presented to the Working Group on Small-Scale Fisheries (WGSSF), after which it was agreed to provide experts, including members of the Friends of SSF, with additional time to compile supplementary comments and suggestions in advance of the SAC session. Through this process, experts underscored the importance of participatory processes for decision-making and stressed that measures for the management of SSF should not be limited to fisheries restrictions but rather should also promote profitability and sustainable fishing methods.

29. The delegate of Morocco, while welcoming efforts to improve scientific advice on the management of SSF, underlined the social importance of the SSF sector and called for socio-economic assessment and careful consideration of impacts of eventual management decisions on SSF livelihoods.

30. Furthermore, the representative of EastMed recalled discussions during the Subregional Committee for the Eastern Mediterranean (SRC-EM) on the need to identify SSF target species and cross check them with GFCM priority species, providing an analysis of gaps towards the assessment of the status and exploitation of selected species.

31. The delegate of Algeria recognized the importance of complete data collection for ensuring the sustainable management of SSF but stressed that there was a need to identify solutions that were appropriate to the realities of small-scale fishers, for example, noting that in some cases the use of logbooks were hindered by high illiteracy rates among fishers. Likewise, the representative of WWF

underlined the fundamental role of complete fleet registers, including SSF vessels, for ensuring proper data collection.

32. Finally, recalling the request by the Commission to steer and coordinate the implementation of the RPOA-SSF, the GFCM Secretariat presented, on the basis of document GFCM:SAC21/2019/5, a framework for monitoring the implementation of the RPOA-SSF and for identifying priority actions for short-term implementation. It was underlined that this framework was developed through a participatory process, in coordination with the Friends of SSF platform, and the resulting document compiled inputs received from the WGSSF, the subregional committees, as well as the MedFish4Ever pre-conference workshop on "Advancing social development for the future of small-scale fisheries in the Mediterranean and the Black Sea".

33. The delegate of the EU remarked that the overall presentation showed progress was being made on implementing the RPOA-SSF and strongly urged further acceleration. She congratulated the Friends of SSF for their efforts in analysing and identifying priority actions within the RPOA-SSF and urged consideration of the platform's conclusions. The delegate of Morocco also congratulated the work carried out, noting the complexity of the documents and highlighting the need for reflection on the feasibility of implementing the priority actions therein.

34. Recognizing the complexity of the "RPOA-SSF Monitoring Framework and Priority Actions" document, as well as the draft table of technical elements for the management of SSF, the Committee agreed that more time was needed to properly assess the documents and to respond to the various requests. To this end, the Committee agreed to continue discussions, under the coordination of the WGSSF chairperson and the GFCM Secretariat and in close collaboration with the Friends of SSF, with a view to convening a one-day meeting on the eve of the forty-third session of the Commission (ToRs reproduced in Appendix 10)

FORMULATION OF ADVICE ON LIVING MARINE RESOURCES AND FISHERIES MANAGEMENT

Future approach for the provision of advice on the status of fisheries and technical management measures

35. The GFCM Secretariat recalled that, with Recommendation GFCM/41/2017/6, the submission of input data for the stock assessment of priority species had become the responsibility of members and that clarifications were needed on the data transmission process in order to ensure adequate implementation of the recommendation while maintaining the quality of advice, including in terms of coverage of priority stocks assessed and time series submitted. Moreover, in line with the SAC work plan, a series of benchmark sessions for select priority species had been organized, and advice had been for the first time provided on year n-1 for the particular case of small pelagics in the Adriatic Sea. The GFCM Secretariat conveyed the feedback of experts, who underlined that providing advice for all priority species and areas was a challenge that could only be attained by extending the time devoted to the Working Groups on Stock Assessment (WGSAs) and using it more efficiently, avoiding parallel sessions, carefully planning benchmark, updated and new assessments of priority species and limiting the assessment of non-priority species. Finally, it was underlined that the subsidiary bodies had proposed a revision of the framework for the provision of advice to account for the need to ensure both more precise advice in data-rich situations and precautionary advice in data-poor situations.

36. The delegate of Croatia emphasized the value of input data towards achieving the best possible advice and underlined the importance of ensuring that each country stand behind such data (both fishery-dependent and expert data). The delegates of Italy and of the EU echoed this view, underlining its special relevance in the case of priority species covered by multiannual management plans and noting that experts should be able to retain the freedom of incorporating data from non-official sources, provided these were duly described and justified. The delegate of Italy further suggested advice on the status of non-priority stocks in data-poor situations could be based on scientific surveys.

37. The Committee agreed that in order to maintain the quality of advice: i) all data should be made available at least one month in advance of relevant meetings; ii) assessments should be based on official data provided by countries on fishing activities (i.e. catch and effort data – number of vessels, number of days at sea, etc.); iii) the independence of experts to decide on scientific data and assumptions used (e.g. biological data on life history traits) should be maintained and preserved; iv) the use of the different data sources and analyses undertaken should be fully reported; and v) full reproducibility should be ensured. In cases where official data were not available, expert groups should provide advice based on estimations or any other information available and the SAC should evaluate the possibility of proposing precautionary measures on the basis of that advice.

38. The importance of the benchmarking process towards the improvement of the quality of advice was underlined and the SAC expressed hope that future efforts would ensure consistently good results. The delegate of Morocco highlighted the importance of planning assessments on a multiannual basis, possibly for three or more years, as this would be beneficial for all, experts and managers alike.

39. The delegates of the EU and Morocco also highlighted the importance of addressing the status of other coastal benthic species, such as sea cucumber and urchins, by investigating stock assessment methods suited to these species.

40. The Committee agreed with the need to launch a process to revise and update the framework for the provision of advice endorsed in 2014 in order to include indications on specific advice for stocks having: i) quantitative assessments and management strategy evaluation, in which case alternative management measures should be evaluated; ii) quantitative assessments, in which case short-term forecasts should be used; and iii) no quantitative assessment, in which case precautionary advice should be provided. The Committee suggested that the process be launched during the 2019 WGSAs and that work towards a proposal continue online, coordinated by the GFCM Secretariat. The GFCM Executive Secretary suggested this revision to be done within the framework of the existing Permanent Working Group on Stock Assessment Methodology.

Status of resources and technical management measures

Overall status of stocks

41. The coordinators of the WGSAs presented an overview of the status of Mediterranean stocks (as reproduced in Appendix 5), noting that the WGSAs had reviewed a total of 74 stocks in 2018, providing advice for 55 of them. This constituted an increase in coverage compared to the previous year, with 16 new stocks assessed and five benchmark assessments performed. Overall, 11 percent of the stocks assessed were considered to be within biologically safe limits while 80 percent were outside biologically safe limits. The Working Group on Stock Assessment of Demersal Species (WGSAD) coordinator underlined that European hake (*Merluccius merluccius*) was the most exploited species, with overexploitation ratios ($F_{current}/F_{unique}$) spanning between 3.3 and 15.1, pointing to the fact that current national measures (minimum landing size, mesh size, etc.) were not providing tangible effects. The Working Group on Stock Assessment of Small Pelagic Species (WGSASP) coordinator stressed the need to increase coverage of small pelagic assessments, especially in the southern and eastern Mediterranean.

42. The Committee acknowledged the steady increase in the quality and quantity of the advice provided on the status of the stocks. Owing to the sheer amount of work done, the Committee underlined the importance of prioritising the stocks covered by benchmark sessions towards optimising the quality of the outcomes. In this context, the delegate of the EU underlined that small pelagic species in the Adriatic Sea were a priority.

43. Regarding sardine in the Alborán Sea, which was also a priority, the delegate of Morocco expressed the concern that, despite the vast amount of data collected by his country, the stock status had been repeatedly determined as uncertain. The WGSASP coordinator responded that issues were

identified with the assessment methods tested and that a careful analysis of disaggregated data was necessary; a work plan detailing the data needed in order to try and overcome the difficulties encountered had been prepared. The same applied to round sardinella in the eastern Mediterranean. Both work plans are reproduced in Appendix 12.

44. As a reply to the dire situation of European hake, it was suggested to implement measures to reduce the mortality of large spawners, for example by limiting effort or catches from longlines or gillnet fisheries. These measures were complementary to the advice already provided by the SAC in 2017 and 2018 on the implementation of measures to protect juveniles of hake, such as the improvement of selectivity or the establishment of FRAs in nursery areas.

European eel

45. The GFCM Secretariat summarized the work done on European eel *(Anguilla anguilla)*, stressing its status was critical and the reasons for its declining abundance were related to both fishing and other human activities. It then outlined the draft concept note for a research programme on European eel, which was formulated, in collaboration with eel experts, as a concerted action aiming to join forces of ongoing research activities, complemented by other short-term priorities.

46. The delegate of Algeria stressed the great interest of his country in European eel, expressing their will to be involved in related actions within the GFCM, as Algeria was currently working towards fulfilling Recommendation GFCM/42/2018/1 on a multiannual management plan for European eel in the Mediterranean Sea and was in the process of adopting a national management plan for the species.

47. The Committee acknowledged that management of European eel should be achieved through reductions in fishing mortality as well as through habitat restoration, achievement of good environmental quality and reduced pollution in rivers and lagoons. On the basis of the work done, it was agreed that a number of factors should be considered for efficient management of European eel, including: i) coordinated efforts by all countries in its distribution area; ii) further work on data-limited indicators and/or on simple assessment models in support of fisheries management; and iii) that restocking may not be an effective strategy in the Mediterranean.

48. The Committee endorsed the content of the concept note for a research programme on European eel (Appendix 8), which should also take into account the work carried out by other scientific bodies, including the International Council for the Exploration of the Sea (ICES), and research projects. The Committee agreed that the tentative budget should be revised and that the financial contribution of all involved CPCs should be foreseen.

Red coral

49. The work carried out by the Workshop on Red Coral (WKREDCORAL) was outlined, pointing to the fact that the red coral *(Corallium rubrum)* population could be in a situation of overexploitation with some signs of deterioration. It was underlined that remotely operated vehicles (ROVs) for scientific purposes were not in use in GFCM countries, although Morocco and Tunisia had expressed the will to start scientific monitoring on red coral banks in the near future. The Secretariat also outlined the updated concept note on a research programme on red coral, including a list of countries to be involved and experts identified for each.

50. The delegate of Algeria recalled that red coral exploitation had been banned in her country for some time, but recently a study on the red coral stock had been launched, on the basis of which a national management plan, inclusive of all measures outlined in Recommendation GFCM/41/2017/5 on the establishment of a regional adaptive management plan for the exploitation of red coral in the Mediterranean Sea, was close to being approved. The delegate of Morocco underlined that his country too had taken the initiative of banning coral fishing since 2005. The delegate of Tunisia emphasized that his country had launched a multidisciplinary and participatory programme in 2008 to study the biology,

growth and exploitation of red coral. He noted that the red coral fishery remained active in his country but a successful management was implemented, through the voluntary rotation of grounds, to maintain a stable stock over the years. The EU delegate outlined the measures applied by EU member states towards the management of red coral, which was carried out at a regional level using catch limits and spatial measures, among others.

51. On the basis of the work of WKREDCORAL, the Committee recommended the urgent implementation of management measures to manage red coral starting from: i) the requirement not to increase catches; and ii) the establishment of a catch certification to ensure traceability as a mechanism to curb illegal, unreported and unregulated (IUU) fishing and facilitate legal coral fishing by encouraging sustainable exploitation. For this latter measure, the EU stood ready to assist in the establishment of a pilot study.

52. The Committee endorsed the updated research programme concept note (Appendix 9) and recommended initiating discussions with possible partners and donors so to launch the research programme in 2020.

Interactions between fisheries and marine ecosystems and environment

Management of deep-sea fisheries (DSF) and protection of vulnerable marine ecosystems (VMEs)

53. The GFCM Secretariat summarised the outcomes of the Working Group on Marine Protected Areas (WGMPA) with respect to the management of DSF and protection of VMEs and presented the preliminary results of a georeferenced database, using data on *Isidella elongata* gardens as a proof-of-concept, underlining the need for harmonization of input data as well as the usefulness of statistical summary analyses.

54. The Committee recommended to adopt a binding decision on mapping existing deep-sea fishing areas in the GFCM area of application, according to agreed protocols, including through the collection of scientific information, highlighting the need for a clear roadmap and timetable for action. It also endorsed the development of the GFCM georeferenced database on sensitive benthic species and habitats, aimed to support the identification of priority areas for which measures to prevent significant adverse impact (SAI) from fisheries on potential VMEs could be developed. In a second instance, and once the database is populated with relevant information and priorities can be identified, protection measures to prevent SAI should be adopted.

Network of essential fish habitats (EFH)

55. The GFCM Secretariat introduced advances made towards the establishment of a network of EFH, in the context of which maps identifying nurseries and spawning grounds of GFCM priority species with the highest overexploitation rate and low levels of biomass, such as *Merluccius merluccius* and *Mullus* sp., were compiled by the Working Group on Vulnerable Marine Ecosystems (WGVME) in 2018 and the WGMPA in 2019.

56. The delegates of Algeria, Egypt, the EU, Morocco, Syria, Tunisia and Turkey all summarised the work done in their countries/member states towards establishing and implementing spatial management measures in view of protecting EFH.

57. In particular, the delegates of Tunisia and Turkey stressed the need for an ecosystem approach to fisheries management, underlining the importance of involving fishers in monitoring and decision-making processes in order to ensure the effectiveness of measures adopted.

58. The representative of MedReact recalled the importance to distinguish between FRAs oriented to protect VMEs or EFH, and that specific monitoring should be used for the different cases. She

highlighted the importance of having monitoring programmes in place, both for new FRAs but also for those established in the past.

59. In line with the proposal of WGMPA, the Committee agreed that focus be placed on the protection of nursery and spawning grounds for select GFCM priority species, suggesting that model-based work for the identification of such areas should be complemented with, and validated by, scientific surveys-at-sea, towards effective and efficient measures. The importance of geographical balance across different ecoregions, subregions, countries and geographical subareas (GSAs) was stressed.

60. The Committee discussed and endorsed that, whenever possible, FRAs should be included within a comprehensive management plan. It agreed with the need to monitor the effectiveness of the FRA with respect to its objectives and that monitoring plans should accompany any new proposal. Nevertheless, the existence of a monitoring plan should not be a prerequisite and the lack of resources for its implementation should not comprise an obstacle to the adoption of a FRA.

Adaptation strategies for climate change and non-indigenous species (NIS)

61. The GFCM Secretariat introduced advances in developing adaptation strategies for climate change and NIS. Pilot studies and draft assessments of the vulnerability of main fisheries to climate change had been launched or were expected to be launched shorly in select subregions, with the objective of providing comprehensive results by the next session of the SAC. In addition, among the NIS populating the Mediterranean, two species of blue crab *(Portunus segnis* and *Callinectes sapidus)* were recently the object of a large number of research initiatives conducted at the national level on the impacts in local fisheries, pointing to the need to advance in the management of these species as fisheries resources.

62. The delegates of Algeria, the EU and Tunisia recalled the pernicious impacts of blue crab on fisheries and that, due to its invasive nature, the need for management was urgent. The Committee was also urged to take action to address pufferfish *(Lagocephalus sceleratus)* through both monitoring and management; the GFCM Secretariat recalled that pufferfish was included as one of the main species addressed by the NIS monitoring plan developed with the United Nations Environment Programme/ Mediterranean Action Plan (UNEP/MAP) and that information on its abundance and distribution, as well as its impact on fisheries and ecosystems should be collected and presented.

63. The representative of the International Union for Conservation of Nature (IUCN) referred to work being carried out by her organization together with partners on the impacts of climate change on selected fisheries in marine protected areas (MPAs), the preliminary results of which were pointing to a moderate or high vulnerability for SSF. She stated such findings, as well as those related to the socio-economic impacts of NIS, especially for small-scale fishers, could be shared with the SAC.

64. The Committee recommended advancing on the management of blue crab, first by developing all the necessary elements towards a comprehensive research programme, and then by identifying adequate measures. In parallel, it praised the advances in assessing the vulnerability of fisheries to climate change and highlighted the importance of pursuing the work at the subregional level so to ultimately provide guidance on potential adaptation measures.

Anthropogenic underwater noise

65. The GFCM Secretariat recalled discussions held on the impact of anthropogenic underwater noise on fish resources, which had gained prominence within the GFCM agenda due to the potential negative effects on stocks and related socio-economic consequences.

66. The representative of the Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and contiguous Atlantic Area (ACCOBAMS) stated that her organization had been

working on ocean noise for a long time and offered to share their experience and expertise in order to build synergies and fruitfully cooperate on this topic.

67. The delegate of the EU endorsed the conclusions and recommendations of the joint Workshop on anthropogenic underwater noise (WKNOISE) held by the GFCM and OceanCare in February 2019. In emphasizing the crucial importance of the issue and the significant impact on fish, she called upon the GFCM to address it in its work agenda.

68. The Committee agreed that underwater noise impacts should be adequately monitored and that coordination with relevant international organizations, including the Convention on the Conservation of Migratory Species of Wild Animals (CMS), the Convention on Biological Diversity (CBD) and the International Maritime Organization (IMO), should be fostered.

Advice on subregional fisheries management

69. The chairpersons of the subregional committee meetings presented the outcomes and draft scientific advice emanating from each subregion.

Blackspot seabream fisheries in the western Mediterranean

70. The main conclusions and recommendations of the Subregional Committee for the Western Mediterranean (SRC-WM) on blackspot seabream *(Pagellus bogaraveo)* were reported, underlining that the stock was found to be overexploited and in overexploitation. Updated technical elements for the management of the species in the Strait of Gibraltar, inclusive of measures on size, maximum effort, catch limits and temporal closures, were presented and it was recalled that further time was still needed to finalize the related benchmark process.

71. The Committee acknowledged the excellent work done, underlining the important advances made in terms of data availability, collection, compilation and analysis. It endorsed the potential management measures emanating from the SRC-WM, including a proposed common minimum conservation reference size (MCRS) of 33 cm TL, and advised that a multiannual management plan – taking into account the elements the SAC adopted in 2018 as well as the update provided by the subregional committee, both included in Appendix 6/B – be adopted and implemented progressively, while assessing the socio-economic impact of measures adopted.

Maledetti shoal FRA proposal

72. The proposal for the establishment of a FRA on the Maledetti shoal in the Ligurian sea (GSA 9) was outlined, noting its objective would be to protect a unique mesophotic habitat (shallow VME) through a permanent closure of 0.52 km^2 to any kind of demersal fishing and that it would affect four small-scale fishers.

73. The delegate of Italy noted that the proposed area was very close to an existing MPA and that fishing activities were negligible, indicating that an alternative protection tool could be more appropriate. Also, echoed by the representative of the Mediterranean Advisory Council (MEDAC), he expressed concerns on this proposal owing to the lack of consultation with stakeholders, including within the Liguria region.

74. On the basis of the above, and taking into account the preference to promote a practice of wider consultation and support among stakeholders for a FRA to become an efficient fisheries management measure, the Committee decided not to submit the proposal to the Commission.

Demersal fisheries in the Strait of Sicily

75. The main conclusions of the Subregional Committee for the Central Mediterranean (SRC-CM) regarding demersal fisheries in the Strait of Sicily were discussed, underlining that the stocks of

European hake *(Merluccius merluccius)* and deep-water rose shrimp *(Parapenaeus longirostris)* were both in overexploitation and recalling the recommendation to protect juveniles as a direct way to achieve reduction of fishing mortality.

76. The delegate of Tunisia recalled that there was an ongoing bottom trawl survey in GSAs 12 and 13 and data emerging from it would be useful towards the further identification/validation of nursery and spawning grounds for these two species.

77. The delegate of the EU underlined that the status of these stocks was still far from the maximum sustainable yield (MSY) target and there was a need to enhance the protection afforded to nursery areas through strict enforcement, for which the EU had already deployed substantial resources. She concluded noting that the progress made should be reassessed to understand whether current measures had had a positive effect in order to evaluate whether an adaptation of the management plan would be needed.

78. The Committee endorsed the SRC-CM recommendations and agreed on the need to perform an assessment of the effectiveness of current management measures.

Management of fisheries employing Fish Aggregating Devices (FAD)

79. The delegate of the EU proposed that the Committee consider the need for the sustainable management of fisheries using FADs. She suggested this should be done by establishing fishing permits and gear-marking requirements, regulating gear composition, determining fishing effort (number and location of FADs deployed) and catches, all accompanied by a plan for their use, in line with the work already done by other regional fisheries management organizations as well as existing FAO guidelines.

80. The representative of CopeMed II informed the Committee that the CopeMed/MedSudMed working group on dolphinfish had recently finalised a review on the biology and fisheries of this species, including a revision of national legistation on the use of FADs in the western and central Mediterranean, which would be made available.

81. The Committee agreed that measures should be implemented on the management of FADs in line with existing guidelines, in particular in relation to the identification of fishing gear, and emphasized that improved information on catch and effort would also be beneficial for the assessment of dolphinfish, a GFCM priority species.

Small pelagic fisheries in the Adriatic Sea

82. The main conclusions of the Subregional Committee for the Adriatic Sea (SRC-AS) regarding small pelagic fisheries in the Adriatic Sea were discussed, including the work done within the Working Group on the Assessment of Alternative Management Measures for the Adriatic Sea (WGMSE-AS).

83. The delegates of Albania, Croatia, the EU and Montenegro recalled that the elements in Recommendation GFCM/42/2018/8 on further emergency measures in 2019-2021 for small pelagic stocks in the Adriatic Sea (geographical subareas 17 and 18) had been transposed in the relevant national and EU legislation for all CPCs involved in this fishery and all CPCs had made efforts to implement the management measures contained therein.

84. The delegate of Montenegro underlined that these measures should be proportionate to the fishing capacity and fishing pressure of different fleets.

85. The delegate of the EU underlined the importance of using this transitional phase to consolidate the scientific advice towards a permanent management plan in 2021 replacing the current emergency measures, recalling the need to account for the impacts of alternative management measures on the different fleets. In this context, she emphasized the need for coordination and cooperation between all players and hoped they could continue working closely with AdriaMed.

86. The Committee acknowledged the excellent work done and expressed thanks to the administrations, scientists and AdriaMed for achieving the ambitious goal of providing advice on stock status for small pelagic species based on year n-1 data. The Committee endorsed the recommendations of the SRC-AS, including: i) the need to advance on the management strategy evaluation framework; ii) the work plan suggested by the WGMSE-AS for the (socio-) economic analysis of the effects of alternative management measures (including the definition of units meaningful for management; Appendix 12); and iii) the need to define common temporal closures.

Bari canyon FRA proposal

87. The proposal for the establishment of a FRA in the Bari canyon (GSA 18) was presented, noting its objective to protect a deep-sea VME hosting numerous endangered mega- and macro-benthic organisms and representing important nursery and spawning areas. It was foreseen that the proposed permanent closure would primarily affect 174 vessels, mostly within the buffer zone, with an estimated fishing effort in terms of fishing trips of approximately 7–10 percent of the total.

88. The delegate of Italy, echoed by the delegate of the EU, acknowledged the significant work carried out by the proposing partners in fulfilling the requests of the forty-second session of the GFCM (stakeholder consultations) and of the SRC-AS (socio-economic analyses including an evaluation of costs and benefits). Nevertheless, he deemed the proposal technically incomplete and requested further work be carried out in order to assess the socio-economic impact of the closure on fishers.

89. The delegate of EU further noted that, as stressed in the SRC-AS, Adriatic countries were in favour of establishing FRAs to mitigate SAI and to facilitate the sustainability of demersal fisheries, but that these measures should be integrated into a comprehensive management plan addressing demersal fisheries in the subregion.

90. The representative of IUCN, on behalf of proposing partners, welcomed the feedback provided by the delegates of Italy and the EU, and underlined that the work carried out in response to the requests made went beyond the minimum requirements outlined by the *Handbook for fisheries socio-economic sample survey* (FAO Fisheries and Aquaculture Technical Paper 613). She stressed that that further work would be unlikely to provide a significantly different understanding on costs and benefits, highlighting the difficulties of pursuing such a work. She concluded by thanking Italy for its efforts in consulting internally and expressed hope that the proposal could be endorsed on a technical basis.

91. Following indications by the GFCM Executive Secretary on the overall process that should frame the discussions on FRAs, the Committee agreed to review this proposal during its next session. In this respect, work should continue during the intersession to better estimate social and economic costs and expected benefits from the potential implementation of this FRA, as well as to analyse effective ways to integrate the proposal into a comprehensive set of management measures.

Demersal fisheries in the Adriatic Sea

92. The overexploitation status of all priority demersal species, with the exception of common cuttlefish, was also highlighted. First results from the Jabuka/Pomo pit monitoring programme were presented, such as increased abundance and size of many priority species within the FRA. In view of improving the overall management of priority species in this subregion, technical elements towards a management plan, including potential fisheries management measures, were presented.

93. The delegate of Montenegro expressed the commitment of his country towards ensuring a sustainable exploitation of demersal resources, and stressed that management measures should be proportional to the fishing capacity of the different fleets.

94. The Committee commended the significant efforts made by all parties involved in the high quality work carried out by the WGMSE-AS. In acknowledging the poor status of Adriatic demersal

stocks, it advised management measures be implemented, in line with the technical elements provided in Appendix 6/A. In particular, the Committee highlighted the importance of identifying and implementing additional FRAs and ensuring fishing capacity is not increased, while fishing effort is managed in a sustainable way and minimum landing sizes are enforced.

95. The Committee reflected on the significant positive impacts of the implementation of the Jabuka/Pomo pit FRA as highlighted by the results obtained by the monitoring plan and summarised in an outstanding video contribution by Croatia. The Committee underlined that the establishment, implementation and monitoring of the Jabuka/Pomo pit FRA should be considered an example of best practice.

Deep-water red shrimp fisheries in the central and eastern Mediterranean

96. The work carried out by the SRC-CM and SRC-EM in relation to the assessment and management of deep-water red shrimp (*Aristeus antennatus* and *Aristaeomorpha foliacea*) fisheries in the eastern-central Mediterranean was presented. The SRCs highlighted the need to extend precautionary management measures for these species to all central Mediterranean GSAs, report catches by GSA of origin and advance towards the definition of fishing grounds. It also stressed the importance of having guidelines for national fleet development plans.

97. The delegates of Egypt, Italy and Lebanon all welcomed the work done towards advancing on the assessment and management of deep-water red shrimp species in the central and eastern Mediterranean and outlined the measures in place in their countries. The delegate of the EU emphasized the considerable advances in the provision and exchange of data on these species, commending the cooperation between countries and supporting the proposed work plan and measures, in particular the extension of precautionary measures to GSAs 12–16.

98. The delegate of Syria provided a detailed account of demersal fishing activities in his country, including temporal and spatial closures applied along the Syrian coast, and requested support to the SAC towards a better understanding and monitoring of their resources, with a view to identifying and implementing specific management measures.

99. The SAC Chairperson thanked the delegate of Syria for his country's increased engagement with the GFCM, noting that careful planning and a minimum of scientific evidence were required for sustainable development of national fleet. He welcomed Syria's continued and active participation in future activities of the Committee.

100. The delegate of the EU, echoed by the delegate of Lebanon, welcomed the elements provided to guide national fleet development plans and suggested they could be used more widely within the GFCM.

101. The Committee endorsed all recommendations of the SRC-EM and SRC-CM, including: i) the proposal to extend precautionary management measures contained in existing recommendations to all central Mediterranean GSAs (i.e. GSAs 12-16); ii) the advice to freeze fishing effort/capacity and implement minimum landing size and mesh size; iii) the proposed minimum set of elements for the preparation of proposals for national fleet development plans (Appendix 7); and iv) the work plan for the provision of advice on stock status (Appendix 12), including the ToRs for the Joint EastMed/MedSudMed/GFCM data preparation meeting.

SAC WORK PLAN FOR 2019–2021

102. The GFCM Secretariat introduced the preliminary work plan, based on the outcomes of intersessional activities. The Committee reviewed the proposed actions and discussed multiannual planning and prioritization.

103. The Committee discussed the list of benchmark assessments proposed for the 2019–2020 intersession (Appendix 11) and agreed on the following priorities: i) finalization of benchmarks for anchovy and sardine in the Adriatic Sea (before the 2019 WGSASP) and for blackspot seabream in the Strait of Gibraltar (during the 2019 WGSAD); ii) benchmark for sardine in the Alborán Sea (during the 2019 WGSASP); and iii) benchmark for European hake in GSAs 01-07, 12-16, 19, 20, 22 and 26 (the week before the 2019 WGSAD) and for round sardinella in the eastern Mediterranean (before the 2020 SRC-EM). The Committee underlined that the timely provision and adequate preparation of data were prerequisites for holding benchmark sessions.

104. The Committee acknowledged the list of updated and new assessments required to achieve 100 percent coverage of priority species in the Mediterranean (Appendix 11). The delegate of the EU informed the Committee that the Scientific, Technical and Economic Committee for Fisheries (STECF) expert working groups could contribute to this task by working on the assessment of all demersal priority species in the western Mediterranean and Adriatic Sea. Nonetheless, the delegate of Albania expressed his preference for continuing with the current functioning of the provision of advice on Adriatic stocks, based on preparatory meetings organized with AdriaMed and on stock assessment sessions carried out within the WGSAs.

105. The Committee discussed the special case of the assessments of Adriatic small pelagics, remarking that the current benchmark would consolidate the assumptions and methodology. Based on this, an updated advice would be provided later in the intersession using year n-1 data (i.e. including 2019 data). This would require coordination between all actors and results could be discussed prior to the 2020 WGMSE-AS and SRC-AS. Deadlines for the provision of data would be established following consultation between the GFCM Secretariat, AdriaMed and the CPCs.

106. The Committee agreed upon its 2019–2021 work plan as reported below.

Regional issues

<u>Stock assessment and strengthened advice</u>

- Compile relevant information on priority species towards increasing the coverage of stock assessment for these species and carry out selected priority benchmark assessments, including data preparation, and when relevant following the proposed roadmaps as available in Appendix 11. Contribute to ongoing actions towards the revision of stock boundaries, including the EU project MedUNITs
- Improve the Stock Assessment Forms (SAFs) to include full descriptions of input data, parameters and assumptions, estimates of fishing mortality by fleet, the number of estimated parameters, model diagnostics, comparative plots and comparative statistics (e.g. Akaike Information Criterion – AIC) when available.
- Revise the framework for the provision of advice, considering also other models than analytic ones.
- Continue supporting the implementation of harmonized scientific surveys-at-sea.
- Continue compiling socio-economic fisheries data, including on SSF.
- Develop robust management strategy evaluation frameworks that can be applied to a variety of fisheries and data availability situations, with particular focus on fisheries under or for which a management plan is being discussed.
- Conduct training activities to increase the capacity in the subregions to using new stock assessment models and/or quantitative assessments of management scenarios, including on the use of socio-economic models and across a number of assessment models.

Data collection and quality indicators

- Work on the implementation of quality indicators on the DCRF online platform for fisheries data as requested through existing GFCM decisions.
- Finalize both the update of the DCRF manual and the release of data transmission tools on the DCRF online platform for those reporting requirements which have been harmonized with the DCRF.

Sustainable small-scale and recreational fisheries, including priority actions for the implementation of the RPOA-SSF

- Expand testing of the characterization matrix at national levels, following the refined common methodology and based on a representative sample, and organize a session for data validation.
- By 2021, produce a full analysis of the socio-economic characteristics of SSF, combining information obtained from the DCRF, from the dedicated GFCM socio-economic surveys and from the EU socio-economic variables compiled through the DCRF.
- Compile existing studies on the interactions between SSF and recreational fisheries.
- With a view to supporting the implementation of efficient management measures for SSF inside MPAs, assess the status of SSF management within MPAs by 2021, based on a regional analysis expected to be carried out by MedPAN in 2020.
- Analyze the current status of SSF fleet registries in all GFCM countries detailing the information compiled and suggesting common minimum variables required to provide advice on issues included in the RPOA-SSF.

European eel

- Launch the research programme on European eel in the Mediterranean Sea according to Appendix 8 and work according to the chronogram suggested in the concept note.

Red coral fisheries

- Engage in consultation with the FAO Statistics and Information Branch of the Fisheries and Aquaculture Department in order to improve the FAO global capture production statistics of red coral from the Mediterranean region as much as possible.
- Launch the research programme on red coral in the Mediterranean Sea according to Appendix 9 and, in particular, address the issue of IUU fishing.

Interactions between fisheries and the marine environment and ecosystems

Vulnerable marine ecosystems and essential fish habitats

- Compile information on the distribution and abundance of VME indicators towards populating the GFCM database on sensitive benthic species and habitats, in line with the proposed ToRs of the integrated expert group on spatial measures addressing vulnerable and essential fish habitats (Working Group on Vulnerable Marine Ecosystems, including a session on essential fish habitats [WGVME-EFH] – Appendix 10).
- Continue working towards producing composite observation-based EFH maps for some GFCM priority species.
- As second step of the proposed roadmap towards a network of EFH, work towards determining how previously identified EFH and sensitive habitats are connected.

Underwater noise

- Carry out a study on the impact of anthropogenic underwater noise on fish stocks and fishing catch rates, as well as associated socio-economic effects, in collaboration with OceanCare.

Bycatch, depredation and fishing technology issues

- Finalize a regional review on the current state of bycatch in the GFCM area of application.
- Keep on implementing, with relevant partners, the bycatch and depredation monitoring programmes and related training activities, also with a view to supporting post-2020 activities.

Advances towards an adaptation strategy for climate change and non-indigenous species

- Carry out a vulnerability assessment of Mediterranean fisheries to climate change in relevant subregions, in line with the conclusions emanating from the Fish Forum 2018.
- Invite countries to share information on ongoing activities related to the monitoring and/or management of NIS, including blue crab and pufferfish. In addition, carry out specific socio-economic studies on blue crab in the different subregions.

Subregional issues

Adriatic Sea

- Expand the analysis of economic dependency of different fleets on the different species, initiated by the STECF-19-02.
- Continue with the monitoring plan for Jabuka/Pomo pit and provide updated information to upcoming relevant meetings.
- Revise and update the technical elements for the management of small pelagics in the Adriatic sea, including through revising reference points (once benchmark is concluded) and providing advice on potential management measures, including the possibility for common temporal closures.

Western Mediterranean

- Continue providing support to the TransBoran project, coordinated by CopeMed II, for the analysis of stock boundaries of priority species in the subregion.
- Continue work on blackspot seabream towards the implementation of management measures.

Central Mediterranean

- Advance on the definition of deep-water red shrimp fishing grounds.
- Review the updated background technical document in support of the management plan for bottom trawl fisheries for deep-water blue and red shrimpand giant red shrimpin the eastern-central Mediterranean (GSAs 12-16 and GSAs 19-27), by the 2020 SRC-CM.
- Advance towards the identification of nursery areas in the Ionian Sea for deep-water blue and red shrimp and giant red shrimp and also on the nursery areas of European hake and deep-water rose shrimp in the Strait of Sicily.
- Advance on selectivity studies, including for deep-water red shrimp in the eastern and central Mediterranean.
- Continue the compilation of information on the presence, abundance and distribution of NIS, using the different observation platforms included in the monitoring plan endorsed (e.g. surveys-at-sea, observers on board, analysis of catches, etc.) and paying special attention of the interaction with SSF, including through participatory approaches and the use of LEK questionnaires.
- Extend the analysis of socio-economic characteristics of the trawl fishing sector in northern Tunisia to cover the main fleets and fisheries of all countries in the subregion.

- Extend the pilot study on the selectivity of the mixed fisheries targeting European hake and deep-water rose shrimp in the central Mediterranean expected to be launched in Gulf of Gabès to deeper areas, e.g. in the north of the Tunisian coast.
- Assess the effectiveness of current management measures for demersal fisheries in the Strait of Sicily.

Eastern Mediterranean

- Advance on the definition of deep-water red shrimp fishing grounds.
- Review the updated background technical document in support of the management plan for bottom trawl fisheries for deep-water blue and red shrimp and giant red shrimp in the eastern-central Mediterranean (GSAs 12-16 and GSAs 19-27), by the 2020 SRC-EM.
- Continue the compilation of information on the presence, abundance and distribution of NIS, using the different observation platforms included in the monitoring plan endorsed (e.g. surveys-at-sea, observers on board, analysis of catches, etc.) and paying special attention of the interaction with SSF, including through participatory approaches and the use of LEK questionnaires.

Meeting	Place/Date
Benchmark assessment for European hake in GSAs 01-07, 09-11, 12-16, 19, 22, 26	2–7 December 2019
Working group on stock assessment of demersal species (WGSAD), including a follow-up benchmark session on Blackspot seabream in the Strait of Gibraltar	FAO HQ, Rome 9–14 December 2019
Working group on stock assessment of small-pelagic species (WGSASP), including a benchmark session on sardine in GSAs 01-04	FAO HQ, Rome 9–14 December 2019
Expert meeting on climate change	December 2019
Follow-up meeting for the benchmark assessments of anchovy and sardine in the Adriatic Sea	January 2020
Workshop on fisheries data submissions and implementation of quality indicators on the DCRF online platform	February 2020
WGRF	March 2020
SRC-WM	March 2020
WGMSE for demersal fisheries in the Strait of Sicily (WGMSE-SOS)	April 2020
SRC-CM	
Benchmark assessment for round sardinella	April 2020
SRC-EM (including a special session on SSF)	
WGMSE for the Adriatic Sea (WGMSE-AS)	May 2020
SRC-AS	
Twenty-second session of the SAC	Lebanon, June 2020
Technical consultation on bycatch	December 2020

107. With a view to discussing the efficient functioning of the SAC, its SRCs and its relevant working groups, including the multiannual planning of updated assessments, the GFCM Executive Secretary recalled the large number of meetings foreseen and the limited capacity of experts to fully engage with all requests and activities. To this end, the delegate of Morocco underlined the importance of engaging moderators from the subregions to coordinate the activities of the subregional committees, with the support of the GFCM Secretariat, ensuring work advances efficiently during the intersession. The delegate of the EU, noting that further reflection was needed on this issue, also highlighted the importance of having detailed and concrete ToRs to guide the objectives of the different meetings and ensure they achieved expected results.

108. In order to facilitate efficient planning of intersessional work, address other issues on the functioning of the SAC and its subsidiary bodies, including the role of moderators, as well as revise the ToRs for proposed meetings, the GFCM Executive Secretary suggested that a coordination meeting of the SAC Bureau, together with relevant chairpersons and experts, be organized before the next annual session of the Commission in view of submitting a consolidated work plan, sustainable in line with resources. The Committee endorsed this proposal.

ANY OTHER MATTER

109. The GFCM Secretariat illustrated the ongoing implementation of monitoring programmes and scientific surveys-at-sea, in line with the: i) *Technical guidelines for scientific surveys in the Mediterranean and the Black Sea: Procedures and sampling for demersal (bottom and beam) trawl surveys and pelagic acoustic surveys;* ii) *Monitoring discards in Mediterranean and Black Sea fisheries: Methodology for data collection*; and iii) *Monitoring incidental catch of vulnerable species in Mediterranean and Black Sea fisheries: Methodology for data collection*. The financial contribution provided by the EU, as well as by other donors such as MAVA, were gratefully acknowledged. Furthermore, the efforts and in-kind contributions by participating CPCs, as well as the technical support by partners, were also recognized.

110. The implementation of these activities, as well as the corresponding technical protocols, were welcomed by the Committee. In particular, the delegate of the EU underlined the contribution of these activities to improving knowledge on fisheries resources and vulnerable species, and pointed to the need to provide training on the protocols to ensure a harmonized approach to data collection.

111. The delegate of Morocco reported the advances in the implementation of these surveys and monitoring programmes in his country. and underlined their role in granting the quality of Moroccan data and the completeness of their database.

112. The delegate of Lebanon noted that, in his country, these initiatives provided opportunities to fill in data gaps and enhanced the capacity of countries to efficiently manage their resources.

113. The representative of EastMed underlined that the close collaboration between the FAO regional projects and the GFCM in the implementation of these activities enabled the optimization of resources. Similarly, representatives of partner organizations, including ACCOBAMS and IUCN, expressed appreciation for the fruitful collaboration and reaffirmed their willingness to continue cooperating in view of assessing bycatch and testing mitigation measures.

114. Following the positive comments received, the Committee agreed to organize a workshop to discuss the advancements in implementing these activities as well as to plan for the joint analysis of data collected, including by investigating problems encountered, sharing experiences, discussing potential applications of the data collected, reviewing data needs and addressing gaps in technical aspects related to sampling activities.

115. The representative of the FAO Fisheries and Aquaculture Department introduced “ABNJ: sustainable fisheries management and biodiversity conservation of deep-sea living marine resources and ecosystems in the areas beyond national juridiction (ABNJ)” (2014–2019), a follow-up on global ABNJ

fisheries and biodiversity conservation project developed under GEF-7. The project encompassed legal instruments and fisheries management, the ecosystem approach to fisheries, multi-sectoral coordination, knowledge-sharing and transparency, and would be set in an ecosystem approach to fisheries framework covering the institutional, ecological and human elements. He invited the GFCM to become an active partner and explained that a concept note was expected by end 2019 and that a full project document would be available by end 2020.

116. Acting on the proposal of the SRC-WM, the GFCM Executive Secretary announced that future session of the Committee would be plastic free.

117. The Committee repeatedly thanked the Government of Egypt for the perfect organization and working conditions offered during the session. The excellent support provided and especially the warm hospitality extended to all participants were highly appreciated.

118. The Committee thanked the donors, in particular the EU, for the financial support underpinning the many activities carried out during the intersession and in the context of the mid-term strategy.

119. The SAC Chairperson and delegates thanked the GFCM Secretariat for the tireless efforts made to ensure a smooth preparation and conduct of the session.

DATE AND PLACE OF THE NEXT SESSION

120. The Committee took note of the kind invitation made by Lebanon to host its twenty-second session in Beirut, subject to official confirmation by the competent authorities.

ADOPTION OF THE REPORT

121. The report, including its appendixes, was adopted on 27 June 2019.

OUVERTURE DE LA SESSION ET ADOPTION DE L'ORDRE DU JOUR

1. Le Comité scientifique consultatif des pêches (CSC) de la Commission générale des pêches pour la Méditerranée (CGPM) de l'Organisation des Nations Unies pour l'alimentation et l'agriculture (FAO) a tenu sa vingt-et-unième session au Caire (Égypte) du 24 au 27 juin 2019. Ont participé à la session des délégués de 18 parties contractantes appartenant à la région méditerranéenne, neuf observateurs, ainsi que des représentants de projets régionaux de la FAO, les membres du Secrétariat de la CGPM et un certain nombre d'experts invités. On trouvera la liste des participants à l'annexe 2.

2. Mme Mona Mehrez, Vice-Ministre, a souhaité la bienvenue aux délégations au nom de M. Ezz el-Din Abu Steit, Ministre égyptien de l'agriculture et de la restauration des terres, et a souhaité que soient conduits des débats fructueux, dont bénéficieraient tous les pays méditerranéens. Soulignant le rôle essentiel de la pêche comme source de sécurité alimentaire, d'emplois et d'autres avantages économiques, Mme Mehrez a insisté sur la nécessité de prendre des mesures immédiates et de disposer de stratégies et de plans pour améliorer la situation actuelle. Elle a conclu en rappelant le rôle historique de l'Égypte dans la CGPM et dans les travaux du CSC ainsi que l'importance que son pays accorde au secteur halieutique.

3. M. Jean-Marc Faurès, intervenant au nom du Représentant régional pour le Proche-Orient et l'Afrique du Nord de la FAO, a remercié le pays hôte et rappelé les défis d'importance auxquels la Méditerranée fait face et la nécessité de les relever en pratiquant une gestion rationnelle étayée par des avis scientifiques. Il a souligné le rythme trouvé et les progrès accomplis dans le cadre de la stratégie à moyen terme (2017-2020) en faveur de la durabilité des pêches en Méditerranée et en mer Noire (stratégie à moyen terme) et à travers les initiatives MedFish4Ever, réaffirmant le soutien de la FAO à la concrétisation des objectifs en question.

4. M. Alaa El-Haweet, Président du CSC, a souhaité aux participants la bienvenue au Caire et a remercié les collègues de l'Autorité Générale pour les Ressources et Développement des Pêches (AGRDP) pour une organisation remarquable. Il a rendu hommage à son prédécesseur, M. Ohtman Jarboui, pour l'excellent travail accompli, et a rappelé aux participants l'ordre du jour chargé et le nombre sans précédent d'activités menées depuis la dernière session du Comité.

5. Prenant la parole au nom du président de la CGPM, M. Abdellah Srour, Secrétaire exécutif de la CGPM, a lui aussi souhaité la bienvenue aux participants et remercié le pays hôte pour les conditions de travail et l'organisation remarquables offertes aux participants. Après avoir présenté les délégués et les observateurs, il a fait rapport sur les pouvoirs reçus et a informé les participants sur les modalités d'organisation de la session.

6. L'ordre du jour a été adopté par le Comité tel qu'il figure à l'annexe 1. On trouvera la liste des documents à l'annexe 3 et les allocutions d'ouverture à l'annexe 4.

ACTIVITÉS INTERSESSIONS INTÉRESSANT LE MANDAT DU COMITÉ SCIENTIFIQUE CONSULTATIF DES PÊCHES, Y COMPRIS DANS LE CADRE DE LA STRATÉGIE À MOYEN TERME

7. S'appuyant sur le document publié sous la cote GFCM:SAC21/2019/2, le président du CSC a présenté les activités techniques menées pendant la période intersessions, notamment 16 réunions techniques, dont quatre sessions d'évaluation des données de référence et une réunion de chacun des quatre comités sous-régionaux. Il a mentionné spécifiquement les progrès accomplis dans la collecte de données sur la pêche et l'application des indicateurs de qualité, et dans la mise en œuvre de certaines activités de la stratégie à moyen terme, notamment les campagnes en mer, les programmes de contrôle des prises accessoires, l'enquête socioéconomique régionale, les mesures visant à améliorer la collecte de données sur la pêche récréative et les travaux relatifs à la pêche artisanale. Il a également souligné les progrès effectués en ce qui concerne les interactions entre le milieu marin et la pêche et l'augmentation notable des activités afférentes à la formulation d'avis sur l'état des stocks. La

conférence de haut niveau sur les initiatives MedFish4Ever, le forum sur les sciences halieutiques (Fish Forum) et la publication du rapport sur *La situation des pêches en Méditerranée et en mer Noire* (SoMFi, 2018) ont été également des événements marquants de l'intersession.

8. Le Comité a salué le travail remarquable qui avait été accompli. Le délégué du Maroc a souligné l'incroyable chemin parcouru par son pays ces dernières années, en particulier dans le domaine de la recherche scientifique sur les espèces vulnérables, grâce aussi au financement reçu d'un certain nombre de partenaires. Il a reconnu qu'il était important d'examiner la durabilité d'initiatives de ce type une fois les projets terminés, insistant sur la nécessité d'une plus forte participation directe des parties contractantes et des parties coopérantes non contractantes (PCC).

RAPPORTS NATIONAUX À L'INTENTION DU COMITÉ SCIENTIFIQUE CONSULTATIF DES PÊCHES

9. Prenant comme base le document GFCM:SAC21/2019/Inf.5, le Secrétariat de la CGPM a présenté une synthèse des informations figurant dans 14 rapports nationaux envoyés par les pays méditerranéens. Par rapport à la dernière année de référence disponible, les débarquements sont restés globalement constants ou n'ont que très légèrement fluctué dans six pays; les quantités débarquées ont nettement augmenté en Algérie (+15 pour cent), en France (+11 pour cent), en Grèce (+9 pour cent), à Malte (+27 pour cent) et en Turquie (+32 pour cent), tandis qu'elles ont diminué en Croatie (-5 pour cent), à Chypre (-17 pour cent) et au Liban (-12 pour cent). La taille de la flotte est demeurée globalement inchangée ou n'a que peu fluctué dans la plupart des pays; on a cependant observé une nette augmentation en Albanie (+10 pour cent) et au Maroc (+14 pour cent) et un recul en Grèce (-6 pour cent) et en Slovénie (-22 pour cent). Les données sur les captures accessoires communiquées par certains pays concernaient principalement des prises accidentelles de requins et de raies, dont certaines espèces figurent dans les annexes du Protocole relatif aux aires spécialement protégées et à la diversité biologique en Méditerranée (ASP/DB), et de tortues de mer (26 individus en 2018). Les rapports comprenaient également des éléments sur les mesures spatiales des pays et autre mesures, sur les programmes de recherche et sur les évaluations des stocks menées au niveau des pays, éléments qui sont reproduits à l'annexe 13.

10. Malgré quelques lacunes dans les informations fournies et en dépit du retard avec lequel certains pays continuent de soumettre leurs rapports, ceux-ci sont toujours considérés comme un outil important pour le CSC, car ils offrent une vue d'ensemble des activités de pêche et des informations sur les prises. La déléguée de l'Union européenne (UE [Organisation membre]) a souligné à quel point il était important de bien appréhender les prises accidentelles d'espèces vulnérables et s'est dite favorable à ce qu'un intérêt plus grand soit porté à la question. Le Comité a exhorté les pays à continuer de s'efforcer de fournir des informations complètes dans les délais impartis au moyen de l'outil électronique de communication des rapports nationaux.

11. Le Comité a noté que la CGPM disposait par ailleurs de la majeure partie des informations demandées dans les rapports nationaux grâce, principalement, au Cadre de référence pour la collecte de données et à d'autres sources, telles que les formulaires d'évaluation des stocks ou les rapports nationaux destinés au Comité d'application. Il est convenu de se pencher sur ces redondances et d'améliorer la façon dont les informations issues des rapports nationaux lui étaient présentées, en les ajoutant éventuellement aux données collectées et soumises en ligne via le Cadre de référence pour la collecte de données.

APPUI À LA MISE EN ŒUVRE DE LA STRATÉGIE À MOYEN TERME ET COOPÉRATION AVEC LES PARTENAIRES

Principales activités menées dans le cadre des projets régionaux de la FAO dans la zone méditerranéenne

12. Les activités les plus importantes menées dans le cadre des projets régionaux de la FAO (AdriaMed, CopeMed II, EastMed et MedSudMed) depuis la dernière session, notamment la coopération scientifique, les activités de recherche, les programmes de formation et l'assistance technique (en matière d'évaluation des stocks, de soutien au suivi des pêches, de statistiques et de systèmes d'information), ont été présentées sur la base du document GFCM:SAC21/2019/Inf.25. On trouvera également des informations détaillées sur ces activités dans les rapports annuels respectifs des comités de coordination, disponibles sur les sites de ces organes.

13. Le Comité a pris acte du travail impressionnant qui avait été accompli dans le cadre des projets régionaux de la FAO et s'est réjoui des efforts considérables déployés à l'appui de ses activités, efforts qui ont permis d'optimiser les ressources et d'améliorer les réalisations.

14. Les délégations de tous les pays qui bénéficient d'une aide au titre des projets régionaux ont remercié les donateurs et salué l'importante contribution de ces projets, qu'il s'agisse de nourrir le débat sur la gestion des pêches, de favoriser la communication, de renforcer les capacités ou de recueillir des données sur la pêche, conformément aux objectifs de la stratégie à moyen terme.

15. La déléguée de l'UE a confirmé le rôle des projets régionaux, soulignant qu'il serait important de conduire une analyse qualitative de leurs réalisations et des progrès réalisés par les PCC par rapport au plan de travail du CSC et de mieux cerner les lacunes et les points faibles qui subsistent dans les sous-régions afin d'améliorer les travaux futurs.

Activités menées par d'autres partenaires

16. La représentante d'OceanCare a informé le Comité des activités récentes dans le domaine du bruit anthropique et des déchets plastiques dans le milieu marin. Elle a mentionné en particulier l'Atelier WKNOISE (*Workshop on Anthropogenic Underwater Noise and Impacts on Fish, Invertebrates and Fish Resources*), organisé conjointement avec la CGPM, qui, avec le FishForum 2018, a été considéré au niveau des Nations Unies comme un exemple efficace de passerelle entre la science et l'élaboration des politiques. Elle a aussi évoqué les résultats d'une étude sur les déchets plastiques en milieu marin qui a été menée en juin 2018 le long des côtes italiennes et dont les conclusions pourraient présenter un intérêt pour le Comité. Elle a conclu en réaffirmant la participation active de son organisation à l'action internationale visant à mettre un terme à la pollution par le plastique.

17. Le représentant du Fonds mondial pour la nature (WWF) a rappelé l'initiative De la science à l'action lancée par son organisation dans l'idée de réunir la recherche scientifique, la pêche et la protection du milieu marin dans une planification fondée sur les écosystèmes. Il a expliqué en quoi la demande croissante d'espace et de ressources marines imposait d'adopter des approches participatives, pour faire en sorte que la planification spatiale marine soit prioritaire dans les travaux techniques et que les pêcheurs apportent effectivement leur contribution dans ce contexte. Il a souligné que des financements à long terme étaient nécessaires pour permettre et soutenir la participation des parties prenantes concernées et que les résultats pourraient éclairer le Comité et les autres organes compétents.

18. Le Comité a salué les progrès accomplis par les organisations partenaires, notamment à l'appui de la stratégie à moyen terme, comme autant d'exemples positifs de l'approche participative mise en œuvre par la CGPM.

QUESTIONS RELATIVES À LA COLLECTE DE DONNÉES SUR LA PÊCHE ET À LEUR QUALITÉ

19. Le Secrétariat de la CGPM a fait référence à la Recommandation CGPM/41/2017/6 relative à la communication de données sur les activités de pêche dans la zone d'application de la CGPM, soulignant que les PCC pouvaient proposer des regroupements ad hoc de segments de la flotte pour représenter l'activité de leur flotte de pêche par sous-région géographique. Les résultats de l'étude de faisabilité concernant l'application d'indicateurs de qualité ont été présentés en même temps que la nouvelle section relative à la qualité des données sur la plateforme en ligne du Cadre de référence pour la collecte de données, qui propose des tableaux de bord d'évaluation de la qualité des données propres aux pays pour chaque indicateur disponible. Le Secrétariat de la CGPM a également fait rapport sur l'harmonisation des exigences actuelles de la CGPM en matière de données sur les pêches dans le Cadre de référence pour la collecte de données et sur la nécessité de mettre la liste des engins de pêche figurant dans la recommandation, aux fins de mesure de l'effort de pêche, en concordance avec la dernière version révisée par le Groupe de travail chargé de coordonner les statistiques des pêches.

20. La déléguée de l'UE a salué les progrès considérables accomplis dans l'amélioration de la qualité globale des données sur les pêches qui permettent la formulation d'avis scientifiques fiables. Elle s'est dite préoccupée par les résultats préliminaires de l'étude de faisabilité, qui ont révélé des problèmes potentiels de qualité des données, en Méditerranée orientale notamment. Elle a suggéré de poursuivre les investigations avec les pays concernés afin de déterminer les éléments préjudiciables à la collecte et à la transmission des données requises, puis de prévoir une assistance technique spécifique, selon que de besoin.

21. Le délégué du Maroc a reconnu l'importance des travaux menés et a souligné que, s'agissant de certaines variables (par exemple les variables socioéconomiques), les informations ne variaient pas d'une année sur l'autre et n'étaient donc pas collectées sur une base annuelle. Cet aspect devrait être pris en compte lors des contrôles de qualité.

22. Le délégué du Liban a repris à son compte les observations précédentes sur les progrès accomplis dernièrement et a indiqué que son pays avait récemment amélioré son système national de collecte, de sorte qu'il était désormais plus exhaustif et qu'il concordait mieux avec les exigences du Cadre de référence.

23. Le Secrétariat de la CGPM a rappelé que l'étude de faisabilité avait pour but de tester l'application des indicateurs de qualité, de sensibiliser davantage les membres à la qualité des données qu'ils communiquent et de résoudre les problèmes éventuels dans les mécanismes de contrôle de la qualité. Des informations actualisées ont ensuite été fournies aux participants sur la récente mise à niveau de la plateforme en ligne du Cadre de référence pour la collecte de données, à savoir l'ajout de systèmes de notification et d'outils de visualisation des données pour faciliter la communication de données par les PCC ainsi que l'intégration d'outils utilisant le logiciel R pour améliorer l'application des indicateurs de la qualité des données.

24. Soulignant qu'il importait d'améliorer la qualité des données communiquées par les PCC, le Comité est convenu d'asseoir plus fermement l'application des indicateurs de qualité (actualité, exhaustivité, conformité, stabilité et cohérence) aux données transmises par les PCC au moyen de la plateforme en ligne du Cadre de référence pour la collecte de données, y compris certaines données qui n'avaient pas été prévues initialement dans l'étude de faisabilité.

25. Le Comité a suggéré que l'annexe 3, intitulée «Mesures de l'effort de pêche par engin de pêche», de la Recommandation CGPM/41/2017/6 soit modifiée pour reprendre la table des engins de pêche révisée par le Groupe de travail chargé de coordonner les statistiques des pêches.

MISE EN ŒUVRE DU PLAN D'ACTION RÉGIONAL RELATIF À LA PÊCHE ARTISANALE EN MÉDITERRANÉE ET EN MER NOIRE (RPOA-SSF)

26. Le Secrétariat de la CGPM a présenté les progrès accomplis en matière de caractérisation de la pêche artisanale et a examiné les premiers résultats de la mise à l'essai de la matrice de caractérisation des activités de pêche élaborée et révisée en coordination avec la plateforme Friends of SSF (plateforme des amis de la pêche artisanale). Ces premiers résultats ont montré que la matrice était un outil utile pour évaluer l'échelle des pêches de manière à la fois dynamique et objective et ont permis de définir la longueur du navire, le type d'engin, le nombre de membres de l'équipage, le mode de propriété, la durée de la sortie en mer et l'écoulement des captures en tant que variables clés à partir de cette analyse préliminaire.

27. À la suite de l'intervention de la déléguée de l'UE, qui a noté que l'approbation de la matrice sur la base de cette première mise à l'essai était prématurée, le Comité est convenu d'étendre la mise à l'essai de la matrice au niveau sous-régional en l'appliquant à des échantillons représentatifs des flottilles nationales, en vue de rassembler des informations sur diverses activités de pêche artisanale, de les analyser et d'extraire des caractéristiques communes sur lesquelles on pourrait s'appuyer pour mieux décrire le secteur. Le Comité a insisté sur le fait que la mise en œuvre des autres activités du Plan d'action régional sur la pêche artisanale en Méditerranée et en mer Noire ne devait pas être retardée du fait de cet essai, mais être au contraire poursuivie en parallèle.

28. Le Secrétariat de la CGPM a par ailleurs présenté, en se fondant sur l'annexe correspondante du document GFCM:SAC21/2019/2, une mise à jour du projet de tableau des éléments techniques pour la gestion de la pêche artisanale. Une première version de ce tableau a été présentée au Groupe de travail sur la pêche artisanale, après quoi il a été décidé de donner davantage de temps aux experts, y compris les membres de Friends of SSF, pour rassembler des observations et des suggestions supplémentaires avant la session du CSC. Dans ce cadre, les experts ont souligné l'importance des processus participatifs de prise de décisions et ont insisté sur le fait que les mesures de gestion de la pêche artisanale ne devaient pas se limiter à des restrictions mais également favoriser la rentabilité et promouvoir des méthodes de pêche durables.

29. Le délégué du Maroc a salué les mesures prises pour renforcer la formulation d'avis scientifiques sur la gestion de la pêche artisanale, mais a souligné l'importance sociale du secteur et a appelé à une évaluation socioéconomique et à un examen attentif des incidences d'éventuelles décisions de gestion sur les moyens de subsistance liés à la pêche artisanale.

30. En outre, le représentant d'EastMed a rappelé les discussions qui avaient eu lieu dans le cadre du Comité sous-régional pour la Méditerranée orientale sur la nécessité de déterminer les espèces ciblées par la pêche artisanale et de les croiser avec les espèces prioritaires de la CGPM, en analysant les lacunes s'agissant de l'évaluation de l'état et de l'exploitation des stocks de certaines espèces.

31. La déléguée de l'Algérie a reconnu qu'il importait d'effectuer des collectes de données complètes en vue d'assurer une gestion durable de la pêche artisanale, mais a souligné qu'il était nécessaire de définir des solutions en prise avec la situation des artisans pêcheurs, indiquant par exemple que, dans certains cas, les taux d'analphabétisme élevés chez les pêcheurs empêchaient l'utilisation de journaux de bord. De la même façon, le représentant du WWF a insisté sur le fait qu'il était primordial de disposer de registres de flottilles de pêche complets (comprenant notamment les navires pratiquant la pêche artisanale) pour assurer une collecte de données satisfaisante.

32. Pour terminer, après avoir rappelé la demande de la Commission s'agissant de la conduite et de la coordination de la mise en œuvre du Plan d'action régional sur la pêche artisanale en Méditerranée et en mer Noire, le Secrétariat de la CGPM a présenté, en s'appuyant sur le document GFCM:SAC21/2019/5, un cadre pour le suivi de la mise en œuvre du Plan et pour la définition des mesures prioritaires devant être prises à court terme. Il a été indiqué que ce cadre avait été élaboré au moyen d'un processus participatif, en coordination avec la plateforme Friends of SSF, et que le

document final rassemblait les éléments reçus du Groupe de travail sur la pêche artisanale, des comités sous-régionaux, ainsi que de l'atelier préalable à la Conférence MedFish4Ever consacré aux avancées en matière de développement social nécessaires pour construire le futur de la pêche artisanale en Méditerranée et en mer Noire.

33. La déléguée de l'UE a observé que la présentation générale indiquait des progrès dans la mise en œuvre du Plan, et a demandé instamment que cette dernière soit accélérée. Elle a félicité la plateforme Friends of SSF pour ses activités d'analyse et de définition des mesures prioritaires à prendre dans le cadre du Plan d'action régional sur la pêche artisanale en Méditerranée et en mer Noire et a appelé à tenir compte des conclusions de la plateforme. Le délégué du Maroc a également salué le travail effectué, et a relevé la complexité des documents et souligné qu'il fallait bien réfléchir à la faisabilité des mesures prioritaires exposées dans ces derniers.

34. Reconnaissant la complexité du document consacré au cadre de suivi du Plan d'action régional sur la pêche artisanale en Méditerranée et en mer Noire et aux mesures prioritaires correspondantes, ainsi que du projet de tableau des éléments techniques pour la gestion de la pêche artisanale, le Comité est convenu qu'il fallait s'accorder davantage de temps pour examiner correctement les documents et répondre aux différentes demandes. À cette fin, le Comité est convenu de poursuivre le débat, sous la houlette du président du Groupe de travail sur la pêche artisanale et du Secrétariat de la CGPM et en étroite collaboration avec la plateforme Friends of SSF, en vue d'organiser une réunion d'une journée la veille de la quarante-troisième session de la Commission (les principaux points à traiter figurent à l'annexe 10).

FORMULATION D'AVIS SUR LES RESSOURCES BIOLOGIQUES MARINES ET LA GESTION DE LA PÊCHE

Approche future de la formulation d'avis sur la situation de la pêche et sur les mesures de gestion techniques

35. Le Secrétariat de la CGPM a rappelé qu'en vertu de la Recommandation CGPM/41/2017/6 la communication des données d'entrée nécessaires à l'évaluation des stocks des espèces prioritaires incombait désormais aux membres et qu'il fallait éclaircir certains points du processus de communication de données pour permettre une application correcte de la recommandation tout en préservant la qualité des avis, notamment en ce qui concernait la couverture des stocks prioritaires évalués et les séries chronologiques communiquées. De plus, conformément au plan de travail du CSC, une série de sessions consacrées aux évaluations de référence de certaines espèces prioritaires avait été organisée, et un avis avait été formulé, pour la première fois, sur l'année n-1 dans le cas particulier des petits pélagiques de la mer Adriatique. Le Secrétariat de la CGPM a transmis le retour d'information reçu des experts, lesquels soulignaient que la formulation d'avis pour toutes les espèces et toutes les zones prioritaires représentait un défi et qu'il ne serait possible de le relever que si le délai accordé aux groupes de travail sur l'évaluation des stocks était allongé et s'il était utilisé plus efficacement, ce qui impliquait d'éviter les séances parallèles, de planifier soigneusement les évaluations de référence, les évaluations actualisées et les nouvelles évaluations des espèces prioritaires, et de limiter l'évaluation des espèces non prioritaires. Pour finir, il a été souligné que les organes subsidiaires avaient proposé une révision du cadre de formulation d'avis en vue de tenir compte de la nécessité de permettre à la fois des avis plus précis lorsque les données étaient abondantes et des avis de précaution en cas de déficit de données.

36. Le délégué de la Croatie a insisté sur la valeur des données d'entrée si l'on voulait formuler le meilleur avis possible et a souligné à quel point il importait que chaque pays s'investisse dans la production de ces données (données liées aux activités de pêche et provenant des experts). Les délégués de l'Italie et de l'UE ont déclaré qu'ils partageaient ce point de vue, soulignant qu'il était particulièrement pertinent dans le cas des espèces prioritaires couvertes par des plans de gestion pluriannuels et faisant remarquer que les experts devaient demeurer libres d'incorporer des données provenant de sources non officielles, à condition que celles-ci soient dûment décrites et justifiées. Le

délégué de l'Italie a proposé également que les avis sur l'état des stocks non prioritaires puissent être fondés sur des enquêtes scientifiques lorsque les données manquaient.

37. Le Comité est convenu que, pour maintenir la qualité des avis: i) toutes les données devaient être mises à disposition au moins un mois avant les réunions concernées; ii) les évaluations devaient être fondées sur les données officielles fournies par les pays concernant les activités de pêche (c'est-à-dire les données relatives aux captures et à l'effort de pêche – nombre de navires, nombre de jours en mer, etc.); iii) l'indépendance des experts quant au choix des données scientifiques et hypothèses utilisées (données biologiques caractéristiques, par exemple) devait être maintenue et protégée; iv) l'utilisation de sources de données différentes et les analyses effectuées devaient faire l'objet d'un compte rendu complet ; et v) la pleine reproductibilité devrait être assurée. En l'absence de données officielles, les groupes d'experts devaient fonder leur avis sur des estimations ou sur toute autre information disponible et le Comité devait évaluer la possibilité de proposer des mesures de précaution sur la foi de cet avis.

38. L'importance du processus d'évaluation de référence pour l'amélioration de la qualité des avis a été mise en évidence et le Comité a exprimé l'espoir que les efforts futurs assureraient des résultats d'une bonne qualité et d'une qualité constante. Le délégué du Maroc a fait remarquer qu'il était essentiel de planifier les évaluations sur une base pluriannuelle, trois ans ou plus si c'était possible, car tous en retireraient un avantage, que ce soit les experts ou les gestionnaires.

39. Les délégués de l'UE et du Maroc ont également souligné qu'il était important d'examiner l'état d'autres espèces benthiques côtières, telles que le concombre de mer et l'oursin, en recherchant des méthodes d'évaluation des stocks adaptées à ces espèces.

40. Le Comité est convenu de la nécessité de lancer un processus de révision et d'actualisation du cadre de formulation des avis approuvé en 2014, pour y intégrer notamment des indications sur les avis spéciaux concernant les stocks pour lesquels: i) on dispose d'évaluations quantitatives et d'une évaluation de la stratégie de gestion, auquel cas il convient d'évaluer des mesures de gestion de substitution; ii) on dispose d'évaluations quantitatives, auquel cas il faut utiliser des prévisions à court terme; et iii) on ne dispose d'aucune évaluation quantitative, auquel cas il convient de formuler un avis de précaution. Le Comité a suggéré de lancer le processus pendant les réunions des groupes de travail sur l'évaluation des stocks en 2019 et de poursuivre les travaux en ligne, sous la coordination du Secrétariat de la CGPM, en vue d'élaborer une proposition. Le Secrétaire exécutif de la CGPM a proposé que cette révision soit menée dans le cadre du Groupe de travail permanent sur la méthode d'évaluation des stocks, déjà en place.

État des ressources et mesures techniques de gestion

État général des stocks

41. Les coordonnateurs des groupes de travail sur l'évaluation des stocks ont présenté une synthèse de l'état des stocks en Méditerranée (figurant à l'annexe 5), en précisant que les groupes de travail sur l'évaluation des stocks en avaient examiné 74 au total en 2018 et avaient formulé des avis pour 55 d'entre eux. Ces chiffres étaient en progression par rapport à l'année précédente: 16 nouveaux stocks ont été évalués et cinq évaluations de référence ont été réalisées. Globalement, 11 pour cent des stocks évalués étaient à l'intérieur des limites biologiques de sécurité et 80 pour cent à l'extérieur. Le coordonnateur du Groupe de travail sur l'évaluation des stocks d'espèces démersales a souligné que le merlu européen (*Merluccius merluccius*) était l'espèce la plus exploitée, avec un taux de surexploitation (F_{actuel}/F_{unique}) situé entre 3,3 et 15,1. Il a indiqué que les mesures nationales en vigueur (taille minimale de débarquement, grandeur des mailles, etc.) n'avaient pas d'effets tangibles. Le coordonnateur du Groupe de travail sur l'évaluation des stocks de petits pélagiques a insisté sur la nécessité d'élargir le champ des évaluations relatives à ces espèces, en particulier en Méditerranée méridionale et orientale.

42. Le Comité a pris acte de l'augmentation constante de la qualité et de la quantité des avis fournis sur l'état des stocks. Compte tenu du volume de travail considérable qui a été accompli, le Comité a

souligné combien il était important d'accorder la priorité aux stocks ayant fait l'objet d'évaluations de référence afin d'optimiser la qualité des résultats. Dans ce contexte, la déléguée de l'UE a souligné que les espèces de petits pélagiques en mer Adriatique constituaient une priorité.

43. S'agissant de la sardine en mer d'Alboran, également prioritaire, le délégué du Maroc a déploré le fait que, malgré la grande quantité de données recueillies par son pays, l'état du stock ait été jugé à plusieurs reprises incertain. Le coordonnateur du Groupe de travail sur l'évaluation des stocks de petits pélagiques a répondu que des problèmes avaient été relevés dans les méthodes d'évaluation mises à l'essai et qu'une analyse attentive des données ventilées s'imposait; un plan de travail indiquant les données dont on avait besoin pour tenter de surmonter les difficultés rencontrées avait été élaboré. Il en était de même pour l'allache en Méditerranée orientale. Les deux plans de travail étaient reproduits à l'annexe 12.

44. Face à la situation alarmante du merlu européen, il a été suggéré de mettre en place des mesures pour réduire la mortalité des grands reproducteurs, par exemple en limitant l'effort de pêche et les prises à la palangre et au filet maillant. Ces mesures compléteraient les avis déjà formulés en 2017 et 2018 par le Comité, qui avait proposé des mesures destinées à protéger les jeunes merlus, notamment l'amélioration de la sélectivité ou encore la création de zones de pêche réglementées dans les zones de reproduction.

Anguille européenne

45. Le Secrétariat de la CGPM a résumé les travaux concernant l'anguille européenne *(Anguilla anguilla)*, en précisant que cette espèce se trouvait dans une situation particulièrement critique et que le déclin des stocks tenait à la fois à la pêche et à d'autres activités humaines. Il a ensuite présenté dans les grandes lignes le projet de note de synthèse relative à un programme de recherche sur l'anguille européenne, élaboré en collaboration avec des spécialistes de l'anguille, dans le cadre d'une action concertée visant à unir les efforts de recherche en cours, complétée par d'autres priorités à court terme.

46. Le délégué de l'Algérie a souligné le vif intérêt de son pays pour l'anguille européenne et a fait part de la volonté de celui-ci de participer aux travaux y afférents au sein de la CGPM, étant donné que l'Algérie s'attelle actuellement à appliquer la recommandation CGPM/42/2018/1 relative à un plan de gestion pluriannuel de l'anguille d'Europe en mer Méditerranée et s'apprête à adopter un plan national de gestion pour cette espèce.

47. Le Comité était d'avis que la gestion de l'anguille européenne devait reposer sur une diminution de la mortalité par pêche ainsi que sur la restauration des habitats, l'amélioration de la qualité de l'environnement et la réduction de la pollution des cours d'eau et des lagunes. Compte tenu des travaux réalisés, il a été convenu qu'un certain nombre de facteurs devaient être pris en considération aux fins d'une gestion efficace de l'anguille européenne, notamment: i) des efforts coordonnés de tous les pays dans l'aire de distribution; ii) la poursuite des travaux sur les indicateurs pour lesquels on dispose de données limitées et/ou sur des modèles d'évaluation simples à l'appui de la gestion des pêches, et iii) l'idée que le repeuplement n'est pas nécessairement une stratégie efficace en Méditerranée.

48. Le Comité a approuvé le contenu de la note conceptuelle relative au programme de recherche sur l'anguille européenne (annexe 8), qui devrait également prendre en compte les travaux réalisés par d'autres instances scientifiques, notamment le Conseil international pour l'exploration de la mer (CIEM), et les projets de recherche. Le Comité est convenu que le budget provisoire devrait être révisé et que la contribution financière de toutes les PCC concernées devrait être envisagée.

Corail rouge

49. Les travaux menés par l'atelier sur le corail rouge *(Corallium rubrum)* ont été illustrés, en indiquant que la population de corail rouge était peut-être surexploitée, avec des signes de dégradation. Il a été souligné que les pays membres de la CGPM n'utilisaient pas de véhicules commandés à distance

à des fins scientifiques, quoique la Tunisie et le Maroc ont indiqué qu'ils souhaitaient entreprendre un suivi scientifique des récifs de corail rouge dans un avenir proche. Le Secrétariat a également présenté dans les grandes lignes la note de synthèse actualisée relative à un programme de recherche sur le corail rouge, y compris la liste des pays participants et des experts désignés pour chacun.

50. La déléguée de l'Algérie a rappelé que l'exploitation du corail rouge avait été interdite dans son pays pendant un certain temps mais qu'une étude sur le stock de corail rouge avait récemment été lancée, sur la base de laquelle un plan de gestion national incluant toutes les mesures préconisées dans la recommandation CGPM/41/2017/5 relative à la mise en place d'un plan régional de gestion adaptative pour l'exploitation du corail rouge en mer Méditerranée était sur le point d'être approuvé. Le délégué du Maroc a indiqué que son pays avait également pris l'initiative d'interdire la pêche au corail rouge dès 2005. Le délégué de la Tunisie a souligné que son pays avait lancé, en 2008, un programme multidisciplinaire et participatif pour l'étude de la biologie, de la croissance et de l'exploitation du corail rouge. Il a fait observer que la pêche au corail rouge demeurait vivace dans son pays mais que des mesures de gestion reposant sur la rotation volontaire des zones de prélèvement étaient mises en place avec succès et permettaient de maintenir la stabilité des stocks au fil des ans. La déléguée de l'UE a présenté dans les grandes lignes les mesures prises par les États membres de l'UE en matière de gestion du corail rouge, qui étaient appliquées au niveau régional au moyen d'une limitation des prises et de mesures spatiales, entre autres.

51. S'appuyant sur les activités menées par l'atelier sur le corail rouge, le Comité a recommandé que des mesures de gestion du corail rouge soient prises de toute urgence, à commencer par: i) l'obligation de ne pas augmenter les prises; et ii) la création d'une certification des prises aux fins de la traçabilité, ce qui permettra de lutter contre la pêche illicite, non déclarée et non réglementée (INDNR) et de faciliter la collecte légale de corail en encourageant une exploitation durable. S'agissant de cette dernière mesure, l'UE s'est déclarée disposée à participer à la mise en place d'une étude pilote.

52. Le Comité a adopté la note de synthèse actualisée sur le programme de recherche (annexe 9) et a recommandé d'entamer des pourparlers avec des partenaires et des donateurs potentiels afin que le programme de recherche puisse être lancé en 2020.

Interactions entre la pêche et les écosystèmes et l'environnement marins

Gestion des pêches en eaux profondes et protection des écosystèmes marins vulnérables

53. Le Secrétariat de la CGPM a résumé les conclusions du Groupe de travail transversal sur les aires marines protégées concernant la gestion des pêches en eaux profondes et la protection des écosystèmes marins vulnérables et a présenté les résultats préliminaires d'une base de données géoréférencée qui s'appuie sur des informations relatives aux jardins d'*Isidella elongata* aux fins d'une démonstration de faisabilité, en insistant sur la nécessité d'harmoniser les données d'entrée et l'utilité des analyses statistiques de synthèse.

54. Le Comité a recommandé d'adopter une décision contraignante sur la cartographie des zones de pêche en eaux profondes dans la zone d'application de la CGPM, selon des protocoles convenus, notamment dans le cadre de la collecte d'informations scientifiques, en soulignant qu'une feuille de route et un calendrier d'action clairs étaient indispensables. En outre, il a approuvé la création d'une base de données géoréférencée de la CGPM sur les espèces et les habitats benthiques sensibles, dont l'objectif est de faciliter la détermination de zones prioritaires pour lesquelles il serait possible de prendre des mesures destinées à prévenir l'impact négatif sensible de la pêche sur les éventuels écosystèmes marins vulnérables. Dans un deuxième temps, et une fois la base de donnée complétée

grâce aux informations pertinentes et les priorités définies, il conviendra d'adopter des mesures de protection visant à prévenir l'impact négatif sensible.

Réseau d'habitats essentiels aux ressources halieutiques

55. Le Secrétariat de la CGPM a présenté les progrès accomplis quant à la création d'un réseau d'habitats essentiels aux ressources halieutiques. Dans le cadre de ces travaux, des cartes indiquant l'emplacement des zones de reproduction et de frai des espèces prioritaires de la CGPM qui présentent le taux de surexploitation le plus élevé et un faible niveau de biomasse, comme *Merluccius merluccius* et *Mullus* sp., ont été établies par le Groupe de travail sur les écosystèmes marins vulnérables en 2018 et le Groupe de travail transversal sur les aires marines protégées en 2019.

56. Les délégués de l'Algérie, de l'Égypte, du Maroc, de la Syrie, de la Tunisie, de la Turquie et de l'UE ont résumé les travaux réalisés dans leurs pays/États membres respectifs en vue de l'adoption et de la mise en œuvre de mesures de gestion spatiale visant à protéger les habitats essentiels aux ressources halieutiques.

57. En particulier, les délégués de la Tunisie et de la Turquie ont souligné qu'il fallait adopter une approche écosystémique de la gestion de la pêche et qu'il importait de faire participer les pêcheurs aux processus de suivi et de prise de décisions, pour que les mesures adoptées soient efficaces.

58. La représentante de MedReact a rappelé qu'il était important de faire la distinction entre les zones de pêche réglementées visant à protéger les écosystèmes marins vulnérables et celles destinées aux habitats essentiels aux ressources halieutiques, et qu'un suivi spécifique devait être adopté en fonction des différents cas. Elle a attiré l'attention sur l'importance de mettre en place des programmes de suivi, tant pour les nouvelles zones de pêche réglementées que pour celles établies dans le passé.

59. Conformément à la proposition du Groupe de travail transversal sur les aires marines protégées, le Comité est convenu de mettre l'accent sur la protection des zones de reproduction et de frai pour certaines espèces prioritaires de la CGPM et a suggéré que les travaux visant à repérer ces zones en fonction d'un modèle soient complétés et validés par des campagnes scientifiques en mer afin que les mesures soient efficaces et efficientes. L'importance de l'équilibre géographique entre les écorégions, sous-régions, pays et sous-régions géographiques a été soulignée.

60. Le Comité a examiné la question de savoir si les zones de pêche réglementées devaient chaque fois que possible s'inscrire dans un plan de gestion complet, et est convenu qu'il devait en être ainsi. Il est convenu qu'il fallait s'assurer de l'efficacité des zones de pêche réglementées en ce qui concernait leurs objectifs et que toute nouvelle proposition devait être accompagnée de plans de suivi. Toutefois, l'existence d'un plan de suivi ne devait pas être considéré comme une condition impérative et le manque de ressources pour le mettre en œuvre ne devait pas constituer un obstacle à la création d'une zone de pêche réglementée.

Stratégies d'adaptation face au changement climatique et aux espèces non indigènes

61. Le Secrétariat de la CGPM a présenté les progrès accomplis dans l'élaboration de stratégies d'adaptation au changement climatique et aux espèces non indigènes. Des études pilotes et des projets d'évaluation de la vulnérabilité des principales activités de pêche face au changement climatique avaient été lancés ou devaient l'être sous peu dans certaines sous-régions, l'objectif étant d'obtenir des résultats complets avant la prochaine session du CSC. Par ailleurs, s'agissant des espèces non indigènes peuplant la Méditerranée, l'impact de deux espèces de crabe bleu *(Portunus segnis* et *Callinectes sapidus)* sur la pêche locale est l'objet d'un grand nombre d'initiatives de recherche au niveau national, ce qui montre qu'il est nécessaire de faire progresser la gestion de ces espèces en tant que ressources halieutiques.

62. Les délégués de l'Algérie, de la Tunisie et de l'UE ont rappelé les effets pernicieux du crabe bleu sur la pêche et ont jugé qu'il était urgent de gérer cette espèce, du fait de son caractère envahissant. Le Comité a également été exhorté à se pencher sur la question du suivi et de la gestion du poisson-globe *(Lagocephalus sceleratus)*. Le Secrétariat de la CGPM a rappelé qu'il s'agissait de l'une des principales espèces visées par le plan de suivi des espèces non indigènes dans le cadre du Plan d'action pour la Méditerranée (PAM) du Programme des Nations Unies pour l'environnement (PNUE) et qu'il convenait de collecter et de présenter des informations relatives à son abondance et à sa distribution, ainsi qu'à son incidence sur la pêche et les écosystèmes.

63. La représentante de l'Union internationale pour la conservation de la nature (UICN) a fait référence aux travaux menés actuellement par son organisation ainsi que des partenaires afin de déterminer les effets du changement climatique sur certaines activités de pêche au sein des aires marines protégées, dont les résultats préliminaires indiquaient une vulnérabilité modérée à élevée de la pêche artisanale. Elle a indiqué que ces constatations, et celles relatives aux impacts socioéconomiques des espèces non indigènes, en particulier pour les artisans pêcheurs, pouvaient être transmises au Comité.

64. Le Comité a recommandé de faire avancer la question de la gestion du crabe bleu, en premier lieu en élaborant tous les éléments nécessaires à un programme de recherche complet, afin de pouvoir ensuite définir les mesures adaptées. Par ailleurs, il s'est félicité des progrès accomplis au sujet de l'évaluation de la vulnérabilité de la pêche face au changement climatique et a souligné qu'il était important de poursuivre les travaux au niveau sous-régional, pour étayer les éventuelles mesures d'adaptation.

Bruit anthropique en milieu marin

65. Le Secrétariat de la CGPM a rappelé les débats concernant l'impact du bruit anthropique en milieu marin sur les ressources halieutiques, qui revêtent une importance croissante au sein de la CGPM compte tenu des effets négatifs potentiels de ce phénomène sur les stocks et de ses conséquences socioéconomiques.

66. La représentante de l'Accord sur la conservation des cétacés de la mer Noire, de la Méditerranée et de la zone Atlantique adjacente (ACCOBAMS) a indiqué que son organisation travaillait depuis longtemps sur le bruit en milieu marin et a proposé de partager l'expérience et l'expertise de celle-ci afin de trouver des synergies et de coopérer de façon fructueuse sur ce sujet.

67. La déléguée de l'UE a pleinement appuyé les conclusions et les recommandations formulées par l'Atelier conjoint sur le bruit anthropique en milieu marin tenu par la CGPM et OceanCare en février 2019. Elle a souligné l'importance cruciale du problème ainsi que les incidences considérables sur les poissons et a invité la CGPM à aborder cette question dans son programme de travail.

68. Le Comité s'est dit d'avis qu'il convenait d'évaluer comme il se doit les impacts du bruit en milieu marin et d'encourager la coordination avec les organisations internationales pertinentes, notamment les secrétariats de la Convention sur la conservation des espèces migratrices appartenant à la faune sauvage (CMS), de la Convention sur la diversité biologique et de l'Organisation maritime internationale (OMI).

Avis sur la gestion des pêches au niveau sous-régional

69. Les présidents des réunions des comités sous-régionaux ont présenté les résultats et les projets d'avis scientifiques émanant de chaque sous-région.

La pêche à la dorade rose en Méditerranée occidentale

70. Il a été fait rapport sur les principales conclusions et recommandations du Comité sous-régional pour la Méditerranée occidentale ayant trait à la dorade rose *(Pagellus bogaraveo)*, en

particulier sur le fait que le stock était surexploité et en situation de surexploitation. Des éléments techniques actualisés pour la gestion de l'espèce dans le détroit de Gibraltar, y compris la mesure de la taille, l'effort maximal, les limites de capture et les fermetures temporaires, ont été présentés et il a été rappelé qu'il faudrait encore du temps pour mener à bien l'établissement des données de référence.

71. Le Comité s'est félicité de l'excellent travail accompli et a souligné les avancées importantes réalisées dans la disponibilité, la collecte, la compilation et l'analyse des données. Il a approuvé les mesures de gestion potentielles suggérées par le Comité sous-régional pour la Méditerranée occidentale, y compris une proposition de taille minimale de référence à des fins de conservation (longueur totale de 33 centimètres) et a recommandé qu'un plan de gestion pluriannuel – tenant compte des éléments adoptés par le CSC en 2018, ainsi que de la mise à jour fournie par le comité sous-régional, qui figurent tous deux à l'annexe 6/B – soit adopté et mis en œuvre progressivement, parallèlement à l'évaluation de l'impact socioéconomique des mesures prises.

Proposition de zone de pêche réglementée pour le haut-fond de Maledetti

72. La proposition de création d'une zone de pêche réglementée au niveau du haut-fond de Maledetti, en mer de Ligurie (sous-région géographique 9) a été présentée dans les grandes lignes, ainsi que son objectif, qui serait de protéger un habitat mésophotique exceptionnel (écosystème marin vulnérable de faible profondeur) par la fermeture permanente de 0,52 kilomètre carré à tout type de pêche démersale, mesure qui concernerait quatre artisans pêcheurs.

73. Le délégué de l'Italie a fait remarquer que la zone en question était très proche d'une aire marine protégée existante et que les activités de pêche y étaient négligeables, et a indiqué qu'une autre forme de protection serait peut-être mieux adaptée. De plus, il s'est dit préoccupé par l'absence de consultation avec les parties prenantes, notamment en Ligurie – préoccupations auxquelles a fait écho la représentante du Conseil consultatif pour la Méditerranée (MEDAC).

74. Compte tenu de ce qui précède et privilégiant l'idée d'une consultation et d'un appui plus larges parmi les parties prenantes afin que les zones de pêche réglementées puissent être des mesures de gestion des pêches efficaces, le Comité a décidé de ne pas soumettre la proposition à la CGPM.

Pêche démersale dans le canal de Sicile

75. Le Comité a examiné les principales conclusions du Comité sous-régional pour la Méditerranée centrale concernant la pêche démersale dans le canal de Sicile, en précisant que les stocks de merlu européen *(Merluccius merluccius)* et de crevette rose du large *(Parapenaeus longirostris)* étaient tous les deux en situation de surexploitation et en rappelant qu'il avait été recommandé de protéger les juvéniles comme moyen direct de réduire la mortalité par pêche.

76. Le délégué de la Tunisie a rappelé qu'une campagne expérimentale par chalutage de fond était en cours dans les sous-régions géographiques 12 et 13 et que les données qui en découleraient contribueraient au relevé et à la validation de l'emplacement des zones de reproduction et de frai pour ces deux espèces.

77. La déléguée de l'UE a souligné que l'état de ces stocks était encore loin du niveau de production maximale équilibrée et qu'il fallait renforcer la protection des zones de reproduction par une application stricte, ce pour quoi l'UE avait déjà déployé des ressources considérables. En conclusion, elle a indiqué qu'il fallait réévaluer les progrès accomplis afin de déterminer si les mesures actuelles avaient eu un effet positif, de manière à décider s'il convenait d'adapter le plan de gestion.

78. Le Comité a approuvé les recommandations du Comité sous-régional pour la Méditerranée centrale et a reconnu la nécessité d'évaluer l'efficacité des mesures de gestion actuelles.

Gestion des activités de pêche faisant appel à des dispositifs de concentration de poissons (DCP)

79. La déléguée de l'UE a proposé que le Comité examine s'il serait nécessaire de mettre en place une gestion durable des pêches faisant recours aux DCP. Elle a suggéré, à cet effet, de mettre en place des permis de pêche et d'imposer le marquage des engins, de réglementer le type d'engins à utiliser, de déterminer l'effort de pêche (nombre de DCP déployés et lieux de déploiement) et les prises, et d'accompagner toutes ces mesures d'un plan de mise en application, en accord avec les travaux déjà menés par d'autres organisations régionales de gestion des pêcheset avec les directives existantes de la FAO.

80. La représentante de CopeMed II a informé le Comité que le groupe de travail CopeMed/MedSudMed sur le coryphène venait d'achever une étude sur la biologie et la pêche de cette espèce, y compris une révision de la législation nationale relative à l'utilisation des DCP en Méditerranée occidentale et centrale, qui serait mise à disposition.

81. Le Comité est convenu que des mesures de gestion des DCP devaient être prises dans le droit fil des directives existantes, en particulier pour ce qui était de l'identification des engins de pêche, et a souligné que des informations améliorées sur les prises et sur l'effort de pêche seraient également utiles à l'évaluation de la situation du coryphène, une espèce prioritaire de la CGPM.

Pêche de petits pélagiques en mer Adriatique

82. Les discussions ont porté sur les principales conclusions du Comité sous-régional pour la mer Adriatique concernant la pêche de petits pélagiques en mer Adriatique, y compris le travail effectué au sein du Groupe de travail sur l'évaluation d'autres mesures de gestion en mer Adriatique.

83. Les délégués de l'Albanie, de la Croatie, du Monténégro et de l'UE ont rappelé que les éléments figurant dans la recommandation CGPM/42/2018/8 relative à de nouvelles mesures d'urgence en 2019-2021 pour les stocks de petits pélagiques en mer Adriatique (sous-régions géographiques 17 et 18) avaient été transposés dans les législations nationales et dans la législation européenne de toutes les PCC concernées par cette pêche, et que toutes les PCC s'étaient efforcées de mettre en œuvre les mesures de gestion contenues dans cette recommandation.

84. Le délégué du Monténégro a souligné que ces mesures devraient être proprotionnelles à la capacité de pêche et à la pression de pêche exercées par les différentes flottes.

85. La déléguée de l'UE a souligné qu'il était important de mettre à profit cette phase de transition pour faire la synthèse des avis scientifiques en vue d'élaborer un plan de gestion permanent en 2021 en remplacement des mesures d'urgence actuelles, et a rappelé qu'il fallait tenir compte des conséquences d'autres mesures de gestion sur les différentes flottilles. Sur ce point, elle a mis l'accent sur la nécessité d'une coordination et d'une coopération entre tous les acteurs et a indiqué qu'elle espérait que ces derniers pourraient continuer de travailler en étroite collaboration avec AdriaMed.

86. Le Comité a salué l'excellent travail effectué et a remercié les administrations, les scientifiques et les participants au projet AdriaMed d'avoir atteint l'objectif ambitieux qui consistait à formuler des avis sur l'état des stocks des petits pélagiques à partir des données de l'année n-1. Le Comité a approuvé les recommandations du Comité sous-régional pour la mer Adriatique, et en particulier: i) la nécessité de faire avancer les travaux sur le cadre d'évaluation de la stratégie de gestion; ii) le plan de travail proposé par le groupe de travail sur l'évaluation d'autres mesures de gestion en mer Adriatique concernant l'analyse (socio-)économique des effets d'autres mesures de gestion (y compris la définition des unités pertinentes en matière de gestion; annexe 12); et iii) la nécessité de définir des restrictions temporaires communes.

Zone de pêche réglementée du canyon sous-marin de Bari

87. La proposition visant à créer une zone de pêche réglementée au niveau du canyon sous-marin de Bari (sous-région géographique 18) a été présentée. L'objectif était de protéger un écosystème marin vulnérable situé en eaux profondes qui abrite de nombreux méga- et macro-organismes benthiques menacés d'extinction et comprend des zones de reproduction et de frai importantes. Il était prévu que la fermeture permanente proposée concerne principalement 174 navires, essentiellement dans la zone tampon, l'effort de pêche en terme de sorties de pêche étant estimé à environ 7-10 pour cent du total.

88. Le délégué de l'Italie, trouvant un écho auprès de la déléguée de l'UE, a salué l'importance du travail accompli par les partenaires ayant collaboré à la proposition pour donner suite aux demandes formulées par la CGPM lors de sa quarante-deuxième session (consultations de parties prenantes) et par le Comité sous-régional pour la mer Adriatique (analyses socioéconomiques avec évaluation coûts-avantages). Il jugeait cependant que la proposition était techniquement incomplète, et demandait des travaux complémentaires afin d'évaluer les conséquences socio économiques de la fermeture sur les pêcheurs.

89. La déléguée de l'UE a par ailleurs indiqué que, comme le soulignait le Comité sous-régional pour la mer Adriatique, les pays de l'Adriatique étaient favorables à la création de zones de pêche réglementées afin d'atténuer les effets néfastes notables et de favoriser la durabilité des pêches démersales, mais que ces mesures devraient être intégrées dans un plan de gestion exhaustif de ces pêches dans la sous-région.

90. La représentante de l'UICN, au nom des partenaires ayant présenté la proposition, s'est félicitée des informations fournies en retour par les délégués de l'Italie et de l'UE, et a souligné que les travaux menés en réponse aux demandes formulées allaient au-delà des exigences minimales définies par le *Handbook for fisheries socio-economic sample survey* (manuel sur les principes et pratiques applicables aux enquêtes socioéconomiques par sondage dans le secteur de la pêche, document technique FAO sur les pêches et l'aquaculture n° 613). Elle a fait valoir qu'il était peu probable que des travaux complémentaires aboutissent à des conclusions notablement différentes s'agissant des coûts et des avantages, insistant sur les difficultés liées à la poursuite de ce travail. Elle a terminé en remerciant l'Italie d'avoir mené des consultations en interne et en disant qu'elle espérait que la proposition pourrait être approuvée sur le plan technique.

91. Suivant les indications fournies par le Secrétaire exécutif de la CGPM concernant le processus général qui devrait encadrer les discussions portant sur les zones de pêche réglementées, le Comité est convenu de réexaminer cette proposition au cours de sa prochaine session. À ce titre, les travaux devraient se poursuivre pendant l'intersession afin de mieux estimer les coûts sociaux et économiques ainsi que les avantages attendus de l'éventuelle mise en place de cette zone de pêche réglementée et afin d'étudier des modalités efficaces pour intégrer cette proposition au sein d'un ensemble complet de mesures de gestion.

Pêche démersale en mer Adriatique

92. L'état de surexploitation de toutes les espèces démersales prioritaires, à l'exception de la seiche commune, a aussi été mis en évidence. Les premiers résultats du programme de suivi de la fosse de Pomo/Jabuca ont été exposés, notamment la plus grande abondance et la taille accrue de nombreuses espèces prioritaires dans la zone de pêche réglementée. Ont également été présentés, dans la perspective d'une amélioration de la gestion globale des espèces prioritaires de cette sous-région, des éléments techniques préparatoires à un plan de gestion, y compris d'éventuelles mesures de gestion des pêches.

93. Le délégué du Monténégro a fait part de l'engagement de son pays en faveur d'une exploitation durable des ressources démersales et a insisté sur le fait que les mesures de gestion devaient être proportionnées à la capacité de pêche des différentes flottilles.

94. Le Comité s'est félicité des efforts notables accomplis par toutes les parties qui ont contribué à l'excellent travail réalisé par le groupe de travail sur l'évaluation d'autres mesures de gestion en mer Adriatique. Prenant acte du mauvais état des stocks démersaux de l'Adriatique, il a conseillé que des mesures de gestion soient prises, conformément aux éléments techniques énoncés dans l'annexe 6/A. En particulier, le Comité a souligné qu'il était important de définir et de mettre en place de nouvelles zones de pêche réglementées et de veiller à ce que la capacité de pêche n'augmente pas, tout en gérant l'effort de pêche dans des conditions durables et en faisant appliquer les règles relatives à la taille minimum au débarquement.

95. Le Comité a fait écho aux effets positifs majeurs produits par la mise en place d'une zone de pêche réglementée dans la fosse de Pomo/Jabuca, tels que mis en relief dans les résultats du plan de suivi et résumés dans une remarquable vidéo produite par la Croatie. Le Comité a souligné que la création, la mise en place et le suivi de la zone de pêche réglementée de la fosse de Pomo/Jabuca devaient être considérés comme un exemple de bonne pratique.

Pêche de gambonet crevettes rouges en Méditerranée centrale et orientale

96. Le Comité sous-régional pour la Méditerranée centrale et le Comité sous-régional pour la Méditerranée orientale ont présenté les travaux réalisés dans le domaine de l'évaluation et de la gestion de la pêche de gambon et crevette rouges *(Aristaeomorpha foliacea et Aristeus antennatus)* en Méditerranée orientale et centrale. Les comités sous-régionaux ont insisté sur la nécessité d'étendre les mesures de gestion conservatoire de ces espèces à toutes les sous-régions géographiques de la Méditerranée centrale, de déclarer les captures par sous-région géographique d'origine et de s'acheminer vers une définition des lieux de pêche. Ils ont également souligné qu'il importait de disposer de directives pour les plans nationaux de développement des flottilles de pêche.

97. Les délégués de l'Égypte, de l'Italie et du Liban se sont tous félicités du travail accompli sur la voie de l'évaluation et de la gestion des espèces de gambon et crevette rouges en Méditerranée centrale et orientale et ont présenté brièvement les mesures en place dans leur pays. La déléguée de l'UE a insisté sur les progrès considérables effectués dans la communication et l'échange de données sur ces espèces, saluant la coopération entre les pays et confirmant le soutien de l'UE au plan de travail et aux mesures proposés, en particulier l'extension des mesures conservatoires aux sous-régions géographiques 12 à 16.

98. Le délégué de la Syrie a fourni un compte-rendu détaillé des activités de pêche démersale dans son pays, y compris les fermetures temporelles et spatiales mises en place le long des côtes syriennes. Il a demandé le soutien du CSC pour assurer une meilleure compréhension et un meilleur suivi des ressources du pays en vue de définir et de mettre en œuvre des mesures de gestion spécifiques.

99. Le président du CSC a remercié le délégué de la Syrie pour l'engagement croissant de son pays au sein de la CGPM et a noté qu'une planification attentive ainsi qu'un minimum d'éléments scientifiques étaient requis pour assurer le développement durable de la flotte nationale. Il a favorablement accueilli la participation continue et active de la Syrie aux futures activités du Comité.

100. La déléguée de l'UE s'est félicitée des éléments fournis pour donner un cadre aux plans nationaux de développement des flottilles de pêche, suggérant qu'ils pourraient être plus largement utilisés au sein de la CGPM, ce à quoi le délégué du Liban s'est fait l'écho.

101. Le Comité a approuvé toutes les recommandations du Comité sous-régional pour la Méditerranée orientale et du Comité sous-régional pour la Méditerranée centrale, notamment: i) la proposition d'étendre les mesures de gestion conservatoire prévues dans les recommandations existantes à toutes les sous-régions géographiques de la Méditerranée centrale (c'est-à-dire les sous-régions 12 à 16); ii) l'avis préconisant un gel de l'effort de pêche/de la capacité et la mise en place d'une taille minimale de débarquement et d'un maillage minimum; iii) l'ensemble minimum proposé d'éléments à réunir pour préparer une proposition de plan national de développement de la flottille de

pêche (annexe 7); et iv) le plan de travail relatif à la formulation d'avis sur l'état des stocks, y compris le cadre de référence de la réunion conjointe EastMed/MedSudMed/CGPM consacrée à la préparation des données (annexe 12).

PLAN DE TRAVAIL DU COMITÉ SCIENTIFIQUE CONSULTATIF DES PÊCHES POUR 2019-2021

102. Le Secrétariat de la CGPM a présenté le plan de travail préliminaire découlant des résultats des travaux menés pendant la période intersessions. Le Comité a examiné les activités proposées et a débattu de la planification pluriannuelle et de l'établissement des priorités.

103. Le Comité, après s'être penché sur la liste des évaluations de référence proposées pour la période intersessions 2019-2020 (annexe 11), est convenu des priorités suivantes: i) achèvement des évaluations de référence pour l'anchois et la sardine en mer Adriatique (avant la réunion de 2019 du Groupe de travail sur l'évaluation des stocks de petits pélagiques) et pour la dorade rose dans le détroit de Gibraltar (pendant la réunion de 2019 du Groupe de travail sur l'évaluation des stocks d'espèces démersales); ii) évaluation de référence visant la sardine en mer d'Alboran (pendant la réunion de 2019 du Groupe de travail sur l'évaluation des stocks de petits pélagiques); et iii) évaluation de référence du merlu européen dans les sous-régions géographiques 01 à 07, 12 à 16, 19, 20, 22 et 26 (la semaine précédant la réunion de 2019 du Groupe de travail sur l'évaluation des stocks d'espèces démersales) et de l'allache en Méditerranée orientale (avant la réunion de 2020 du Comité sous-régional pour la Méditerranée orientale). Le Comité a souligné que la communication en temps utile et la préparation efficace des données étaient des conditions indispensables à la tenue de sessions consacrées aux évaluations de référence.

104. Le Comité a pris note de la liste des évaluations actualisées et des nouvelles évaluations à mener à bien pour couvrir 100 pour cent des espèces prioritaires en Méditerranée (annexe 11). La déléguée de l'UE a indiqué au Comité que les groupes d'experts du Comité scientifique, technique et économique de la pêche (CSTEP) pourraient participer à cette tâche en s'attelant à l'évaluation de toutes les espèces démersales prioritaires en Méditerranée occidentale et en mer Adriatique. Néanmoins, le délégué de l'Albanie a dit préférer continuer à adopter le fonctionnement actuel de la formulation d'avis sur les stocks en mer Adriatique, sur la base de réunions préparatoires organisées avec AdriaMed et de sessions d'évaluation des stocks tenues par les groupes de travail sur l'évaluation des stocks.

105. Le Comité s'est penché sur le cas particulier des évaluations des stocks de petits pélagiques en mer Adriatique, en précisant que l'évaluation de référence actuelle permettrait d'étayer les hypothèses et de renforcer la méthode. Sur cette base, un avis actualisé, fondé sur les données de l'année n-1 (autrement dit, incluant les données de 2019), serait communiqué ultérieurement pendant la période intersessions. Cela demanderait une coordination entre tous les acteurs et les résultats pourraient être examinés avant la réunion du Groupe de travail sur l'évaluation d'autres mesures de gestion en mer Adriatique et la réunion du Comité sous-régional pour la mer Adriatique qui se tiendront en 2020. Les dates limites pour la transmission de données seraient fixées après consultation entre le Secrétariat de la CGPM, AdriaMed et les PCC.

106. Le Comité a approuvé son plan de travail pour 2019-2021, comme indiqué ci-après.

Questions régionales

<u>Évaluation des stocks et avis améliorés</u>

- Rassembler des informations pertinentes sur les espèces prioritaires afin d'améliorer la couverture de l'évaluation des stocks de ces espèces et réaliser un certain nombre d'évaluations de référence prioritaires, y compris la préparation des données, en tenant compte, le cas échéant, des feuilles de route proposées à l'annexe 11. Contribuer aux activités en cours en vue de la révision des limites géographiques des stocks, notamment dans le cadre du projet MedUNITs de l'UE.

- Améliorer les formulaires d'évaluation des stocks afin qu'ils comprennent une description complète des éléments requis: données d'entrée, paramètres et hypothèses, estimations de la mortalité par flottille, nombre de paramètres estimatifs, diagnostics de modèles, tracés comparatifs et statistiques comparatives (critère d'information d'Akaike, par exemple), selon les informations disponibles.
- Réviser le cadre à appliquer pour la formulation des avis, en tenant compte également de modèles autres que les modèles analytiques.
- Continuer d'apporter un appui à la réalisation de campagnes scientifiques en mer harmonisées.
- Continuer de rassembler des données socioéconomiques sur la pêche, y compris sur la pêche artisanale.
- Élaborer des cadres d'évaluation de la stratégie de gestion qui puissent être appliqués à différentes pêches et à diverses situations de disponibilité des données, en mettant plus particulièrement l'accent sur les pêches pour lesquelles un plan de gestion est en vigueur ou est en cours d'examen.
- Mener des activités de formation dans les sous-régions afin de renforcer les capacités relatives à l'utilisation de nouveaux modèles d'évaluation des stocks et/ou des évaluations quantitatives issues de scénarios de gestion, y compris concernant l'utilisation de modèles socioéconomiques et pour divers modèles d'évaluation.

Collecte de données et indicateurs de qualité

- Faire en sorte qu'on utilise des indicateurs de qualité sur la plateforme en ligne du Cadre de référence pour la collecte des données, pour les données relatives aux pêches, ainsi que l'a demandé la Commission dans ses décisions.
- Mettre au point la version actualisée du manuel relatif au Cadre de référence pour la collecte des données, ainsi que les outils de transmission des données à diffuser sur la plateforme en ligne, en ce qui concerne les exigences en matière de communication qui ont été harmonisées avec le Cadre de référence pour la collecte des données.

Pêche artisanale et pêche récréative durables, y compris les actions prioritaires aux fins de la mise en œuvre du plan d'action régional pour la pêche artisanale

- Étendre la mise à l'essai de la matrice au niveau national, en suivant la méthode commune améliorée et sur la base d'un échantillon représentatif, puis organiser une session consacrée à la validation des données recueillies.
- D'ici à 2021, mener une analyse complète des caractéristiques socioéconomiques de la pêche artisanale, sur la base des informations recueillies à l'aide du Cadre de référence pour la collecte des données, des enquêtes socioéconomiques spéciales de la Commission et des variables socioéconomiques de l'UE regroupées à l'aide du Cadre de référence.
- Rassembler les études existantes sur les interactions entre la pêche artisanale et la pêche récréative.
- En vue de contribuer à la mise en œuvre de mesures de gestion efficaces pour la pêche artisanale au sein des aires marines protégées, procéder, d'ici à 2021, à une évaluation de la situation en ce qui concerne la gestion de la pêche artisanale dans les aires marines protégées, en s'appuyant sur l'analyse régionale que le réseau MedPAN devrait mener en 2020.
- Analyser l'état actuel des registres des flottilles de pêche artisanale dans tous les pays de la CGPM, en précisant les informations recueillies et en suggérant des variables minimales communes pour la formulation des avis sur les questions couvertes par le plan d'action régional pour la pêche artisanale.

Anguille d'Europe

- Lancer le programme de recherche sur l'anguille d'Europe en Méditerranée conformément à l'Annexe 8 et réaliser les travaux selon le chronogramme proposé dans la note de synthèse.

Exploitation du corail rouge

- Engager des consultations avec la Sous-division des statistiques et de l'information du Département des pêches et de l'aquaculture de la FAO en vue d'améliorer autant que possible les statistiques de la FAO concernant la production mondiale de corail rouge exploité en Méditerranée.
- Lancer le programme de recherche sur le corail rouge en mer Méditerranée conformémeent à l'Annexe 9 et, en particulier, aborder la question de la pêche INDNR.

Interactions entre la pêche et les écosystèmes et l'environnement marins

Écosystèmes marins vulnérables et habitats essentiels aux ressources halieutiques

- Rassembler les informations relatives à la répartition et à l'abondance recueillies à l'aide des indicateurs applicables aux écosystèmes marins vulnérables afin d'alimenter la base de données de la CGPM sur les espèces benthiques sensibles et leurs habitats, conformément au mandat qui est proposé pour le groupe intégré d'experts chargé d'étudier les mesures de gestion spatiale visant les habitats vulnérables essentiels aux ressources halieutiques (Groupe de travail sur les écosystèmes marins vulnérables, y compris une session sur les habitats halieutiques essentiels, appendice 10).
- Poursuivre les travaux en vue de la réalisation, à partir d'observations, de cartes mixtes des habitats essentiels, pour certaines espèces prioritaires de la CGPM.
- Au titre de la deuxième étape de la feuille de route proposée en vue de l'établissement d'un réseau d'habitats essentiels aux ressources halieutiques, œuvrer à la caractérisation des liens entre les habitats halieutiques essentiels et habitats sensibles déjà recensés.

Bruit en milieu marin

- En collaboration avec OceanCare, réaliser une étude visant à évaluer les effets du bruit anthropique en milieu marin sur les stocks de poissons et sur les taux de capture, ainsi que les incidences socioéconomiques.

Questions relatives aux captures accessoires, aux déprédations et aux techniques de pêche

- Mener à bien un examen régional de la situation actuelle en matière de captures accessoires dans la zone d'application de la CGPM.
- En collaboration avec les partenaires concernés, poursuivre la mise en œuvre du programme de suivi des captures accessoires et des déprédations, ainsi que les activités de formation correspondantes, notamment en vue d'appuyer les activités post-2020.

Progrès accomplis dans l'élaboration d'une stratégie d'adaptation face au changement climatique et aux espèces non indigènes

- Procéder à une évaluation de la vulnérabilité des pêches en Méditerranée face au changement climatique, dans les sous-régions concernées, conformément aux conclusions issues du Fish Forum 2018.
- Inviter les pays à mettre en commun leurs informations sur les activités de suivi et/ou de gestion des espèces non indigènes en cours, y compris le crabe bleu et le poisson ballon. En outre, réaliser des études socioéconomiques spécifiques sur le crabe bleu dans les différentes sous-régions.

Questions sous-régionales

Mer Adriatique

- Étendre l'analyse de la dépendance économique des flottilles de pêche à l'égard des différentes espèces, entamée par le Comité scientifique, technique et économique de la pêche à sa deuxième réunion de 2019.
- Poursuivre la mise en œuvre du plan de suivi de la fosse de Pomo/Jabuka et fournir des informations actualisées lors des prochaines réunions pertinentes.
- Réviser et actualiser les éléments techniques relatifs à la gestion des petits pélagiques en mer Adriatique, notamment en révisant les points de référence (après la conclusion des évaluations de référence) et en formulant des avis sur des mesures de gestion possibles, y compris d'éventuelles fermetures temporelles communes.

Méditerranée occidentale

- Continuer d'apporter un appui au projet TransBoran coordonné par CopeMed II pour l'analyse des limites géographiques des stocks d'espèces prioritaires dans la sous-région.
- Pursuivre les travaux sur la dorade rose dans la perspective de la mise en œuvre de mesures de gestion.

Méditerranée centrale

- Poursuivre les travaux sur la définition des lieux de pêche de gambon et crevette rouges.
- Examiner la version actualisée du document technique de référence relatif au plan de gestion de la pêche au chalut de fond visant le gambon et la crevette rouges , en Méditerranée orientale et en Méditerranée centrale (sous-régions géographiques 12 à 16 et 19 à 27), d'ici à la session de 2020 du Comité sous-régional pour la Méditerranée centrale.
- Poursuivre le recensement des zones de reproduction du gambon et de la crevette rougesen mer Ionienne, ainsi que des zones de reproduction du merlu européen et de la crevette rose du large dans le canal de Sicile.
- Poursuivre les études sur la sélectivité, en particulier pour le gambon et la crevette rouges en Méditerranée centrale et en Méditerranée orientale.
- Continuer de recueillir des informations sur la présence, l'abondance et la répartition des espèces non indigènes, en s'appuyant sur les différentes plateformes d'observation inscrites dans le plan de suivi approuvé (campagnes en mer, observateurs à bord des navires, analyse des captures, etc.) et en portant une attention particulière aux interactions avec la pêche artisanale, notamment dans le cadre d'approches participatives et à l'aide de questionnaires sur les savoirs écologiques traditionnels.
- Poursuivre l'analyse des caractéristiques socioéconomiques du secteur de la pêche au chalut au nord de la Tunisie en l'étendant aux principales flottilles et pêcheries de tous les pays de la sous-région.
- Élargir la portée de l'étude pilote sur la sélectivité des pêches mixtes exploitant le merlu européen et la crevette rose du large en Méditerranée centrale, qui devrait être lancée dans le golfe de Gabès et être étendue à des lieux de pêche en eaux plus profondes, par exemple au nord de la côte tunisienne.
- Évaluer l'efficacité des mesures de gestion actuelles pour la pêche démersale dans le canal de Sicile.

Méditerranée orientale

- Poursuivre la définition des lieux de pêche de gambon et crevette rouges.

- Examiner la version actualisée du document technique de référence relatif au plan de gestion de la pêche au chalut de fond visant le gambon et la crevette rouges, en Méditerranée orientale et en Méditerranée centrale (sous-régions géographiques 12 à 16 et 19 à 27), d'ici à la session de 2020 du Comité sous-régional pour la Méditerranée orientale.
- Continuer de recueillir des informations sur la présence, l'abondance et la répartition des espèces non indigènes, en s'appuyant sur les différentes plateformes d'observation inscrites dans le plan de suivi approuvé (campagnes en mer, observateurs à bord des navires, analyse des captures, etc.) et en portant une attention particulière aux interactions avec la pêche artisanale, notamment dans le cadre d'approches participatives et à l'aide de questionnaires sur les savoirs écologiques traditionnels.

Réunion	Lieu/date
Évaluation de référence visant les stocks de merlu européen dans les sous-régions géographiques 01 à 07, 09 à 11, 12 à 16, 19, 22, 26	2-7 décembre 2019
Groupe de travail sur l'évaluation des stocks d'espèces démersales, y compris une session de suivi sur les données de référence consacrée à la dorade rose dans le détroit de Gibraltar	Siège de la FAO, Rome 9-14 décembre 2019
Groupe de travail sur l'évaluation des stocks de petits pélagiques, y compris une session consacrée aux évaluations de référence visant la sardine dans les sous-régions géographiques 01 à 04	Siège de la FAO, Rome 9-14 décembre 2019
Réunion d'experts sur le changement climatique	décembre 2019
Réunion de suivi pour les évaluations de référence visant les stocks d'anchois et de sardine en mer Adriatique	janvier 2020
Atelier sur la communication de données concernant la pêche et l'application d'indicateurs de qualité sur la plateforme en ligne du Cadre de référence pour la collecte des données	février 2020
Groupe de travail sur la pêche récréative	mars 2020
Comité sous-régional pour la Méditerranée occidentale	mars 2020
Groupe de travail sur l'évaluation d'autres mesures de gestion des pêches d'espèces démersales dans le canal de Sicile	avril 2020
Comité sous-régional pour la Méditerranée centrale	
Évaluation de référence visant les stocks d'allache	avril 2020
Comité sous-régional pour la Méditerranée orientale (y compris une session spécialement consacrée à la pêche artisanale)	
Groupe de travail sur l'évaluation d'autres mesures de gestion en mer Adriatique	mai 2020
Comité sous-régional pour la mer Adriatique	
Vingt-deuxième session du Comité scientifique consultatif des pêches	Liban, juin 2020
Consultation technique sur les captures accessoires	décembre 2020

107. Sur la question du fonctionnement efficace du CSC, de ses comités sous-régionaux et des groupes de travail pertinents, y compris la planification pluriannuelle des évaluations actualisées, le Secrétaire exécutif de la CGPM a rappelé le grand nombre de réunions prévues et la difficulté pour les

experts de répondre à toutes les demandes et de participer à toutes les activités. À cet égard, la délégation du Maroc a insisté sur le fait qu'il était important d'engager des modérateurs dans les sous-régions pour coordonner les activités des comités sous-régionaux, avec l'appui du Secrétariat de la CGPM; ces modérateurs veilleraient à ce que les travaux progressent de façon satisfaisante pendant la période intersessions. La déléguée de l'UE, estimant que la question nécessitait une réflexion plus approfondie, a souligné qu'il était crucial d'établir un mandat concret et détaillé indiquant les objectifs des différentes réunions afin que celles-ci aboutissent aux résultats escomptés.

108. En vue de faciliter la planification efficace des activités intersessions, d'examiner d'autres questions relatives au fonctionnement du CSC et de ses organes subsidiaires, y compris le rôle des modérateurs, et de revoir le mandat pour les réunions proposées, le Secrétaire exécutif de la CGPM a suggéré d'organiser une réunion de coordination du Bureau du CSC, avec les présidents et les experts concernés, avant la prochaine session annuelle de la Commission, ce qui permettrait de lui présenter ensuite un plan de travail consolidé et réalisable au moyen des ressources disponibles. Le Comité a approuvé cette proposition.

AUTRES QUESTIONS

109. Le Secrétariat de la CGPM a illustré l'application des programmes de suivi et les campagnes en mer, en se fondant sur les documents suivants: i) *Technical guidelines for scientific surveys in the Mediterranean and the Black Sea: Procedures and sampling for demersal (bottom and beam) trawl surveys and pelagic acoustic surveys;* ii) *Monitoring discards in Mediterranean and Black Sea fisheries: Methodology for data collection*; et iii) *Monitoring incidental catch of vulnerable species in Mediterranean and Black Sea fisheries: Methodology for data collection*. Les contributions financières apportées par l'UE et d'autres donateurs, dont la Fondation MAVA, ont été vivement appréciées. Par ailleurs, les efforts déployés par les PCC participantes, leurs contributions en nature, ainsi que l'appui technique des partenaires, ont également été salués.

110. Le Comité s'est félicité de la mise en œuvre de ces activités ainsi que des protocoles techniques correspondants. Plus particulièrement, le délégué de l'UE a souligné que les activités menées permettaient d'améliorer les connaissances sur les ressources halieutiques et les espèces vulnérables et il a insisté sur la nécessité de dispenser une formation sur les protocoles à suivre afin d'assurer une approche harmonisée en matière de collecte des données.

111. Le délégué du Maroc a informé les participants des progrès accomplis dans la mise en œuvre des campagnes en mer et des programmes de suivi dans son pays et a souligné le rôle que ces activités jouaient pour assurer la qualité des données marocaines ainsi que l'exhausitivité des bases de données.

112. Le délégué du Liban a fait remarquer que ces initiatives permettaient, dans son pays, de combler les lacunes en matière de données et donnaient aux pays les moyens de gérer leurs ressources halieutiques de manière efficace.

113. Le représentant du projet EastMed a souligné que la collaboration étroite établie entre les projets régionaux de la FAO et la CGPM aux fins de la mise en œuvre de ces activités avait permis d'optimiser les ressources. De même, les représentants des organismes partenaires, en particulier ACCOBAMS et l'UICN, se sont félicités de la collaboration fructueuse qui avait été nouée et ils ont réaffirmé leur volonté de continuer à coopérer en vue de l'évaluation des captures accessoires et de la mise à l'essai de mesures d'atténuation adaptées.

114. Compte tenu des observations positives qui sont parvenues, le Comité est convenu d'organiser un atelier afin de réfléchir aux moyens qui permettraient de faire progresser la mise en œuvre de ces activités, et d'envisager une analyse commune des données recueillies, comportant en particulier l'étude des problèmes rencontrés, la mise en commun des données d'expérience, l'examen des possibilités d'utilisation des données recueillies, l'analyse des besoins en matière de données et l'étude

de solutions visant à combler les lacunes dans certains domaines techniques liés aux activités d'échantillonnage.

115. Le représentant du Département des pêches et de l'aquaculture de la FAO a présenté le projet portant sur la gestion durable des pêches et la conservation de la biodiversité des ressources biologiques marines et des écosystèmes d'eaux profondes dans les zones ne relevant pas de la juridiction nationale (2014-2019), qui faisait suite au projet mondial pour la conservation des pêches et de la biodiversité dans les zones ne relevant pas de la juridiction nationale, mis au point au titre de la septième reconstitution des ressources du Fonds pour l'environnement mondial (FEM-7). Le projet qui couvrait divers aspects, en particulier les instruments juridiques, la gestion des pêches, l'approche écosystémique des pêches, la coordination multisectorielle, le partage des connaissances et la transparence, devait s'inscrire dans le cadre d'une approche écosystémique des pêches élargie aux dimensions institutionnelles, écologiques et humaines. Le représentant a invité la CGPM à devenir un partenaire actif du projet et a expliqué qu'une note de synthèse serait élaborée d'ici à la fin de 2019 et qu'un document de projet complet serait disponible d'ici à la fin de 2020.

116. En réponse à la proposition du Comité sous régional pour la Méditerranée occidentale, le Secrétaire exécutif de la CGPM a annoncé que le plastique serait banni des prochaines sessions du Comité.

117. À plusieurs reprises, le Comité a remercié le Gouvernement de l'Égypte pour la remarquable organisation de la session et les conditions idéales dans lesquelles elle s'était déroulée. Il a particulièrement apprécié l'excellent appui qui avait été fourni et l'accueil chaleureux qui avait été réservé à l'ensemble des participants.

118. Le Comité a remercié les donateurs, en particulier l'UE, pour la contribution financière ayant soutenu les nombreuses activités menées durant l'intersession et dans le contexte de la stratégie à moyen terme.

119. Le Président du CSC et les délégués ont remercié le Secrétariat de la CGPM d'avoir veillé sans relâche à assurer une préparation fluide et la bonne tenue de la session.

DATE ET LIEU DE LA PROCHAINE SESSION

120. Le Comité a pris bonne note de l'aimable invitation du Liban, qui a proposé d'accueillir sa vingt-deuxième session à Beyrouth, sous réserve de la confirmation officielle des autorités compétentes.

ADOPTION DU RAPPORT

121. Le rapport, y compris ses annexes, a été adopté le 27 juin 2019.

List of appendixes

1. Agenda
2. List of participants
3. List of documents
4. Opening statements
5. Status of Mediterranean stocks
6. Technical elements for the management of select fisheries
    A. Technical elements for the management of demersal fisheries in the Adriatic Sea
    B. Updated technical elements for the management of blackspot seabream in the Strait of Gibraltar
7. Elements for the preparation of proposals for national fleet development plans
8. Concept note for a research programme on European eel
9. Updated concept note for a research programme on red coral
10. Terms of reference for select meetings
    - Draft terms of reference for WGMSE
    - Draft terms of reference for WGRF
    - Draft terms of reference for WGVME-EFH
    - Draft terms of reference for expert meeting on the climate change
    - Draft terms of reference for the Workshop on fisheries data submissions and implementation of quality indicators on the DCRF online platform
    - Draft terms of reference for the ad hoc meeting on the implementation of the RPOA-SSF
11. List of assessments proposed for the 2019–2020 intersession
    A. Planned benchmark assessments by subregion
    B. List of other required updated and new assessments of priority species
12. Endorsed programmes of work for the provision of advice of select priority species
    A. Sardine in the Alboran Sea
    B. Round sardinella in the eastern Mediterranean
    C. Socio-economic analysis of the effects of alternative management measures for small pelagic fisheries in the Adriatic Sea
    D. Deep-water red shrimp in the eastern and central Mediterranean
13. National reports

Appendix 1

Agenda

1. Opening and adoption of the agenda
2. Intersessional activities of relevance to the SAC, including within the framework of the mid-term strategy
3. National reports to the SAC by CPCs
4. Issues related to fisheries data collection and data quality
5. Implementation of the Regional plan of action for small-scale fisheries in the Mediterranean and the Black Sea (RPOA-SSF)
6. Formulation of advice on marine living resources and fisheries management
7. SAC work plan for 2019–2021, including by subregion
8. Any other matter
9. Date and place of the next session
10. Adoption of the report

Annexe 1

Ordre du jour

1. Ouverture de la session et adoption de l'ordre du jour
2. Activités intersessions intéressant le mandat du CSC, y compris dans le cadre de la stratégie à moyen terme
3. Rapports nationaux établis par les parties contractantes et les parties non contractantes coopérantes à l'intention du CSC
4. Questions relatives à la collecte de données sur la pêche et à leur qualité
5. Mise en œuvre du Plan d'action régional relatif à la pêche artisanale en Méditerranée et en mer Noire (RPOA-SSF)
6. Formulation d'avis sur les ressources biologiques marines et la gestion des pêches
7. Plan de travail du CSC pour 2019-2021, y compris par sous-région
8. Autres questions
9. Date et lieu de la prochaine session
10. Adoption du rapport

Appendix 2

List of participants/Liste des participants

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Appendix 3

List of documents

GFCM:SAC21/2019/1	Provisional agenda and timetable
GFCM:SAC21/2019/2	Executive report of SAC intersessional activities, recommendations and work plan (available in English and French)
GFCM:SAC21/2019/3	Draft Concept note for a research programme on European eel (available in English only)
GFCM:SAC21/2019/4	Updated concept note for a research programme on red coral (available in English only)
GFCM:SAC21/2019/5	RPOA-SSF monitoring framework and priority actions (available in English only)
GFCM:SAC21/2019/6	FRA proposal: Maledetti Shoal (GSA 9) (available in English only)
GFCM:SAC21/2019/7	FRA proposal: Bari canyon (GSA 18) (available in English only)
GFCM:SAC21/2019/Inf.1	List of documents (available in English and French)
GFCM:SAC21/2019/Inf.2	List of participants
GFCM:SAC21/2019/Inf.3	Report of the forty-second session of the General Fisheries Commission for the Mediterranean (FAO headquarters, 22–26 October 2018)
GFCM:SAC21/2019/Inf.4	Report of the twentieth session of the Scientific Advisory Committee on fisheries (Morocco, 26–29 June 2018) (bilingual)
GFCM:SAC21/2019/Inf.5	National reports to the SAC by contracting parties, including comparative analysis of related data requirements
GFCM:SAC21/2019/Inf.6	Report of the Subregional Committee for the Adriatic Sea (SRC-AS) (Croatia, 23–24 May 2019)
GFCM:SAC21/2019/Inf.7	Report of the Workshop on the assessment of management measures for Adriatic pelagic and demersal resources (WKMSE) (FAO headquarters, 17–18 May 2019)
GFCM:SAC21/2019/Inf.8	Report of the WGSASP benchmark session on small pelagic species in the Adriatic Sea (FAO headquarters, 13–16 May 2019)
GFCM:SAC21/2019/Inf.9	Report of the Working Group on the management of European eel (WGMEASURES-EEL) (FAO headquarters, 16–17 April 2019)
GFCM:SAC21/2019/Inf.10	Report on the Workshop on red coral (FAO headquarters, 15–16 April 2019)
GFCM:SAC21/2019/Inf.11	Report of the Subregional Committee for the Western Mediterranean (SRC-WM) (France, 5 April 2019)
GFCM:SAC21/2019/Inf.12	Report of the WGSAD benchmark session on blackspot seabream (France, 1–4 April 2018)
GFCM:SAC21/2019/Inf.13	Report of the Subregional Committee for the Central Mediterranean (SRC-CM) (FAO headquarters, 21–22 March 2019)
GFCM:SAC21/2019/Inf.14	Report of the Subregional Committee for the Eastern Mediterranean (SRC-EM) (FAO headquarters, 18–19 March 2019)

GFCM:SAC21/2019/Inf.15	Report of the Working Group on small-scale fisheries (WGSSF) (Montenegro 6–7 March 2019)
GFCM:SAC21/2019/Inf.16	Report of the GFCM/OceanCare Workshop on anthropogenic underwater noise and impacts on fish, invertebrates and fish resources (FAO headquarters, 21–22 February 2019)
GFCM:SAC21/2019/Inf.17	Report of the Working Group on Marine Protected Areas, including a session on Essential Fish habitats (WGMPA) (FAO headquarters, 18–21 February 2019)
GFCM:SAC21/2019/Inf.18	Report of the WGSAD benchmark session for the assessment of European Hake in the Adriatic Sea (FAO headquarters, 15–18 January 2019)
GFCM:SAC21/2019/Inf.19	Report of the Working Group on Stock Assessment of Demersal Species (WGSAD) (FAO headquarters, 19–23 November 2018)
GFCM:SAC21/2019/Inf.20	Report of the WGSAD benchmark session for the assessment of red mullet in GSAs 12–16 and 19 (FAO headquarters, 19–21 November 2018)
GFCM:SAC21/2019/Inf.21	Report of the Working Group on Stock Assessment of Small Pelagic Species (WGSASP) (FAO headquarters, 19–23 November 2018)
GFCM:SAC21/2019/Inf.22	Results of the feasibility phase for the application of fisheries data quality indicators on the DCRF online platform
GFCM:SAC21/2019/Inf.23	Major activities of the FAO regional projects
GFCM:SAC21/2019/Dma.1	FAO. 2018. *The State of Mediterranean and Black Sea Fisheries. General Fisheries Commission for the Mediterranean*. Rome. 172 pp.
GFCM:SAC21/2019/Dma.2	FAO. 2019. *The State of Mediterranean and Black Sea Fisheries. General Fisheries Commission for the Mediterranean at a glance*. Rome. 30 pp.
GFCM:SAC21/2019/Dma.3	Forthcoming. *Monitoring discards in Mediterranean and Black Sea fisheries: methodology for data collection*. FAO Fisheries and Aquaculture Technical Paper No. 639. Rome, FAO. 88 pp.
GFCM:SAC21/2019/Dma.4	Forthcoming. *Monitoring incidental catch of vulnerable species in Mediterranean and Black Sea fisheries: methodology for data collection*. FAO Fisheries and Aquaculture Technical Paper No. 640. Rome, FAO. 92 pp.
GFCM:SAC21/2019/Dma.5	Carbonara, P., Follesa, M.C., eds. 2019. *Handbook on fish age determination: a Mediterranean experience*. Studies and Reviews n. 98. Rome, FAO. 192 pp.
GFCM:SAC21/2019/Dma.6	Follesa, M.C., Carbonara, P., eds. 2019. *Atlas of the maturity stages of Mediterranean fishery resources*. Studies and Reviews n. 99. Rome, FAO. 268 pp.
GFCM:SAC21/2019/Dma.7	Manual of the GFCM Data Collection Reference Framework (DCRF) – Version 19.1 (available in English and French)
GFCM:SAC21/2019/Dma.8	Regional plan of action for small-scale fisheries in the Mediterranean and the Black Sea (available in English and French)

Annexe 3

Liste des documents

CGPM:SAC21/2019/1	Ordre du jour et calendrier provisoires
CGPM:SAC21/2019/2	Rapport exécutif sur les activités intersessions, les recommandations et le plan de travail du CSC (disponible en anglais et en français)
CGPM:SAC21/2019/3	Projet de note conceptuelle relatif à un programme de recherche sur l'anguille d'Europe (disponible en anglais seulement)
CGPM:SAC21/2019/4	Note conceptuelle actualisée relative à un programme de recherche sur le corail rouge (disponible en anglais seulement)
CGPM:SAC21/2019/5	Cadre de suivi du plan d'action régional pour la pêche artisanale en Méditerranée et en mer Noire et mesures prioritaires (disponible en anglais seulement)
CGPM:SAC21/2019/6	Proposition de zone de pêche réglementée: banc de Maledetti (sous-région géographique 9) (disponible en anglais seulement)
CGPM:SAC21/2019/7	Proposition de zone de pêche réglementée: canyon de Bari (sous-région géographique 18) (disponible en anglais seulement)
CGPM:SAC21/2019/Inf.1	Liste des documents (disponible en anglais et en français)
CGPM:SAC21/2019/Inf.2	Liste des participants
CGPM:SAC21/2019/Inf.3	Rapport de la quarante-deuxième session de la Commission générale des pêches pour la Méditerranée (siège de la FAO, 22-26 octobre 2018)
CGPM:SAC21/2019/Inf.4	Rapport de la vingtième session du Comité scientifique consultatif des pêches (Maroc, 26-29 juin 2018) (bilingue)
CGPM:SAC21/2019/Inf.5	Rapports nationaux des parties contractantes au CSC, y compris une analyse comparative des prescriptions connexes en matière de données
CGPM:SAC21/2019/Inf.6	Rapport du Comité sous-régional pour la mer Adriatique (Croatie, 23-24 mai 2019)
CGPM:SAC21/2019/Inf.7	Rapport de l'atelier sur l'évaluation des mesures de gestion pour les ressources pélagiques et démersales en mer Adriatique (siège de la FAO, 17-18 mai 2019)
CGPM:SAC21/2019/Inf.8	Rapport de la session d'évaluation de référence des espèces de petits pélagiques en mer Adriatique du Groupe de travail sur l'évaluation des stocks d'espèces de petits pélagiques (siège de la FAO, 13-16 mai 2019)
CGPM:SAC21/2019/Inf.9	Rapport du Groupe de travail sur la gestion de l'anguille d'Europe (siège de la FAO, 16-17 avril 2019)
CGPM:SAC21/2019/Inf.10	Rapport de l'atelier sur le corail rouge (siège de la FAO, 15-16 avril 2019)
CGPM:SAC21/2019/Inf.11	Rapport du Comité sous-régional pour la Méditerranée occidentale (France, 5 avril 2019)
CGPM:SAC21/2019/Inf.12	Rapport de la session d'évaluation de référence de la dorade rose du Groupe de travail sur l'évaluation des stocks d'espèces démersales (France, 1-4 avril 2018)

CGPM:SAC21/2019/Inf.13	Rapport du Comité sous-régional pour la Méditerranée centrale (siège de la FAO, 21-22 mars 2019)
CGPM:SAC21/2019/Inf.14	Rapport du Comité sous-régional pour la Méditerranée orientale (Siège de la FAO, 18-19 mars 2019)
CGPM:SAC21/2019/Inf.15	Rapport du Groupe de travail sur la pêche artisanale (Monténégro 6-7 mars 2019)
CGPM:SAC21/2019/Inf.16	Rapport de l'atelier conjoint CGPM/OceanCare sur les bruits anthropiques en milieu marin et leurs impacts sur les poissons, les invertébrés et les ressources halieutiques (siège de la FAO, 21-22 février 2019)
CGPM:SAC21/2019/Inf.17	Rapport du Groupe de travail sur les aires marines protégées, y compris une session sur les habitats essentiels aux ressources halieutiques (siège de la FAO, 18-21 février 2019)
CGPM:SAC21/2019/Inf.18	Rapport de la session d'évaluation de référence du merlu européen en mer Adriatique du Groupe de travail sur l'évaluation des stocks d'espèces démersales (siège de la FAO, 15-18 janvier 2019)
CGPM:SAC21/2019/Inf.19	Rapport du Groupe de travail sur l'évaluation des stocks d'espèces démersales (siège de la FAO, 19-23 novembre 2018)
CGPM:SAC21/2019/Inf.20	Rapport de la session d'évaluation de référence du rouget de vase dans les sous-régions géographiques 12-16 et 19 du Groupe de travail sur l'évaluation des stocks d'espèces démersales (siège de la FAO, 19-21 novembre 2018)
CGPM:SAC21/2019/Inf.21	Rapport du Groupe de travail sur l'évaluation des stocks de petits pélagiques (siège de la FAO, 19-23 novembre 2018)
CGPM:SAC21/2019/Inf.22	Résultats de la phase de faisabilité concernant l'application d'indicateurs de qualité des données relatives à la pêche sur la plateforme en ligne du Cadre de référence pour la collecte de données
CGPM:SAC21/2019/Inf.23	Activités principales des projets régionaux de la FAO
CGPM:SAC21/2019/Dma.1	FAO. 2018. *The State of Mediterranean and Black Sea Fisheries. General Fisheries Commission for the Mediterranean*. Rome. 172 pp. (disponible en anglais seulement)
CGPM:SAC21/2019/Dma.2	FAO. 2019. *The State of Mediterranean and Black Sea Fisheries. General Fisheries Commission for the Mediterranean at a glance*. Rome. 30 pp. (disponible en anglais seulement)
CGPM:SAC21/2019/Dma.3	Forthcoming. *Monitoring discards in Mediterranean and Black Sea fisheries: methodology for data collection*. FAO Fisheries and Aquaculture Technical Paper No. 639. Rome, FAO. 88 pp. (disponible en anglais seulement)
CGPM:SAC21/2019/Dma.4	Forthcoming. *Monitoring incidental catch of vulnerable species in Mediterranean and Black Sea fisheries: methodology for data collection*. FAO Fisheries and Aquaculture Technical Paper No. 640. Rome, FAO. 92 pp. (disponible en anglais seulement)
CGPM:SAC21/2019/Dma.5	Carbonara, P., Follesa, M.C., eds. 2019. *Handbook on fish age determination: a Mediterranean experience*. Studies and Reviews n. 98. Rome, FAO. 192 pp. (disponible en anglais seulement)

CGPM:SAC21/2019/Dma.6	Follesa, M.C., Carbonara, P., eds. 2019. *Atlas of the maturity stages of Mediterranean fishery resources*. Studies and Reviews n. 99. Rome, FAO. 268 pp. (disponible en anglais seulement)
CGPM:SAC21/2019/Dma.7	Manuel du Cadre de référence pour la collecte de données de la CGPM - Version 19.1 (disponible en anglais et en français)
CGPM:SAC21/2019/Dma.8	Plan d'action régional pour la pêche artisanale en Méditerranée et en mer Noire (disponible en anglais et en français)

Appendix 4

Opening statements

Opening speech by Alaa Eldin El Haweet

SAC Chairperson

Excellencies,

Honourable delegates,

Colleagues of the FAO and the GFCM,

Ladies and Gentlemen,

It is an honour for me to welcome you – for the first time as SAC Chairperson – to the twenty-first session of the GFCM Scientific Advisory Committee on Fisheries. It is also my sincere pleasure to welcome you to my country of Egypt, and I thank my colleagues from GAFRD for their hospitality and excellent organization of this session.

I also take this occasion to thank and congratulate my predecessor, Mr Othman Jarboui, whose excellent work as chairperson over the previous years oversaw an increase in the level of engagement, maturity and scientific excellence of this SAC, positioning it as a body capable of addressing the challenges and expectations it faces. I accept the baton you have passed to me and I am confident that with continued effort and investment from all member countries and experts present, we can continue to ask the right questions, continually improve our scientific advice and sustain the progress we have made.

In response to the Commission, which raised the bar of expectations for this Committee and entrusted it with an intense intersessional agenda, an unprecedented number of activities have been carried out. I am proud to say that the SAC experts have risen to the challenges they have been presented with and I thank them for their important efforts. Much has been accomplished during this intersession and I will try to review just a few highlights.

The 2018/2019 intersession saw an even further consolidation of the subregional approach. These committees have permitted more detailed and efficient discussions on management topics, enhancing the SAC's ability to produce advice and to respond to requests for management plans. As evidenced by the full agendas at each of these SRCs and the requests for additional time in future meetings, it is clear that the subregional committees are fulfilling a crucial and necessary role. As a result of these committees, we now have sound technical guidance – from updated technical elements for the management of certain priority stocks, to proposals for new Fisheries Restricted Areas, to common research programmes and monitoring initiatives. – upon which to base our deliberations and ultimately our scientific advice.

During this intersession we have also seen important steps taken towards improving our scientific advice and the data upon which it is based. In this regard, I underline two important initiatives. As you recall, last year we discussed a plan for preparing benchmark assessments of priority species and I am happy to report that this year, we have managed to initiate the benchmarking process for four priority stocks, setting the course for improving the quality of advice even more. Also, for the first time in the GFCM experts and administrations of the Adriatic Sea have worked together to come to this session of the SAC with an advice on the status of small pelagic species based on data up to 2018. This is a milestone in speeding up the process of advice, and I would like to thank all experts and administrations involved in this big success. Furthermore, this year has also seen the initiation of a feasibility phase for the application of

data quality indicators. Although in an early stage, this process promises to be an important tool for ensuring the data upon which our advice is based is of the best quality.

I also note that great strides are being made in the implementation of the "Mid-term strategy (2017-2020) towards the sustainability of Mediterranean and Black Sea fisheries". This intersession we saw the launch of our first scientific demersal survey-at-sea in Tunisia. Fruits of other efforts are also coming in, as we wrap up socio-economic data collection in a number of countries and now move to the data analysis phase. Efforts to improve data on bycatch and incidental catch of vulnerable species are also underway, with consolidated methodologies for data collection disseminated and in use in the field. I also make special note of the historic adoption last year of a Regional Plan of Action for Small-scale Fisheries and the fact that efforts to implement this ambitious are already underway, particularly for technical issues related to SSF.

Finally, I would be remiss if I didn't mention two important accomplishments that have been reached in this intersession. Last December we held, for the first time, the Forum on Fisheries Science in the Mediterranean and Black Sea. By all accounts, this Fish Forum was a tremendous success, allowing us to consolidate our network of experts in the region, disseminate cutting-edge research and improve our science-policy interface. This forum was also the backdrop for a second important accomplishment: the launch of the second edition of "The State of Mediterranean and Black Sea Fisheries" (or SoMFi). Already we have come to rely on this publication as the premier source of information about fisheries in our region, however, I congratulate this second edition for being even more comprehensive and for providing increasingly detailed analysis.

As I said at the beginning, this SAC has made important strides during this intersession and has risen to the many challenges it has been presented with. With that said, our tasks ahead are many and complex. For this reason, I do not wish to take any more of your time as I wish to allow as much time as possible for our discussions. I therefore thank you in advance for your contributions over the coming days and I wish us luck in our work ahead!

Opening speech by Egypt

On behalf of of H.E. Minister of Agriculture and Land Reclamation Ezz el-Din Abu Steit

(*Informal translation from Arabic*)

H.E President of the General Fisheries Commission for the Mediterranean,

Mr Abdellah Srour, Executive Secretary of the General Fisheries Commission for the Mediterranean,

Mr Alaa El Haweet, Chairperson of the Scientific Advisory Committee,

Ladies and gentlemen,

On behalf of the H.E. Ezz el-Din Abu Steit, Minister of Agriculture and Land Reclamation, I am honored to welcome you to Egypt to participate in the meeting of the Scientific Advisory Committee of the General Fisheries Commission for the Mediterranean Sea (GFCM) and I wish you productive and successful discussions. I also wish that the sessions of this meeting will lead to many fruitful recommendations and will help us build sustainable fisheries, which is one of the main pillars of food security and it effectively contributes to the sustainable development of fisheries resources needed by Mediterranean countries.

Since ancient times, fishing has been one of the major sources of food and employment for humanity, providing jobs and economic benefits to all those working in this sector. However, with increased knowledge and the development of fisheries, it appears that although living marine resources are renewable, they are not infinite and they need to be managed properly in order to sustain their contribution to the food, economic and social needs of the world's growing population.

Fishing communities and the entire economic sector supported by fishery resources are at risk. The long-term sustainability of fisheries is threatened by the overexploitation of key fish stocks and by changes in the ecosystems.

In light of the current situation for fisheries, there is an urgent need to take appropriate measures to address it. It is necessary to adopt strategies and plans to improve this situation, to monitor the success of these strategies and to enforce appropriate administrative regulations, as several factors such as overfishing, pollution and environmental degradation are affecting the sustainable development of the sector.

If these issues are not addressed, the situation will worsen in the near future.

Fisheries management needs to seek to strike a balance between the environmental, social and economic objectives and to level the playing field, while ensuring an efficient and effective management.

Fisheries are an essential source of employment, livelihood and food security.

Egypt has made great efforts towards the sustainability of fishery resources, the preservation of fish stocks and the provision of livelihood to coastal communities. Egypt has also developed and upgraded its fishing fleet to make sure fishery products are fully used and have added value, while also ensuring compliance and respecting the decisions issued by the General Fisheries Commission for the Mediterranean.

Holding the Scientific Advisory Committee on Fisheries in Egypt reflects Egypt's historical role in the General Fisheries Commission for the Mediterranean and its strong interest in developing the fisheries sector in line with sustainable development goals and with the decisions and recommendations of the General Fisheries Commission for the Mediterranean.

To conclude, I would like to thank all of those who have contributed to the organization and the success of this meeting. I wish you all productive and successful discussions to achieve the goals we have set to increase food security, particularly as far as fishery resources are concerned, for our people. I also wish you a very good stay in Egypt.

Opening speech by Jean-Marc Faurès, Regional Programme Leader

FAO Regional Office for the Near East and North Africa

Honourable delegates,

Colleagues of the FAO and the GFCM,

Partner organizations,

Ladies and Gentlemen,

- On behalf of the Food and Agriculture Organization of the United Nations, I have the sincere pleasure of welcoming you to Egypt for this twenty-first session of the General Fisheries Commission for the Mediterranean (GFCM) Scientific Advisory Committee on Fisheries (SAC).
- I would like also like to express my thanks to the country of Egypt, and specifically the colleagues from GAFRD, for their excellent hospitality in hosting this meeting.
- As we all know, the ocean and its role as a source of renewable resources has been given a new impetus with the adoption of the UN Agenda 2030 and the specific Sustainable Development Goal number 14; Life Below Water. In FAO we address this under our strategic objectives, in particular Objective 2, which focuses on the important role of fisheries and aquaculture to promote sustainable development and Blue Growth.
    - In this light, I also congratulate the national experts present here today. Your active role in this committee embodies precisely what the FAO is about. The discussions you will have over the coming days are essential for ensuring sound scientific advice is translated into effective policy that promotes livelihoods and food security for those depending on the Mediterranean Sea.
- We know that the issues facing the Mediterranean Sea are significant:
    - Combatting overfishing and ensuring that fishing capacity of coastal states is aligned with the productivity of our seas.
    - Mitigating the negative impacts on marine ecosystem, including from climate changes, marine pollution (including marine plastics) and the increasing numbers of non-indigenous species.
    - And ensuring the long-term economic sustainability of our fishers who depend on these shared resources for their livelihoods, particularly small-scale fishers.
- To meet these challenges, strong and sustainable management of our Mediterranean fisheries, based on sound scientific advice is the only way forward.
- Much progress has been made in recent years. To this end, I mention specifically the work of this Committee in implementing the Mid-term strategy (2017–2020) towards the sustainability of Mediterranean and Black Sea fisheries adopted by the GFCM.
    - This strategy has served as a catalyst for mobilizing resources and action to enhance the knowledge base upon which scientific advice is based, to raise awareness and political support, and to enhance regional cooperation.

  - In this light, FAO-RNE continues to express its support for this strategy's implementation, including through key collaboration on common projects.

- Similarly, I would be remiss if I didn't also mention the important role of the MedFish4Ever declaration in galvanizing political support and attention for the issues at hand and for the urgent action that is needed.
  - Many of you had the pleasure of attending, two weeks ago, the GFCM High-level conference on MedFish4Ever initiatives in Marrakech, Morocco.
  - On this occasion, it was clear that our attention hasn't strayed and that the Mediterranean riparian states remain as committed as ever to achieving the objectives enshrined in this declaration.
- On behalf of FAO, I am pleased to see so much momentum to take serious steps to tackle the sustainability of our shared resources in the Mediterranean Sea.
  - To take these steps, however, we rely on you: the experts.
  - Knowing that you have much to deliberate over the course of this week, I don't wish to take up any more of your time.
  - I look forward to your active participation over the course of this week.
  - I challenge you to produce strong and clear advice that forms the foundation for the decision-making we need to reach our common objectives.

Appendix 5

Status of Mediterranean stocks

Table 1: Scientific advice on the status of the assessed demersal stocks

GSA	Species	Methodology used	Current values	Reference points	F_{curr}/F_{unique}	Stock status (exploitation and biomass[1] level)	Scientific advice	WGSAD comments
Western Mediterranean								
01&03	*Merluccius merluccius*	XSA, Y/R	Fcurr= 1.30	F0.1= 0.21	6.5	In overexploitation with relative low biomass	Reduce fishing mortality	Update assessment of the one presented last year
04	*Merluccius merluccius*	VIT, Y/R	Fcurr= 1.3	F0.1= 0.2	6.5	In overexploitation with relative low biomass	Reduce fishing mortality	New assessment with three years of data
05	*Merluccius merluccius*	A4a	Fcurr= 1.34	F0.1= 0.18	7.4	In overexploitation with relative low biomass	Reduce fishing mortality	Update assessment of last year; last year the assessment was done with XSA
06	*Merluccius merluccius*	A4a	Fcurr= 1.40	F0.1= 0.20	7.0	In overexploitation with relative low biomass	Reduce fishing mortality	Update assessment of the one presented last year
07	*Merluccius merluccius*	XSA, Y/R	Fcurr= 1.81	F0.1= 0.12	15.1	In overexploitation with relative low biomass	Reduce fishing mortality	Update assessment of the one presented last year
09, 10, 11	*Merluccius merluccius*	A4a	Fcurr= 0.55	F0.1= 0.14	3.9	In overexploitation with relative low biomass	Reduce fishing mortality	New assessment. It was recommended by WGSAD in 2017 to perform a joined assessment in these three GSAs. The status of the stock is consistent with the figure from last year assessment done in GSA 9 using SS3

[1] The indication to the biomass level is referred to relative reference points deriving from the 33rd and 66th percentile of the stock assessment and not to absolute values of biomass.

* When more than one model was performed for the given assessment, asterisk refers to the final model validated by the WGSAD and to which reference values reported in this tables refer to.

GSA	Species	Methodology used	Current values	Reference points	F_{curr}/F_{unique}	Stock status (exploitation and biomass[1] level)	Scientific advice	WGSAD comments
06	*Mullus barbatus*	A4a, Y/R	Fcurr= 2.2 (±0.28)	F0.1= 0.34	6.4	In overexploitation with relative intermediate biomass	Reduce fishing mortality	Last year the assessment was done using XSA. The assessment presented by STECF provided similar results
07	*Mullus barbatus*	XSA, Y/R	Fcurr= 0.78	F0.1= 0.31	2.5	In overexploitation with relative high biomass	Reduce fishing mortality	Update of last year assessment. Correction of t0 compared to last year. Similar results from the assessment presented by STECF
09	*Mullus barbatus*	A4a	Fcurr=1.57	$F_{0.1}$=0.54	2.9	In overexploitation	Maintain the current level of fishing mortality	New assessment
10	*Mullus barbatus*	A4a	Fcurr=0.25	$F_{0.1}$=0.54	0.46	Sustainably exploited	Maintain the current level of fishing mortality	Last year the assessment was performed with XSA, giving the same figure on the stock status
01	*Aristeus antennatus*	A4a, Y/R	Fcurr= 1.40 (±0.17)	F0.1= 0.44	3.2	In overexploitation with relative intermediate biomass	Reduce fishing mortality	Last year the assessment was done using XSA. Advice in line with an additional assessment presented by STECF provided similar results
02	*Aristeus antennatus*	XSA, Y/R	Fcurr= 0.70	F0.1= 0.50	1.4	In overexploitation with relative low biomass	Reduce fishing mortality	New assessment
05	*Aristeus antennatus*	XSA, a4a				In overexploitation	Reduce fishing mortality	Qualitative advice; instability in the population dynamics in the last years due to environmental drivers
06	*Aristeus antennatus*	A4a, Y/R	Fcurr= 2.08 (±0.36)	F0.1= 0.42	4.9	In overexploitation with relative low biomass	Reduce fishing mortality	Last year the assessment was done using XSA. Advice in line with an additional assessment presented by STECF provided similar results
09, 10, 11	*Aristeaomorpha foliacea*	A4a	Fcurr = 1.12	$F_{0.1}$ = 0.57	1.9	In overexploitation with relative low biomass	Reduce fishing mortality	New assessment in line with the recommendation from WGSAD 2017 on considering joining GSAs 9, 10 and 11. Overexploitation status as in the assessment for GSA 9 done last year

GSA	Species	Methodology used	Current values	Reference points	F_{curr}/F_{unique}	Stock status (exploitation and biomass[1] level)	Scientific advice	WGSAD comments
01	*Parapenaeus longirostris*	XSA, Y/R	Fcurr=1.10	F0.1=0.50	2.2	In overexploitation with relative high biomass	Reduce fishing mortality	New assessment
01, 03, 04	*Parapenaeus longirostris*	LCA (VIT)	Fcurr=1.5	F0.1=0.70	2.2	In overexploitation	Reduce fishing mortality	New assessment done with 3 years of data (2015-2017)
05	*Parapenaeus longirostris*	XSA, Y/R	Fcurr= 0.95	F0.1= 0.77	1.2	In overexploitation with relative high biomass	Reduce fishing mortality	Update assessment from last year
06	*Parapenaeus longirostris*	XSA, Y/R	Fcurr=1.60	F0.1=0.70	2.3	In overexploitation with relative high biomass	Reduce fishing mortality	Update assessment from last year
09, 10, 11	*Parapenaeus longirostris*	A4a	Fcurr = 1.68	$F_{0.1}$ = 0.74	2.3	In overexploitation with relative high biomass	Reduce fishing mortality	New assessment; last year the assessment was done separately in GSA 9 (exploited sustainably) and 10 (overexploited) using XSA
05	*Nephrops norvegicus*	A4a	Fcurr = 0.73	$F_{0.1}$ = 0.13	5.61	In overexploitation	Reduce fishing mortality	New assessment
06	*Nephrops norvegicus*	A4a	Fcurr = 0.44	$F_{0.1}$ = 0.12	3.66	In overexploitation	Reduce fishing mortality	New assessment
01& 03	*Pagellus bogaraveo*	SPiCT, BioDyn, VIT				In overexploitation and overexploited	Reduce fishing mortality	**Benchmark assessment:** • Stock status based on a combination of all models all producing compatible results • Further work should be carried out on the development of the length-based GADGET model
Central Mediterranean								
12-16	*Merluccius merluccius*	XSA, Y/R	0.91	0.20	4.6	In overexploitation with relative ow biomass	Reduce fishing mortality	Update of last year assessment

GSA	Species	Methodology used	Current values	Reference points	F_{curr}/F_{unique}	Stock status (exploitation and biomass[1] level)	Scientific advice	WGSAD comments
12-14	*Mullus barbatus*	XSA	0.94	0.47	2.00	High overfishing with relatively high biomass	Reduce fishing mortality	**Benchmark assessment:** • shift to statistical models • separate biological parameters for GSA 12 and GSAs 13-14 • review maturity ogive • standardize tuning fleet • explore discard data
15	*Mullus barbatus*	XSA	0.45	0.40	1.11	Low overfishing with relatively low biomass	Reduce fishing mortality	**Benchmark assessment:** • shift to statistical models • VMS data to improve knowledge on fleet connectivity between GSAs 15 & 16 • Use MEDITS for tuning • explore discard data • Investigate joining GSAs 15 & 16
16	*Mullus barbatus*	XSA	0.40	0.42	0.95	In sustainable exploitation with relatively intermediate/high biomass	Maintain the current level of fishing mortality	**Benchmark assessment:** • shift to statistical models • VMS data to improve knowledge on fleet connectivity between GSAs 15 & 16 • Use MEDITS for tuning considering issues related to age0 • explore discard data Investigate joining GSAs 15 & 16
19	*Mullus barbatus*	XSA	0.42	0.40	1.05	Low overexploitation with relatively intermediate biomass	Reduce fishing mortality	**Benchmark assessment:** • shift to statistical models • consider issues related to age0 when using MEDITS data for tuning
20	*Mullus barbatus*	SPiCT	Fcurr= 0.20	F_{MSY} = 0.70	0.28	Sustainably exploited with absolute high biomass ($B_{current}/B_{MSY}$ = 1.8)	Maintain the current level of fishing mortality	New assessment

GSA	Species	Methodology used	Current values	Reference points	F_{curr}/F_{unique}	Stock status (exploitation and biomass[1] level)	Scientific advice	WGSAD comments
12-16	*Parapenaeus longirostris*	XSA, Y/R	Fcurr=1.42	$0.84 \leq F_{0.1} \leq 0.93$	1.69 -1.53	In overexploitation with relative high biomass	Reduce fishing mortality and catches of undersized shrimps	Update assessment
Adriatic Sea								
17-18	*Merluccius merluccius*	SS3	Fcurr = 0.56	F0.1 = 0.17	3.4	In overexploitation and overexploited	Reduce fishing mortality	**Benchmark assessment:** • Different runs performed with SS3 and a4a; SS3 chosen to provide advice based on diagnostics • A4a to be further developed to mimic SS3 outcomes to use to develop an MSE
17-18	*Mullus barbatus*	A4a	Fcurr = 0.48	F0.1 = 0.41	1.2	In overexploitation with relative high biomass	Reduce fishing mortality	The period during which the MEDITS trawl survey was conducted was noted as particularly important for this species; the issue of further standardizing MEDITS surveys in some GSAs was raised. Issues to be tackled in the future benchmark were listed in the report.
17-18-19	*Parapenaeus longirostris*	A4a				Possibly in overexploitation	Reduce fishing mortality	A precautionary advice is provided. Due to the fast increase in biomass, the methods used to assess this stock appear not able to properly model the population dynamics, and they are providing unstable results in the last years.
17	*Penaeus kerathurus*	CMSY	Fcurr= 0.96	F_{MSY}= 0.46	2.1	In overexploitation with relative low biomass	Reduce fishing mortality	New assessment
17	*Squilla mantis*	SS3	Fcurr=0.66 (±0.33)	F0.1=0.43	1.5	In overexploitation with relative low biomass	Reduce fishing mortality	New growth parameters are needed.
17-18	*Squilla mantis*	A4a	Fcurr=1.08	F0.1=0.40	2.6	In overexploitation with relative high biomass	Reduce fishing mortality	New assessment; new growth parameters are needed.

GSA	Species	Methodology used	Current values	Reference points	F_{curr}/F_{unique}	Stock status (exploitation and biomass[1] level)	Scientific advice	WGSAD comments
17-18	*Nephrops norvegicus*	SPiCT	Fcurr= 0.66	F_{MSY}= 0.45	1.5	In overexploitation with absolute low biomass ($B_{current}/B_{MSY}$ = 0.41)	Reduce fishing mortality	New assessment
17	*Sepia officinalis*	CMSY	Fcurr= 0.40	F_{MSY}= 0.48	0.8	Sustainably exploited with absolute low biomass ($B_{current}/B_{MSY}$ = 0.65)	Not to increase fishing mortality	Update assessment from last year. F in the last two years is below F_{MSY}. However, wide ranges of uncertainties are observed in the last years from under exploitation to overexploitation
Eastern Mediterranean								
25	*Pagellus erythrinus*	SPiCT	Fcurr= 0.24	F_{MSY} = 0.47	0.51	Sustainably exploited	Do not increase fishing mortality	Different approaches were tested, including LiME and CMSY. All the models provided results consistent with the accepted advice.
27	*Pagellus erythrinus*	LCA (VIT)	Fcurr= 0.61	F0.1= 0.37	1.6	In overexploitation	Reduce fishing mortality	The endorsement of EC regulation 1967/2006, which bans bottom-trawl activities within 1.5 nautical mile off the coast and in depths below 50m, pushed fishing effort further offshore leading to the reduction of fishing pressure on this continental shelf species.
27	*Lithognathus mormyrus*	LCA (VIT)	-	-	-	In overexploitation	Reduce fishing mortality	Despite the availability of three years of data (2015-2017), the group considered insufficient the sampling coverage in 2017. Therefore the assessment was considered for providing qualitative advice.
26	*Mullus surmuletus*	LCA (VIT)	Fcurr= 0.77	F0.1= 0.32	2.38	In overexploitation	Reduce fishing mortality	Six years of data were available, from 2011 to 2014, 2016-2017. The last three years were used to provide advice.
26	*Metapenaeus stebbingi*	LCA (VIT)	Fcurr= 2.54	F0.1= 0.89	2.86	In overexploitation	Reduce fishing mortality	The assessment was based on six years of data. The assessment on separate and combined years provided stable and consistent results. A separable VPA was performed to support the results of VIT analysis.

Table 2: Scientific advice on the status of the assessed small pelagic stocks

GSA	Species	Methodology used	F/FMSY *(E)	B/BMSY *B/Bpa **B/Blim	Stock status	Management advice	WG comments
1	Anchovy	Precautionary based on trends	--	--	Uncertain	Not to increase fishing mortality	Catches are highly variable and mainly based on recruitment. The population is small and often restricted to one bay. The acoustic survey exhibits some problems to be used in stock assessment. No stock assessment could be validated. Nonetheless, based on trends in different indicators, no sign of overexploitation could be detected (fish size increased, as well as nominal and standardized CPUE, while catches were stable). The WG suggests to adopt a precautionary approach and to not increase fishing mortality.
1	Sardine	Precautionary based on trends	--	--	Uncertain	Reduce fishing mortality	The acoustic survey exhibits some problems to be used in stock assessment. No stock assessment could be validated. Nonetheless, the WG decided to provide qualitative advice based on trends in different indicators. Landings decreased and no long-term trends were observed in size or CPUE. Still, CPUE were lowest in 2017, and length at age and weight at age slightly decreased in the last 3 years. Also, no recruitment was observed in the fisheries in 2017. Therefore, as a precautionary approach the WG recommends to reduce fishing mortality.
3	Sardine	Precautionary based on trends	--	--	Uncertain	Reduce fishing mortality	Some data issues were highlighted, especially regarding the acoustic tuning index. An important work to disaggregate spring and autumn surveys need to be performed in order to be able to use them in assessments. No assessment could be run due to this tuning index problem. Nonetheless, the WG decided to provide qualitative advice based on trends in different indicators. Catches as well as nominal CPUE have decreased a lot since 2000, although the standardized CPUE are stable. Both size and mean weight have also decreased. Due to these negative trends, the WG suggests to adopt a precautionary approach and to reduce fishing mortality.
6	Anchovy	SPICT			Sustainably exploited	Evaluate potential fishing opportunities	Uncertainty in the growth curve and ultimately natural mortality prevented XSA to give satisfactory results. A SPICT biomass model using a long time-series of catches from 1945 and MEDIAS and ECOMED biomasses as tuning was also run. Both surveys were used as a single index but with indicating their different timing. The model shows a sustainable exploitation, which is supported by the increase in catches and acoustic

GSA	Species	Methodology used	F/FMSY *(E)	B/BMSY *B/Bpa **B/Blim	Stock status	Management advice	WG comments
							biomass in recent years. Nonetheless, the ratios (B/B_{MSY} = 1.9 and F/F_{MSY} = 0.58) might be a bit optimistic and the WG notes that fish are still quite small and lean. As such, this assessment is presented as a qualitative one.
6	Sardine	XSA/a4a	2.11	--	In overexploitation	Reduce fishing mortality	Two different models were performed. Both used annual ALK to slice length-frequency distribution but they differed in the growth curve and natural mortality used. The a4a model used two updated growth curves obtained using larvae otoliths to improve t_0 (one before and one after 2010 to reflect changes in fish size and growth), while the XSA used the usual Von Bertalanffy growth. Both models give very similar trends in terms of SSB, recruitment and F and give similar ratio of exploitation (2.11 for a4a and 2.12 for XSA). The stock is in high overexploitation and fishing mortality needs to be decreased.
7	Sardine	Direct acoustic estimate & Indirect method (2-stage biomass model)	*E=0.01	--	Ecologically unbalanced Very low fishing mortality.	Fishing mortality should not be allowed to increase.	The situation is very similar to previous years: the size is still low and the age composition unbalanced. A 2-stage biomass model has been performed combining acoustic biomass and catches from 1993 to 2017 confirming the very low fishing mortality. The biomass estimate, body condition and recruitment in 2018 are intermediate. The WG recalls that the low fishing effort is due to the small size of sardines and an absence of market for them. Management measures need to ensure that if size increases again the fishing activity would not increase too much to allow the stock for a recovery.
7	Anchovy	Direct estimate from acoustics	--	*0.71 **1.41	Low biomass	Reduce fishing mortality.	The biomass in 2018 is above B_{lim} but below B_{pa}. The very high recruitment observed in 2017 did not translate in an increase of the age-2 class in 2018. There is no improvement in the size or age composition. But the body condition increased a lot, which might be due to particular environmental conditions during the survey, as the majority of anchovies were found close to the surface, contrary to their usual bottom distribution. As for sardines, management measures need to ensure that if size increases again the fishing activity would not increase too much to allow the stock for a recovery.
16	Sardine	XSA		--	In overexploitation	Reduce fishing mortality	Work has been done to standardize the acoustic index to a same area each year. Also, the use of an average ALK in order to be more coherent enabled the XSA to converge and give

GSA	Species	Methodology used	F/FMSY *(E)	B/BMSY *B/Bpa **B/Blim	Stock status	Management advice	WG comments
							satisfactory diagnostics. MEDIAS was used as a tuning index and the model was run on the 2002-2017 period. Nonetheless, there is still uncertainty in some of the input data (especially in growth parameters, which were extracted from another GSA) and the assessment is thus presented as qualitative (F/F_{MSY} = 1.69).
17-18	Anchovy	SAM	1.32*	2.6* 1.3**	In overexploitation	Reduce fishing mortality	Updated assessment including 2018 (data year-1) data
17-18	Sardine	SAM	1.71*	1.25* 0.63**	Overexploited and in overexploitation	Reduce fishing mortality	Updated assessment including 2018 (data year-1) data
22	Anchovy	Indirect method (a4a & SAM)	0.78 (a4a)	--	Sustainably exploited	Evaluate potential fishing opportunities	This stock was assessed through two different statistical catch at age models (SAM and a4a). Due to logistics problems, there are gaps in the data (in terms of survey but also of catch at age) and assumptions had to be made to fill them for the SAM model. As a consequence, uncertainty is high as shown by confidence intervals in the plot and results should be taken with caution. In order to decrease this uncertainty, surveys have to be carried out every year. Nonetheless both models gave a similar perspective of F/F_{MSY} below 1 (0.47 for SAM and 0.78 for a4a) and confirmed the status obtained last year, increasing our confidence in the results. a4a was selected as the preferred model as it allowed for gaps in the data and for a retrospective analysis.
22	Sardine	Indirect method (a4a & SAM)	1.12 (a4a)	--	In overexploitation	Reduce fishing mortality	This stock was assessed through two different statistical catch at age models (SAM and a4a). Due to logistics problems, there are gaps in the data (in terms of survey but also of catch at age) and assumptions had to be made to fill them for the SAM model. As a consequence, uncertainty is very high as shown by confidence intervals in the plot and results should be taken with caution. In order to decrease this uncertainty, surveys have to be carried out every year. Nonetheless both models gave a similar perspective of F/F_{MSY} above 1 (1.99 for SAM and 1.12 for a4a) and confirmed the status obtained last year, increasing our confidence in the results. a4a was selected as the preferred model as it allowed for gaps in the data and for its retrospective analysis.

Appendix 6

Technical elements for the management of select fisheries

Appendix 6/A

Technical elements for the management of demersal fisheries in the Adriatic Sea

1. Scope

The management plan should cover the Adriatic Sea, corresponding to GSAs 17 and 18.

Demersal fisheries in the Adriatic Sea account for approximately 30 percent of all Adriatic catches, with around ten prevalent demersal species being caught mainly by bottom trawlers and, to a lesser extent, beam trawlers, longlines, set nets and traps (SOMFI, 2018). Irrespective of the gear used, demersal resources in the Adriatic Sea are caught by multispecies fisheries. The main species targeted by bottom trawls in the Adriatic Sea are red mullet (*Mullus barbatus*, 12.2 percent), spottail mantis shrimp (*Squilla mantis*, 11.95 percent), European hake (*Merluccius merluccius*, 11.85 percent), musky octopus (*Eledone moschata*, 7.5 percent), common cuttlefish (*Sepia officinalis*, 6.24 percent), deep water rose shrimp (*Parapenaeus longirostris*, 5.08 percent), European squid (*Loligo vulgaris*, 4.26 percent), caramote prawn (*Penaeus kerathurus*, 4.19 percent) and whiting (*Merlangius merlangus*, 3.22 percent)), with other species accounting for 33.5 percent for a total catch of 28880 tonnes. The main species targeted by beam ("rapido") trawls in the Adriatic Sea are common sole (*Solea solea*, 28.14 percent), purple dye murex (*Bolinus brandaris*, 21.16 percent), common cuttlefish (15.67 percent), Murex (*Murex* spp., 10.71 percent), scallops (Pectinidae, 5.97 percent), spottail mantis shrimp (4.69 percent), with other species comprising 13.65 percent for a total catch of 3964 tonnes (SOMFI, 2018). Longliners also take demersal resources in the Adriatic Sea, for a total of 1105 tonnes and mainly targeting European hake (49.9 percent), while small-scale fisheries using static gears of various kinds (traps and pots, gillnets and trammel nets) are dominated by common cuttlefish (16.66 percent) and common sole (14.35 percent) (SOMFI, 2018).

2. Status of Adriatic Sea demersal stocks

The status of Adriatic Sea priority species assessed at the GFCM Working Group on the Assessment of Demersal Species (WGSAD) in 2018 is summarized in Table 1, showing that with the exception of common cuttlefish which was sustainably exploited, all other priority species were found to be in overexploitation, to different extents. European hake leading the way with a current level of fishing mortality close to 3.5 times higher than F_{MSY}.

3. Potential fisheries management measures

The existing (*in italics*) and potential fisheries management measures applicable to demersal fisheries in the Adriatic Sea include:

- Fishing effort regime
- FRA to protect EFH
    - *Jabuka/Pomo pit (Rec. GFCM 41/2017/3)*
- *Depth restrictions*
- Other spatial restrictions
    - *Distance from the coast*
- Temporal closures
    - Authorized number of fishing days

- Temporal closures
- Gear restrictions
  - *Authorized/prohibited gear types*
  - Gear characteristics including *mesh size*
- Management of the fleet capacity
  - Fleet registry
  - Number of vessels/fleet capacity
- *Minimum conservation reference size*
- Control measures
  - VMS and electronic logbook
  - pilot project for joint inspection schemes

4. Simulation of the potential effects of alternative management measures

On the basis of the request by the forty-second session of the GFCM to the SAC to provide advice on technical elements for the management of demersal fisheries in the Adriatic Sea, the WKMSE-AS discussed the work carried out by the recent *STECF expert group on Multiannual Plan for the fisheries exploiting demersal stocks in the Adriatic Sea (STECF-19-02)*, and provided the following comments and suggestions. The full report of the STECF 19-02 is available at:

https://stecf.jrc.ec.europa.eu/documents/43805/2465980/STECF+19-02+-+MAP+demersals+Adriatic.pdf

Technical comments:

The WKMSE-AS agreed on the importance of ensuring and testing for the robustness of the models used for advice to the assumptions made, particularly during benchmark sessions, as highlighted by the analysis carried out by the STECF expert group. In this context it was suggested that adequate time should be devoted during assessment expert groups to investigate and document uncertainty through sensitivity analyses.

The WKMSE-AS noticed that the effect of the three-year lag between data (fisheries reference year) and management caused, in all stocks evaluated, a cyclicity in the projected F that was also reflected in SSB and catches.

The WKMSE-AS discussed the methods and results obtained by the STECF expert group, and commented the following:

a. European hake:
   i. the fact that hake is heavily overexploited leads to the stock being very reactive to changes in F leading to large increases in SSB. This brings the stock dynamics to areas not observed in the past data, increasing uncertainty in the outcomes and suggesting results should be taken cautiously. Nevertheless, the outcomes of the MSE for this stock are very similar to those obtained for other hake stocks around the world, some of them validated by an observed quick recovery after a reduction of fishing pressure.

b. Deepwater rose shrimp:
   i. The assessment highlights a peak in recruitment in the most recent part of the time series. This makes it difficult to project into the future and therefore the results of an MSE based on this assessment should be taken with caution.

c. Common sole:

   i. The average of F in the last three years, used as F status quo, is smaller than the terminal F in the assessment, instantly triggering an increase in SSB, due to an artificial decrease of fishing mortality in the first year of the projection.

   ii. For this particular MSE, the harvest control rules were not robust to the stock recruitment relationship assumed in the assessment.

Management scenarios

The WKMSE-AS acknowledged that the scenarios tested within the STECF 19-02 were in line with general principles also valid within the GFCM framework. In relation to the spatial scenario simulating the closure of the 6 nm strip to trawling in the western GSA17, it was underlined that this measure would not be applicable to the fisheries of the eastern Adriatic Sea, due to the specificities of the area (sea bottom) and the fleets.

Experts also noted that other additional scenarios could be identified in line with the procedure agreed by the SAC, and in support of the request made by the GFCM. In this context, it was highlighted that in order to have scenarios that are able to account for the differences between countries, for example in terms of fishing effort deployed, detailed data describing the different national fleets was required.

Advice

In recognizing the value of the work described in STECF 19-02, the WKMSE-AS recommended the following findings should be taken into consideration by the SRC-AS and the SAC for the management of Adriatic demersal resources:

- The linear reduction scenario tested had the best performance in terms of both recovery and reaching the target of MSY. This is particularly true for stocks that are highly overexploited and for which a significant and continued reduction (as highlighted by the results of the stock assessment) may be needed to reach agreed targets. In those cases, small reductions of effort (i.e. reductions that are only a small fraction of the reduction suggested by the stock assessment) may not be enough and may be absorbed by changes in the fishery. On those cases, implementing small reductions on effort only postpone the implementation of the actual level of reduction required to achieve targets, with the effect of increasing the probability that the target may not be reached at the agreed deadline in the simulation.

- Regarding common sole, the most effective spatial measures to reduce F among the ones tested is the combination of the 6 nm closure with the effort reduction. The simulations with the sole sanctuary resulted in an increase of SSB, without significant effect on F.

- Simulations comparing the effects of a two- and a three-year management lag in the cyclic response observed in the simulations show that with a two-year lag, cycles in F are smaller while with a three year lag they get bigger over time. This increases the uncertainty in the projections for catch and SSB. This effect is exacerbated by the fact that the fishery for most of these species concentrates on individuals between one and three years of age, so by the time adopted measures become effective, the stock used as the basis of management would have already left the fishery.

Table 1. Status of Adriatic Sea priority species emerging from the 2018 GFCM Working Group on the Assessment of Demersal Species (WGSAD)

GSA	Species	Method	Fcurr	F_{unique}	Ratio	Stock status	Advice	WGSAD comments
17-18	*Merluccius merluccius*	SS3	0.56	$F_{0.1}$ = 0.17	**3.4**	Overexploited and in overexploitation (Bratio = 0.7)	Reduce fishing mortality	Benchmark assessment. Results consistent with previous assessment (higher F ratio). Similar perspective between candidate models (a4a and SS3)
17-18	*Mullus barbatus*	A4a	0.48	$F_{0.1}$ = 0.41	**1.2**	In overexpl. Rel. high biomass	Reduce fishing mortality	The issue of further standardizing MEDITS surveys in some GSAs was raised.
17-18-19	*Parapenaeus longirostris*	A4a				Possibly in overexpl.	Reduce fishing mortality	Precautionary advice is provided. Due to the fast increase in biomass, methods used to assess this stock appear not able to properly model the population dynamics
17	*Penaeus kerathurus*	CMSY	0.96	F_{MSY}= 0.46	**2.1**	In overexpl. Rel. low biomass	Reduce fishing mortality	New assessment
17	*Squilla mantis*	SS3	0.66 (±0.33)	$F_{0.1}$=0.43	**1.5**	In overexpl. Rel. low biomass	Reduce fishing mortality	New growth parameters needed
17-18	*Squilla mantis*	A4a	1.08	$F_{0.1}$=0.40	**2.6**	In overexpl. Rel. high biomass	Reduce fishing mortality	New assessment; new growth parameters needed

GSA	Species	Method	Fcurr	F_{unique}	Ratio	Stock status	Advice	WGSAD comments
17-18	*Nephrops norvegicus*	SPiCT	0.66	F_{MSY}= 0.45	**1.5**	In overexpl. Absolute low biomass (Bratio = 0.41)	Reduce fishing mortality	New assessment
17	*Sepia officinalis*	CMSY	0.40	F_{MSY}= 0.48	**0.8**	Sustain. exploited Absolute low biomass (Bratio = 0.65)	Not to increase fishing mortality	Updated assessment. F in the last two years is below F_{MSY}. However, wide ranges of uncertainties are observed in the last years from under exploitation to overexploitation

Appendix 6/B

Updated technical elements for the management of fisheries for blackspot seabream (*Pagellus bogaraveo*) in the Strait of Gibraltar

Technical elements for the management of fisheries for blackspot seabream (*Pagellus bogaraveo*) in the Strait of Gibraltar (endorsed at the twentieth session of the SAC, 2018)

1. Scope of the management plan

The management plan should address all fisheries targeting *Pagellus bogaraveo*, in GSA 01–03 including recreational fisheries. Adaptive management measures addressing the management unit of the Strait of Gibraltar (see figure) shall be based on a quantitative advice for this unit, to be provided by SAC by 2019, while precautionary measures in line with Recommendation GFCM/41/2017/2 shall be applied in the rest of the area mentioned in this scope.

2. Objectives

Improving the exploitation pattern of blackspot seabream fisheries

Operational objectives

To maintain fishing mortality for blackspot seabream within precautionary reference points and to achieve as soon as possible or maintain the maximum sustainable yield.

In order to do that, F_{MSY}, Bpa and BLim should be established by 2019

3. Fisheries management measures

Recommendation GFCM/41/2017/2 request concerned CPCs to maintain the fishing fleet capacity or fishing effort at levels authorized and applied in recent years for the exploitation of blackspot seabream in the Alboran Sea.

In this respect, fishing capacity for longliners (including Spanish and Moroccan voraceras) as well as small scale vessels using mainly longlines and handlines, should be understood as the combination of a **unit of activity** (fishing days) and a **unit of capacity** (number of hooks).

The management plan could also consider the need to assess and minimize any potential impact of existing fishing gears on the seabed, including through the possibility of testing alternative gears/materials.

In addition to the above, the following management measures, including those proposed within Recomendation GFCM/41/2017/2 as well as additional potential management measures , could be considered, taking into account the comments provided by Morocco and Spain.

Management measures	Comments	Morocco	Spain
Spatial restrictions	Rec. GFCM/41/2017/2 request countries to consider this type of measures and inform on spatial closures	No available information on exact areas to be protected	No available information on exact areas to be protected The fishing grounds within the Strait of Gibraltar are reduced, difficult to impose spatial restriction. Juveniles are outside the Strait of Gibraltar and it could be important to establish some protection.
Temporal restrictions	Rec. GFCM/41/2017/2 request countries to consider this type of measures and inform on temporal restrictions	Wait for results on biological cycles in the area	Previous temporal restriction (2 months February and March – coincides with the spawning period) not active from 2016. Future management plan could agree on common temporal closure
Gear restrictions	Rec. GFCM/41/2017/2 request passive fishing gear, including markers and intermediary buoys, shall permanently display the registration letters and numbers reported on the hull of the fishing vessel to which they belong	Fishing gears used are not considered passive gears by Morocco.	Already included in EU regulation. The gear is linked in the boat and is therefore not considered a passive gear, no extra mark used.
Minimum size	Minimum conservation reference sizes should be defined and harmonized in the sub-region, based on the best scientific knowledge about maturity.	Currently 25 cm Fork Length. Any revision pending future results of the biological sampling.	Currently 33 cm Total Length, coming from a STECF scientific assessment, related to sex change, applicable both in the Atlantic and Mediterranean waters. As there are studies on high survival rate, alive release of below size individuals should be considered as a possibility

4. Decision rules

The management plan will include decision rules with pre-agreed measures to be adopted under different conditions of the stock in relation to agreed biological reference points. The specific technical measures to be adopted under each stock status scenarios are to be defined in appropriate national and sub-regional working groups, taking into account the socioecomic impacts of the proposed measures.

5. Scientific monitoring

The Scientific Advisory Committee (SAC) of the GFCM should be responsible for advice on status of stocks and economic indicators of fisheries.

Adequate and periodic scientific monitoring of fisheries (including socioeconomic indicators) and exploited stocks at national level should be ensured so that SAC is in a position to provide scientific advice.

Monitoring and reporting of the number of hooks used in a fishing operation will be desirable in order to have a precise estimate of effort.

6. Research priorities to improve the assessment and management of fisheries

The list of research priorities should be organized based on the measures proposed within the plan. As a first indication and based on the advice provided by the Working Groups on Stock assessment, potential research priorities could include:

- Continue the current monitoring on landings and length frequency distributions of landings;
- Start biological sampling in both countries (Morocco and Spain);
- Keep exploring analytical tools such as GADGET to assess the stock;
- Conduct a study on stock boundaries;
- Establish observers on board programmes for both the target fishery and the trawl fishery;
- Launch a survey to obtain a fishery-independent index;
- Standardize effort between countries;
- Collect relevant socio-economic data towards their future inclusion in a Management Strategy Evaluation framework;
- Collect data regarding recreational fisheries, and
- Understand interactions between the fishery and the environment.

7. Fisheries monitoring

Management plan should follow existing recommendations, in particular those included in Recommendation GFCM/41/2017/2 in relation to the register of fishing authorizations, and take into consideration relevant aspects included in adopted resolutions related to MCS.

8. Review of the management plan

The contents of the management plans should be periodically reviewed in order to accommodate changes in the fisheries. Comprehensive roadmaps will be provided by SAC for the assessment and management of the fishery.

Update on technical elements for the management of blackspot seabream in the Strait of Gibraltar (endorsed at the twenty-first session of the SAC, 2019)

This document is a compilation of relevant information for the management of blackspot seabream (*Pagellus bogaraveo*), complementing previous technical elements for the management of this fishery, as produced by the twentieth Session of the SAC. It includes i) the most recent advice on the status of the blackspot seabream *(Pagellus bogaraveo)* stock, as produced by the WGSAD; ii) baseline information used to determine the minimum conservation reference size as advice in relation to minimum landing size; iii) the number of authorized vessels for both Morocco and Spain; and iv) management measures in place, including trends data on effort and landings, per country and fleet, for different time series. This information emanates from the second and third meetings of the SRC-WM (Spain, March 2018 and France, April 2019, respectively) as well as the benchmark session on the assessment of blackspot seabream *(Pagellus bogaraveo)* in the Strait of Gibraltar (France, April 2019). It complements the elements for the management of blackspot seabream *(Pagellus bogaraveo)*, endorsed by the twentieth session of the SAC (Morocco, June 2018).

TABLE 1 - Status of the blackspot seabream *(Pagellus bogaraveo)* stock in the Strait of Gibraltar

Model	**Data series**	**B/BMY**	**F/FMSY**
BioDyn	Aggregated S+M catches 1983-2018 and Spain CPUE corrected with 0 catch (1995-2018)	0.14	-
BioDyn	Aggregated S+M catches 1983-2018 and Spain CPUE corrected with 0 catch (1983-2018)	0.14	-
SPICT	Aggregated S+M catches 1983-2018 and Spain CPUE all series corrected (VMS + corrected)	0.22	1.81
SPICT	Aggregated S+M catches 1983-2018 and Spain CPUE corrected only 2000 - 2008 (+VMS)	0.18	1.99
LCA	Aggregated S + M length frequency distributions (2016 - 2018)	-	2.13
	Average	**0.17**	**1.90**

TABLE 2 - relevant information for the determination of minimum landing size

	Spain	Morocco
L50 males (cm)	30	31
L50 females (cm)	35	32
L50 change of sex (cm)	35	--
Existing minimum landing size (TL in cm)	33	28*

* minimum landing size in Morocco is 25 cm fork length, which is estimated to be equivalent to 28 cm total length

TABLE 3a - Active fleet operating in the fishery (Morocco)

Years / Effort	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Fleet segment	Polyvalent artisanal Polyvalent longline	Polyvalent artisanal Polyvalent longline	Polyvalent artisanal Polyvalent longline	Polyvalent artisanal Polyvalent longline	Polyvalent artisanal Polyvalent longline	Polyvalent artisanal Polyvalent longline	Polyvalent artisanal Polyvalent longline	Polyvalent artisanal Polyvalent longline	Polyvalent artisanal Polyvalent longline	Polyvalent artisanal Polyvalent longline	Polyvalent artisanal Polyvalent longline	Polyvalent artisanal Polyvalent longline	Polyvalent artisanal Polyvalent longline	Polyvalent artisanal Polyvalent longline	Polyvalent artisanal Polyvalent longline	Polyvalent artisanal Polyvalent longline	Polyvalent artisanal Polyvalent longline
Capacity (Number of hooks)	There is a maximum number of hooks used in each country (see Table 4) – to give better estimations of this parameter a sampling program is envisaged																
Nominal effort (capacity x activity)																	
Number of vessels	115	125	103	113	102	127	129	115	141	178	168	174	165	168	170	160	163
Polyvalent artisanal (<6 m)	14	25	15	21	8	28	25	16	34	79	72	72	75	83	92	76	78
Polyvalent longliners **(>6m)**	101	100	88	92	94	99	104	99	107	99	96	102	90	85	78	84	85
Landing ports	Tangier (main port) Ksar Sghir Belyounech Fnideq-M'diq	Tangier (main port) Ksar Sghir Belyounech Fnideq-M'diq	Tangier (main port) Ksar Sghir Belyounech Fnideq-M'diq	Tangier (main port) Ksar Sghir Belyounech Fnideq-M'diq	Tangier (main port) Ksar Sghir Belyounech Fnideq-M'diq	Tangier (main port) Ksar Sghir Belyounech Fnideq-M'diq	Tangier (main port) Ksar Sghir Belyounech Fnideq-M'diq	Tangier (main port) Ksar Sghir Belyounech Fnideq-M'diq	Tangier (main port) Ksar Sghir Belyounech Fnideq-M'diq	Tangier (main port) Ksar Sghir Belyounech Fnideq-M'diq	Tangier (main port) Ksar Sghir Belyounech Fnideq-M'diq	Tangier (main port) Ksar Sghir Belyounech Fnideq-M'diq	Tangier (main port) Ksar Sghir Belyounech Fnideq-M'diq	Tangier (main port) Ksar Sghir Belyounech Fnideq-M'diq	Tangier (main port) Ksar Sghir Belyounech Fnideq-M'diq	Tangier (main port) Ksar Sghir Belyounech Fnideq-M'diq	Tangier (main port) Ksar Sghir Belyounech Fnideq-M'diq

TABLE 3b - Active fleet operating in the fishery (Spain)

Years / Effort	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Fleet segment *(Strait of Gibraltar)*																	
Capacity (Number of hooks)*	There is a maximum number of hooks used in each country (see Table 5), currently 2400 per fishing day																
	2 800	2 800	2 800	2 600	2 400	2 400	2 400	2 400	2 400	2 400	2 400	2 400	2 400	2 400	2 400	2 400	2 400
Nominal effort (capacity*time)	10 939 600	9 875 600	13 048 000	15 145 000	14 548 800	13 202 400	18 328 800	20 402 400	21 475 200	17 200 800	14 272 800	88 44 000	5 983 200	9 290 400	8 853 600	6 600 000	4 231 200
Number of active vessels (TOTAL)	104	100	107	130	137	118	113	146	108	104	88	77	70	67	71	66	61
Voracera handliner (6-12 m) **	104	100	107	112	120	111	102	135	98	94	79	68	62	61	63	58	54
Longliner (6-12 m)				18	17	7	11	11	10	10	9	9	8	6	8	8	7
Landing ports	Tarifa and Algeciras ("Voracera"-handliners), Conil (longliners)																

TABLE 4a: Total effort (number of days) in Spain and Morocco (2010 – 2018)

Year	Spain	Morocco
2010	7 029	2 786
2011	5 725	4 038
2012	3 845	3 858
2013	2 419	2 820
2014	3 702	3 593
2015	3 394	4 994
2016	2 411	4 614
2017	1 308	5 359
2018	4 29	2 596

TABLE 4b: Monthly effort (number of days) in Spain and Morocco (average of 2010 – 2018)

Month	Spain	Morocco
1	239	250
2	27	174
3	71	220
4	351	289
5	462	380
6	529	413
7	465	357
8	390	379
9	197	408
10	186	331
11	211	277
12	236	374

TABLE 5 - Existing management measures

Country / Measures	Morocco	Spain
Spatial restrictions	NO	NO
○ **Temporal restrictions**	NO	NO
○ **Catch restrictions**	NO	NOT in MED / EU TAC in ICES IX
○ **Effort restrictions**	NO	YES (5 days/vessel/week); 180 fishing days/vessel/year
○ **Gear restrictions**	NO	YES
Minimum size	25 cm (FL)	33 cm (TL)
○ **Participatory restrictions**	NO	YES (close vessels census)
Limits to fishing capacity	NO	YES
Vessel Monitoring System	Yes (for longliners >6)	Yes (all vessels have “green boxes”)
Other		

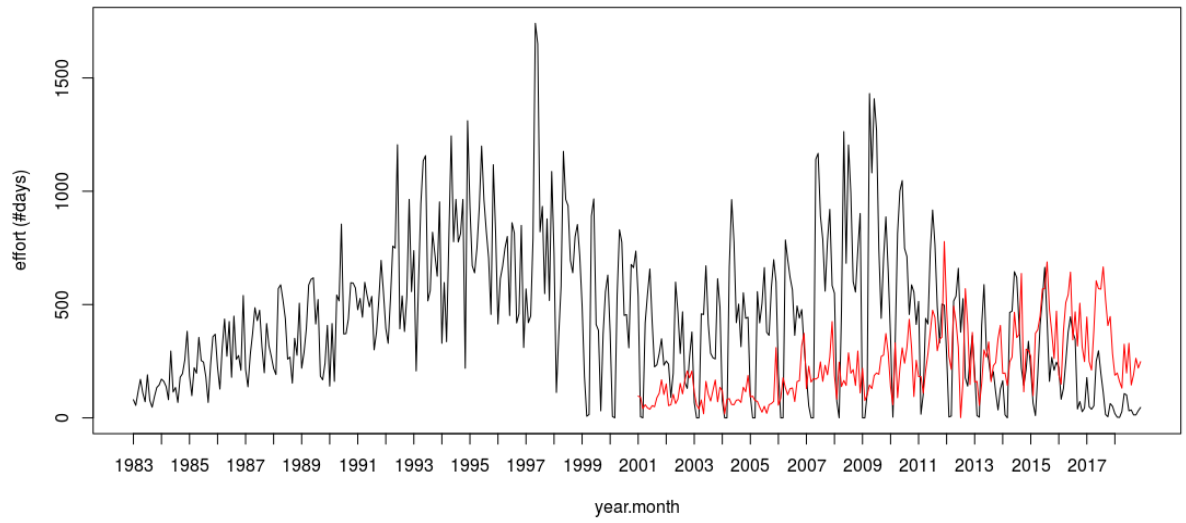


Figure 1: Time series (1983-2018) of effort (in number of days at sea) from Spain (black) and Morocco (red)

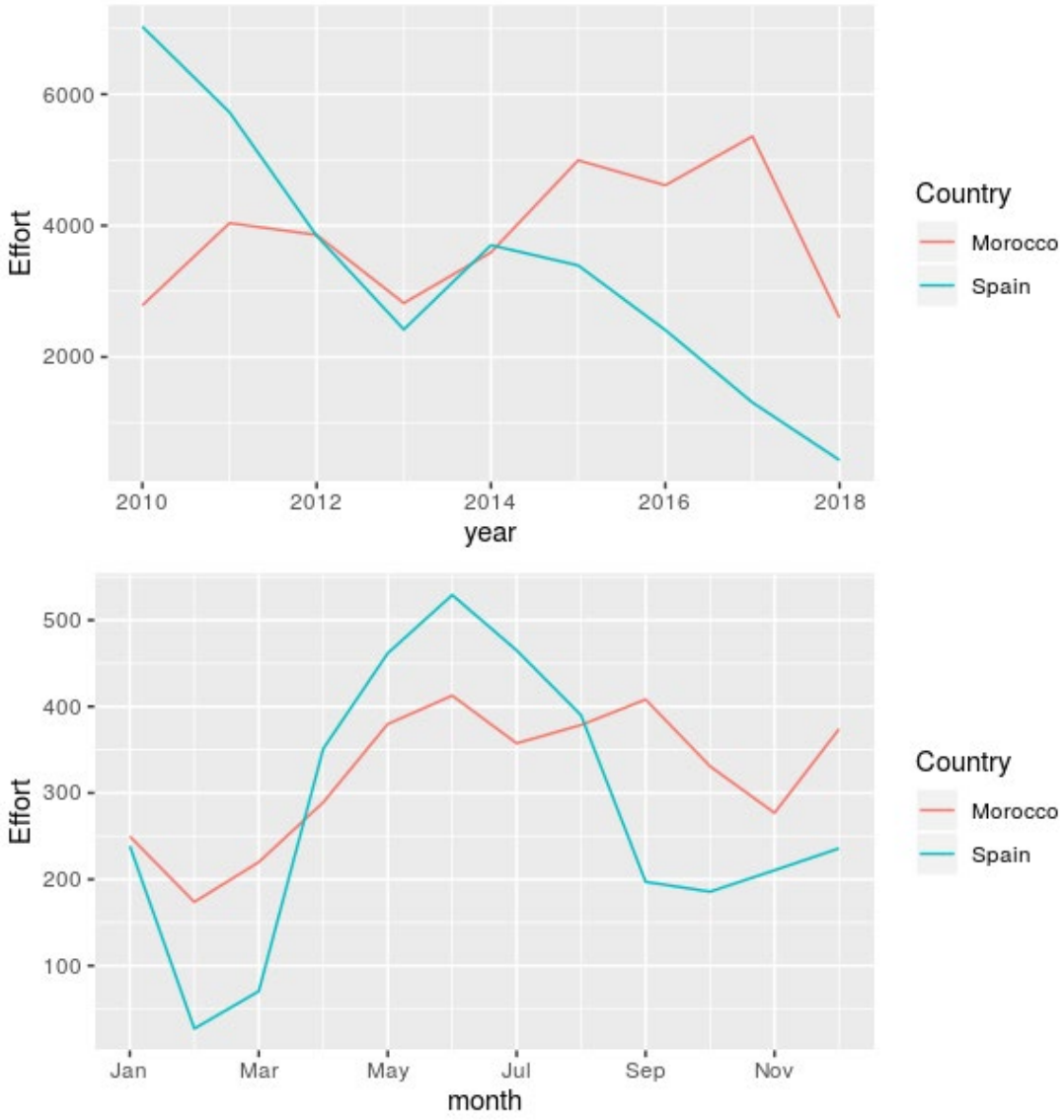
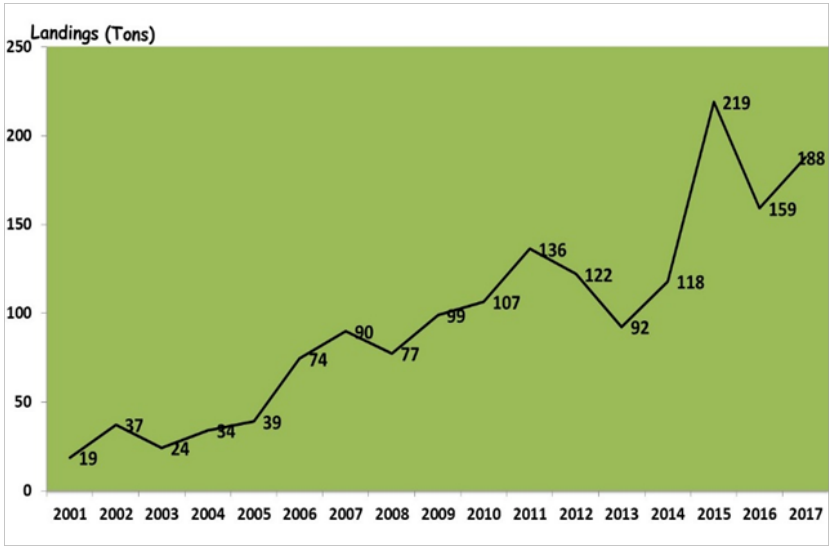


Figure 2: Effort by country from 2010 to 2018: total effort by year (top) average effort by month (bottom)



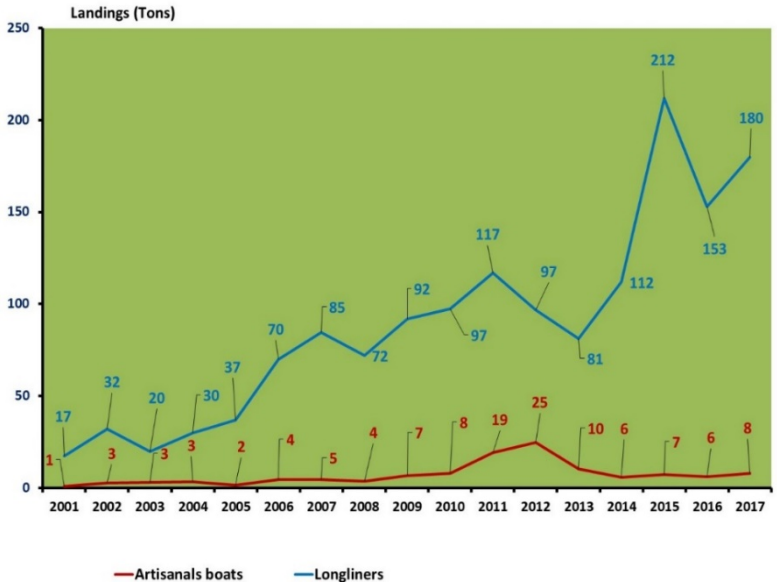


Figure 3a: Trends of landings (2001 – 2017) from the different fleets; Morocco

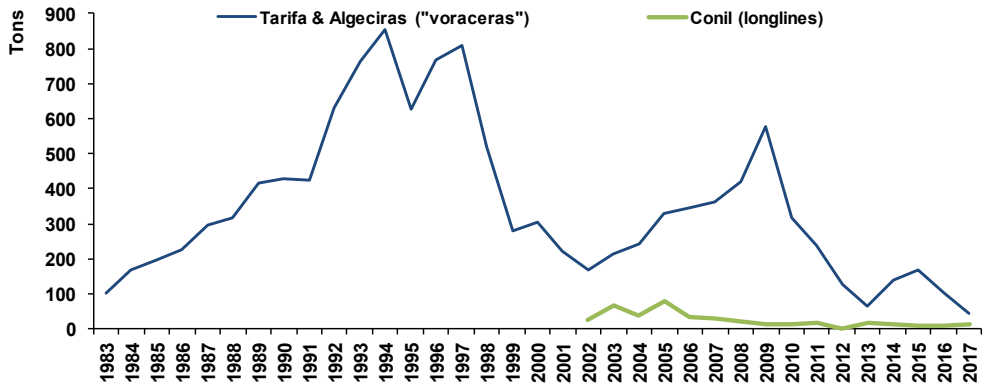


Figure 3b: Trends of landings (1983 – 2017) from the different fleets; Spain

Appendix 7

Proposed minimum elements for guiding the preparation of national fleet development plans for the deep-water red shrimp fisheries in the Levant and Ionian seas (as per recommendations GFCM/42/2018/3 and GFCM/42/2018/4)

In line with the overall goals of the GFCM and specific objectives of the Recommendations GFCM/42/2018/3 and GFCM/42/2018/4 on the management plans for deep-water red shrimp (DWRS) fisheries in the Levant and Ionian Seas, CPCs willing to develop fisheries for DWRS may submit a fleet development plan for the fishery for appreciation by the GFCM Commission. The fleet development plan should be based on a precautionary approach and provide the elements listed below, to facilitate the SAC and the Commission to evaluate the plans, also taking into account the general objectives of the Recommendations adopted, including the need to avoid increasing overall fishing effort/fleet capacity.

Taking into consideration the existing protocols and the outcomes of the WGVME, the proposed new fishery should not affect existing VMEs and be aligned with the protocols adopted by the GFCM.

Minimum elements for the preparation of a national fleet development plan proposal.

- Number and characteristics of the vessels proposed to be licensed to fish for DWRS. The plan should indicate the stepwise approach to be used for the development of the fishery in order to avoid a situation of overcapacity. In this regard, it should also indicate the feasibility of phasing out vessels, should this become necessary. To avoid new investments in fishing capacity, temporarily licensing vessels from other existing fisheries would be desirable and preferable.
- Areas (GSAs) and fishing grounds where the vessels will operate.
- Regulatory measures that will be put in place to control the operation of such vessels with a view to decrease the risks of overfishing the stocks, including:
    - Specific licensing schemes for DWRS fisheries, including a limit to the number of licenses (total fishing capacity) allowed.
    - Technical management measures to control the level of fishing mortality, including closed areas, closed seasons, fishing effort limits, catch limits, minimum sizes, gear specifications, among others.
- Monitoring, Control and Surveillance mechanisms to be employed, including the use of VMS, port inspections and observers on board.
- Data collection and reporting systems for catch, effort and biological data on the target stocks and bycatch species.

Research programmes that will be put in place to enhance knowledge on the status of the stocks and fisheries.

Appendix 8

Concept note for a research programme on European eel: towards coordination of European eel stock management and recovery in the Mediterranean

1. Preparation of this document

On the basis of the request of Recommendation GFCM/42/2018/1 on a multiannual management plan for European eel in the Mediterranean and the discussion held at the Working Group on the management of European eel (WGMEASURES – EEL; FAO headquarters, Rome, Italy, 16–17 April 2019), this Concept note includes the main elements of a proposal for a research programme on European eel.

The present Concept note has been drafted in a similar way to the research programme for red coral, mentioned in Recommendation GFCM/42/2018/1, and is based on the outputs of WKMEASURES-EEL 2019, including the outcome of consultations with administrations and national experts. This was integrated with a comprehensive review of recent (2010–2019) scientific papers published on different scientific issues concerning eel in the southern geographic range (the Mediterranean Sea), to assess existing relevant information, progress and gaps in knowledge, and needs for further insights that might be relevant for assessing the situation of the Mediterranean eel stock. It is intended to take into account the work carried out by all relevant scientific bodies working on European eel.

The draft was compiled by the GFCM Secretariat, with the assistance of Ms Eleonora Ciccotti, in collaboration with a selection of European eel experts in the Mediterranean Sea, including Elsa Amilhat, Fabrizio Capoccioni, Azza ElGanainy, Chiara Leone, Sükran Ozdilek, and Argyrios Sapounidis.

2. Background

European eel (*Anguilla anguilla*, L. 1758) is a temperate catadromous species with a wide distribution range, including coastal, transitional and inland waters of Countries in Europe and in the Mediterranean Region. The species is migratory and displays a unique life cycle, that assumes that spawning takes place in the Sargasso Sea (N-W Atlantic) and that oceanic larvae (*leptocephali*) are transported by currents across the Atlantic Ocean to the coasts of the distribution range, where they metamorphose into glass eels that recruit to continental waters. Here they remain during their growing phase (yellow eel) until they attain a pre-reproductive stage (silver eels) after several years. European eel is a panmictic species (Dannewitz *et al.*, 2005; Palm *et al.* 2009; Pujolar *et al.*, 200; Als *et al.* 2011), displaying an extreme plasticity in phenotypic traits as well as a marked physiological and ecological endurance. This, and the consequent adaptability to extremely different habitats (Vollestad, 1992), relies upon a common genetic pattern (van Ginneken & Maes 2005;). Recent studies have suggested that a recently-found genetic polymorphism in eel populations could be correlated with environmental gradients (Pujolar *et al.*, 2014), possibly due to spatially varying selection and/or genetically based habitat selection producing genetically distinct ecotypes (Drouineau *et al.*, 2018).

A concern for the eel global stock arose from the observation of a prolonged decline of recruitment and reductions of adult eel yields across the entire distribution area (Moriarty & Dekker, 1997; ICES, 2001, 2002, 2004, 2006), the severity of this decline being formally recognized since 1998 (ICES, 1999; Dekker, 2003; Bilotta *et al.*, 2011). ICES (2017a, b) estimated that glass eel recruitment dropped to less than 10 percent of the 1960 – 1979 average, intermittently dropping to less than 1 percent in the North Sea (ICES, 2007).

The overall eel decline has been interpreted as the result of the combined effect of a number of natural causes and anthropogenic pressures impacting eel and its habitats. Such impacts are attributable to oceanic changes, overfishing, habitat degradation and habitat loss, contamination resulting from increased pollutant loads, ubiquitous spreading of the swimbladder parasite *Anguilliculoides crassus* and other pathologies. All these threats have probably been acting synergistically (Drouineau *et al.*, 2018) on multiple life history stages, causing a general decrease of the spawning stock biomass and influencing qualitative aspects of the escaping breeders (Belpaire *et al.* 2016), a feature that might potentially affect migratory and reproductive capacity (ICES, 2016a).

Following this, IUCN classified European eel as critically endangered in 2008 (confirmed in 2010 and 2014) (Jacoby & Gollock, 2014), while the long debate on the measures to be undertaken to protect the global eel stock and to ensure its recovery (ICES, 2002) has provided, within the EU, the grounds for the implementation of a specific framework that was achieved in 2007 with the issuing of a specific Regulation, EC 1100/2007

(Council of the European Union, 2007). This document requires that each Member State exploiting eel by fishery, aquaculture or other, has to establish measures within National Management Plans (NMPs) to reduce anthropogenic mortality and contribute to the global stock restoration towards a common target, identified in the enhancement of silver eel escapement from all continental waters. Furthermore, in 2009, eel was listed under CITES Appendix II, requiring export permits, and in 2011 EU Member States agreed on a zero export quota for the species.

The critical status of the European eel stock has been acknowledged for the Mediterranean since 2010, as and with it the necessity for integration of the Mediterranean Region within the stock-wide coordination of actions for the European eel (Aalto *et al.*, 2016). In this regard, the GFCM Secretariat undertook a number of steps, and at its thirty-seventh session (2013), the GFCM Commission agreed to support an Eel Pilot Action to build a coordinated management framework for the European eel in the Mediterranean Sea. This led to the creation of a Joint ICES/ EIFAAC/GFCM Working Group on European Eel, to a first tentative assessment of the European eel stock in the Mediterranean and to a Liaison Action to focus discussion on the basic needs to build a Mediterranean Eel Management Plan. In this respect, the intention of proposing a management plan for European eel in 2018 was brought forward at the forty-first session of the GFCM Commission (FAO, 2017), to be based on the findings summarized within the framework of a dedicated working group on European eel. The elements for such a plan were prepared at WKMEASURES-EEL 2018 (GFCM, 2018) and presented to the forty-second Commission (FAO, 2018). The Commission thus approved Recommendation GFCM/42/2018/1 on a multiannual management plan for European eel in the Mediterranean Sea, that details scope, general and operational objectives, transitional management measures, also addressing the need for improved scientific advice. In this respect, in Part IV of Recommendation GFCM/42/2018/1 it is specified that the GFCM Secretariat shall provide terms of reference for the implementation of a research programme on European eel in the Mediterranean Sea, to be launched in 2019 and completed in 2022, its outcomes to be presented to the forty-sixth session of the GFCM. Relevant issues and priorities for such a research programme were discussed at WKMEASURES-EEL 2019 (GFCM:SAC21/2019/Inf.9).

A total of 176 papers on European eel relevant for the preparation of this Concept note were identified and selected through a specific query on ISI WEB of SCIENCE, SCOPUS and Google Scholar. Recent advances or highlights on issues of key interest such as spawning grounds, genetic structure of the eel stock, biology of the ocean larval phase, evidence of silver eels crossing the Gibraltar Strait to the Atlantic Ocean, confirm that some basic questions relative to the eel in the Mediterranean can be considered clarified (Atlantic reproduction in the Sargasso Sea, genetic structure and panmixia, emigration of spawners from the Mediterranean and transport of larvae from the Atlantic across the Mediterranean Sea). A large number of studies, even recent, are available that contribute to the knowledge of the biology of the eel continental stages (growth, differentiation, reproductive biology, population structure, ecology) for local stocks throughout the Mediterranean, and many papers have been published on recruitment, spawner quality, assessment of local stocks. All this establishes a foundation for future research and a sound basis for any management scheme at the local level. A review of state of the art of recent and ongoing research (1995–2018) allowed also to ascertain that a number of Projects were carried out or are still in progress.

3. Structure of the research programme

Against this background, also given the time frame available and on the basis of the work plan agreed at WKMEASURES-EEL 2019, including a chronogram of the upcoming meetings (Annex 1), the research programme should be, at least in a first phase, executed as a **Concerted Action** to be achieved by joining forces of ongoing research activities and sharing expertise. In consultation with the experts and on order to maximize the outputs of the concerted action, the need arose to expand the time available for the research programme. The current proposal if, thus, for an 18–month programme.

The general objective is to deal with issues relevant to the setting up of a coordinated framework for management, and specific goals should be to:

- collect and update data concerning eel stock and eel habitats in the Mediterranean Region
- establish a common framework for eel stock assessment
- establish a common framework for long-term monitoring of eel in the Mediterranean

- identify and appraise management and protection measures for the eel stock recovery relevant to the Mediterranean

The project shall be carried out within a strong coordination framework, also relying on international and national networking. The work-plan foresees four main work packages, within which research teams shall share methodologies, data and expertise.

The Project is expected to begin at latest in January 2020 and end in June 2021. It shall be carried out according to a timetable (see below) detailing the execution of the single work packages, as well as project meetings and the participation to eel-dedicated Working Groups in 2020 and 2021. The Project shall provide specific deliverables, also detailed below.

4. Work-plan

It is foreseen that the work plan be divided into five work packages as summarised in Figure 1 and described below in detail.

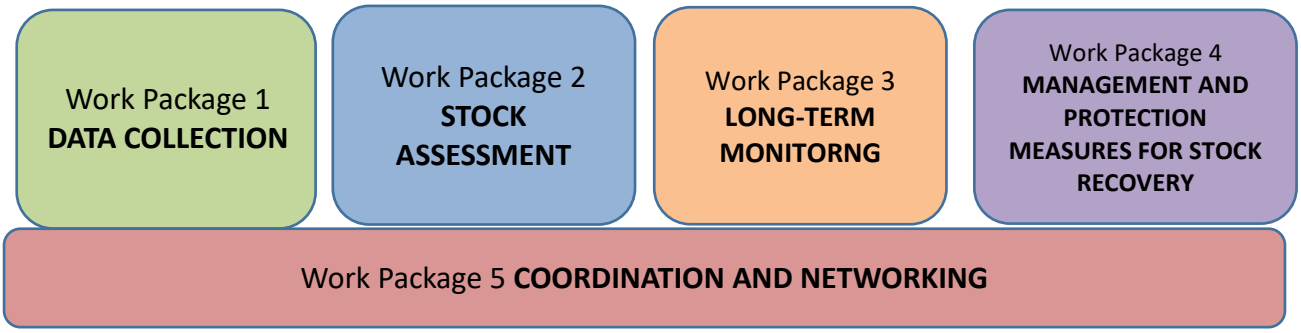


Figure 1. Graphical summary of the five Work Packages

4.1. Work package 1: Data collection

This work package is centred around the collection and update of data on three main issues:

- eel available habitats
- biological and ecological features of eel local stocks
- eel exploitation features (effort and landings)

over the Mediterranean Region, including all coastal, transitional and inland waters within Countries that are part of the European eel Southern range of distribution.

The work package should rely on a thorough research and sharing of all existing documentation by consultation with all relevant Institutions, Administrations and Agencies, and proceed on a standardized basis, aiming at the compilation of a database and of thematic maps to be shared and used for further work within the Project.

Therefore, this work package shall provide:

- a standardization of methods and protocols for collecting data
- a standardization of data storage (data bases, digital archives, maps)
- a compilation of databases concerning:

  a) eel available habitats: this shall address estimation of wetted areas for all habitat typologies (rivers, lakes, coastal lagoons, coastal areas) in order to collect and georeference information and edit such data. This task shall also address collection of information on the environmental status of catchments and habitats, based on all available information (literature, Agencies internal reports, international frameworks for water monitoring and quality assessment and any other source available)

  b) eel local stocks biological and ecological features: this shall address the gathering of all available qualitative and quantitative information on eel local stocks. Information should concern all eel continental stages (growth, differentiation, reproductive biology, population structure, ecology, etc),

and shall be carried out by collecting available literature (published and grey, old and recent, local and international), that can contribute to the characterization of eel Mediterranean local stocks

c) eel exploitation and trade: this shall address the collection of all the information on eel fisheries and exploitation, including recreational and aquaculture, either qualitative and/or quantitative, including trade in terms of eel imports and exports. Information shall address as a priority: sites where eel fisheries are present, description of the fisheries (methods, gears, number of fishermen, seasonality, yields) and the collection of landings time series over time for any specific site/fishery available. Inquiries should also tentatively address information on unreported, unregulated or illegal fisheries that might be present. Data collection shall be carried out by involving all frameworks and administrations able to provide data, both historical and recent.

4.2. Work package 2: Establishing a framework for stock assessment

This work package is centred around establishing a common basis for assessing eel stocks at different scales in the Mediterranean (site/habitat/management unit/country/Region), also providing information on minimum requirements for data, methods, targets for assessment.

Therefore, this work package shall foresee:

- definition of the spatial scale/s for assessment (also based on results of work package 1)
- definition of suitable stock indicators for pristine, present and target stock conditions. Potential indicators are stock biomass indicators and mortality indicators, to derive local stocks and overall global stock status, as agreed internationally (ICES, 2017a, 2017b).

  This shall be based on existing relevant information (EIFAAC/ICES/GFCM WGEEL Reports, specific ICES Workshops, outcomes of coordinated Research Projects or Concerted Actions carried out at National and International levels), but also based on on-going or future work (Hanel *et al.*, 2018). The choice of stock indicators and the definition of pristine and target reference conditions should also rely on a specific analysis of eel stocks and habitats in the Mediterranean in the past and at present (also based on results of work package 1)
- revision of existing methods for assessment of stock indicators/reference points, both direct and model-based
- identification of a suitable method/model to be shared, and of minimum requirements for its use, also contemplating the possible applications in data-poor and data-rich conditions.

4.3. Work package 3: Establishing a framework for long-term monitoring

This work package is aimed at establishing a common structure for monitoring eel stocks, as well as providing standardized data for the assessment of stock indicators.

This should be carried out by:

- Investigation of all the monitoring frameworks actually in place for eel in Mediterranean countries, addressing any issue (fisheries, trade, features of local stocks, recruitment, escapement, stock indicators, quality and contamination also for human consumption, any other)
- Comparison of the Data Collection Framework (EU Regulation 199/2008 and following, EU-Map) and DCRF (GFCM framework for the collection and transmission of fisheries-related data in the GFCM area of application) requirements and implementation status, in order to harmonize provisions and methods and further implement coordination between the two.
- Revision of the methods for collecting data on eel stocks (sampling design, life stage identification, age reading) and monitoring of recruitment, yellow eel standing stock, silver eel escapement, also based on recent findings and current methodological research.
- Agreement on a standardized protocol for eel data collection monitoring at the National levels, that shall harmonise present national and international existing frameworks
- Evaluation of the necessary characteristics for establishing key sites for long term monitoring of basic indicators of the status of the Mediterranean eel stock (glass eel recruitment, silver eel escapement),

representative of essential habitat typologies (lagoons, rivers, estuaries) or regional differences (Northern, Southern, Eastern Mediterranean), and identification of such key sites.

4.4. Work package 4: Evaluation of management and protection measures for the stock recovery

This work package will focus on listing and qualitative analysis of possible management and protection measures, on their feasible application and effectiveness at different spatial scales within the Mediterranean region (sites/habitats/Management Units). This latter issue should also take into account local management strategies (fisheries, Ramsar sites or Protected sites, transnational catchments, stakeholders involvement etc) and local governance frameworks (Management Plans, legislations), in order to envisage the effective potential role of any measure or set of measures in view of the achievement of the recovery of the European eel stock in the Mediterranean area.

This work package should address the following:

- measures addressing commercial and recreational fisheries
- measures addressing habitat loss or migration (upstream and downstream) impairment by damming
- measures addressing habitat restoration, improvement and eel habitats protection
- measures to sustain local stocks (restocking/assisted upstream migration, trap & transport) or to enhance escapement (silver eel release)
- measures addressing reduction of mortalities by hydropower, pumping stations
- measures addressing protection from predators
- any other

Some of these measures or sets of measures are already in place within on-going, or in-preparation, Management Plans. Fishery-related management measures are widely adopted and are based on a variety of measures, reflecting the great diversity of eel fisheries in different countries and in different habitats. A framework for coordination in the Mediterranean has been set and detailed in the Elements for a Management Plan for European eel (2018) and transposed -or to be transposed- by GFCM Recommendation GFCM/42/2018/1. This should soon reflect in a decrease in fishing pressure on the overall eel stock in the Mediterranean area, but its effective implementation and the real efficacy for the recovery of the eel stock, in the first place contributing to the overall silver eel escapement, is difficult to be ascertained and assessed (ICES, 2017a; Hanel *et al.*, 2019).

Measures aiming at sustaining local stocks (restocking, trap & transport), widely implemented in on-going Eel Management Plans through Europe, have a high potential in sustaining eel production, but such practices are not used in the Mediterranean, except when related to fisheries management. These were sporadically present for enhanced fisheries in coastal lagoons in certain areas, mostly in the past when recruitment, and hence seed availability was high. Stocking and translocation of eels still present a number of controversial aspects, widely addressed within a dedicated Workshop (ICES, 2016b), and namely relating, among others, to the risk to alter genetic features of the eel global stock, risks related to spreading of parasites and diseases, potential effects on sex-ratios of eel local stocks. Overall, a main objection also relates to the lack of clear evidence of a net benefit of restocking to the overall stock. Measures to enhance escapement, such as silver eel releases, should also be considered, with the specific aim of reducing silver eel fishing mortality and contributing to escapement, for example for lagoon fisheries at fish barriers.

Measures dealing with habitat improvement or protection, or measures addressing reduction of natural or mortality of indirect anthropogenic origin, have to be considered and addressed with specific emphasis to Mediterranean environments, especially referring to river habitats for which there is scarce information if compared to transitional habitats such as coastal lagoons. Furthermore, the effectiveness of complementary protection measures, such as total bans of specific fisheries for specific stages (recruits or potential breeders) or specific local stocks (high quality) and/or in specific sites or habitats (Protected sites, high quality habitats) or for specific gears to ensure total protection of specific local stocks, should also be evaluated.

Against this background, work package 4 should provide for:

- listing and critical examination of measures within the different categories, also addressing their present implementation and their perspective effectiveness
- feasibility and applicability of different measures in Mediterranean eel habitats, taking into account current management frameworks, eel habitat typologies, spatial scale of application
- defining a priority set of measures to be implemented at the local scale (sites), at the level of specific Management Units and at the Regional scale

With the aim to attain a regional coordination framework for the implementation of management measures for the eel stock recovery in the Mediterranean Region.

4.5. Work package 5: transversal work package on coordination and networking

The work plan of a coordinated GFCM Research Programme on European eel aiming at a better coordination of eel stock management for stock recovery in the Mediterranean region will require a strong coordination framework, also relying on international and national networking.

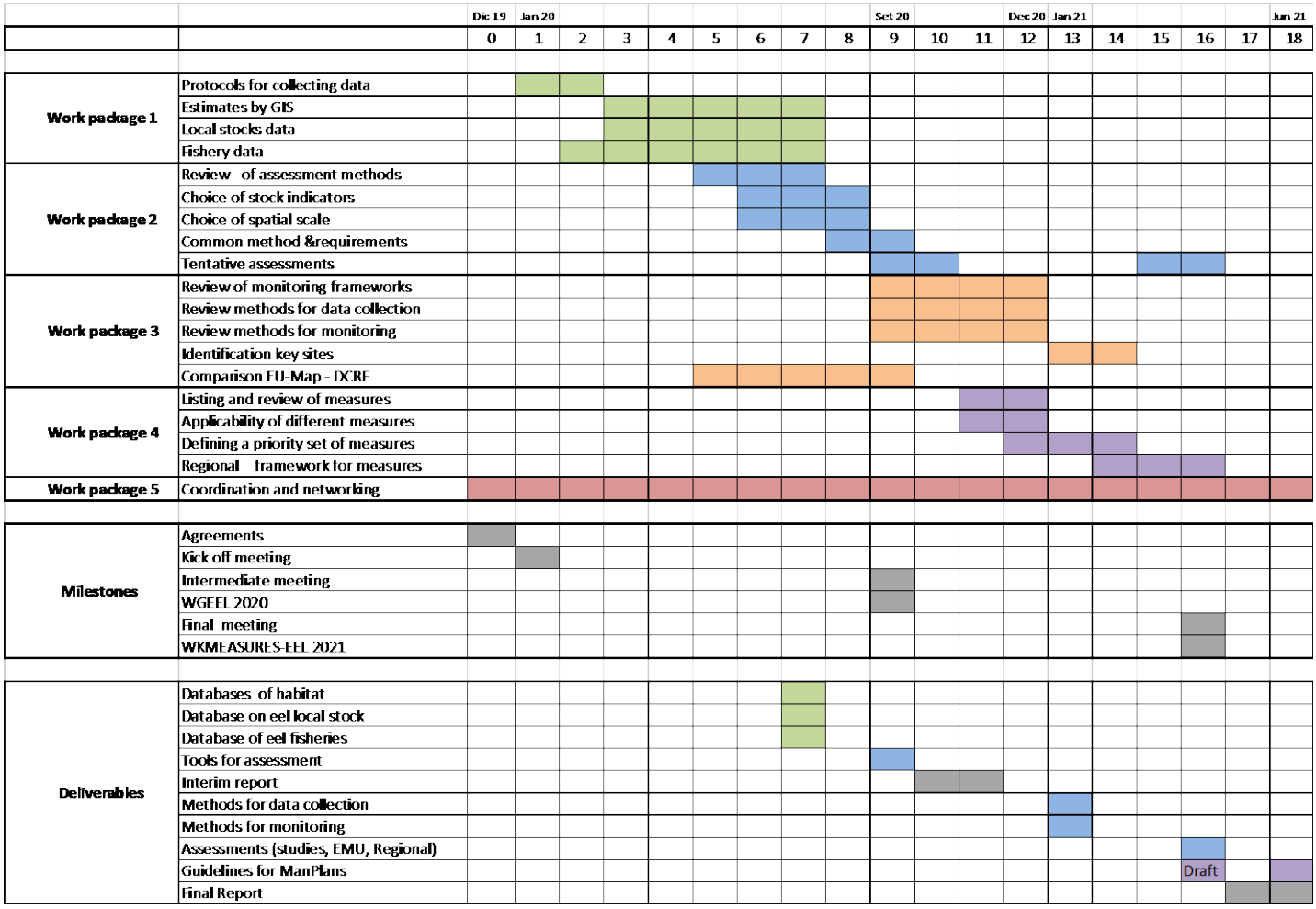
Therefore, this work package shall foresee:

- a census of all on-going National and International Projects on eel in the Mediterranean area, and eventually relevant Projects at a wider level
- the creation of a network of Mediterranean teams involved in such Projects, and evaluation of the possibility to share expertise and data
- identification of case studies, e.g. sites or habitats or Management Units that could contribute to test eel stock assessment methods under different management scenarios, with the data and methods identified respectively in work package 1 and work package 2. These pilot sites should be representative of typical Mediterranean eel habitats and of threats for eel local stocks, including fisheries exploitation (tentatively, two rivers and two coastal lagoons).
- Identification of key sites for coordinated and long-term monitoring (tentatively,1 river and 1 lagoon for each FAO 37 area, North, Central and Eastern Med);
- Organization of regular meetings (one kick off, one intermediate and one final) and attendance of Partners to International Working groups, EIFAAC/ICES/GFCM WGEEL 2020 and WKMEASURES-EEL (April 2021) in order to share on-going work and interim progress.
- Organisation of dissemination meetings at the National levels, oriented to share results with researchers, Administrators and Stakeholders

5. Deliverables

- Databases and maps of wetted areas, environmental and geographical characteristics of catchments
- Database of eel local stocks (biological features, exploitation and trade features, etc)
- Definition of proper stock indicators and of a common method for assessment for both data-poor and data-rich situations;
- Methodologies for data collection and long term monitoring
- Website for sharing data, methods, results
- Tentative: assessment with a common tool for case studies, Management Units, at Regional level under different management scenarios
- Common management framework (Guidelines for Man-Plans)
- Intermediate report
- Final Report

6. Provisional timetable



7. Tentative proposed partner composition

2 Countries EU with all EMUs in Med → have Management Plan, data (to be revised) and expertise to share

2 Countries with some EMUs in Med → have Management Plan, data (to integrate) and expertise to share

2 Countries in North Africa → no Management Plan, data (to collect and integrate) and expertise to share

1 Country eastern Mediterranean → no Management Plan, data (to collect and integrate) and expertise to share

1 Country in the Adriatic → no Management Plan, data (to collect and integrate) and expertise to share

TOTAL: 8 Partners (of which 1 acting as Leading partner/scientific coordinator) + GFCM Supervision

The following is foreseen for each country:

- one senior (half time) researcher
- one young researcher (full time) with a specific profile
- focal point backing up researchers in the data collection at Ministry Directorates, Administrations, Environmental Agencies, Fishermen cooperatives, Electricity boards etc
- Each partner approx. 16 man/month (+ 8 man/month for coordination to Leading partner)

8. Tentative overall budget

A tentative budget for all partners together by work package (excluding possible overheads), is suggested in the table below.

	Total (man/months)	**Permanent staff (senior)** (man/months)	**Contract staff (junior)** (man/months)	**Consultants**	**Other costs (to be included elsewhere)**	**Permanent staff (senior)**	**Contract staff (junior)**
GFCM Supervision				1			
Project Coordination (extra man/month to Leader)	8	8				50 000	
Work package 1	70	16	54			100 000	160 000
Work package 2	28	8	20			50 000	60 000
Work package 3	22	8	14			50 000	45 000
Work package 4	28	8	20			50 000	60 000
External Assistance (website, GIS, modeling)					30 000		
Travel					15 000		
					45 000	300 000	325 000
						TOTAL	***670000***

A man/month is defined as having approximately 21 working days.

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Appendix 8/Annex 1

Chronogram towards the provision of advice on the status of the stock and management measures for European eel in the Mediterranean Sea

This chronogram outlines the basic steps agreed by the Working Group on the Management of European eel in the Mediterranean Sea held on 16–17 April 2019, modified to accommodate an eighteen-month long research programme.

Its aim is to work towards providing advice to the SAC, at the latest in 2022, on appropriate management measures and their effectiveness, as specified in Recommendation GFCM/42/2018/1 on a multiannual management plan for European eel (*Anguilla anguilla*) in the Mediterranean.

According to this work plan, six meetings are foreseen in the period of time between 2020 and 2022, as summarised in the Table below. Proposed draft terms of reference for these meetings are outlined following the table.

	2020	**2021**	**2022**
Before the SAC	[Launch of research programme - January 2020]	WGMEASURES-EEL	Stakeholder meeting* WGMEASURES-EEL
After the SAC	EIFAAC/ICES/GFCM WGEEL 2020	EIFAAC/ICES/GFCM WGEEL Stakeholder meeting*	

2020 EIFAAC/ICES/GFCM WGEEL

The terms of reference should be agreed with ICES and EIFAAC, but it is proposed to dedicate a session to present on-going work of the Research Programme, with reference to outcomes of the collection of data and database building, and to tools and methods for an assessment of the status of European eel in the Mediterranean.

Draft terms of reference 2021 WGMEASURES-EEL

This meeting should take place in 2021 before the twenty-third session of the SAC.

It is foreseen to comprise two sessions, one on data exploration and preparation, a second to start the process of qualitatively evaluating existing management measures, as follows:

1. **Data preparation session**

It is proposed this session lasts up to two and a half days.

The work will involve collating and analysing all data available and submitted, by country, according to Recommendation GFCM/42/2018/1 and to the work outlined by the research programme on European eel in the Mediterranean Sea:

- ✓ past data on yields of different eel life stages, as far back as possible in time;
- ✓ habitats where European eel is known or likely to occur in their respective waters;
- ✓ first overview of recreational and IUU fisheries; and
- ✓ data pertaining to restocking and fattening activities.

2. **Session on qualitative evaluation of existing management measures**

It is proposed this session lasts up to two and a half days and is carried out in the presence of stakeholders. The work will involve:

- ✓ recap of management measures in place;
- ✓ list of potential new management measures; and
- ✓ qualitative appraisal of all listed management measures.

The outcomes of both sessions will be presented at the twenty-second session of the SAC (2020).

2021 EIFAAC/ICES/GFCM WGEEL

The terms of reference should be agreed with ICES and EIFAAC, but it is proposed to dedicate a session towards an assessment of the status of European eel in the Mediterranean and on-going work for its Management framework, also taking advantage of the outcomes of the 2021 WGMEASURES-EEL detailed above and the research programme on European eel in the Mediterranean Sea.

Draft terms of reference for the stakeholder meeting on management measures: 2021/2022

This meeting proposes to bring together scientists and stakeholders in a one (maximum two) day meeting to do the following:

- discuss existing and potential management measures in light of the outcomes of the research programme and the previous qualitative evaluation; and
- determine the geographical units to be used for the evaluation of different measures depending on the different mode of application of measures in different countries (e.g. the presence of cooperatives in Greece etc.).

The meeting will take place in 2021/2022 before the 2022 WGMEASURES-EEL.

Draft terms of reference 2022 WGMEASURES-EEL

This meeting should take place in 2022 before the twenty-fourth session of the SAC. It is proposed to last up to four days, depending on requirements.

The meeting will involve the activities related to the finalization of the work on data-limited evaluation of the effectiveness of all alternative management measures and the production of advice to the SAC, to be further detailed, based on:

- the outcomes of the research programme on European eel in the Mediterranean Sea;
- the outcomes of 2020 and 2021 EIFAAC/ICES/GFCM WGEEL;
- the outcomes of 2021WGMEASURES-EEL;
- the outcomes of the stakeholder meetings on management measures in 2021/2022;
- integration of results of the research programme in the context of existing work;
- discussion of potential management measures in the context of all available information;

The outcomes will be presented at the twenty-fourth session of the SAC (2022).

Appendix 9

Updated concept note for a research programme on red coral

1. Preparation of this document

On the basis of the request of Recommendation GFCM/41/2017/5 on the establishment of a regional adaptive management plan for the exploitation of red coral in the Mediterranean Sea, which calls for the implementation of a research programme on red coral in the Mediterranean Sea, and the discussion held at the Workshop on red coral (WKREDCORAL) held at FAO headquarters HQ, Rome, Italy, 16-17 April 2019, this concept note is submitted to the SAC 2019 for its final endorsement.

A first concept note for a research programme on red coral was prepared by an independent expert yet in 2014, and after various phases of consultations with national experts it was updated and then presented to and approved by the SAC at its nineteenth session (2017). In view of the implementation of the programme, the concept note was presented again to the WKREDCORAL 2019. On this occasion, a large audience of experts provided useful inputs and insights to update some content of the proposed work packages. The present concept note has been therefore further enlarged, updated and finalized in May 2019 by a group of experts coordinated by Alessandro Cau, with the assistance of the GFCM Secretariat.

2. Background

There is an urgent need of Mediterranean scientific projects aimed at filling several gaps of knowledge on the different traits of red coral life history, because they represent essential data in support of the red coral fishery management. Therefore, the overall focus of the present 'Mediterranean GFCM red coral scientific project' is to ensure a standardized level knowledge about red coral populations subject to exploiting activities to promote the successful management of red coral fisheries in the Mediterranean Sea, implementing the ecosystem approach to fisheries (EAF), in those countries with a history in red coral exploitation.

3. Structure of the research programme

The proposed project is composed by five work packages (summarized in Fig. 1): WP1- surveys at sea, WP2 biological and ecological studies, WP3 – Stock assessment and recovery protocols, WP4 – socio-economic analyses, and WP5 – pilot study on traceability and certification mechanisms.Priority is given to the collection of useful data for the provision of advice in support of fishery management, through surveys at sea and laboratory analyses. The combination of fishery-dependent (e.g. analysis of catch) and fishery-independent sources of information (e.g. surveys at sea on a multi-annual basis) will ensure a regular monitoring of the resource. The fishery is monitored through an 'on board scientific observer program' with the aim to collect data on effort and yields in a coordinated way at the pan-Mediterranean level. The knowledge on the spatial distribution, and the main threats to which Mediterranean *C. rubrum* populations are exposed (exploited banks at the depth between -50 and -130 m) are investigated by the means of visual surveys performed with ROVs, adapted for scientific research. The ROV underwater videos obtained within the present project could represent a valid baseline information both for scientific and conservation purposes, for the updated mapping of commercial banks of red coral but also, on a wider sense, of the fragile coralligenous assemblages. Apart from the *in situ* investigations, *ex situ* laboratory analyses are foreseen to acquire new biological, ecological, social and economic data, necessary for the proper management of the resource. A particular focus is on the acquisition of data such as biomass, recruitment, and mortality rates of commonly exploited banks – necessary to construct a population dynamics models to estimate projected resource allocations. The status of the resource is explored using both traditional and new stock assessment methods developed *ad hoc*, based on current and historical catch data. A detailed socio-economic analysis is also included to elucidate all the external aspects affecting the fishery, providing useful insights for the development of bioeconomic models and economic indicators as a further support in the sustainable management of the stocks. Furthermore, the Mediterranean research programme aims also at providing guidelines and best practices for recovery of red corals and to facilitate the harmonization and the standardization of data collection protocols, as well as the coordination and comparison of results obtained by ongoing and future national, regional and international research programmes on red coral. Finally, the project includes a pilot study, implementing traceability mechanisms for *C. rubrum* (from the time the coral is landed and sold as raw material, to its manufacture, until it reaches the retailer as a finished product). These mechanisms would allow certification that the red coral is collected in

compliance with Mediterranean or national regulations and they could be also effective in eradicating red coral IUU fishing.

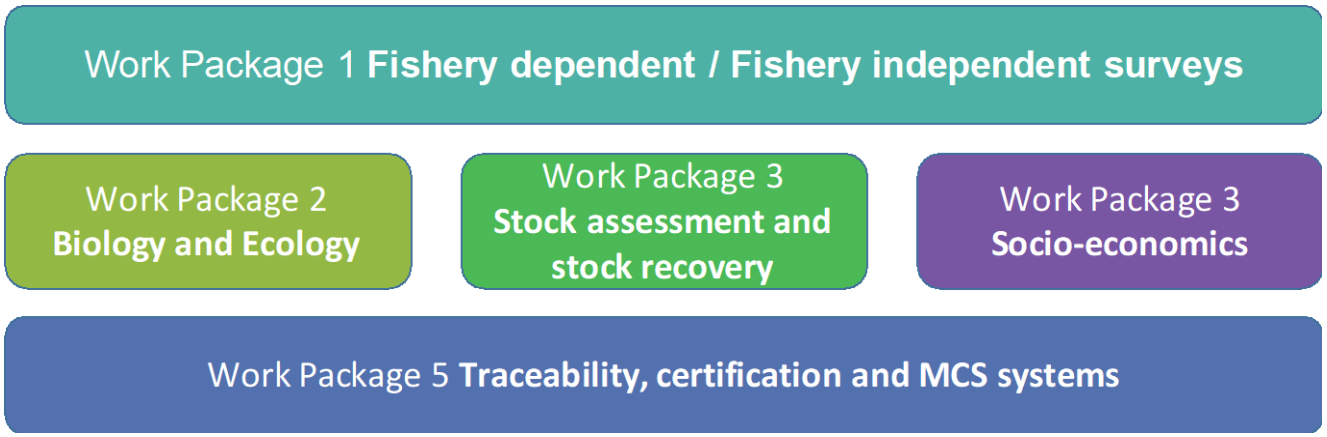

Figure 1. Graphical summary of the five Work Packages

4. Work plan

The following five work packages are designed to address the main issues required by the GFCM SAC and its technical groups, as well as to address the need to evaluate the social and economic aspects of the fishery as requested by the Commission for the implementation of fisheries management plans.

WP1: FISHERY DEPENDENT / FISHERY INDEPENDENT DATA COLLECTION, THROUGH SURVEYS AT SEA

1.1 Description

Fishery dependent data specifically refer to useful information based on fishing activities as defined by relevant GFCM recommendations (area of exploitation, name of landing port, annual catch of red coral, average diameter (mm) of the colonies harvested; percentage in weight of undersized (i.e. <7 mm) colonies; effort expressed as annual number of fishing days; range depth of harvesting) which ultimately, when acquired accurately, may give a comprehensive picture of the fishing effort. Such data are collected by CPCs since 2013 and compulsory transmitted to the GFCM Secretariat. In many cases, these data derive from logbooks, or inspections of catches at landing. In the first case, validation of logbooks is required for the data to be accurate, that is giving a true indication of the fishery, and could be used in stock assessments. In the second case, the monitoring of landings does not detect undersized colonies or trans-shipped coral or coral sold prior to landing. Therefore, to collect the most accurate and detailed data on harvesting, within this project a detailed program of observers at sea is realized in relevant GFCM countries. Scientific observer programs can represent a very effective way to implement and to ensure compliance with legal size limits. Moreover, they can collect detailed data on size of catches; this is important for gauging possible changes to exploited populations over time (truncation of age classes and increasing, or heavy predominance of, small colonies in catches). In addition, observers can provide valuable information if asked to collected biological data besides landing data (see WP2). The 'observers' program is repeated in all the different harvesting seasons over the duration of the project. GFCM CPCs are asked to identify the proper mechanisms to ensure that observers are host on board of all authorized vessels in a significant number of days in the harvesting season. Fishery independent data refer to data acquired independently from fishing activities. This study will be based on direct observations of both harvested and non-harvested red coral populations by means of Remotely Operated Vehicle (ROV), specifically adapted for scientific research. The ROV is equipped with a Ultra Short Baseline (USBL) underwater tracking system and provides real time data on its position, depth, and course during the dive. Transects will be filmed by a high-resolution color video camera and, after, processed through specific image-analysis software in order to provide data on populations density and demography, which will be further detailed in WP2. The ROV could be equipped with a single function manipulator suitable for biological sampling.

1.2 Objectives

This WP aims at setting an on-board observes program for red coral fishery in the GFCM competence area, which will provide useful and accurate fishery dependent data. The observers' duties comprise 1) the

acquisition geo-referenced data for the mapping of commercial banks; 2) the record detailed data on catches. For each harvesting dive, the observers record on board: the coordinates, depth, total weight (the total amount of coral harvested in each dive) as well as the weight of the alive and dead fractions separately. Moreover, they measure the weight, the basal diameter and the maximum height for all the red coral colonies. Finally, whenever possible, small portions of a subset of the collected colonies are sampled and ethanol- or formalin-preserved in order to be used in biological studies (i.e., on reproduction, genetics, and growth; see WP2). Fishery independent data, based on ROV surveys will provide: 1) extensive mapping of both exploited and non-exploited red coral banks; 2) populations density, demography (size distribution data and branching patterns), natural recruitment and mortality rates of populations within and outside coral no-take areas (if the case).

1.3 Expected outputs

WP1, based on both fishery dependent and independent data, will provide:

1. Operative protocols to be distributed among participant institutions;
2. Validation of previously obtained fishery data;
3. *Ad-hoc* training workshops to assure the complete harmonization of procedures and methodologies for on-board observers;
4. Extensive mapping of both exploited and non-exploited red coral banks within the GFCM competence area, including data on density, demography, recruitment and mortality that will be further developed through WP2;
5. Controlled *in situ* sampling for bio-ecological studies (see WP2);

WP2: BIOLOGY AND ECOLOGY

2.1 Description

Collection of appropriate data is essential for the management, the stock assessment, the identification of reference points and the setting of remedial actions. Apart from catch and effort data, and data of size in catches, two other types of data are important and will be collected in WP2: biological and ecological data. The biology and ecology of *C. rubrum* in the GFCM relevant countries at depth from 50 to 130 m are investigated through a combination of ROV visual surveys, *in situ* sampling (see WP1) and *ex-situ* laboratory analysis on selected colonies. Biological data refer to:

- Data on size of the banks at sea**.** Size data can signal important changes in populations over that could be fishery induced and may warrant management attention. In long-lived species such as the red coral, loss of larger individuals may substantially affect reproductive output and may need management action.
- Other biological parameters of individuals and populations obtained through specific biological studies, especially density, abundance, size structure, and morphology (branching pattern), as well as certain life history traits (e.g., growth rates, reproductive strategy, connectivity, genetic features, and longevity). All these parameters must be taken into consideration when developing fisheries management strategies as these provide indicators of the status of populations.

Ecological data refer to:

- Data on distribution of Mediterranean red coral populations and associated species using standardized methodologies;
- Data on mortality of red coral, especially in deep populations (> 50 m), and relative causes. It is known that in the shallow waters the occurrence of these events is linked with climatic factors such as the recent establishment of longer and hotter summer in the NW Mediterranean Sea, but other stressors such as opportunistic microbial infections, the presence of epi and endobionts, human activities

insisting on the coastal zone (e.g., pollution, fishing, boating and scuba diving) play a major role as well;

- Data on the connectivity among red coral populations that will provide useful information on the possible effects of fisheries genetic erosion due to harvesting (fisheries genetics);

WP2 studies will be based on direct observations of population with a ROV possibly equipped with a single function manipulator suitable for biological sampling that will provide small fragments of biological samples for the subsequent biological analyses. Furthermore, ROV visual transect will be used to document the impact of other fishing activities. In particular, the signs of trawling and anchoring in or at the vicinity of red coral banks, as well as the presence and number of lost fishing gears (long-lines, trammel nets) will be recorded. For each transect, the number and extend of damaged and/or dead colonies will be recorded.

2.2 Objectives

The main objective of WP2 is to retrieve useful information on biological and ecological parameters of Mediterranean red coral populations. As mentioned above both *in situ* sampling and *ex-situ* laboratory analyses will be performed. The main objective of *in situ* sampling is to perform the size structure analysis of populations in selected sites, through high resolution photos and still images extracted from high definition videos.

A. **Demography**: Investigate the effects of harvesting on populations and the effect of protection from harvesting, with respect to this size distribution data of populations within and outside coral no-take areas.

B. **Growth and Recruitment:** Monitoring populations with temporal replicates to measure their growth (the increase in diameter and height as well as any change in the development of branching). High-resolution ROV videos will be used to investigate on the recruitment rate of populations over natural substrates, to identify eventual points of settlement of the recruits and to follow their survival, growth and evolution.

C. **Natural Mortality:** the extent of mortality on red coral populations, both the incidence (i.e. percentage of colonies affected: dead or suffering partial mortality) and the virulence (i.e. degree of mortality within each colony).

The main objective *ex-situ* laboratory analyses will be based on the collection of samples of live red coral colonies. These colonies will be collected by the manipulator arm fitted on the ROV and/or picked by professional divers actively involved in the research in order to retrieve data on:

A. **Demography:** Measurements made on entire colonies collected with ROVs will be compared to image analysis-based data in order to calibrate the two types of measurements (digital images versus colonies). These data will allow testing the utility of ROVs surveys in population dynamic studies.

B. **Age and reproduction**: A representative sample of colonies, including all size classes of the populations investigated, will be used for determining the age and reproduction biology. Also, the reproductive features of both polyps and colonies of deep *C. rubrum* will be investigated on specimens collected on seasonal basis.

C. **Genetics:** Small portions of branches of colonies will be used for genetic analyses. Existing and new genetic markers will be used to investigate the connectivity among red coral populations and the possible effects of fisheries genetic erosion due to harvesting (fisheries genetics).

D. **Mortality:** the colonies will be examined for the presence of epi- and endobionts.

2.3 Expected outputs

WP2, with the use of non-destructive techniques such as ROV-based survey and with laboratory work, will allow to:

1. Quantify presence, patch frequency and colony density of red corals both in harvested and protected areas (if the case)
2. Document the present status of ecosystems through qualitative and quantitative studies;

3. Extensively map the benthic fauna associated with red coral populations, with useful insights on ecological relations driving the coexistence of the species;
4. Create a temporal series of data useful to analyse temporal changes as specifically investigated in wp3;
5. Improve the knowledge on biological aspects of deep red coral populations, both harvested and unharvested, in particular on:
    a. demography,
    b. age,
    c. growth,
    d. reproduction,
    e. mortality,
    f. genetic variability and connectivity within and among areas.

WP3: STOCK ASSESSMENT AND STOCK RECOVERY

3.1 Description

Developing a quantitative model for an exploited population is a standard precondition for drawing up a management plan for the resource. Stock assessment is considered as the application of statistical and mathematical tools to relevant data in order to obtain a quantitative understanding of the status of the stock and make quantitative predictions of stocks' reactions to alternative future fishing/harvesting regimes. Outputs from stock assessment should provide some parameters that can be related to reference points, *i.e.* to a conventional value of indicators which represents a state of the fishery and whose characteristics are useful for the management of the stocks. In WP3, information on catch and effort that since 2013 GFCM countries have submitted to GFCM will be checked and eventually used as input for indirect Production methods. Similarly, the application of direct methods (e.g., Yield per recruit Y/R) will be tested, given that during the project new input data (mainly biological data) are supposed to be collected in other WPs and thus will be used to simulate populations trend over time. Leslie–Lewis transition matrix, despite being highly data demanding, can be used to simulate the trends of red coral populations over time, allowing predictions of harvest effects based on every possible variation in fishing effort, and selective harvesting affecting the different age classes in a different way. WP3 will also study the dynamics and timing of recovery of harvested populations and of now protected (but previously exploited) populations within MPAs or no-take areas. Recovery dynamics can be generally summarized in three processes that occur in harvested populations: settlement of new larvae, growth to maturity and reproduction. The settlement of larvae, and the growth of recruits will be documented and constantly monitored through periodical inspections based on non-invasive procedures. Photo and/or video documentation through ROV surveys (in deep sites) or divers (shallow sites) will be realized in order to measure the recruitment, the survival and growing rates in red coral populations undergoing a recovery process. It is well known that, given the very low growth rates of red corals, the full effects of the recovering of depauperated sites is visible only after several decades. Therefore, during the project it will not be possible to document the growth of the newly settled colonies up to the size of maturity and reproduction, but only to document the settlement and to describe and compare the evolution and timing of the recovering process of the whole population in different areas, that is in newly-, recently- or old-established protected sites.

3.2 Objectives

The objective of WP3 is to apply both traditional (direct and indirect) and innovative stock assessment methods to have conventional value (reference points), which are useful in the management of red coral resource. WP3 will include, in the first instance, an overview of existing data and critical gaps by each CPC, in order to have a complete picture of the data that are present or needed to apply both traditional and innovative stock assessment methods useful to obtain reference points for fishery management. New specific models, highlighting how long the fishery might take to respond to the adjustments made in the management measures, will be tested. This will depend on the age/length structure of the fishery (how many years it will take for all of the age/length classes to reach equilibrium again), and of course also on the future recruitment and the current size of the stock. Projections will be made using a range of models, including age-based and length-

based analytical models and biomass dynamic forms. Furthermore, WP3 aims at providing useful insights on the recovery process of harvested populations of Mediterranean red coral, with specific focus on *in situ* observation of growth pattern and relative demographic processes occurring after the protection of banks.

3.3 Expected outputs

WP3 will allow to:

1. Apply of different, both traditional (direct and indirect) and innovative, stock assessment methods in red coral populations;
2. Describe recovery processes occurring at sea to build up solid guidelines and protocols for the monitoring and facilitation of the recovering populations.

WP4: SOCIO-ECONOMICS

4.1 Description

Professional red coral harvesting is the first step towards jewellery production chain of the raw material. Harvesting, however, constitutes the minor fraction of the whole production chain, in terms of employed workers (hundreds of fishermen versus thousands of employers in the manufacturing process). While red coral production chain is somehow described, socio-economics aspects and the relative context within red coral fishery are almost unknown. Up to date, the only available information is restricted to the list of authorized fishing vessels submitted to GFCM by countries, but further detail of people involved is not available. As example, it is known that several professional divers do often have a second employment, which in many cases constitutes the first occupation in life, while others practice red coral harvesting as unique source of income. Moreover, the age of divers, their origins (*i.e.*, if they are native from the harvesting countries or not) and many other aspects still have to be determined in the GFCM competence area. WP4 aims at investigating these aspects and delineate the socio-economic context where red coral fishery operates across the GFCM competence area, which is characterised by a wide heterogeneity, including EU and non-EU countries. Such factors could be important in modulating the harvesting activities across countries and, as such, do constitute precious information as further support in the development of sustainable management of the resource.

4.2 Objective

WP4 aims at performing the first detailed socio-economic analysis of the red coral fisheries in the GFCM competence areas in order to elucidate all the external aspects affecting the fishery. In particular, questionnaires will be submitted to fishers in order to acquire information, among others, on: i) age; ii) education; iii) years of activity in the sector; iv) eventual other employments; v) annual income; vi) country of origin.

4.3 Expected output

WP4 will allow to:

1. Get a detailed picture of the socio-economic context of red coral fishery within the GFCM competence area. Such data constitute the base for further studies regarding, among others, the development of bioeconomic models and economic indicators, essential for the sustainable exploitation of this resource.

WP5: TRACEABILITY, CERTIFICATION SAND MCS SYSTEMS

5.1 Description

IUU activities and the black-market trade of red coral are known to be common in the Mediterranean Sea, although it is difficult to quantify their extent. Poaching is probably widespread throughout the basin, therefore the enforcement of new MCS measures is critical and urgent to limit illegal harvests. Common traceability mechanisms could represent an important element of the GFCM red coral management plan. WP5 aims at realizing a pilot experiment for implementing a traceability mechanism of raw coral colonies collected within the GFCM competence area, where raw colonies are consistently tracked from the time the coral is landed and sold as raw material, to the manufactures, and until they reach the retailer. It would allow the certification that

the precious coral has been collected in compliance with GFCM and national regulations (area, quota, depth, size etc.).

5.2 Objectives

Different traceability mechanisms for raw coral colonies harvested in GFCM countries will be tested, such as individual codes and certificates of origin attached to every coral (colony), in which the production area is consistently disclosed at every stage, from the time the colony is landed and sold as raw material until it finally reaches the store as a finished product. This would not only enable traceability of the harvested corals but also to certify that the coral was collected in compliance with GFCM recommendations and of each production area (i.e. relevant national laws). The feasibility of using eco-labels to certify that the fishing methods and efforts have proven environmentally sustainable is a further option that will be explored.

5.3 Expected output

WP5 will allow to:

1. Set up of an effective traceability mechanism for raw coral colonies collected within the GFCM competence area, which could be effective in helping to curtail IUU fishing.

CAPACITY BUILDING AND STANDARD PROTOCOLS

It is a common objective of the whole project and consequently of all described WPs to share knowledge, best practices and protocols as a tool for standardize as much as possible all described procedures. Where and if necessary, the project also aims to share these procedures through *ad-hoc* established training courses for the proper acquisition of the abovementioned data.

List of scientists/experts involved in red coral research in Mediterranean countries in which red coral exploitation occur (Algeria, Croatia, France, Greece, Italy, Morocco, Tunisia, Spain)

ALGERIA

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CROATIA

Faculty of Science, Department of Zoology, Zagreb, Croatia

- KRUZIC, Petar
- KIPSON, Silvija

State Institute for Nature Protection, Croatia

- RODIC BARANOVIC, Petra

FRANCE

Association des corailleurs corses, Calvi, France

- CARDUCCI, Jean Pierre
- RAFFAELLI, Jean Michel

Laboratoire d'Ecogéochimie des Environnements Benthiques (LECOB – UMR8222), Observatoire Océanologique, Sorbonne Universités, UPMC Universités Paris 06, CNRS, Banyuls sur Mer, France

- BRAMANTI, Lorenzo

Aix Marseille Univ, Avignon Université, CNRS, IRD, IMBE, Marseille, France

- AURELLE, Didier

Institut Méditerranéen de Biodiversité et d'Ecologie marine et continentale, Marseille, France

- MARSCHAL, Christian

Université de La Réunion, Saint-Denis Messag, France

- GUILLAUME, Mireille M.M.

Centre Scientifique de Monaco, Monte Carlo, Monaco

- FERRIER-PAGÈS, Christine

Institut Pythéas - Observatoire des sciences de l'univers, Marseille, France

- HARMELIN, Jean Georges

Ifremer, UMR MARBEC (Marine Biodiversity, Exploitation and Conservation), Sète, France

- ARNAUD-HAOND, Sophie

GREECE

Hellenic Centre for Marine Research, Athens, Greece

- SALOMIDI, Maria

Small-Scale Fisheries Department of Marine Fisheries Ministry of Rural Development, Athens, Greece

- LALIOTOU, Barbara

ITALY

Dipartimento di Scienze Biologiche, Geologiche e Ambientali, Centro Interdipartimentale di Ricerca per le Scienze Ambientali, Università di Bologna, Ravenna, Italy

- ABBIATI, Marco
- COSTANTINI, Federica

ISPRA (Istituto Superiore Per la Ricerca Ambientale), Rome, Italy

- ANGIOLILLO, Michela
- CANESE, Simonepietro
- SALVATI, Eva

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- CILIBERTO, Massimo

ASSOCORAL, Coralli e cammei di Torre del Greco, Torre del Greco (NA), Italy

- AUCELLA, Vincenzo
- CONDITO, Ciro

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- BO, Marzia
- CATTANEO-VIETTI, Riccardo

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- CAU, Alessandro
- CAU, Angelo
- CANNAS, Rita
- FOLLESA, Maria Cristina
- PORCU, Cristina

Dipartimento di Scienze della Vita e dell'Ambiente (DISVA), Polytechnic University of Marche, Ancona, Italy

- CERRANO, Carlo

Dipartimento di Oceanografia, Istituto Nazionale di Oceanografia e di Geofisica Sperimentale, Sgonico (TS), Italy

- GALLI, Giovanni
- SOLIDORO, Cosimo

Dipartimento di Biologia, Università di Pisa, Pisa, Italy

- SANTANGELO, Giovanni
- BENEDETTI, Maria Carla
- PRIORI, Cristina
- ERRA, Fabrizio

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- ROSSI, Sergio
- GORI, Andrea

Stazione Zoologica Anton Dohrn, Napoli, Italy

- TEIXIDÒ, Nùria

Stazione Zoologica Anton Dohrn, Sezione Sicilia, Italy

- ANDALORO, Franco

Dipartimento di Scienze e Tecnologia, Università degli Studi di Napoli Parthenope, Napoli, Italy

- SANDULLI, Roberto
- RUSSO, Giovanni

Dipartimento di Economia Aziendale, Università degli Studi di Napoli Federico II, Napoli, Italy

- STAMPACCHIA, Paolo

MOROCCO

Faculty of Sciences, University Mohammed V, Rabat, Morocco

- BAZAIRI, Hocein

National Institute for Fisheries Research, Casablanca, Morocco

- BENCHOUCHA, Saïd
- TALEB, Said
- ZOUBI, Abdelaziz
- DRIDI, Abdelmajid

SPAIN

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- LEDOUX, Jean-Baptiste

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- ESPINOZA, Free
- MESTRE, Manuel
- GONZALES, Alexandre R.
- OSTALÈ-VALRIBERAS, Enrique

TUNISIA

Institut National des Sciences et Technologie de la Mer (INSTM), Salammbô, 2025, Tunisia

- BEN MOSTAFA, Karim

University of Carthage, Institut National des Sciences et Technologies de la Mer, Tunis, Tunisia

- GAAMOUR, Adel

Other relevant international experts

- TSUONIS, Georgios (California State University Northridge, Northridge, CA 91330, USA)
- FRIEDMAN, Kim (Food and Agriculture Organization of the United Nations, Rome, Italy)
- SGHAIER, Yassine-Ramzi (Regional Activity Centre for Specially Protected Areas, Tunis Cedex, Tunisia)
- GAYNOR, Karen (Convention on International Trade in Endangered Species of Wild Fauna and Flora Geneva, Switzerland)

Appendix 10

Terms of reference for selected meetings

Terms of reference for Working Group on the Assessment of Alternative Management Measures (WGMSE)

The WGMSE will provide support to the SAC towards advice on the impacts of alternative measures for selected fisheries, in particular those for which the Commission has requested it, or for which the SAC has proposed to implement immediate management measures.

General terms of reference

- Revise the state of the art of MSE processes both in the Mediterranean and Black Sea and in other contexts around the world, and propose advances towards robust advice on alternative management measures, including on data limited stocks
- For the selected fisheries and based on the management scenarios and reference points agreed in the context of the GFCM (i.e. as provided in the GFCM guidelines for management plans or as requested by the Commission or the SAC), assess the potential effects on stocks and fleets of the implementation of alternative scenarios, including:

a. the identification of biological, stock assessment, pressure and socioeconomic data (time series) and parameters needed to run the model;

b. the identification of components of the simulation model for which a sensitivity analysis coherent with the model assumptions should be run and review of the characteristics and the assumptions related to the different components of the simulation models used for the assessment of potential effects of management scenarios (e.g. biological, pressure and socioeconomic);

c. running the simulation scenarios and providing comparative tables of the expected status of stocks and fleet indicators (e.g. catch, socioeconomic indicators, etc) in comparison with agreed reference points.

Composition of sessions in the 2019–2020 intersession

In the 2019–2020 intersession, the WGMSE will comprise two sessions as follows:

1. WGMSE for demersal fisheries in the Strait of Sicily (WGMSE-SOS)
2. WGMSE for the Adriatic Sea (WGMSE-AS)
    - Advance on the MSE framework for pelagic fisheries in the Adriatic Sea
    - Advance on the post-hoc analysis of socioeconomic impacts of alternative management measures for small pelagic fisheries in the Adriatic Sea
    - Expand the analysis of economic dependency of different fleets on the different demersal species in the Adriatic Sea, initiated by the STECF-19-02.

The presence of fisheries and technical experts, including external experts, is required. This should be facilitated by the GFCM and the relevant FAO Regional projects.

Terms of reference of the Working Group on Recreational Fisheries (WGRF)

The main objective of the Working Group is to coordinate technical, scientific and socio-economic activities relating to recreational fisheries in order to fill the main data gaps relating to this sector, to produce advice for consideration and validation by the SAC and WGBS and to support the sustainable management of recreational fisheries within an Ecosystem Approach to Fisheries perspective. To this end, the WGRF shall:

- Provide advice on the implementation of technical outputs of Target 2 of the mid-term strategy in relation to recreational fisheries;
- Measure the biological and ecological impacts of marine recreational fishing activity on fish stocks, particularly for priority species, and on the marine environment;
- Measure the socio-economic impact of marine recreational fishing activity on coastal communities in the Mediterranean and Black Sea, including its interaction with related sectors such as tourism and small-scale fisheries;
- Harmonize methodologies for assessing recreational fisheries, towards improved data collection in support of sustainable recreational fisheries management;
- Identify interactions between recreational and small-scale fisheries, with a view to assessing potential conflicts, including competition for resources, competition for space and gear interactions.

The specific objective of the WGRF for the 2019–2020 intersession is to:

- Comment on the application of the draft "Handbook for data collection on recreational fisheries in the Mediterranean and the Black Sea" and consolidate experience from its initial piloting, with a view to revising the draft handbook and resubmitting it to the SAC for its consideration.

Terms of reference for the Working Group on Essential Fish Habitats (EFH) and Vulnerable Marine Ecosystems (VME)

General terms of reference

- Review, develop and propose methodologies for the definition, identification and analysis of relevant benthic species and habitats, the identification of fishing footprint, and other issues relevant for the advice on FRAs
- Maintain liaison and contact with other relevant expert groups related to the provision of advice on spatial issues, including other GFCM expert groups (e.g. WG SAs) as well as relevant WGs of partner organizations (ICES, SPA/RAC, etc.)
- Address requests made from the SAC and Commission on issues related to FRAs, including on EFH and VMEs.

The GFCM work should focus on three main components, namely:

<u>FRAs</u>

The working group shall:

- review the proposals for the establishment of new FRAs and identify priorities or initiate the development of new proposals;

- analyse, in coordination with other relevant expert groups (e.g. WGs on stock assessment, WKMSE) data from scientific monitoring of existing FRAs;
- make suggestions in view of establishing monitoring plan;
- assess the effectiveness of the FRAs and their contribution to global targets.

EFH

The working group shall:

- compile the available information on EFH (e.g. from observations, models);
- prepare a draft advice on priority areas, species and critical life stages as well as suggest potential management measures;
- advance on connectivity and network issues

VME

The working group shall:

- compile the available information on VME indicators (e.g. from surveys, fisheries);
- prepare a draft advice on priority areas and potential management measures;
- provide other suggestions to minimize significant adverse impacts of fisheries on VMEs.

Specific Terms of Reference for the Next Session

In the next session, the working group should focus on:

- review new and ongoing proposals for FRAs;
- consolidate the database on sensitive benthic habitats;
- consolidate the catalogue of EFH;
- provide suggestions on potential management measures in line with the scientific evidence compiled.

Terms of reference for the Expert Meeting on Climate Change

A roadmap towards an adaptation plan was endorsed by the 19th session of the SAC, including:

- Development of the methodology for vulnerability assessment (2018-2019)
- Application to key fisheries by subregion (2019-2020)
- Presentation of results and discussion of adaptation measures (2020)

Since then, the methodology was developed and it was agreed that it would be applied subregionally; pilot studies were agreed. The vulnerability assessment of small pelagic and demersal fisheries in both northern and southern countries of the western and eastern Mediterranean was launched in 2019 and the same is planned for 2020 for the central Mediterranean and the Adriatic Sea. This will also include a presentation of the work done by IUCN and other partners on vulnerability assessment.

The expert meeting on climate change will serve to review work done and set the way forward. The main points to be covered will include:

- Discussion and review of the results of existing vulnerability assessments,
- Discussion of adaptation options for main vulnerability factors identified

The meeting shall be attended by experts from research institutes and administrations as well as relevant partners.

Terms of reference of the Workshop on Fisheries Data Submissions and Implementation of Quality Indicators on the DCRF Online Platform

- Analyze potential challenges in the collection and transmission of fisheries data by CPCs through the DCRF online platform;
- Assist CPCs on the selection of fleet segment and species by GSAs in the context of the existing DCRF mechanism;
- Report on the current implementation of quality indicators (timeliness, completeness, conformity, stability and consistency) on the DCRF online platform;
- Review the methodology for the application of data quality indicators, including definition of thresholds.

Draft terms of reference for the ad hoc meeting on the implementation of the RPOA-SSF

The objective of this ad hoc meeting is to prepare advice for the Commission on the implementation of the RPOA-SSF, with particular attention to the following:

- Commenting on the RPOA-SSF Monitoring Framework and Priority Actions, including indicators for measuring the implementation of the RPOA-SSF, the related questionnaire for collecting baseline information.
- Identifying the priority topics within the RPOA-SSF, and relevant work plan actions, for implementation in the short-term, including:
    - Providing draft ToRs for the relevant ad hoc/expert meeting(s) to implement identified priority actions
    - Commenting on the draft concept note for the “Stakeholder University” capacity building programme
    - Suggesting actions towards the consolidation of the draft technical elements for the management of SSF

This ad hoc meeting shall be attended by representatives of CPCs, representatives of organizations participating in the Friends of SSF platform and the GFCM Secretariat.

Appendix 11

List of assessments proposed for the 2019–2020 intersession

Appendix 11/A

Planned benchmark assessments by subregion for the 2019–2020 intersession

Subregion	Benchmark assessments		
	Species	**GSA**	**Timing**
Western	*Pagellus bogaraveo*	01 and 03	To be finalized and presented at WGSAD 2019
	Merluccius merluccius	01-07, 09-11	Independent session before WGSAD 2019 (with other GSAs)
	Sardina pilchardus	01-04, 06-07, 09-11	2019 WGSASP
Central	*Merluccius merluccius*	12-16, 19, 20	Independent session before WGSAD 2019 (with other GSAs)
Adriatic	*Sardina pilchardus*	17-18	Continuation of previous benchmark
	Engraulis encrasicolus	17-18	Continuation of previous benchmark
Eastern	*Sardinella aurita*	24*, 26, 27 *pending the outcomes of the FAO-EastMed working group	Independent session before SRC-EM 2020
	Merluccius merluccius	22, 26	Independent session before WGSAD 2019 (with other GSAs)
Regional	*Coryphaena hippurus*	All	February-April 2020

Appendix 11/B

List of other required updated and new assessments of priority species

Subregion	Species	GSA	Type of assessment
Western	*Parapenaeus longirostris*	01	Update assessment
	Parapenaeus longirostris	01, 03, 04	Update assessment
	Parapenaeus longirostris	05	Update assessment
	Parapenaeus longirostris	06	Update assessment
	Parapenaeus longirostris	09, 10, 11	Update assessment
	Engraulis encrasicolus	1	Further development of the 2018 assessment
	Engraulis encrasicolus	6	Further development of the 2018 assessment
	Engraulis encrasicolus	7	Update assessment
	Engraulis encrasicolus	5, 9, 10, 11	Still to be performed
Central	*Mullus barbatus*	12-14	Update assessment
	Mullus barbatus	15	Update assessment
	Mullus barbatus	16	Update assessment
	Mullus barbatus	19	Update assessment
	Mullus barbatus	20	Update assessment
	Parapenaeus longirostris	12-16	Update assessment
	Aristeus antennatus	12, 13, 14, 15, 16, 19,	Still to be performed
	Aristaeomorpha foliacea	12, 13, 14, 15, 16, 19,	Still to be performed
	Sardina pilchardus	16	Update assessment
	Engraulis encrasicolus	16	Further development of the 2018 assessment
	Sardina pilchardus	12, 13, 14, 15	Still to be performed
	Engraulis encrasicolus	12, 13, 14, 15	Still to be performed
Adriatic	*Merluccius merluccius*	17-18	Update assessment
	Parapenaeus longirostris	17-18-19	Update assessment
	Squilla mantis	17	Update assessment
	Squilla mantis	17-18	Update assessment
	Sepia officinalis	17	Update assessment
	Engraulis encrasicolus	17-18	Update assessment including 2019 (data year-1)
	Sardina pilchardus	17-18	Update assessment including 2019 (data year-1)
Eastern	*Mullus barbatus*	26	Further development of the 2018 assessment
	Mullus barbatus	22	Update from 2017
	Mullus barbatus	22, 23, 24, 25 26, 27	Still to be performed
	Aristeus antennatus	22, 23, 24, 25, 26, 27	Still to be performed
	Aristaeomorpha foliacea	22, 23, 24, 25, 26, 27	Still to be performed
	Engraulis encrasicolus	22	Update assessment
	Sardina pilchardus	22	Update assessment
	Engraulis encrasicolus	23, 24, 25, 26, 27	Still to be performed
	Sardina pilchardus	23, 24, 25, 26, 27	Still to be performed

Appendix 12

Endorsed programmes of work for the provision of advice of select priority species

Appendix 12/A

Work plan for the assessment of Sardine in the Alborán Sea (GSAs 01-03-04)

1 – Construct a table of Metadata available: put everything even if not continuous in time (e.g. past Algeria LFD) and Retrieve raw data per country and check them all.

2 – Address all issues of the data, in particular :

- Total Catch : check long time series
- Survey:
  - GSA1: analyse the survey area for each year, get average density and raise it to a common area each year (preferably the entire area)
  - GSA3: get raw data, build an age / length structure index on spring survey . Build a second age / length index on autumn survey. Compare LFD from autumn and spring surveys.
- LFD in catch:
  - GSA1 : check monthly LFD, write down if some month missing or any important change has occured in sampling : change in harbours sampled, etc.
  - GSA3 : check monthly LFD, write down if some month missing or any important change in sampling : change in harbours sampled, etc.
  - GSA4 : get all existing data, at least 2005, 2007, 2012, 2016–2018, raise the LFD to the catches, check monthly LFD, write down if some month missing or any important change in sampling : change in harbours sampled, etc.
- Ageing :
  - GSA1 plot VonBertalanffy growth curve on top of the data and check readings if needed
  - GSA3 & 4 : satrt reading otoliths and build ALK
- Growth curve: estimate VonBertalanffy growth curves and compare them from year to year and consider having one for all years pooled together
- Slicing of LFD: need to compare slicing from growth curve (a common one, one per GSA) and from ALK. See the consistency or difference and think where they come from.
- Any other thing that come up while exploring the raw data

3 – Think how to combine data from all GSAs

- Plot LFD of all three areas on top of each other for all common years : check if Moroccan or Spanish LFD might be considered similar to Algerian one and if so then use it to ventilate catches between sizes for years with no LFD in Algeria

- Growth : plot the age reading data on a single plot with colour per GSA, plot the three growth curves on top of each other and one from all GSA pooled together, decide if a single growth curve can be applied for all three areas

4 – Run an assessment model: depending on previous work, think about which model to apply. It would be good to have a model that can use more than one index of abundance (so we can use the two surveys independently). Try to apply a single assessment model for all three GSAs on top of assessment per GSA. Consider that XSA requires age structure index and cannot accept two indices. FLSAM model or a Statistical Catch at Age model can accept different indices (age structure and biomass). The option of a surplus model with pooled landings from the three GSAs using different tuning indices (eg acoustic surveys, standardized CPUE) should also be considered along with an age structured assessment.

Appendix 12/B

Work plan towards the benchmark assessment of round sardinella in the eastern Mediterranean

Introduction

While ageing issues are being worked on, round sardinella will have to rely on length data to perform assessments.

In order to make the best use of such length data, it is important that they be analysed in the most comprehensive manner possible. This should include an appraisal of how to combine monthly (or bimonthly) samples of length frequency distributions of the catches into yearly length frequency distributions in the most appropriate way.

It was agreed that this exercise should comprise the identification of possible sources of bias in the monthly/bimonthly data that will then have to be controlled or corrected for when aggregating the LFDs.

Once this analysis has been done then the data can be used to perform a number of length-based data-limited assessment methods to determine stock status. The aim of running more than one method will be to investigate whether all methods provide consistent pictures of the resource.

Concurrently, the group agreed on using simulation testing to investigate the performance of the assessment methods of choice and also determine the best way of proceeding in terms of whether to join GSAs (26 and 27) or keep them separate.

Proposed workplan

The progressive workplan proposed by the WG is as follows:

1. **Gather and collate data on catches and LFDs for all countries (Lebanon, Egypt, Palestine, Turkey, Cyprus, Syria, Israel and Greece), as available**

2. **Possible sources of bias in data (catches and/or LFDs) and suggested strategies to identify them (preliminary appraisal during the FishForum to determine the rest of the timeline)**
    - Targeting of different species and/or sizes
        - *Ask fishers whether they target certain species/sizes in certain months*
        - *Ask this kind of questions when sampling is occurring related to the samples*
        - *Look for species catch compositions and compare LFDs under different percentages of sardinella*
    - Spatial behavior of fish
        - Environmental effects
            - *River discharge data*
            - *Surface temperature data*
            - *Identify other environmental data that could affect LFDs*
        - Mixing of stocks
        - Migrations
            - *Relate LFDs to space and time: plot LFD per harbour on a map by month*
    - Spatial and temporal fleet behavior
        - Coastal vs. offshore
            - *Plot LFDs in space and time or use vessel size as a proxy of distance from the coast*
        - Temporal fishing stops for various reasons (e.g. market)
            - *Identify any stops in the fishery and their reasons*

    - Day vs. night
        - *Find samples that can be unequivocally associated to day or night catches*
- Sampling
    - Effort and spatial differences in sampling
        - *Plot LFD by port and sample size*
- Gear
    - Selectivity and type
        - *Describe gear used by the fishery*
        - *Compare LFDs according to gear type*
- Regulations
    - Closed seasons
    - Distance from the coast

This exercise can be done by the experts in their home institutions. The support of an expert will be provided if needed. The output will be a i) summary of potential biases for each data set, ii) suggestions for the optimization and improvement of sampling schemes

3. Compilation of final data sets taking into account the output of point 2) above

The support of an expert will be provided if needed.

4. Development of a simulation framework to test the performance of different candidate data-limited assessment methods

a. Discuss and agree on the assumptions for a simulated population
- Identify conceptual models for:
    i. Recruitment
    ii. Growth
    iii. Mortality
    iv. Maturity
    v. Fecundity

b. Run all assessment methods to test
- VIT
- LB-SPR
- LIME
- Other?
- Consider performing the same exercise on catch-only methods when needed

c. Perform the simulations under different assumptions
- Single *vs.* joint GSAs
- Other depending on point a)

d. Decide on the best strategy for the assessment of round sardinella in view of the 2019 benchmark

This work should be done in two phases:

I. a preparation phase where experts individually identify the most likely conceptual framework for the simulated populations as per point 3a,
II. a meeting to finalize the decisions in I), through group discussion, and runs the simulations.

The development of the simulation models will be supported by an expert that will contribute towards building the capacity of experts.

5. Run the selected methods using the real data

Based on the outcomes of point 3), initial runs will be performed before the 2019 WGSASP with the aim of presenting proposed assessments at the WGSASP benchmark session for the round sardinella in 2019.

Appendix 12/C

Socioeconomic analysis of the effects of alternative management measures for small pelagic fisheries in the Adriatic Sea

With respect to the analysis of the economic impacts of alternative management measures for small pelagic species in the Adriatic Sea, the WKMSE-AS propose to proceed in a step-wise manner as follows:

- Short term actions (to be carried out before the 2020 SRC-AS):
    1. Compile a shortlist of objectives by country.
    2. Identify any additional data requirements with respect to the objectives identified.
    3. Propose a methodology to carry out post-hoc economic analyses based on the outcomes of the existing biological MSE (i.e. estimated catch and SSB).
- Medium term actions (to be carried out before the 2021 SRC-AS):
    1. Perform a case study analysis on a selected fleet (or part of a fleet) by country using available data, keeping in mind the need to integrate and relate these results to the MSE carried out at stock level.
    2. Identify different fleets meaningful for the management of small pelagic species in each country also based on the fleet characterization matrix being carried out at subregional level in the entire Mediterranean

Appendix 12/D

Work plan for the assessment of deep-water red shrimp in the central-eastern Mediterranean, including draft terms of reference for the Joint EastMed/MedSudMed/GFCM data preparation meeting for deep-water red shrimp

- Advance on the determination of fishing grounds overlaying species distribution, and possibly catches, on top of effort data
- Further data exploration to identify possible sources of bias
    - Fishery-independent data
        - Detailed haul by haul data: e.g. for MEDITS Ta, Tb, Tc
        - Standardization
        - Analysis of spatial distribution of the resources
        - Analysis of the timing
    - Fishery-dependent data
        - Timeline of fishery development related to catch timeseries, if possible
        - Monthly catches, if available
        - LFDs: spatiotemporal distribution of biological sampling
        - CPUE: to try to address potential sources of hyperstability
        - Identification of variables to use for CPUE standardization
        - QA/QC on fishery data time series: e.g. documenting problems/traffic light approach initially
- Determination of stock assessment units
    - Analysis of data corrected/controlled for bias
- Collation of data
- Identification and performance of possible methodologies:
    - Investigate data limited models for the provision of precautionary advice for GSAs-19-20-21 and GSAs 24-25-26-27, including simulation testing and the exploration of more than one model
    - Integrated assessment for joint eastern-central subregions for the benchmark in 2020
- Enhance data collection in more data poor GSAs (20, 21, 24, 25, 26, 27)

<u>Milestones</u>

- SRC-EM and SRC-CM (20 March 2019): 1 day
    - Analysis of haul-by-haul survey data
        - Spatial pattern (indices, length structure indicators and maturity)
        - Trend approach (indices, length structure indicators and maturity)
        - Standardization (index)

COISPA to provide guidance on methods, coordinated by GFCM Secretariat – Ricardo to assist from afar

- 2019 Joint EastMed/MedSudMed/GFCM Data preparation meeting (proposed September 2019) – 5 days
- WGSAD 2019 (November 2019): advice on the status of the stocks according to agreed assessment units
- SRC-EM and SRC-CM (2020)

Benchmark assessment in 2020/2021 intersession: ToRs to be agreed at 2020 SRC

Draft terms of reference for the Joint EastMed/MedSudMed/GFCM data preparation meeting for deep-water red shrimp [5 days]

1. Data exploration to identify possible sources of bias
   i. Fishery-independent data

   Presentation of the results of the work done during the intersession (meeting on 20 March 2019) on the identification of possible biases and the standardization of available survey data

   ii. Fishery-dependent data

   This will require a significant amount of work to be done prior to the meeting to be planned and discussed during the SRCs

   - Presentation of the timelines of fishery development related to catch time series (e.g. changes in regulations, technological creep and other things), for each fishery and documenting problems related to the quality of fisheries time series data, initially through a traffic light approach
   - Analysis of monthly catches, if available
   - Analysis of the spatiotemporal distribution of biological sampling of catches (LFD)
   - CPUE data:
     - Analysis of available CPUE data towards addressing potential sources of hyperstability
     - Attempts at standardizing CPUE data, using auxiliary data when available

   iii. Presentation of any new data available

   Presentation of any new data collected in the past intersession that could be useful towards the assessment of these species e.g. new LEK data.

2. Advance on the determination of fishing grounds overlaying species distributions emerging from fishery-independent surveys (task 1.i above), and possibly catches (task 1.ii above), on top of effort data

   This work will have to start well in advance of the meeting and possibly involve one person contracted to coordinate it.

   The central issue will be the measurement of fishing effort by fleet and its use to estimate the approximate effort of remaining fleets.

3. Determination of stock assessment units and collation of data
    - Analysis of data corrected/controlled for bias
4. Identification and performance of possible methodologies:

    This will require a consultant to be hired and do some work prior to the meeting: Ricardo Amoroso.

    This will be followed by assessment work between the data preparation meeting and the WGSAD at the end of November.

    - Investigate data limited models for the provision of precautionary advice for GSAs-19-20-21, GSAs 24-25-26-27, GSAs 22-23, GSAs 12-16 and GSAs 12-27 all together, including simulation testing and the exploration of more than one model

Appendix 13

National report summaries
(reports provided by countries)

ALBANIA

Section 1 - Description of fisheries

A. Fishing grounds (GSAs): 18 – Southern Adriatic Sea

B. Total landings: 6,202 tonnes (2018); 6,282 tonnes (2017); 6,196 tonnes (2016); 3,808 tonnes (2015)

Main 10 species landed

Species	*Tonnes*
Engraulis encrasicolus	1,516
Parapenaeus longirostris	1,275
Merluccius merluccius	872
Sardina pilchardus	460
Mullus spp	347
Nephrops norvegicus	257
Octopus vulgaris	176
Loligo vulgaris	129
Aristeus antennatus	125
Sepia officinalis	79

C. Fleet: 631 vessels (2018); 573 vessels (2017); 564 vessels (2016)
Total kW: 86,353 (2018); 79,587 (2017); 77,024 (2016)
Total GT: 7494 (2018); 6953 (2017); 6841 (2016)
AVG LOA: 10.6 m (2018)
Min LOA: 2.5 m
Max LOA: 41 m
AVG LOA previous year: 11 m

Section 2 - Status of stocks of priority species

Species/Stock	Ref. year	Stock status	GSA	Presented to GFCM WGs?	Presented to any other forum?
Engraulis encrasicolus	2018	In overexploitation and overexploited	18 - Southern Adriatic Sea	YES - Validated	NO
Engraulis encrasicolus	2018	In overexploitation and overexploited	17 - Northern Adriatic	YES - Validated	NO
Sardina pilchardus	2018	In overexploitation and overexploited	18 - Southern Adriatic Sea	YES - Validated	NO
Sardina pilchardus	2018	In overexploitation and overexploited	17 - Northern Adriatic	YES - Validated	NO
Mullus barbatus	2017	In overexploitation with relative high biomass	18 - Southern Adriatic Sea	YES - Validated	NO
Mullus barbatus	2017	In overexploitation with relative high biomass	17 - Northern Adriatic	YES - Validated	NO
Squilla mantis	2017	In overexploitation with relative high biomass	18 - Southern Adriatic Sea	YES - Validated	NO
Squilla mantis	2017	In overexploitation with relative high biomass	17 - Northern Adriatic	YES - Validated	NO
Merluccius merluccius	2017	In overexploitation and overexploited	18 - Southern Adriatic Sea	YES - Validated	NO
Merluccius merluccius	2017	In overexploitation and overexploited	17 - Northern Adriatic	YES - Validated	NO
Nephrops norvegicus	2017	In overexploitation with absolute low biomass	18 - Southern Adriatic Sea	YES - Validated	NO
Nephrops norvegicus	2017	In overexploitation with absolute low biomass	17 - Northern Adriatic	YES - Validated	NO

Section 3 - Status of statistics and information system

A. Description of the national system of fishery statistics and/or any improvement/change occurred

Albanian Fishing Fleet Register is an electronic register, update in 2017 with the support of AdriaMed project. The Fleet Register is kept in the Fisheries and Aquaculture Unit in the Ministry of Agriculture and Rural Development, where officer in charge enter, record and store all the datas of fishing vessels in database (Name of vessel, main port, kW,GT, fishing method and fishing gear, other technical elements ect). These datas are based on official documents issued by General Marittime Directorate, Albanian Shipping Register, Border Police ect. According to Law 64/2012 "On Fisheries", license holder of fishing vessel > 10 m in length, must keep and submit the logbook to the fishery Inspector, max 48 hours after their arrival in port. Average prices of fish species are calculated based on prices and quantities collected by sales notes.
Albania is updating and riestablishing VMS with a strong and effective technical support of GFCM and the new system will be able also for ERS transmission (electronic logbook). With the support of AdriaMed project we realized the socio-economic survey for all fleet segments as well as biological data for 15 species (6 species of group I and 9 species of group II). We are trying to collect and incorporate all technical, biological and socio-economic data in a central database, according to the National data collection programme. (DCM No 256, date 24.04.2019 "On the establishment of a National framework for the collection, management and use of data in the fisheries sector to support scientific advice according Albanian Fisheries Strategy"

B. National entities or authorities in charge for the collection of data pertaining the GFCM DCRF Tasks

Task I - Global Figures of National Fisheries	Task II - Catch	Task III - Bycatch	Task IV - Fleet	Task V - Effort	Task VI – Socio-Economic Data	Task VII - Biological Information
Ministry of Agriculture and Rural Development, Fisheries Unit	MARD, Fisheries Unit, Directorate of Fisheries & Aquaculture Service	MARD, Fisheries Unit, Directorate of Fisheries & Aquaculture Service	Ministry of Agriculture and Rural Development, Fisheries Unit	Ministry of Agriculture and Rural Development, Fisheries Unit	MARD, Fisheries Unit, Scientific entities	MARD, Fisheries Unit, Scientific entities

Section 4 - Status of research in progress (or recently concluded)

Research or Project title	Subject	From	To
The National programme of biological and socio-economic data in the fisheries sector	Socio-economic	2017	2019
MEDIAS MEDITS	Stock assessment	2000	2019
MEDITS	Stock assessment	2000	2019

Section 5 - Involvement in activities of FAO regional projects

Activity	FAO regional project	Year	Type
Support the fisheries monitoring of Albania	ADRIAMED	2018	Data collection and statistics, Socio-economics, Stock assessment, Marine environment and conservation
Capacity development	ADRIAMED	2018	

Section 6 - Management measures taken in direct response to GFCM decisions

Section 7 - Environment protection measures

Section 8 - Recommendation GFCM/36/2012/2 on mitigation of incidental catches of cetaceans in the GFCM area By-catch events

Notes

No by-catch of cetaceans were recorded during 2018.

Section 9 - Recommendation GFCM/36/2012/3 on fisheries management measures for conservation of sharks and rays in the GFCM area

Notes

No recorded by-catches for sharks and rays during 2018. Article 37 of the Law 64/2012, "On Fisheries", ban to catch different species of sharks as *Cetorhinus maximus*, *Carcharodon carcharias* ect.

Section 10 - Recommendation GFCM/35/2011/4 on the incidental catch of sea turtles in fisheries in the GFCM competence area

Notes

There were no by-catch or accidental catch of sea turtles recorded or reported in 2018. Respective GFCM Recommendation and EU Regulation are incorporated in the Albanian legislation and the species are stricted protect.

Section 11 - Recommendation GFCM/35/2011/3 on reducing incidental catch of seabirds in fisheries in the GFCM Competence Area

Notes

There are no by-catch of seabirds reported in 2018. Respective GFCM Rec and EU Reg are incorporated in Albanian legislation (letter h of point 1, point 2, 3, 4 of article 37 of the Law 80/2017.

Section 12 - Recommendation GFCM/35/2011/5 on fisheries measures for the conservation of the Mediterranean monk seal (*Monachus monachus*) in the GFCM Competence Area

Notes

There were not reported accidental catch of monk seal during 2018. The species is under strict protection by Albanian legislation.

Section 13 - Proposals for future research programmes

ALGERIA

Section 1 - Description of fisheries

A. Fishing grounds (GSAs): 04 – Algeria

B. Total landings: 102,354 tonnes (2018); 89,200 tonnes (2017); 85,536 tonnes (2016); 88,420 tonnes (2015); 85,234 tonnes (2014)

Main 10 species landed

Species	*Tonnes*
Sardina pilchardus	50,853
Sardinella aurita	18,493
Trachurus spp	10,893
Engraulis encrasicolus	3,304
Boops boops	3,148
Parapenaeus longirostris	1,090
Aristeus antennatus	840
Sarda sarda	812
Auxis thazard	809
Octopodidae	652

C. Fleet: 5616 vessels (2018); 5323 vessels (2017); 5323 vessels (2016); 5024 vessels (2015); 4777 (2014)
Total kW: 654,992 (2018); 626,760 (2017); 600,827 (2016)
Total GT: 74,564 (2018); 73,575 (2017); 68,107 (2016)
AVG LOA: 9.3 m (2017)
Min LOA: 3.3 m
Max LOA: 40 m
AVG LOA previous year: 9.3 m

Section 2 - Status of stocks of priority species

Species/Stock	Ref. year	Stock status	GSA	Presented to GFCM WGs?	Presented to any other forum?
Sardina pilchardus	2017	In sustainable exploitation	04	Y – Not Validated	
Parapenaeus longirostris	2017	In overexploitation	04	Y	
Merluccius merluccius	2016	In overexploitation	04	Y	

Section 3 - Status of statistics and information system

A. Description of the national system of fishery statistics and/or any improvement/change occurred

Le dispositif de collecte de données statistiques, mis en place en Algérie datant des années 1970 a connu diverses modifications et adaptations. Il s'agit d'un dispositif qui s'appuyant sur la collecte de données par des agents collecteurs au niveau des ports de pêche, qui restituent par la suite les canevas statistiques renseignés aux antennes de pêche dont ils relèvent. Lesdites antennes relayent quotidiennement ces données aux Directions de Wilaya qui, à leur tour, les transmettent mensuellement à la Direction Centrale (MPRH) qui s'occupe de consolider, traiter et analyser les données recueillies. S'étalant sur près de 1280 Km, la côte Algérienne est subdivisée en quatorze (14) wilayas à façade maritimes dont cinq (05) à l'Est, cinq (05) au Centre et quatre (04) à l'Ouest qui constituent les subdivisions administratives à la base du réseau de collecte. Avant l'année 2019, la collecte par les agents collecteurs des données statistiques des débarquements s'effectuait de manière exhaustive, ce qui nécessitait d'énormes efforts pour couvrir l'ensemble de la flottille de pêche professionnelle (plus de 5500 embarcations tous types de métiers confondus). La tâche était d'autant plus ardue en l'absence de halle à marée au niveau des points de débarquements et d'horaire fixe pour le débarquement du poisson. L'autre difficulté rencontrée concerne les petites embarcations de la pêche artisanale qui débarquent au niveau des plages d'échouage là où l'agent collecteur est absent.

Fort de ce constat et afin de remédier à la situation, l'Algérie a opté pour une approche statistique s'appuyant sur un système d'échantillonnage aléatoire et stratifié de la flottille de pêche et des débarquements. Cela a donné naissance au nouveau Système Statistique National fondé sur une Application Statistique en ligne (SSPAALweb), conçue en collaboration avec des experts de l'Union Européenne dans le cadre du Programme DIVECO2.

Les principaux résultats obtenus pouvant être résumés comme suit :

- Elaboration d'une classification statistique de la pêche et aquaculture en Algérie en harmonie avec celles de la FAO et de la CGPM ;
- Développement d'un système statistique intégré (registre de bateaux-engins, captures, effort de pêche –maritime et continentale-, prix et valeurs) basé sur une méthodologie d'échantillonnage permettant une gestion en ligne du registre de

bateaux-engins ainsi que la collecte et de la diffusion des données et des statistiques à tous les groupes d'utilisateurs. Le système intègre également des modules spécifiques à l'aquaculture marine et continentale.
- Plus de 150 personnes (Chefs de services, Chefs d'Antennes, Agents enquêteurs) impliqués dans la collecte, l'analyse et le traitement des données, ont été formés sur le fonctionnement du nouveau système informatique statistique et ont bénéficiés de formations sur les nouvelles classifications statistiques de pêche et aquaculture ainsi que dans les domaines des statistiques avancées.
- 21 DPRH et 34 Antennes de pêche au niveau des ports, sont reliés aux Datacenter par Intranet ;
- Un accès au public est prévu pour un certain nombre de données présélectionnées ;
- Elaboration d'un système en ligne (www.dgpa.gov.dz) de Suivi du Registre de la Flottille de pêche et des Autorisation de pêche;
- Le système (www.dgpa.gov.dz) permettant également de suivre en ligne la collecte de données relatives aux captures débarquée, à l'effort de pêche, à l'aquaculture et aux prix de vente.
- Le système fournit enfin aux décideurs un Tableau de bord ainsi que des Rapports multiples sur l'état de la pêcherie ;

Enfin l'application a était conçue pour satisfaire à l'ensemble des exigences du DCRF-CGPM relatives au registre de la flottille, des captures de pêche (selon la segmentation de la CGPM), de la valeur et des prix du poisson.

B. National entities or authorities in charge for the collection of data pertaining the GFCM DCRF Tasks

Task I - Global Figures of National Fisheries	Task II - Catch	Task III - Bycatch	Task IV - Fleet	Task V - Effort	Task VI – Socio-Economic Data	Task VII - Biological Information
Direction Générale de la Pêche et de l'Aquaculture (DGPA)	Direction Générale de la Pêche et de l'Aquaculture (DGPA)	Direction Générale de la Pêche et de l'Aquaculture (DGPA)	Direction Générale de la Pêche et de l'Aquaculture (DGPA) et Service des Gardes de Côtes (Ministère de la Défense Nationale)	Direction Générale de la Pêche et de l'Aquaculture (DGPA) et Service des Gardes de Côtes (Ministère de la Défense Nationale)	Direction Générale de la Pêche et de l'Aquaculture (DGPA) et CNRDPA (Centre Nationale de la Recherche et Développement de la Pêche et de l'Aquaculture)	CNRDPA (Centre Nationale de la Recherche et Développement de la Pêche et de l'Aquaculture)

Section 4 - Status of research in progress (or recently concluded)

Research or Project title	Subject	From	To
Small pelagics (sardine, anchovy and round sardinelle) stock assessment using landing data	Stock assessment	2016	2018
Demersal fishes (hake, red mullet and pink shrimp) stocks assessment using landing data	Stock assessment	2016	2018
Biomass evaluation of small pelagic fishes using hydroacousitc method	Stock assessment	2013	2018
Demersal fishes abundance index determination using trawl survey	Stock assessment	2013	2018
Socio-economic indicators of Algerian fisheries	Socio-economics	2013	2019

Section 5 - Involvement in activities of FAO regional projects

Activity	FAO regional project	Year	Type
Projet pilote COPEMED II « application de l'approche Ecosystémique » dans la zone ouest de Béjaia	COPEMED	2018	Marine environment and conservation
Projet pilote FAO « Initiative Blue Hope » dans la zone ouest de Béjaia	COPEMED	2019	Socio-economics
Transboundary population structure of Sardine, European hake and blackspot seabream in the Alboran Sea and adjacent waters: a multidisciplinary approach (TRANSBORAN)	COPEMED	2018	Stock assessment
Data collection: biological sampling and socio-economic surveys of Annaba fishery (eastern Algeria)	COPEMED/MEDSUDMED	2017	Stock assessment, data collection and statistics, Socio-economics

Section 6 - Management measures taken in direct response to GFCM decisions

Title/Reference to National Law	Related GFCM Decision(s)
Draft law	REC.CM-GFCM/42/2018/1
Management plan being published	REC.CM-GFCM/42/2018/1
Ministerial regulation in progress	REC.CM-GFCM/42/2018/2
Executive Decree being published	REC.DIR-GFCM/42/2018/10

Section 7 - Environment protection measures

Name of the area	Type of spatial restriction	Year
Nature reserve of Cap Lindles	Nature reserve	2018

Section 8 - Recommendation GFCM/36/2012/2 on mitigation of incidental catches of cetaceans in the GFCM area

Section 9 - Recommendation GFCM/36/2012/3 on fisheries management measures for conservation of sharks and rays in the GFCM area

Species	N specimens	Weight (Kg)	Date	GSA	Fleet Segment	Fishing Gear	Main Target Species
Alopias vulpinus (Thresher) [Annex III]		10,420	2017	4 - Algeria	[OLD TASK 1] J - Pelagic Trawlers (> 6 metres)	Bottom trawls (not specified)	Parapenaeus longirostris (Deep-water rose shrimp); Merluccius merluccius (European hake)
Prionace glauca (Blue shark) [Annex III]		7,400	2017	4 - Algeria	[OLD TASK 1] C - Polyvalent small-scale vessels with engine (6-12 metres)	Drifting longlines	Xiphias gladius (Swordfish); Euthynnus alletteratus (Little tunny(=Atl.black skipj))

Section 10 - Recommendation GFCM/35/2011/4 on the incidental catch of sea turtles in fisheries in the GFCM competence area

Section 11 - Recommendation GFCM/35/2011/3 on reducing incidental catch of seabirds in fisheries in the GFCM Competence Area

Section 12 - Recommendation GFCM/35/2011/5 on fisheries measures for the conservation of the Mediterranean monk seal (*Monachus monachus*) in the GFCM Competence Area

Section 13 - Proposals for future research programmes

Development of the dolphinfish fishery for the benefit of the Algerian artisanal fishery.

CROATIA

Section 1 - Description of fisheries

A. Fishing grounds (GSAs): 17 - Northern Adriatic Sea

B. Total landings: 68,875 tonnes (2017); 72,326 tonnes (2016); 72,914 tonnes (2015); 79,396 tonnes (2014)

Main 10 species landed

Species	***Tonnes***
Sardina pilchardus	48,333
Engraulis encrasicolus	10,880
Scomber japonicus	1,981
Trachurus spp	915
Mullus barbatus	1,000
Merluccius merluccius	928
Parapenaeus longirostris	834
Eledone spp	363
Loliginidae, Ommastrephidae	255
Solea solea	231

C. Fleet: 7536 vessels (2019); 7553 vessels (2018); 7494 vessels (2017); 7705 vessels (2016)
Total kW: 344,679 (2019); 353,586 (2018); 366,110 (2017)
Total GT: 43,711 (2019); 45,274 (2018); 47,076 (2017)
AVG LOA: 6.8 m (2019)
Min LOA: 2.4 m
Max LOA: 40 m
AVG LOA previous year: 6.1 m

Section 2 - Status of stocks of priority species

Species/Stock	Ref. year	Stock status	GSA	Presented to GFCM WGs?	Presented to any other forum?
Mullus barbatus	2017	In overexploitation	17-18	Y – Not validated	Y - STEFC (EU)
Parapenaeus longirostris	2017	In overexploitation	17-18-19	Y – Not validated	Y - STEFC (EU)
Squilla mantis	2017	In overexploitation	17	Y – Not validated	
Squilla mantis	2017	In overexploitation with biomass above reference point	17-18	Y – Not validated	Y - STEFC (EU)
Nephrops norvegiucus	2017	In overexploitation	17-18	Y – Not validated	Y - STEFC (EU)
Sepia officinalis	2017	In sustainable exploitation with biomass below reference points	17	Y – Not validated	
Sepia officinalis	2017	In sustainable exploitation with biomass above reference points	17-18		Y - STEFC (EU)
Solea solea	2017	In overexploitation	17		Y - STEFC (EU)

Section 3 - Status of statistics and information system

A. Description of the national system of fishery statistics and/or any improvement/change occurred

Croatian Fishing Fleet Register is an electronically-kept register, now web-based, in which relevant data on vessels and vessel activities are registered. The Fleet Register is a centralized structure, where field offices enter the data which are all immediately recorded and stored in a central database. Data on the vessels (GT, kW, technical elements) are obtained from official documents issued by other relevant institutions (Ministry of Maritime Affairs, Transport and Infrastructure - Croatian Register of Shipping and Croatian Register of Boats). Since 2018 all modifications on fishing vessels in the Fleet Register are automatically transmitted to the Union Vessel Register following FLUX procedures. Republic of Croatia has established links between responsible authorities (Croatian Bureau of Statistics and the MoA) in order to meet the relevant requirement and secure the delivery of statistical data in a unified manner. Croatia has since 2001 been implementing the obligation of all license holders to keep and submit the logbooks on fishing activities. According to the provisions of the national regulation, all license holders operating with fishing vessels equal to or longer than 10 m have to keep and submit the logbook. Logbook contains the data on catch and landing per species and quantity. Data on catches over 5 kg has to be entered into the logbook for all species. Exceptionally, there are 17 species that have to be entered into the logbook regardless of the quantity caught. These are the following: *Spicara smaris, Lophius spp., Homarus gammarus, Engraulis encrasicolus, Palinurus elaphas, Zeus faber, Arca noae, Eledone moschata, Eledone cirrhosa, Merluccius merluccius, Sprattus sprattus, Maja squinado, Sardina pilchardus, Mullus barbatus, Mullus surmuletus, Nephrops norvegicus* and *Scorpaena scrofa*. License holders of vessels below 10 m LoA are obliged by national regulation to submit monthly fishing reports of their fishing activities; therefore the entire

commercial fleet is covered. The electronic logbook was installed to all vessels above 12 m LoA. All fishing vessels irrespective of the length must have an e-logbook installed if they have a Fishing Permit for certain fighing gear or if they have an individual allowable catch for a certain species.
All sales data are reported via a web-based application in an electronic form. These data include relevant information on the vessel and the buyer, as well as on prices and quantities. Average prices of marine species are calculated using prices and quantities collected via sales notes. For the purpose of reporting Croatia is developing a central DCF-GFCM database with information on technical and socio-economic data on all vessels included in the Fleet Register in each referent year. Biological data is stored at the Institute of Oceanography and Fisheries. Linking of databases with the Institute of Oceanography and Fisheries databases is underway in order to incorporate biological data in the central DCF-GFCM database kept by the Directorate of Fisheries. All relevant statistics in regards to DCF and GFCM requirements are incorporated within the central database in order to facilitate the preparation of reports. All data collection is implemented according to the National data collection programmer in accordance with the Data Collection Framework (DCF) as well as obligations under the GFCM and ICCAT. Reports are made using DCF data and according to procedures and methodologies set out by DCF, GFCM and ICCAT.

B. National entities or authorities in charge for the collection of data pertaining the GFCM DCRF Tasks

Task I - Global Figures of National Fisheries	Task II - Catch	Task III - Bycatch	Task IV - Fleet	Task V - Effort	Task VI – Socio-Economic Data	Task VII - Biological Information
Ministry of Agriculture/ Directorate of Fisheries	Ministry of Agriculture/ Directorate of Fisheries	Ministry of Agriculture/Directorate of Fisheries	Ministry of Agriculture/ Directorate of Fisheries	Ministry of Agriculture/ Directorate of Fisheries	Ministry of Agriculture/ Directorate of Fisheries	Ministry of Agriculture/Directorate of Fisheries and Institute of Oceanography and Fisheries

Section 4 - Status of research in progress (or recently concluded)

Research or Project title	Subject	From	To
National programme for data collection in fisheries	Data collection and statistics	2012	2019
MEDITS	Stock assessment, data collection and statistics	2013	2019
MEDIAS	Stock assessment, data collection and statistics	2013	2019
SOLEMON	Stock assessment, data collection and statistics	2017	2019
Jabuka/Pomo Pit trawl survey	Data collection and statistics, Stock assessment, Marine environment and conservation	2018	2020

Section 5 - Involvement in activities of FAO regional projects

Activity	FAO regional project	Year	Type
FAO Adriamed activities	ADRIAMED		Stock assessment, Data collection and statistics, Socio-economics,Marine environment and conservation

Section 6 - Management measures taken in direct response to GFCM decisions

Title/Reference to National Law	Related GFCM Decision(s)
Ordinance on special fishery management regime in the area of Jabuka pit	REC.CM-GFCM/41/2017/3
Ordinance on amendments of ordinance on fishing opportunities for fishing with purse seine "srdelara"	REC.CM-GFCM/40/2016/3; REC.CM-GFCM/38/2014/1; REC.CM-GFCM/37/2013/1
Ordinance on fishing opportunities for fishing with purse seine "srdelara"	REC.CM-GFCM/37/2013/1; REC.CM-GFCM/40/2016/3; REC.CM-GFCM/38/2014/1
Ordinance on amendments and changes of ordinance on fishing opportunities for fishing with purse seine "srdelara"	REC.CM-GFCM/40/2016/3
Ordinance on changes of ordinance on fishing opportunities for fishing with purse seine "srdelara"	REC.CM-GFCM/40/2016/3

Ordinance on fishing opportunities for fishing with purse seine "srdelara"	REC.CM-GFCM/42/2018/8
Ministerial Order on closure for eel fishery in 2019	REC.CM-GFCM/42/2018/1

Section 7 - Environment protection measures

Section 8 - Recommendation GFCM/36/2012/2 on mitigation of incidental catches of cetaceans in the GFCM area

No incidental catch of vulnerable species observed during scientific monitoring of commercial fisheries in 2018.

Section 9 - Recommendation GFCM/36/2012/3 on fisheries management measures for conservation of sharks and rays in the GFCM area

No incidental catch of vulnerable species observed during scientific monitoring of commercial fisheries in 2018.

Section 10 - Recommendation GFCM/35/2011/4 on the incidental catch of sea turtles in fisheries in the GFCM competence area

No incidental catch of vulnerable species observed during scientific monitoring of commercial fisheries in 2018.

Section 11 - Recommendation GFCM/35/2011/3 on reducing incidental catch of seabirds in fisheries in the GFCM Competence Area

No incidental catch of vulnerable species observed during scientific monitoring of commercial fisheries in 2018.

Section 12 - Recommendation GFCM/35/2011/5 on fisheries measures for the conservation of the Mediterranean monk seal (*Monachus monachus*) in the GFCM Competence Area

No incidental catch of vulnerable species observed during scientific monitoring of commercial fisheries in 2018.

Section 13 - Proposals for future research programmes

CYPRUS

Section 1 - Description of fisheries

A. Fishing grounds (GSAs): 14 - Gulf of Gabes; 15 - Malta Island; 17 - Northern Adriatic; 20 – Eastern Ionian Sea; 21 - Southern Ionian Sea; 22 - Aegean Sea; 24 - North Levant; 25 - Cyprus Island; 26 - South Levant

B. Total landings: 1,470 tonnes (2018) 1,775 tonnes (2017); 1,479 (2016); 1,326 tonnes (2014)

Main 10 species landed

Species	***Tonnes***
Thunnus alalunga	626
Thunnus thynnus	133
Boops boops	86
Spicara smaris	76
Serranus cabrilla	71
Xiphias gladius	45
Mullus surmuletus	43
Sparisoma cretense	26
Lagocephalus sceleratus	28

C. Fleet: 793 (2018); 786 vessels (2017); 768 vessels (2016); 840 vessels (2015)
Total kW: 38,363 (2018); 36,782 (2017); 33,447 (2016)
Total GT: 3,637 (2018); 3,462 (2017); 3,196 (2016)
AVG LOA: 7.3 m (2018)
Min LOA: 4.3 m
Max LOA: 27.2 m
AVG LOA previous year: 7.2 m

Section 2 - Status of stocks of priority species

Species/Stock	Ref. year	Stock status	GSA	Presented to GFCM WGs?	Presented to any other forum?
Mullus surmuletus	2016		25	Y	N
Boops boops	2016	In overexploitation	25	Y	N
Pagellus erythrinus	2017	In sustainable exploitation	25	Y	N

Section 3 - Status of statistics and information system

A. Description of the national system of fishery statistics and/or any improvement/change occurred

The authority responsible for the collection and management of fishery statistics in Cyprus is the Department of Fisheries and Marine Research (DFMR) of the Ministry of Agriculture, Rural Development and Environment. The data collected by the fishery statistical system are used to fulfill the following objectives:

- To serve as a guide for management purposes, i.e. to direct the DFMR to decide on the introduction of measures and regulations for the fishery
- To provide statistical information to other bodies: The data are transmitted to the International Organizations and Agencies, where Cyprus has the legal obligation to send, i.e. FAO, GFCM, ICCAT and the European Union.
- To be analysed for scientific purposes: Along with biological data collected through sampling, the statistical data are used to evaluate the stocks of the most important commercial demersal fish species.

The current available database systems in the DFMR for recording and storing data related to fisheries include the following systems: i) the Electronic Reporting System (ERS), the Fishing Vessel Register (FVR), the Vessel Monitoring System (VMS), the Fisheries Resources Management System Database, and the Marine Environment Database.

The data stored under the database systems are dealt with confidence. Data access to the systems is limited to authorised personnel.

B. National entities or authorities in charge for the collection of data pertaining the GFCM DCRF Tasks

Task I - Global Figures of National Fisheries	Task II - Catch	Task III - Bycatch	Task IV - Fleet	Task V - Effort	Task VI – Socio-Economic Data	Task VII - Biological Information
Department of Fisheries and Marine Research	Department of Fisheries and Marine Research	Department of Fisheries and Marine Research	Department of Fisheries and Marine Research	Department of Fisheries and Marine Research	Department of Fisheries and Marine Research	Department of Fisheries and Marine Research

Section 4 - Status of research in progress (or recently concluded)

Research or Project title	Subject	From	To
National Work Plans for data collection in the fisheries and aquaculture sector	Data collection and statistics	2005	
RELIONMED-LIFE - Preventing a LIONfish invasion in the MEDiterranean through early response and targeted Removal	Marine environment and conservation	2017	2021
LIFE EUROTURTLES	Marine environment and conservation	2016	2021
Interreg Balkan-Mediterranean MELTEMI	Marine environment and conservation	2017	2019
Interreg Balkan-Mediterranean RECONNECT	Marine environment and conservation	2017	2019
Strengthening Regional Cooperation in the area of large pelagic fisheries data collection (RECOLAPE)– MARE/2016/22	Data collection and statistics	2017	2019
STREAM - Strengthening regional cooperation in the area of fisheries biological data collection in the Mediterranean and Black Sea (MARE/2016/22)	Data collection and statistics	2017	2019
Recovery of Fisheries Historical Time Series for Mediterranean and Black Sea Stock Assessment (RECFISH) - Specific contract Nr. 01 TENDER EASME/EMFF/2016/032	Data collection and statistics	2017	2019
IDEM (Implementation of the MSFD to the DEep Mediterranean Sea) - Grant agreement No 11.0661 /2017/750680/SUB/EN V.C2	Marine environment and conservation	2017	2019

Section 5 - Involvement in activities of FAO regional projects

Activity	FAO regional project	Year	Type
Involvement in activities of FAO Regional Projects	EASTMED	2018	

Section 6 - Management measures taken in direct response to GFCM decisions

Section 7 - Environment protection measures

Name of the area	Type of spatial restriction	Year
MPA CAVO GREGO	Marine Protected Area (MPA)	2018
MPA LARA	Marine Protected Area (MPA)	2018
MPA SEA CAVES	Marine Protected Area (MPA)	2019

Section 8 - Recommendation GFCM/36/2012/2 on mitigation of incidental catches of cetaceans in the GFCM area

Section 9 - Recommendation GFCM/36/2012/3 on fisheries management measures for conservation of sharks and rays in the GFCM area

Species	Weigh t (Kg)	N specimens	Date	GSA	Fleet Segment	Fishing Gear	Main Target Species
Prionace glauca (Blue shark) [Annex III]	84		13/05/2018	22 - Aegean Sea	[OLD TASK 1] I - Long liners (> 6 metres)	Drifting longlines	Thunnus thynnus (Atlantic bluefin tuna)
Prionace glauca (Blue shark) [Annex III]	6	1	28/11/2018	25 - Cyprus Island	[OLD TASK 1] I - Long liners (> 6 metres)	Drifting longlines	Xiphias gladius (Swordfish)
Prionace glauca (Blue shark) [Annex III]	24	1	19/05/2018	25 - Cyprus Island	[OLD TASK 1] I - Long liners (> 6 metres)	Drifting longlines	Thunnus alalunga (Albacore)
Prionace glauca (Blue shark) [Annex III]	83	2	23/05/2018	25 - Cyprus Island	[OLD TASK 1] I - Long liners (> 6 metres)	Drifting longlines	Thunnus alalunga (Albacore)

Species	Weight (Kg)	N specimens	Date	GSA	Fleet Segment	Fishing Gear	Main Target Species
Prionace glauca (Blue shark) [Annex III]	55	1	12/04/2018	24 - North Levant	[OLD TASK 1] I - Long liners (> 6 metres)	Drifting longlines	Xiphias gladius (Swordfish)
Prionace glauca (Blue shark) [Annex III]	35	1	16/06/2018	24 - North Levant	[OLD TASK 1] I - Long liners (> 6 metres)	Drifting longlines	Thunnus alalunga (Albacore)
Prionace glauca (Blue shark) [Annex III]	84	1	30/04/2018	25 - Cyprus Island	[OLD TASK 1] I - Long liners (> 6 metres)	Drifting longlines	Xiphias gladius (Swordfish)
Prionace glauca (Blue shark) [Annex III]	85	1	03/11/2018	24 - North Levant	[OLD TASK 1] I - Long liners (> 6 metres)	Drifting longlines	Xiphias gladius (Swordfish)
Prionace glauca (Blue shark) [Annex III]	50	1	03/05/2018	24 - North Levant	[OLD TASK 1] I - Long liners (> 6 metres)	Drifting longlines	Xiphias gladius (Swordfish)
Prionace glauca (Blue shark) [Annex III]	9	1	08/11/2018	25 - Cyprus Island	[OLD TASK 1] I - Long liners (> 6 metres)	Drifting longlines	Xiphias gladius (Swordfish)

Section 10 - Recommendation GFCM/35/2011/4 on the incidental catch of sea turtles in fisheries in the GFCM competence area

Section 11 - Recommendation GFCM/35/2011/3 on reducing incidental catch of seabirds in fisheries in the GFCM Competence Area

Section 12 - Recommendation GFCM/35/2011/5 on fisheries measures for the conservation of the Mediterranean monk seal (*Monachus monachus*) in the GFCM Competence Area

Section 13 - Proposals for future research programmes

FRANCE[2]

Section 1 - Description of fisheries

A. Fishing grounds (GSAs): 07 – Gulf of Lion; 08 – Corsica Island

B. Total landings: 15,031 tonnes (2017); 13,588 tonnes (2016); 12,467 tonnes (2015)

Main 10 species landed

Species	*Tonnes*
Octopus vulgaris	1,637
Engraulis encrasicolus	1,303
Sparus aurata	996
Sardina pilchardus	876
Merluccius merluccius	765
Scomber spp	508
Mugilidae	476
Trisopterus minutus	473
Lophius budegassa	428
Trachurus trachurus	371

C. Fleet: 1,452 vessels (2018); 1,489 vessels (2017); 1,460 vessels (2016); 1,455 vessels (2015)
Total kW: 145,272 (2018); 144,476 (2017)
Total GT: 1,622,491 (2018); 1,592,667 (2017)
AVG LOA: 8.5 m (2018)
Min LOA: 2.9 m
Max LOA: 42 m
AVG LOA previous year: 8.5 m

Section 2 - Status of stocks of priority species

Species/Stock	Ref. year	Stock status	GSA	Presented to GFCM WGs?	Presented to any other forum?
Merluccius merluccius	2017	High overfishing status	07	Y	N
Mullus barbatus	2017	High overfishing status	07	Y	N
Engraulis encrasicolus	2018	Ecologically unbalanced	07	Y	N
Sardina pilchardus	2017	Ecologically unbalanced	07	Y	N

Section 3 - Status of statistics and information system

A. Description of the national system of fishery statistics and/or any improvement/change occurred

Le Système d'Informations Halieutiques (SIH) :

Le Système d'Information Halieutique (SIH) de l'Ifremer constitue un réseau d'observation scientifique des ressources halieutiques et des usages associés (pêche professionnelle et progressivement pêche récréative) de l'Ifremer, sur l'ensemble des façades maritimes. Les objectifs du SIH s'inscrivent dans l'un des 10 axes stratégiques de l'Ifremer : contribuer à une pêche durable. Il s'agit de permettre à la pêche d'assurer, d'une manière durable, l'approvisionnement alimentaire en produits sains tout en répondant aux nouveaux défis de l'état de la ressource, de la hausse des prix de l'énergie, de la rentabilité des entreprises et de la protection des habitats. Il est le résultat de l'adaptation d'un système d'observation à des questions de recherche et d'expertise en réponse aux enjeux sociétaux :

- nécessité d'appréhender le « système pêche » dans son intégralité (y compris sa composante petite pêche côtière)
- question de l'adéquation entre les capacités de production et l'état des stocks (et donc de la régulation des usages)
- mise en place de l'approche écosystémique des pêches (couplage entre écologie, ressource, exploitation et économie)

Pour répondre aux missions de l'Ifremer, le SIH considère l'ensemble du système pêche, dans toutes ses composantes et sur l'ensemble des façades. Il s'appuie notamment sur l'échantillonnage des captures commerciales (à terre et en mer) dont les paramètres biologiques, les campagnes à la mer, les pêches récréatives, les statistiques de pêche, les enquêtes activités et économiques. Il est dépositaire des cahiers des charges et des spécifications techniques pour les plans d'échantillonnage, la collecte, le stockage, l'accès aux données halieutiques, les restitutions internes et externes. Il élabore des indicateurs intégrés sur les pêcheries et réalise des synthèses à destination des acteurs de la filière pêche et du grand public. Ces données sont intégrées dans la base HARMONIE et les protocoles sont disponibles sur un site web dédié (www.ifremer.fr/sih). La collecte

[2] Sections 3, 7, 9, and 13 have been modified by the country after the twenty-first[t] session of the SAC

des données de Méditerranée sur les ressources exploitées par la pêche professionnelle est réalisée dans le cadre de la DCF (Data Collection Framework). Elle repose sur différents programmes détaillés ci-dessous.

Programme d'échantillonnage biologique (OBSVENTES) et paramètres biologiques

Les actions « Echantillonnages biologiques des captures » et « paramètres biologiques », dans le golfe du Lion (GSA 7), visent à obtenir la structure en taille et/ou en âge des captures (apports commerciaux) des principales espèces exploitées par différents métiers, ainsi que les paramètres biologiques afférents, pour l'évaluation des stocks. L'échantillonnage des débarquements est réalisé sous criée ou sur les quais pour les navires >12 m. Depuis 2010, ces échantillonnages couvrent les navires <12 m (seulement 200 sorties/an). Les métiers identifiés ciblent préférentiellement, loup, sole, merlu, rouget de vase et de roche, poulpe de roche, sardine, anchois et anguille. Des otolithes sont prélevés sur daurade, merlu, rouget de vase, anchois et sardine mais leur lecture exclut ceux du merlu liés à de trop fortes incertitudes. Maturité et condition sont suivies pour anchois et sardine. Ces échantillonnages visent à aborder les espèces exploitées, étant entendu que les espèces évaluées par les instances internationales comme la CGPM sont prioritaires.

Programme OBSDEB d'enquêtes d'activités et des débarquements des navires de moins de 12 m

L'objectif d'OBSDEB était d'améliorer la connaissance acquise sur les activités de la flotte de pêche professionnelle. Ce programme a été lancé par le Système d'Informations Halieutiques (SIH) de l'Ifremer, en collaboration avec la Direction des Pêches Maritimes en 2007. Ce programme visait à estimer par échantillonnage les niveaux d'effort de pêche et de captures des "petits métiers", qui du fait de l'absence de flux déclaratifs, d'une forte inactivité des petites unités et de la très forte dispersion géographique de ces flottilles, sont aujourd'hui mal connus.
Le programme OBSDEB s'est achevé à compter du 1er janvier 2019 du fait d'un niveau de connaissance désormais suffisant basé sur le flux déclaratif.

Programme OBSMER d'observation des captures en mer

L'objectif d'OBSMER est de permettre une meilleure compréhension de l'interaction entre les ecosystèmes marins et les activités de pêche. Le programme vise à observer la capture dans son ensemble et les activités de pêche, ainsi que l'environnement de la marée. Ces données servent notamment pour le calcul d'indicateurs de capture aux niveaux régional, national et européen, qui sont utilisées pour les évaluations de stocks. Le programme national prévoit pour la façade méditerranéenne (GSA 7), des observations sur les captures des chalutiers (fond et pélagique). Les débarquements d'espèces commercialisées, prises accessoires, rejets, et caractéristiques techniques de chaque trait sont collectés. En 2015, 29 chalutiers sur les 56 (soient 118 marées sur 10161) ont été échantillonnées dans le Golfe du Lion (GSA7).

Programme MEDITS-France (GSA 07 et 08)

La campagne française de chalutage annuelle d'évaluation des ressources démersales (MEDITS) se déroule sur la façade Est Corse (65 traits) et dans le golfe du Lion (23 traits), en fin de printemps. Elle a lieu à la même période en Méditerranée (France, Espagne, Italie, Grèce, Chypre, Malte, Slovénie, Croatie, Monténégro, Albanie) et mer Noire (Roumanie et Bulgarie). Le programme Medits, lancé en 1993 a permis de standardiser les modalités pratiques d'échantillonnage (période, échantillonnage biologique, engin de capture…) et ainsi de constituer une base de connaissances commune sur les ressources démersales exploitées. Les observations biologiques sont réalisées selon le protocole décrit dans la dernière version de "Instruction manual MEDITS" (8, Medits_Handbook_2016_version_8_042016,site du SIH-IFREMER). L'ensemble des espèces collectées dont le benthos sont triées, pesées et dénombrées. Pour 84 espèces, des mensurations sont réalisées en plus et sur 41 de ces espèces (32 sélaciens, 3 poissons osseux, 4 crustacés, 2 céphalopodes) sont collectés tous les paramètres individuels (pesée individuelle, sexe, maturité, taille, otolithes pour les deux rougets et le merlu et illicii pour les baudroies). Depuis 2015, des informations supplémentaires sont collectées pour la DCSMM, à savoir les gélatineux, les macrodéchets marins et pour certaines espèces (merlu, roussette, encornet rouge, merlan bleu, bucarde rouge, moule, pectinidae, ascidie rose, Microcosmus sp.) les isotopes, contenus stomacaux et contaminants. En 2016, 18 stations WP2 et CTD ont été réalisées (8 est-Corse et 10 Golfe du Lion).

Programme MEDIAS-France (GSA 07)

La campagne française de prospection acoustique et chalutage se déroule chaque année au mois de Juillet dans le Golfe du Lion (+ Nord Catalogne certaines années). Le protocole a été uniformisé avec les autres pays méditerranéens dans le cadre de MEDIAS depuis 2008. La prospection dans le Golfe s'effectue le long de 9 radiales perpendiculaires à la côte et distantes de 12 miles nautiques. Des chalutages d'identification des échos acoustiques sont ensuite effectués. L'ensemble des poissons collectés dans les chalutages est trié, pesé et dénombré. Les espèces cibles (anchois, sardines, sprats, maquereaux, chinchards et merlus) sont également mesurées et des paramètres biologiques (sexe, maturité, taux de gras, otolithes) sont récoltés. Enfin

des paramètres physiques (température, salinité, chlorophylle) et des données concernant les autres compartiments biologiques sont également collectées à l'aide de CTD, filets à zooplancton, bouteille Niskin et de protocoles d'observation des prédateurs supérieurs.

B. National entities or authorities in charge for the collection of data pertaining the GFCM DCRF Tasks

Task I - Global Figures of National Fisheries	Task II - Catch	Task III - Bycatch	Task IV - Fleet	Task V - Effort	Task VI – Socio-Economic Data	Task VII - Biological Information
Direction des pêches maritimes et de l'aquaculture avec le soutien de l'IFREMER	Direction des pêches maritimes et de l'aquaculture avec le soutien de l'IFREMER	Direction des pêches maritimes et de l'aquaculture avec le soutien de l'IFREMER	Direction des pêches maritimes et de l'aquaculture	Direction des pêches maritimes et de l'aquaculture avec le soutien de l'IFREMER	Direction des pêches maritimes et de l'aquacultur e avec le soutien de l'IFREMER	Direction des pêches maritimes et de l'aquaculture avec le soutien de l'IFREMER

Section 4 - Status of research in progress (or recently concluded)

Research or Project title	Subject	From	To
MONALISA	Other	2017	2020
IDEM (Implementation of MFSD (EU marine framework strategy directive) in deep Mediterranean water)	Other	2018	2019
DISCARDLESS (Propose adaptive strategies to discard ban for the European fisheries)	Other	2015	2019
GALION (Gestion Alternative de la ressource du Golfe du Lion)	Other	2016	2019
SIGNAL (Developing an condition indicator for seabream using the color of the facial ornaments)	Other	2017	2019
FISHNCHIP (Detecting reproductive events of Bluefin Tuna)	Other	2019	2021
CONNECT-MED	Other	2019	2021
PECHALO (Impact study of fishing strategy and Occitan trawlers fleet adaptations on sustainability and viability of their activity)	Other	2019	2019
BENTHCHAL (Bottom trawling impact on benthic habitats)	Other	2018	2020
ALCOVE (Development of electronic pot for estimation of octopus abundance)	Other	2019	2019

Section 5 - Involvement in activities of FAO regional projects

Section 6 - Management measures taken in direct response to GFCM decisions

Section 7 - Environment protection measures

Name of the area	Type of spatial restriction	Year	Fleet segments	From	To	Objective
Zones de pêche à accès réglementé dans le golfe du Lion (GSA 7)	National closure to fisheries (nFRA)	2018				

Section 8 - Recommendation GFCM/36/2012/2 on mitigation of incidental catches of cetaceans in the GFCM area

Section 9 - Recommendation GFCM/36/2012/3 on fisheries management measures for conservation of sharks and rays in the GFCM area

Species	N specimens	Weight (Kg)	Date	GSA	Fleet Segment	Fishing Gear	Main Target Species
Squatina squatina (Angelshark) [Annex II]	1		16/05/2018	8 - Corsica Island		Set gillnets (anchored)	
Isurus oxyrinchus (Shortfin mako) [Annex II]	1		20/10/2018	8 - Corsica Island		Drifting longlines	
Squalus acanthias (Piked dogfish) [Annex III]	1		22/08/2018	8 - Corsica Island		Trammel nets	
Squatina squatina (Angelshark) [Annex II]	5		08/06/2018	8 - Corsica Island		Trammel nets	

Section 10 - Recommendation GFCM/35/2011/4 on the incidental catch of sea turtles in fisheries in the GFCM competence area

Section 11 - Recommendation GFCM/35/2011/3 on reducing incidental catch of seabirds in fisheries in the GFCM Competence Area

Section 12 - Recommendation GFCM/35/2011/5 on fisheries measures for the conservation of the Mediterranean monk seal (*Monachus monachus*) in the GFCM Competence Area

Section 13 - Proposals for future research programmes

Migrations of Bluefin Tuna
Restoration of benthic habitat after demersal fishery ban
Simulate the effect of the Gulf of Lions management plan and alternatives on demersal trawlers and exploited stocks

GREECE

Section 1 - Description of fisheries

A. Fishing grounds (GSAs): 20 – Eastern Ionian Sea; 23 – Crete Island; 22 – Aegean Sea

B. Total landings: 83,573 tonnes (2018); 77,000 tonnes (2017); 74,588 tonnes (2016)

Main 10 species landed

Species ***Tonnes***

C. Fleet: 14,123 vessels (2018); 14,977 vessels (2017); 15,177 vessels (2016)
Total kW: 395,170 (2018); 426,601 (2017); 430,698 (2016)
Total GT: 66,748 (2018); 71100 (2017); 71729 (2016)
AVG LOA: 7.4 m
Min LOA: 2.6 m
Max LOA: 40 m
AVG LOA (previous year): 7.5 m

Section 2 - Status of stocks of priority species

Species/Stock	Ref. year	Stock status	GSA	Presented to GFCM WGs?	Presented to any other forum?
Mullus barbatus	2017	In sustainable exploitation	20	Y	N
Engraulis encrasicolus	2017	In sustainable exploitation	22	Y	N
Sardina pilchardus	2017	In overexploitation	22	Y	N

Section 3 - Status of statistics and information system

A. Description of the national system of fishery statistics and/or any improvement/change occurred

B. National entities or authorities in charge for the collection of data pertaining the GFCM DCRF Tasks

Task I - Global Figures of National Fisheries	Task II - Catch	Task III - Bycatch	Task IV - Fleet	Task V - Effort	Task VI – Socio-Economic Data	Task VII - Biological Information
Hellenic DG Fisheries of the Ministry of Rural Development & Food	Hellenic DG Fisheries of the Ministry of Rural Development & Food	Hellenic DG Fisheries of the Ministry of Rural Development & Food	Hellenic DG Fisheries of the Ministry of Rural Development & Food	Hellenic DG Fisheries of the Ministry of Rural Development & Food	Hellenic DG Fisheries of the Ministry of Rural Development & Food	Hellenic DG Fisheries of the Ministry of Rural Development & Food

Section 4 - Status of research in progress (or recently concluded)

Research or Project title	Subject	From	To
National Fisheries Data Collection Programme (DCF)	Data collection and statistics	2017	2019
MEDITS in the marine area of Cyprus Republic	Data collection and statistics	2018	2020
MSFD-Implementation of the Marine Strategy Framework Directive in North Aegean Sea	Marine environment and conservation	2018	2024
PrEseRvIng and sustainably governing Cultural heritage and Landscapes in European coastal and maritime regions	Other	2018	2021
Climate change and European Aquatic Resources (CERES)	Marine environment and conservation		
ODYSSEA: Operation of an integrated system observatories in the Mediterranean sea	Marine environment and conservation	2017	2021
COST	Marine environment and conservation	2018	2021
Water Framework Directive – freshwater systems	Other	2018	2023
Water Framework Directive – transitional waters	Other	2018	2024
LIFE IP	Other	2018	2024
Melanosis inhibition in commercial shrimps: a case study in Hellenic fisheries	Other	2018	2021

Research or Project title	Subject	From	To
Extending the commercial life of fresh anchovies to ice use of micro-nano-ozone bubbles	Other	2018	2021
Batoids on your plate: Species composition of the Hellenic ray trade	Marine environment and conservation	2019	2020
Batoids on your plate: Species composition of the European ray trade	Marine environment and conservation	2019	2020
PROGNOSIS- Correlating biotic and abiotic factors for the development of the prognosis model of disease outbreaks in pisciculture farms	Other	2019	2022
MONITOX	Marine environment and conservation	2018	2020
From mussels to muscles	Other	2014	2020
MedSUSHI	Other	2018	2021
Bioalgal food	Other	2014	2020
AFRIMED: Algal Forest Restoration In the MEDiterranean Sea	Marine environment and conservation	2019	2021
PROTOMEDEA	Marine environment and conservation	2015	2018
MINOUW	Marine environment and conservation	2015	2019
Artificial reef- Litochoro	Marine environment and conservation	2017	2020
MERCES: Marine Ecosystem Restoration in Changing European Seas	Marine environment and conservation	2016	2020
Paradigm for Novel Dynamic Oceanic Resource Assessments (PANDORA)	Stock assessment	2018	2020
Actions for Marine Protected Areas (AMARe)	Marine environment and conservation	2016	2019
CLIMAFISH	Marine environment and conservation	2018	2020
ARIEL	Marine environment and conservation	2018	2020
ANATHALLOI	Marine environment and conservation	2017	2020

Section 5 - Involvement in activities of FAO regional projects

Activity	FAO regional project	Year	Type
Scientific and Institutional Cooperation to Support Responsible Fisheries in the Eastern Mediterranean	EASTMED	2018	Socio-economics, Education and training
Scientific Cooperation to Support Responsible Fisheries in the Adriatic Sea	ADRIAMED	2018	Stakeholder

Section 6 - Management measures taken in direct response to GFCM decisions

Title/Reference to National Law	Related GFCM Decision(s)
Draft Ministerial Decision	REC.CM-GFCM/42/2018/1
Draft Ministerial Decision	REC.CM-GFCM/42/2018/4
Measures for the trade of sharks & rays	REC.CM-GFCM/42/2018/2
Presidential Decree for the protection of wild fauna & flora	REC.CM-GFCM/42/2018/2
Circular for the prohibition of landing, retaining onboard, transhipping, transferring, storing, selling, displaying or offering for sale of certain species of sharks & rays	REC.CM-GFCM/42/2018/2
Ministerial Decision for the organization and operation of the fisheries monitoring, control and surveillance center	REC.DIR-GFCM/42/2018/10

Section 7 - Environment protection measures

Name of the area	Type of spatial restriction	Year
National Marine Park of Alonissos & North Sporades islands	Marine Protected Area (MPA)	1992
National Marine Park of Zakynthos	Marine Protected Area (MPA)	1999

Name of the area	Type of spatial restriction	Year	Fleet segments	From	To	Objective
South Coast of Thasos island	National closure to fisheries (nFRA)	2017	All	01/05	31/05	Protection of the juveniles of Merluccius merluccius
All Greek territorial waters	National closure to fisheries (nFRA)	2018	All	01/05	31/10	Protection of Holothuria spp stocks
All Greek territorial waters	National closure to fisheries (nFRA)	2018	A - Polyvalent small-scale vessels without engine (<12 metres); B - Polyvalent small-scale vessels with engine (<6 metres); C - Polyvalent small-scale vessels with engine (6-12 metres); I - Long liners (> 6 metres); M - Polyvalent vessels (> 12 metres)	07/12	31/12	Urgent national closure for the protection of MedSWO, valid only for year 2018.
All Greek territorial waters	National closure to fisheries (nFRA)	2019	All	01/09	30/04	Protection of Plesionika narval stocks
Various marine areas with Posidonia oceanica beds	National closure to fisheries (nFRA)	2019	D - Trawlers (<12 metres); F - Trawlers (> 24 metres); G - Purse Seiners (6-12 metres); H - Purse Seiners (>12 metres); E - Trawlers (12 - 24 metres); L - Dredgers (> 6 metres); J - Pelagic Trawlers (> 6 metres); K - Tuna Seiners (> 12 metres)	Permanent		Protection of sensitive benthic habitats

Section 8 - Recommendation GFCM/36/2012/2 on mitigation of incidental catches of cetaceans in the GFCM area

No incidental catches of cetaceans recorded for 2018.

Section 9 - Recommendation GFCM/36/2012/3 on fisheries management measures for conservation of sharks and rays in the GFCM area

Species	N specimens	Weight (Kg)	Date	GSA	Fleet Segment	Fishing Gear	Main Target Species
Centrophorus granulosus (Gulper shark) [Annex III]	1		06/08/2018	22 - Aegean Sea	[OLD TASK 1] F - Trawlers (> 24 metres)	Bottom otter trawls	

Species	N specimens	Weight (Kg)	Date	GSA	Fleet Segment	Fishing Gear	Main Target Species
Leucoraja melitensis (Maltese ray) [Annex II]	1	1	15/12/2018	22 - Aegean Sea	[OLD TASK 1] F - Trawlers (> 24 metres)	Bottom otter trawls	
Mustelus mustelus (Smooth-hound) [Annex III]	2	5	03/05/2018	22 - Aegean Sea	[OLD TASK 1] E - Trawlers (12 - 24 metres)	Bottom otter trawls	
Mustelus mustelus (Smooth-hound) [Annex III]	1	5	09/05/2018	22 - Aegean Sea	[OLD TASK 1] I - Long liners (> 6 metres)	Longlines (not specified)	
Mustelus mustelus (Smooth-hound) [Annex III]	2	3	18/05/2018	22 - Aegean Sea	[OLD TASK 1] E - Trawlers (12 - 24 metres)	Bottom otter trawls	
Mustelus mustelus (Smooth-hound) [Annex III]	6	11	19/05/2018	22 - Aegean Sea	[OLD TASK 1] E - Trawlers (12 - 24 metres)	Bottom otter trawls	
Mustelus mustelus (Smooth-hound) [Annex III]	2	2	20/05/2018	22 - Aegean Sea	[OLD TASK 1] E - Trawlers (12 - 24 metres)	Bottom otter trawls	
Mustelus mustelus (Smooth-hound) [Annex III]	1		22/05/2018	22 - Aegean Sea	[OLD TASK 1] C - Polyvalent small-scale vessels with engine (6-12 metres)	Trammel nets	
Mustelus mustelus (Smooth-hound) [Annex III]	1	1	28/07/2018	22 - Aegean Sea	[OLD TASK 1] C - Polyvalent small-scale vessels with engine (6-12 metres)	Trammel nets	
Mustelus mustelus (Smooth-hound) [Annex III]	1	1	15/10/2018	22 - Aegean Sea	[OLD TASK 1] I - Long liners (> 6 metres)	Longlines (not specified)	
Mustelus mustelus (Smooth-hound) [Annex III]	1		20/12/2018	22 - Aegean Sea	[OLD TASK 1] F - Trawlers (> 24 metres) Bottom	Bottom otter trawls	
Rostroraja alba (White skate) [Annex II]	1	7	30/03/2018	22 - Aegean Sea	[OLD TASK 1] I - Long liners (> 6 metres)	Longlines (not specified)	
Squalus acanthias (Picked dogfish) [Annex III]	2	1	16/05/2018	22 - Aegean Sea	[OLD TASK 1] E - Trawlers (12 - 24 metres)	Bottom otter trawls	
Squalus acanthias (Picked dogfish) [Annex III]	73	64	21/05/2018	22 - Aegean Sea	[OLD TASK 1] E - Trawlers (12 - 24 metres)	Bottom otter trawls	
Squalus acanthias (Picked dogfish) [Annex III]	8	4	07/09/2018	22 - Aegean Sea	[OLD TASK 1] I - Long liners (> 6 metres)	Bottom otter trawls	
Squalus acanthias (Picked dogfish) [Annex III]	13	11	20/10/2018	22 - Aegean Sea	[OLD TASK 1] F - Trawlers (> 24 metres)	Bottom otter trawls	
Squalus acanthias (Picked dogfish) [Annex III]	2	4	21/10/2018	22 - Aegean Sea	[OLD TASK 1] F - Trawlers (> 24 metres)	Bottom otter trawls	
Squalus acanthias (Picked dogfish) [Annex III]	1	13	29/10/2018	22 - Aegean Sea	[OLD TASK 1] F - Trawlers (> 24 metres)	Bottom otter trawls	

Species	N specimens	Weight (Kg)	Date	GSA	Fleet Segment	Fishing Gear	Main Target Species
Squalus acanthias (Picked dogfish) [Annex III]	26	24	30/10/2018	22 - Aegean Sea	[OLD TASK 1] F - Trawlers (> 24 metres)	Bottom otter trawls	
Squalus acanthias (Picked dogfish) [Annex III]	4	5	12/11/2018	22 - Aegean Sea	[OLD TASK 1] F - Trawlers (> 24 metres)	Bottom otter trawls	
Squalus acanthias (Picked dogfish) [Annex III]	10	14	04/12/2018	22 - Aegean Sea	[OLD TASK 1] F - Trawlers (> 24 metres)	Bottom otter trawls	
Squalus acanthias (Picked dogfish) [Annex III]	20	17	08/12/2018	22 - Aegean Sea	[OLD TASK 1] F - Trawlers (> 24 metres)	Bottom otter trawls	
Squalus acanthias (Picked dogfish) [Annex III]	3	5	14/12/2018	22 - Aegean Sea	[OLD TASK 1] F - Trawlers (> 24 metres)	Bottom otter trawls	
Squalus acanthias (Picked dogfish) [Annex III]	37	10	21/12/2018	22 - Aegean Sea	[OLD TASK 1] F - Trawlers (> 24 metres)	Bottom otter trawls	
Squalus acanthias (Picked dogfish) [Annex III]	5	2	22/12/2018	22 - Aegean Sea	[OLD TASK 1] F - Trawlers (> 24 metres)	Bottom otter trawls	
Squalus acanthias (Picked dogfish) [Annex III]	19	10	27/12/2018	22 - Aegean Sea	[OLD TASK 1] F - Trawlers (> 24 metres)	Bottom otter trawls	
Squalus acanthias (Picked dogfish) [Annex III]		3	28/12/2018	22 - Aegean Sea	[OLD TASK 1] E - Trawlers (12 - 24 metres)	Bottom otter trawls	
Squalus acanthias (Picked dogfish) [Annex III]	9	5	29/12/2018	22 - Aegean Sea	[OLD TASK 1] F - Trawlers (> 24 metres)	Bottom otter trawls	

Section 10 - Recommendation GFCM/35/2011/4 on the incidental catch of sea turtles in fisheries in the GFCM competence area

Species	N specimens	Date	GSA	Fleet Segment	Fishing Gear	Main Target Species
Caretta caretta (Loggerhead turtle)	1	05/12/2018	22 – Aegean Sea	[OLD TASK 1] F - Trawlers (> 24 metres)	Bottom otter trawls	
Caretta caretta (Loggerhead turtle)	1	03/05/2018	22 – Aegean Sea	[OLD TASK 1] H - Purse Seiners (>12 metres)	With purse lines (purse seines)	Engraulis encrasicolus (European anchovy)

Section 11 - Recommendation GFCM/35/2011/3 on reducing incidental catch of seabirds in fisheries in the GFCM Competence Area

No incidental catches of seabirds recorded for 2018.

Section 12 - Recommendation GFCM/35/2011/5 on fisheries measures for the conservation of the Mediterranean monk seal (*Monachus monachus*) in the GFCM Competence Area

No incidental catches of Monk Seals recorded for 2018.

Section 13 - Proposals for future research programmes

Artificial light at night
Mapping and evaluation of Posidonia Meadows and other important marine habitats under the European Habitats Directive (92/43/EEC), in the coastal waters of Cyprus (No.:19/2018)»
Optimization of fishing and stock assessment of deep sea shrimp Aristeus antennatus and Aristeomorpha foliacea in the Greek seas

Optimization of the aquaculture conditions of the native oyster Ostrea edulis (Linnaeus, 1758) and evaluation of the genetic diversity in Thermaikos Gulf
Sustainable use of seafood by-products: collagen and hyaluronic acid production from fish trimmings

ITALY

Section 1 - Description of fisheries

A. Fishing grounds (GSAs): 9 - Ligurian and North Tirrenian Sea; 10 – South and Central Tirrenian Sea 11.1 - Sardinia (west); 11.2 – Sardinia (est); 16 - South of Sicily; 17 – Northern Adriatic; 18 - Southern Adriatic Sea; 19 – Western Ioniani Sea

B. Total landings: 191,915 tonnes (2017); 192,356 tonnes (2016); 192,212 tonnes (2015); 176,778 tonnes (2014)

Main 10 species landed

Species	*Tonnes*
Engraulis encrasicolus	39,038
Sardina pilchardus	22,700
Chamelea gallina	11,808
Parapenaeus longirostris	9,210
Merluccius merluccius	7,598
Sepia officinalis	6,604
Mullus barbatus	6,309
Squilla mantis	4,421
Eledone moschata	3,289
Katsuwonus pelamis	3,176

Fleet: 12,270 vessels (2017); 12,310 vessels (2016); 12,426 vessels (2015); 12,681 vessels (2014)
Total kW: 983 (2017) 994000 (2016); 10130000 (2015)
Total GT: 157,700 (2017); 163,000 (2016)
AVG LOA:
Min LOA:
Max LOA:
AVG LOA (previous year):

Section 2 - Status of stocks of priority species

Species/Stock	Ref. year	Stock status	GSA	Presented to GFCM WGs?	Presented to any other forum?
Aristaeomorpha foliacea	2018	In overexploitation	09-10-11.1-11.2	Y	Y - STEFC
Engraulis encrasicolus	2018	Uncertain	16	Y	
Merluccius merluccius	2018	In overexploitation	09-10-11.1-11.2	Y	Y - STEFC
Merluccius merluccius	2018	In overexploitation	12-13-14-15-16	Y	
Merluccius merluccius	2018	In overexploitation	17-18		Y - STEFC
Mullus barbatus	2018	In overexploitation	09	Y	Y - STEFC
Mullus barbatus	2018	In sustainable exploitation	10	Y	Y - STEFC
Mullus barbatus	2018	In overexploitation	17-18	Y	Y - STEFC
Mullus barbatus	2018	In sustainable exploitation	16	Y	
Mullus barbatus	2018	In overexploitation	19	Y	
Nephrops norvegicus	2018	In overexploitation	17-18		Y - STEFC
Parapenaeus longirostris	2018	In overexploitation	09-10-11.1-11.2	Y	Y - STEFC
Parapenaeus longirostris	2018	In overexploitation	12-13-14-15-16	Y	
Parapenaeus longirostris	2018	In overexploitation	17-18-19		Y - STEFC
Sardina pilchardus	2018	In overexploitation	16	Y	
Sepia officinalis	2018	In sustainable exploitation	17	Y	Y - STEFC
Solea solea	2018	In overexploitation	17		Y - STEFC
Squilla mantis	2018	In overexploitation	17	Y	
Squilla mantis	2018	In overexploitation	17-18		Y - STEFC

Section 3 - Status of statistics and information system

A. Description of the national system of fishery statistics and/or any improvement/change occurred

Fishery statistics are collected within the European Regulation on Data Collection (EU reg. n. 1004/2017). Statistics are produced on the basis of a sample of national fishing fleet, yearly updated, and their reliability is guaranteed by specific validation software. Within the European Regulation on Data Collection a centralized database has been developed to store fishery statistics (capacity, effort and landings data), economic data of the fleet, economic data of the aquaculture sector, economic data of the processing industries, biological data (parameters of the population by species and surveys data), and ecosystem indicators. Fishery statistics are transferred to GFCM, to the European Commission, to Eurostat and to other RFMOs (like ICCAT). They are currently used by the national administration to support political decisions and to monitor the state of the fishing sector.

B. National entities or authorities in charge for the collection of data pertaining the GFCM DCRF Tasks

Task I - Global Figures of National Fisheries	Task II - Catch	Task III - Bycatch	Task IV - Fleet	Task V - Effort	Task VI – Socio-Economic Data	Task VII - Biological Information
Italian Ministry of Agricultural, Food, Forestry Policies and Tourism-Directorate General for maritime Fisheries and Aquaculture	Italian Ministry of Agricultural, Food, Forestry Policies and Tourism-Directorate General for maritime Fisheries and Aquaculture	Italian Ministry of Agricultural, Food, Forestry Policies and Tourism-Directorate General for maritime Fisheries and Aquaculture	Italian Ministry of Agricultural, Food, Forestry Policies and Tourism-Directorate General for maritime Fisheries and Aquaculture	Italian Ministry of Agricultural, Food, Forestry Policies and Tourism-Directorate General for maritime Fisheries and Aquaculture	Italian Ministry of Agricultural, Food, Forestry Policies and Tourism-Directorate General for maritime Fisheries and Aquaculture	Italian Ministry of Agricultural, Food, Forestry Policies and Tourism-Directorate General for maritime Fisheries and Aquaculture

Section 4 - Status of research in progress (or recently concluded)

Section 5 - Involvement in activities of FAO regional projects

Activity	FAO regional project	Year	Type
Involvement in activities of FAO Regional Projects	ADRIAMED, EASTMED, MEDSUDMED	2018	Stock assessment, data collection and statistics, socio-economics, marine environment and conservation

Section 6 - Management measures taken in direct response to GFCM decisions

Title/Reference to National Law	Related GFCM Decision(s)
D.M. 1 giugno 2017 e D.D. 21 luglio 2017 - Fossa di Pomo	REC.CM-GFCM/41/2017/3
D.M. 10 agosto 2017 - Pesca Piccoli Pelagici Mar Adriatico	REC.CM-GFCM/40/2016/3
Decreto del Sottosegretario n. 172 del 30 aprile 2019 - Modifica del decreto 25 gennaio 2016, recante "Misure per la pesca dei piccoli pelagici nel Mar Mediterraneo e misure specifiche per il Mare Adriatico".	REC.CM-GFCM/42/2018/8
Decreto direttoriale n. 26287 del 21 dicembre 2018 - Adozione del Piano nazionale di gestione per la raccolta del corallo rosso (Corallium rubrum) nelle acque marine del territorio nazionale	REC.CM-GFCM/41/2017/5
D.A. 61 del 31/07/2018 Interruzione temporanea obbligatoria dell'attività di pesca nel mare territoriale della Regione Sicilia anno 2018	REC.CM-GFCM/39/2015/2

Section 7 - Environment protection measures

Section 8 - Recommendation GFCM/36/2012/2 on mitigation of incidental catches of cetaceans in the GFCM area

Species	N specimens	Date	GSA	Fleet Segment	Fishing Gear	Main Target Species
Tursiops truncatus (Bottlenose dolphin)	2	2018	17 - Northern Adriatic	[OLD TASK 1] F - Trawlers (> 24 metres)	Pair trawls (not specified)	

Section 9 - Recommendation GFCM/36/2012/3 on fisheries management measures for conservation of sharks and rays in the GFCM area

Species	Weight (Kg)	N specimens	Date	GSA	Fleet Segment	Fishing Gear	Main Target Species
Squalus acanthias (Picked dogfish) [Annex III]		9	01/01/2018	17 - Northern Adriatic	[OLD TASK 1] E - Trawlers (12 - 24 metres)	Pair trawls (not specified)	Engraulis encrasicolus (European anchovy), Sardina pilchardus (European pilchard(=Sardine))
Mustelus punctulatus (Blackspotted smooth-hound) [Annex III]		43	01/01/2018	17 - Northern Adriatic	[OLD TASK 1] F - Trawlers (> 24 metres)	Pair trawls (not specified)	Engraulis encrasicolus (European anchovy), Sardina pilchardus (European pilchard(=Sardine))
Mustelus mustelus (Smooth-hound) [Annex III]		37	01/01/2018	17 - Northern Adriatic	[OLD TASK 1] F - Trawlers (> 24 metres)	Pair trawls (not specified)	Engraulis encrasicolus (European anchovy), Sardina pilchardus (European pilchard(=Sardine))
Squalus acanthias (Picked dogfish) [Annex III]		17	01/01/2018	17 - Northern Adriatic	[OLD TASK 1] F - Trawlers (> 24 metres)	Pair trawls (not specified)	Engraulis encrasicolus (European anchovy), Sardina pilchardus (European pilchard(=Sardine))
Mustelus mustelus (Smooth-hound) [Annex III]		5	01/01/2018	17 - Northern Adriatic	[OLD TASK 1] E - Trawlers (12 - 24 metres)	Pair trawls (not specified)	Engraulis encrasicolus (European anchovy), Sardina pilchardus (European pilchard(=Sardine))
Prionace glauca (Blue shark) [Annex III]		3	01/01/2018	17 - Northern Adriatic	[OLD TASK 1] E - Trawlers (12 - 24 metres)	Pair trawls (not specified)	Engraulis encrasicolus (European anchovy), Sardina pilchardus (European pilchard(=Sardine))

Section 10 - Recommendation GFCM/35/2011/4 on the incidental catch of sea turtles in fisheries in the GFCM competence area

Species	N specimens	Date	GSA	Fleet Segment	Fishing Gear	Main Target Species
Caretta caretta (Loggerhead turtle)	10	2018	17 - Northern Adriatic	[OLD TASK 1] E - Trawlers (12 - 24 metres)	Midwater trawls (not specified)	
Caretta caretta (Loggerhead turtle)	12	2018	17 - Northern Adriatic	[OLD TASK 1] F - Trawlers (> 24 metres)	Midwater trawls (not specified)	

Section 11 - Recommendation GFCM/35/2011/3 on reducing incidental catch of seabirds in fisheries in the GFCM Competence Area

Section 12 - Recommendation GFCM/35/2011/5 on fisheries measures for the conservation of the Mediterranean monk seal (*Monachus monachus*) in the GFCM Competence Area

Section 13 - Proposals for future research programmes

LEBANON

Section 1 - Description of fisheries

A. Fishing grounds (GSAs): 27 - Levant

B. Total landings: 3,100 tonnes (2018); 3,536 tonnes (2017); 4,269 tonnes (2016); 3,652 tonnes (2015)

Main 10 species landed

Species	***Tons***
Clupeoidei	766
Diplodus sargus	333
Euthynnus alletteratus	173
Boops boops	161
Signatus rivulatus	140
Pagellus acarne	119
Liza aurata	114
Caranx spp	93
Pagellus bogaraveo	82
Pagrus spp	81

C. Fleet: 2140 (2018); 2193 (2017); 1963 vessels (2016); 2005 vessels (2015)
Total kW: 59,245 (2018); 58,666 (2017); 51,045 (2016)
Total GT:
AVG LOA: 7.4 m (2018)
Min LOA 1.4 m
Max LOA 17.5 m
AVG LOA (previous year): 7.4 m (2017)

Section 2 - Status of stocks of priority species

Species/Stock	Ref. year	Stock status	GSA	Presented to GFCM WGs?	Presented to any other forum?
Pagellus erythrinus	2018		27	Y	N
Sardinella aurita	2018		27	Y	N
Lithognathus mormyrus	2018		27	Y	N

Section 3 - Status of statistics and information system

A. Description of the national system of fishery statistics and/or any improvement/change occurred

Department of Fisheries & Wildlife-Ministry of Agriculture collects the following data:
- Catch & Effort: according to Flouca Web utility developed by FAO EastMed Project
- Socio-economic data: random sample according to methodology developed by FAO GFCM
- Fishing Licensing System: developed by FAO EastMed Project
- Discards data

Lebanese CNRS collects Biological Data according to methodolgy developed by FAO EastMed Project

B. National entities or authorities in charge for the collection of data pertaining the GFCM DCRF Tasks

Task I - Global Figures of National Fisheries	Task II - Catch	Task III - Bycatch	Task IV - Fleet	Task V - Effort	Task VI – Socio-Economic Data	Task VII - Biological Information
Department of Fisheries & Wildlife-Ministry of Agriculture						

Section 4 - Status of research in progress (or recently concluded)

Section 5 - Involvement in activities of FAO regional projects

Activity	FAO regional project	Year	Type
FAO EastMed Project	EASTMED	2018	Stock assessment Data collection and statistics Socio-economics

Section 6 - Management measures taken in direct response to GFCM decisions

Section 7 - Environment protection measures

Section 8 - Recommendation GFCM/36/2012/2 on mitigation of incidental catches of cetaceans in the GFCM area

Section 9 - Recommendation GFCM/36/2012/3 on fisheries management measures for conservation of sharks and rays in the GFCM area

Section 10 - Recommendation GFCM/35/2011/4 on the incidental catch of sea turtles in fisheries in the GFCM competence area

Section 11 - Recommendation GFCM/35/2011/3 on reducing incidental catch of seabirds in fisheries in the GFCM Competence Area

Section 12 - Recommendation GFCM/35/2011/5 on fisheries measures for the conservation of the Mediterranean monk seal (*Monachus monachus*) in the GFCM Competence Area

Section 13 - Proposals for future research programmes

MALTA

Section 1 - Description of fisheries

A. Fishing grounds (GSAs): 15 – Malta Island

B. Total landings: 2,752 tonnes (2018); 2,149 tonnes (2017); 2,307 tonnes (2016); 2,437 tonnes (2015)

Main 10 species landed

Species	*Tonnes*
Scomber japonicus	657
Coryphaena hippurus	423
Xiphias gladius	309
Thunnus thynnus	304
Scomber scombrus	157
Lepidopus caudatus	134
Thunnus alalunga	106
Boops boops	46
Octopus vulgaris	39
Mullus surmuletus	33

C. Fleet: 938 vessels (2018); 935 (2017); 931 vessels (2016); 1001 vessels (2015)
Total kW: 73,237 (2018); 69908 (2017); 67244 (2016)
Total GT: 6,530 (2018); 6405 (2017); 6343 (2016)
AVG LOA: 7.2 m (2018)
Min LOA: 3 m
Max LOA: 35 m
AVG LOA previous year: 7.2 m

Section 2 - Status of stocks of priority species

Species/Stock	Ref. year	Stock status	GSA	Presented to GFCM WGs?	Presented to any other forum?
Merluccius merluccius	2017	In overexploitation	15	Y	
Parapenaeus longirostris	2017	In overexploitation	15	Y	
Mullus barbatus	2017	In overexploitation	15	Y	

Section 3 - Status of statistics and information system

A. Description of the national system of fishery statistics and/or any improvement/change occurred

B. National entities or authorities in charge for the collection of data pertaining the GFCM DCRF Tasks

Task I - Global Figures of National Fisheries	Task II - Catch	Task III - Bycatch	Task IV - Fleet	Task V - Effort	Task VI – Socio-Economic Data	Task VII - Biological Information

Section 4 - Status of research in progress (or recently concluded)

Research or Project title	Subject	From	To
LIFE + BAĦAR	Marine environment and conservation	2013	2018
A scientific study to improve trawl gear selectivity	Marine environment and conservation	2017	2019
Project HARMONY	Marine environment and conservation	2018	2019
Project BYTHOS	Other	2017	2021

Section 5 - Involvement in activities of FAO regional projects

Activity	FAO regional project	Year	Type
Stock assessments of Demersal species	MEDSUDMED	2018	Stock assessment

Pilot project on small scale fisheries and LEK	MEDSUDMED	2018	Data collection and statistics
FAO/GFCM/JRC Summer school	ADRIAMED, COPEMED, EASTMED, MEDSUDMED	2018	Data collection and statistics

Section 6 - Management measures taken in direct response to GFCM decisions

Title/Reference to National Law	Related GFCM Decision(s)
Subsidiary Legislation 425.08 enforcement of sea fishing convention order	REC.CM-GFCM/42/2018/2
Subsidiary Legislation 425.08 enforcement of sea fishing convention order	REC.CM-GFCM/42/2018/5
"Subsidiary Legislation 425.08 enforcement of sea fishing convention order; Subsidiary Legislation 425.07 – Fishing Vessels Regulations"	REC.MCS-GFCM/42/2018/6
"Subsidiary Legislation 425.08 enforcement of sea fishing convention order; Subsidiary Legislation 425.07 – Fishing Vessels Regulations"	REC.DIR-GFCM/42/2018/10
"Subsidiary Legislation 425.08 enforcement of sea fishing convention order; Subsidiary Legislation 425.07 – Fishing Vessels Regulations"	REC.MCS-GFCM/42/2018/11
"Subsidiary Legislation 425.08 enforcement of sea fishing convention order; Legal Notice 209 of 2011"	REC.DIR-GFCM/41/2017/1
Subsidiary Legislation 425.08 enforcement of sea fishing convention order	REC.DIR-GFCM/41/2017/6
"Subsidiary Legislation 425.08 enforcement of sea fishing convention order; Subsidiary Legislation 425.07 – Fishing Vessels Regulations"	REC.MCS-GFCM/41/2017/7

Section 7 - Environment protection measures

Name of the area	Type of spatial restriction	Year
	Marine Protected Area (MPA)	2016

Section 8 - Recommendation GFCM/36/2012/2 on mitigation of incidental catches of cetaceans in the GFCM area

Section 9 - Recommendation GFCM/36/2012/3 on fisheries management measures for conservation of sharks and rays in the GFCM area

Section 10 - Recommendation GFCM/35/2011/4 on the incidental catch of sea turtles in fisheries in the GFCM competence area

Section 11 - Recommendation GFCM/35/2011/3 on reducing incidental catch of seabirds in fisheries in the GFCM Competence Area

Section 12 - Recommendation GFCM/35/2011/5 on fisheries measures for the conservation of the Mediterranean monk seal (*Monachus monachus*) in the GFCM Competence Area

Section 13 - Proposals for future research programmes

Improve Data Collection Programmes

MOROCCO

Section 1 - Description of fisheries

A. Fishing grounds (GSAs): 03 – Southern Alboran Sea

B. Total landings: 25,907 tonnes (2018); 24,925 tonnes (2017); 22,380 tonnes (2016)

Main 10 species landed

Species	*Tonnes*
Sardina pilchardus	8,232
Trachurus trachurus	4,466
Octopus vulgaris	2,835
Scomber japonicus	1,852
Xiphias gladius	1,062
Engraulis encrasicolus	835
Boops boops	748
Sardinella aurita	606
Parapenaeus longirostris	391
Merluccius merluccius	375

C. Fleet: 3392 vessels (2018); 2981 vessels (2017); 3985 vessels (2016); 3383 vessels (2015)
Total kW: 110,179 (2018); 107,112 (2017); 218,831 (2016)
Total GT: 19,841 (2018); 20,922 (2017); 26,252 (2016)
AVG LOA: 13 m (2018)
Min LOA: 5 m
Max LOA: 25 m
AVG LOA previous year: 11 m

Section 2 - Status of stocks of priority species

Species/Stock	Ref. year	Stock status	GSA	Presented to GFCM WGs?	Presented to any other forum?
Sardina plichardus	2017	Overexploited	03	Y	N
Sardina plichardus	2017		01-03-04	Y	N
Parapenaeus longirostris	2017	In overexploitation	01-03-04	Y	N
Pagellus bogaraveo	2017	In overexploitation	01-03	Y	N
Merluccius merluccius	2017	In overexploitation	01-03	Y	N

Section 3 - Status of statistics and information system

A. Description of the national system of fishery statistics and/or any improvement/change occurred

Un système statistique national marocain des pêches est instauré depuis 2001 par l'Office National des Pêches (ONP). Ce système de gestion des bases de données consiste à enregistrer régulièrement les informations relatives à l'activité de pêche. Il s'agit de la production (en poids et en valeur) par port, par jour, par bateau (nom et matricule), par type de pêche et par espèce ainsi que l'identité de l'acheteur. Les fichiers armement des unités de pêche sont disponibles auprès du Département des Pêche Maritime relatifs aux caractéristiques techniques tel que la Puissance Motrice, Tonnage Juge Brut, Longueur Hors Tout, date de construction; l'identité de l'armateur etc… L'Institut National de recherche de sa part a mis en place un protocole d'enquête basé sur le principe d'inférences statistiques et adapté aux spécificités des pêcheries de chaque région et qui a permis de compléter des informations sur la pêche que le système officiel de l'ONP ne fournit pas jusqu'à présent ; il s'agit notamment de la capture totale par espèce (et non groupe d'espèces), par port, par métier et par catégorie commerciale ainsi que l'effort de pêche par métier en tenant compte de la variabilité de la durée de la marée. Aussi, les informations relatives aux indicateurs socio-économiques s'ajoutent aux enquêtes dans le cadre des programmes spécifique de chaque région.

B. National entities or authorities in charge for the collection of data pertaining the GFCM DCRF Tasks

Task I - Global Figures of National Fisheries	Task II - Catch	Task III - Bycatch	Task IV - Fleet	Task V - Effort	Task VI – Socio-Economic Data	Task VII - Biological Information
Fisheries Department	National Fisheries Office	National Institute of Scientific Research (INRH)	Fisheries Department	National Institute of Scientific Research (INRH)	National Institute of Scientific Research (INRH)	National Institute of Scientific Research (INRH)

Section 4 - Status of research in progress (or recently concluded)

Research or Project title	Subject	From	To
Évaluation des stocks des principales espèces au niveau de la GSA03	Stock assessment	2017	2020
Étude des cycles de vie des espèces d'interêt commerciale (*Octopus vulgaris, Parapenaeus longirostris, Merluccius merluccius, Sardina pilchardus*)	Stock assessment	2014	2020
Étude du cycle de vie de *Pagellus bogaraveo*, stock du détroit de Gibraltar	Stock assessment	2018	2020
Étude du cycle de vie de l'anémone de mer *Anemonia sulcata*	Stock assessment	2018	2020
Étude des interactions entre le Grand Dauphin et la pêche à la senne au niveau de la GSA03	Marine environment and conservation	2017	2019
Étude de l'impact de la mise en place de nouvelles mesures de gestion, telle que l'implantation des aires marines protégées, l'immersion des récifs artificiels et autres.	Marine environment and conservation	2017	2020
Étude des fonctions des écosystèmes côtiers et lagunaire (Marchica)	Marine environment and conservation	2015	2020
Étude de l'impact des changements climatiques sur la distribution et l'abondance des petits pélagiques	Marine environment and conservation	2018	2022
Suivi et évaluation des rejets et prises accessoires en Méditerranée	Marine environment and conservation	2018	2020
Estimation des populations des cétacés en Méditerranée	Marine environment and conservation	2018	2020
Suivi des échouages des cétacés et des tortues marines	Marine environment and conservation	2018	2020

Section 5 - Involvement in activities of FAO regional projects

Activity	FAO regional project	Year	Type
TRANSBORAN project	COPEMED	2018	Réalisation des mesures biometriques et des analyses génétiques de la sardine et de merlu blanc
TRANSBORAN project	COPEMED	2018	Réalisation des mesures biometriques et des analyses génétiques de la dorade rose
Étude du cycle de vie de *Pagellus bogaraveo*, stock du détroit de Gibraltar	COPEMED	2018	Stock assessment, data collection and statistics, socio-economics
Analyse socioéconomique de la pêche en Méditerranée marocaine	COPEMED	2018	Stock assessment, data collection and statistics, socio-economics

Section 6 - Management measures taken in direct response to GFCM decisions

Title/Reference to National Law	Related GFCM Decision(s)
Arrêté portant réglementation annuelle de la pêche dans les eaux continentales et fixant les réserves de pêche pendant la saison 2017-2018	REC.CM-GFCM/42/2018/1
Arrêté n°1517-17 du 15 juin 2017 relatif à l'interdiction temporaire de pêche de certaines espèces de requins	REC.CM-GFCM/42/2018/2
Décret n°2-73-659 du 02 février 1974 réglementant la pêche aux filets fixes	REC.DIR-GFCM/42/2018/10
Dahir n°1-10-2011 du 18 février 2011 portant promulgation de la Loi n° 52-09	REC.DIR-GFCM/41/2017/1
La loi n°15-12 relative à la prévention et la lutte contre la pêche illicite, non déclarée et non réglementée et modifiant et complétant le dahir n°1-73-255 du 23 novembre 1973 formant règlement sur la pêche maritime.	REC.MCS-GFCM/41/2017/7
Décret n°2-04-26 du 17 janvier 2005 fixant les modalités de pêche du corail	REC.CM-GFCM/41/2017/5
La loi n°15-12 relative à la prévention et la lutte contre la pêche illicite, non déclarée et non réglementée et modifiant et complétant le dahir n°1-73-255 du 23 novembre 1973 formant règlement sur la pêche maritime.	REC.DIR-GFCM/41/2017/6

Section 7 - Environment protection measures

Section 8 - Recommendation GFCM/36/2012/2 on mitigation of incidental catches of cetaceans in the GFCM area

Section 9 - Recommendation GFCM/36/2012/3 on fisheries management measures for conservation of sharks and rays in the GFCM area

Section 10 - Recommendation GFCM/35/2011/4 on the incidental catch of sea turtles in fisheries in the GFCM competence area

Section 11 - Recommendation GFCM/35/2011/3 on reducing incidental catch of seabirds in fisheries in the GFCM Competence Area

Section 12 - Recommendation GFCM/35/2011/5 on fisheries measures for the conservation of the Mediterranean monk seal (*Monachus monachus*) in the GFCM Competence Area

Section 13 - Proposals for future research programmes

Étude de la croissance journalière de la sardine et du poulpe en méditerranée marocaine
Étude écosystémique de la baie de M'diq
Identification, suivi des débarquements et évaluation des stocks des différentes éspèces de requins d'intérêt commerciale
L'étude de l'effet des changements climatiques sur l'écosystème marin et sur la biodiversité dans la GSA 03
L'identification et la cartographie des zones de ponte et de nourriceries des principales espèces exploitées

SLOVENIA

Section 1 - Description of fisheries

A. Fishing grounds (GSAs): 17 - Northern Adriatic

B. Total landings: 126 tonnes (2018); 128 tonnes (2017); 152 tonnes (2016); 195 tonnes (2015); 254 tonnes (2014)

Main 10 species landed

Species	*Tonnes*
Whiting	28
Musky octopus	20
Gilthead seabream	15
Common sole	10
European squid	8
Red mullet	6
European seabass	4
Common pandora	4
Mullets nei	3
Other	28

C. Fleet: 134 vessels (2018); 171 vessels (2017); 171 vessels (2016)
Total kW: 8,466 (2018); 8,821 (2017); 8,535 (2016)
Total GT: 668.9 (2018); 603.98 (2017); 589.66 (2016)
AVG LOA: 7.3 m (2018)
Min LOA: 3.5 m
Max LOA: 19.4 m
AVG LOA previous year: 7 m

Section 2 - Status of stocks of priority species

Species/Stock	Ref. year	Stock status	GSA	Presented to GFCM WGs?	Presented to any other forum?
Sardina pilchardus	2017	In overexploitation	17	Y	
Engraulis encrasicolus	2017	In overexploitation	17	Y	

Section 3 - Status of statistics and information system

A. Description of the national system of fishery statistics and/or any improvement/change occurred

Data collection at the national level is organised by the Ministry of Agriculture, Forestry and Food. Specific data collection tasks in the context of the performance of a public fisheries service are performed by the Fisheries Research Institute of Slovenia in accordance with maritime fisheries legislation. In Slovenia there are five information systems in place. The InfoRib is and will remain the main system. It covers all the relevant fisheries data. The second is the VMS system which covers the VMS data. The third is the inspection information system Aquaspec, where all the inspection data are in place, the forth is ERS where all electronic reports and data from the electronic logbooks are stored and the fifth is biological data base BIOS. Some elements of the systems are already interconnected and in the future the interconnection between the systems will also improve in line with the requirements of the EU and other pertaining legislation in force and thus we will gain better control over fisheries activities. InfoRib is the centralized information system which contains all the relevant data on fisheries in Slovenia. In the system there are the following modules: Fleet vessel register, Logbooks, Fishing Permits, Socio-economic data, Reporting, Sampling, Technical indicators, Code lists, First sale, Aquaculture, Processing Industry and Meetings Module. Biological Sampling Module is stored in the Fisheries Research Institute database. InfoRib is interconnected with the VMS data base and with ESR data. It enables different crosschecking of the data, validation of the data and queries for end users. In the future we will improve interconnection with the Aquaspec system and with the central node for fisheries data at the European Commission. Biological data are stored at the Fisheries Research Institute of Slovenia in BIOS database. In the future also the interconnection between BIOS and InfoRib shall be established. The yearly maintenance of the systems is performed regularly. It includes also all the preparation work for different reports, for national and international end users.

B. National entities or authorities in charge for the collection of data pertaining the GFCM DCRF Tasks

Task I - Global Figures of National Fisheries	Task II - Catch	Task III - Bycatch	Task IV - Fleet	Task V - Effort	Task VI – Socio-Economic Data	Task VII - Biological Information
Ministry of Agriculture Forestry and Food, Fisheries Research Institute of Slovenia	Ministry of Agriculture Forestry and Food, Fisheries Research Institute of Slovenia	Ministry of Agriculture Forestry and Food, Fisheries Research Institute of Slovenia	Ministry of Agriculture Forestry and Food, Fisheries Research Institute of Slovenia	Ministry of Agriculture Forestry and Food, Fisheries Research Institute of Slovenia	Ministry of Agriculture Forestry and Food, Fisheries Research Institute of Slovenia	Ministry of Agriculture Forestry and Food, Fisheries Research Institute of Slovenia

Section 4 - Status of research in progress (or recently concluded)

Research or Project title	Subject	From	To
Socio-economics	Socio-economics	2008	2017
MEDIAS	Stock assessment	2007	2018
MEDITS	Stock assessment	1996	2018
SOLEMON	Stock assessment	2009	2018

Section 5 - Involvement in activities of FAO regional projects

Activity	FAO regional project	Year	Type
Regional stock assessment	ADRIAMED	2018	Stock assessment

Section 6 - Management measures taken in direct response to GFCM decisions

Title/Reference to National Law	Related GFCM Decision(s)
Decision of the Minister issued in accordance with the Marine Fisheries Act (Official Gazette of the Republic of Slovenia, No 115/06, 76/15 and 69/17)	REC.CM-GFCM/42/2018/8

Section 7 - Environment protection measures

Section 8 - Recommendation GFCM/36/2012/2 on mitigation of incidental catches of cetaceans in the GFCM area

Section 9 - Recommendation GFCM/36/2012/3 on fisheries management measures for conservation of sharks and rays in the GFCM area

Section 10 - Recommendation GFCM/35/2011/4 on the incidental catch of sea turtles in fisheries in the GFCM competence area

Section 11 - Recommendation GFCM/35/2011/3 on reducing incidental catch of seabirds in fisheries in the GFCM Competence Area

Species	N specimens	Date	GSA	Fleet Segment	Fishing Gear	Main Target Species
Phalacrocorax aristotelis (European shag)	1	19/09/2018	17 - Northern Adriatic	[OLD TASK 1] E - Trawlers (12 - 24 metres)	Bottom otter trawls	

Section 12 - Recommendation GFCM/35/2011/5 on fisheries measures for the conservation of the Mediterranean monk seal (*Monachus monachus*) in the GFCM Competence Area

Section 13 - Proposals for future research programmes

SPAIN

Section 1 - Description of fisheries

A. Fishing grounds (GSAs): 01 – Northern Alboran Sea; 02 – Alboran Island; 05 – Balearic Islands; 06 – Northern Spain; 07 – Gulf of Lion

B. Total landings: 80,708 tonnes (2018); 79,263 tonnes (2017); 75,860 tonnes (2016); 59,784 tonnes (2015); 68,571 tonnes (2014)

Main 10 species landed

Species	***Tonnes***
Engraulis encrasicolus	24,123
Sardina pilchardus	11,826
Sardinella aurita	3,795
Trachurus spp	3,122
Merluccius merluccius	3,041
Scomber spp	2,789
Thunnus thynnus	2,522
Octopus vulgaris	2,520
Mullus spp	2,178
Ommastrephidae	1,622

C. Fleet: 2,228 (2018); 2,285 vessels (2017); 2,287 vessels (2016); 2743 vessels (2014)
Total kW: 277,124 (2018); 284,044 (2017); 284,793 (2016)
Total GT: 52,569 (2018); 52,732 (2017); 52,575 (2016)
AVG LOA: 12.9 m (2018)
Min LOA: 3.6 m
Max LOA: 43.45 m
AVG LOA previous year: 12.9 m

Section 2 - Status of stocks of priority species

Species/Stock	Ref. year	GSA	Stock status	Presented to GFCM WGs?	Presented to any other forum?
Aristeus antennatus	2017	6 - Northern Spain	In overexploitation	YES - Validated	NO
Aristeus antennatus	2017	1 - Northern Alboran Sea	In overexploitation	YES - Validated	NO
Aristeus antennatus	2017	2 - Alboran Island	In overexploitation	YES - Validated	NO
Aristeus antennatus	2017	5 - Balearic Island		YES - Validated	NO
Engraulis encrasicolus	2017	6 - Northern Spain		YES - Validated	NO
Engraulis encrasicolus	2017	1 - Northern Alboran Sea		YES - Validated	NO
Merluccius merluccius	2017	7 - Gulf of Lions	In overexploitation	YES - Validated	NO
Merluccius merluccius	2017	1 - Northern Alboran Sea	In overexploitation	YES - Validated	NO
Merluccius merluccius	2017	3 - Southern Alboran Sea	In overexploitation	YES - Validated	NO
Merluccius merluccius	2017	5 - Balearic Island	In overexploitation	YES - Validated	NO
Merluccius merluccius	2017	6 - Northern Spain	In overexploitation	YES - Validated	NO
Mullus barbatus	2017	6 - Northern Spain	In overexploitation	YES - Validated	NO
Mullus barbatus	2017	7 - Gulf of Lions	In overexploitation	YES - Validated	NO
Nephrops norvegicus	2017	6 - Northern Spain	In overexploitation	YES - Validated	YES - STECF (EU)
Nephrops norvegicus	2017	5 - Balearic Island	In overexploitation	YES - Validated	YES - STECF (EU)
Pagellus bogaraveo	2017	1 - Northern Alboran Sea		YES - Validated	NO
Pagellus bogaraveo	2017	3 - Southern Alboran Sea		YES - Validated	NO
Parapenaeus longirostris	2017	1 - Northern Alboran Sea	In overexploitation	YES - Validated	NO
Parapenaeus longirostris	2017	1 - Northern Alboran Sea	In overexploitation	YES - Validated	NO
Parapenaeus longirostris	2017	3 - Southern Alboran Sea	In overexploitation	YES - Validated	NO
Parapenaeus longirostris	2017	4 - Algeria	In overexploitation	YES - Validated	NO
Parapenaeus longirostris	2017	5 - Balearic Island	In overexploitation	YES - Validated	NO
Parapenaeus longirostris	2017	6 - Northern Spain	In overexploitation	YES - Validated	NO
Sardina pilchardus	2017	1 - Northern Alboran Sea		YES - Validated	NO
Sardina pilchardus	2017	1 - Northern Alboran Sea	In overexploitation	YES - Validated	NO

Section 3 - Status of statistics and information system

A. Description of the national system of fishery statistics and/or any improvement/change occurred

The Spanish fisheries statistics and information system is based on the data from different sources. All the variables are collected following the legislation that conforms the EU´s Data Collection Framework, as indicated in EU Regulation 1004/2017. The collection of variables included in the Spanish National Programme are fully compliant with the mentioned legislation. The Unit in the General Secretary for Fisheries in charge of the coordination of the programme is the Deputy General Directorate for the Protection of the Resources.

B. National entities or authorities in charge for the collection of data pertaining the GFCM DCRF Tasks

Task I - Global Figures of National Fisheries	Task II - Catch	Task III - Bycatch	Task IV - Fleet	Task V - Effort	Task VI – Socio-Economic Data	Task VII - Biological Information
General Secretary for Fisheries	General Secretary for Fisheries	Spanish Institute of Oceanography	General Secretary for Fisheries	General Secretary for Fisheries	Subdirectorate General of Statistics	Spanish Institute of Oceanography

Section 4 - Status of research in progress (or recently concluded)

Research or Project title	Subject	From	To
SPELMED. Evaluacion of the population status and specific management alternatives for the small pelagic fish stocks	Stock assessment	2018	2020
PELWEB. Winners, losers and changes in the pelagic trophic web in the Western Mediterranean: ecologic consequences to future projections	Marine environment and conservation	2018	2020
RECFISH. Recovery of fisheries historical time series for Mediterranean and Black Sea Stock Assessment	Stock assessment	2018	2019
STREAM. STrengthening REgional cooperation in the Area of fisheries biological data collection in the Mediterranean and Black Sea	Data collection and statistics	2018	2019
DiscardLess	Marine environment and conservation	2015	2019
Analysis and monitoring of marine resources and fishing activities from the artisanal and recreational fleets in Andalucía	Stock assessment	2017	2020
Humans versus sharks. Assessment of the replacement of top marine predators at planet level	Stock assessment		
FISHGENOME. Improving cost-efficiency of fisheries research surveys and fish stocks assessments using next-generation genetic sequencing methods	Stock assessment	2019	2021
JAMM. Effects of the invasive crab Callinectes sapidus in the lake ecosystem Mar Menor and its fisheries	Invasive species	2018	2019
Pilot project on the survival rate of juveniles of the European spiny lobster Palinurus elephas	Stock assessment	2019	2021
MAREMATING. Competition for mating at high density in a marine reserve	Marine environment and conservation	2016	2020
CLIFISH	Marine environment and conservation	2016	2020
RESERVE_BENEFIT. Evaluating and managing connectivity in a network of Marine Protected Areas to maintain genetic diversity and deliver fish beyond protected limits	Marine environment and conservation	2017	2019
TREMALL45. Comparative study of two trammel nets in the Levantine Marine Reserve of Mallorca	Selectivity	2018	2019
UNIART. Development of a more sustainable bottom trawl gear for the deep water red shrimp fishery	Fishing technology	2019	2020
DISCARDLIFE. Survivor and recovery of discarded rays in the bottom trawl fishery	Discard survival	2019	2020

Research or Project title	Subject	From	To
Med_Units. Study on advancing fisheries assessment and management advice in the Mediterranean and Black Sea by aligning biological and management units of priority species	Stock assessment	2019	2021

Section 5 - Involvement in activities of FAO regional projects

Activity	FAO regional project	Year	Type
TRANSALBORAN. Transboundary population structure of Sardine and European hake and blackspot seabream in the Alboran Sea and adjacent waters: a multidisciplinary approach	COPEMED		Stock assessment
Joint CopeMed-GFCM data preparation meeting on blackspot Seabream in the Strait of Gibraltar and adjacent waters	COPEMED	2018	Stock assessment
On-the-job training for the standardization of biological sampling between Spain and Morocco	COPEMED	2018	Data collection and statistics
Study Groups on stock assessment of small pelagic and demersal stocks of interest to Algeria, Morocco and Spain in Alborán sea (GSAs 01, 02, 03 and 04)	COPEMED	2018	Stock assessment
11th meeting of the CopeMed II Coordination Committee	COPEMED	2018	Coordination
El Bibane lagoon, Zarzis, Tunisia	COPEMED	2019	Marine environment and conservation
Second Joint COPEMED II – GFCM data preparation meeting on Blackspot seabream (Pagellus bogaraveo) in the Strait of Gibraltar	COPEMED	2019	Stock assessment
Working Group for Coryphaena hippurus fisheries	COPEMED	2019	Data collection and statistics

Section 6 - Management measures taken in direct response to GFCM decisions

Title/Reference to National Law	Related GFCM Decision(s)
Orden APA/1186/2018, de 14 de noviembre, por la que, en uso de la habilitación contenida en su disposición final segunda, se modifica en materia de vedas y límites de captura el Real Decreto 629/2013, de 2 de agosto, por el que se regula la pesca del coral	REC.CM-GFCM/41/2017/5

Section 7 - Environment protection measures

Name of the area	Type of spatial restriction	Year
Enlargement of the National Park of Cabrera archipelago	Marine Protected Area (MPA)	2019
Marine Reserve in Alboran Island	Marine Protected Area (MPA)	1997 and 2018
MPA Corridor for Cetaceans Migration in the Mediterranean	Marine Protected Area (MPA)	2018

Name of the area	Type of spatial restriction	Year	Fleet segments	From	To	Objective
Temporal and permanent closure areas for demersal fisheries in the Gulf of Lion	National Fisheries Restricted Area (nFRA)	2018	D - Trawlers (<12 metres); E - Trawlers (12 - 24 metres); F - Trawlers (> 24 metres); I - Long liners (> 6 metres)			Protection of fish nurseries, Protection of spawners

Section 8 - Recommendation GFCM/36/2012/2 on mitigation of incidental catches of cetaceans in the GFCM area

Section 9 - Recommendation GFCM/36/2012/3 on fisheries management measures for conservation of sharks and rays in the GFCM area

Section 10 - Recommendation GFCM/35/2011/4 on the incidental catch of sea turtles in fisheries in the GFCM competence area

Species	N specimens	Date	GSA	Fleet Segment	Fishing Gear	Main Target Species
Caretta caretta (Loggerhead turtle)	1	07/03/2018	6 - Northern Spain	[OLD TASK 1] E - Trawlers (12 - 24 metres)	Bottom otter trawls	

Section 11 - Recommendation GFCM/35/2011/3 on reducing incidental catch of seabirds in fisheries in the GFCM Competence Area

Section 12 - Recommendation GFCM/35/2011/5 on fisheries measures for the conservation of the Mediterranean monk seal (*Monachus monachus*) in the GFCM Competence Area

Section 13 - Proposals for future research programmes

Improving selectivity of gears and scientific base for technical measures
Scientific studies on ecosystem and environmental problems on pelagic stocks

TUNISIA

Section 1 - Description of fisheries

A. Fishing grounds (GSAs): 12 – Northern Tunisia; 13 – Gulf of Hammamet; 14 – Gulf of Gabes

B. Total landings: 130,289 tonnes (2017); 126,528 tonnes (2016); 131,705 (2015); 126,512 tonnes (2014)

Main 10 species landed

Species ***Tonnes***

C. Fleet: 14,515 (2017); 13,908 vessels (2016); 14,099 vessels (2015)

Total kW:

Total GT:

AVG LOA:

Min LOA:

Max LOA:

AVG LOA (previous year):

Section 2 - Status of stocks of priority species

Species/Stock	Ref. year	Stock status	GSA	Presented to GFCM WGs?	Presented to any other forum?
Merluccius merluccius	2018	In overexploitation	12-13-14	Y	At national level. Journée nationale d'Information
Parapenaeus longirostris	2018	In overexploitation	12-13-14	Y	At national level. Journée nationale d'Information
Mullus barbatus	2018	In overexploitation	12	Y	At national level. Journée nationale d'Information
Mullus barbatus	2018	In overexploitation	13-14	Y	At national level. Journée nationale d'Information
Pagellus erythrinus	2018	In overexploitation	14	N	At national level. Journée nationale d'Information

Section 3 - Status of statistics and information system

A. Description of the national system of fishery statistics and/or any improvement/change occurred

Le système national des statistiques des pêches est sous la responsabilité de la Direction Générale de la Pêche et de l'Aquaculture. Il concerne presque toutes les rubriques (production, flottille, effort, population maritime, ...). La DGPA élabore chaque année un annuaire complet sur toutes les statistiques des pêches de chaque année et entretient une base de données informatisées qui renferment tous les détails des statistiques de la production par espèce/engin/port/zone. Pour la collecte des données, les services de la DGPA se base sur des opérations directes d'échantillonnage, sur des logbook et sur des bilans mensuelles. L'année dernière, le réseau des collecteurs s'est renforcé par le recrutement de plus de 80 gardes de pêche dont l'une des tâches est la collecte des données statistiques des pêches. Cependant, certaines difficultés persistent encore particulièrement en ce qui concerne l'activité des unités de la pêche artisanale (un nombre très important d'unités épartpillés sur environ 1300 km).

B. National entities or authorities in charge for the collection of data pertaining the GFCM DCRF Tasks

Task I - Global Figures of National Fisheries	Task II - Catch	Task III - Bycatch	Task IV - Fleet	Task V - Effort	Task VI – Socio-Economic Data	Task VII - Biological Information
Direction Générale de la Pêche et de l'Aquaculture	Direction Générale de la Pêche et de l'Aquaculture	Institut National des Sciences et Technologies de la Mer en concertation avec la DGPA	Direction Générale de la Pêche et de l'Aquaculture	Direction Générale de la Pêche et de l'Aquaculture	Institut National des Sciences et Technologie de la Mer en concertation avec la DGPA	Institut National des Sciences et Technologies de la Mer en concertation avec la DGPA

Section 4 - Status of research in progress (or recently concluded)

Research or Project title	Subject	From	To
Ressources halieutiques benthiques tunisiennes: Évaluation des stocks et aménagement des pêcheries	Stock assessment	2016	2019
Ressources halieutiques pélagiques tunisiennes: Évaluation des stocks et aménagement des pêcheries	Stock assessment	2016	2019
Développement d'engins de pêche sélectifs pour une exploitation durable des pêcheries tunisiennes	Technologie des engins de pêche	2016	2019
Étude de l'impact de la prolifération du crabe bleu Portunis segnis sur les pêcheries artisanales des côtes tunisiennes	Impact sur les activités de pêche et les ecosystèmes marins	2017	2020
Statut des élasmobranches et des tortue marines dans les pêcheries de sennes tournantes et palangre de surface au golfe de Hammemet	Marine environment and conservation	2019	2020
Comprendre les « prises accessoires » de multiples taxons d'espèces vulnérables en Méditerranée et essai de méthodes d'atténuation - une approche collaborative	Marine environment and conservation	2017	2020
Implementation of the indicator "Impacts of marine litter on sea turtles and biota" in RSC and MSFD areas	Marine environment and conservation	2019	2021

Section 5 - Involvement in activities of FAO regional projects

Activity	FAO regional project	Year	Type
Étude de l'exploitation et éventuelle évaluation du stock de l'anguille Anguilla anguilla dans les eaux tunisiennes	COPEMED	2018	Stock assessment, Data collection and statistics
Implémentation de l'Approche Ecosystémique des Pêches pour mieux gérer la pêcherie de la lagune El Bibane au sud tunisien	COPEMED	2019	Stock assessment, Data collection and statistics, Socio-economics, Marine environment and conservation
Evaluation des stocks de la chevrette, du merlu et du rouget blanc dans la région du canal de Sicile	MEDUSUDMED	2018	Stock assessment, socio-economics, marine environment and conservation
Étude socio-economique de la pêcherie de la chevrette et du merlu dans la région Nord de la Tunisie	MEDUSUDMED	2017	Socio-economics
Projet Transboran	COPEMED	2018	Stock assessment
Études de la pêche artisanale des eaux tunisienne	MEDSUDMED	2018	Répartition spatiale de l'effort de pêche
Amélioration des opérations d'échantillonnages des espèces exploitées dans les eaux tunisiennes	MEDSUDMED	2019	Stock assessment, Data collection and statistics

Section 6 - Management measures taken in direct response to GFCM decisions

Section 7 - Environment protection measures

Name of the area	Type of spatial restriction	Year	Fleet segments	From	To	Objective
GSA 14	National closure to fisheries (nFRA)	2009	F - Trawlers (> 24 metres); E - Trawlers (12 - 24 metres); D - Trawlers (<12 metres)	01/07	30/09	Protection of fish nurseries, Protection of fish feeding ground, Protection of spawners, Protection of sensitive benthic habitats, Protection of seabirds/turtles/monk seals

Section 8 - Recommendation GFCM/36/2012/2 on mitigation of incidental catches of cetaceans in the GFCM area

Section 9 - Recommendation GFCM/36/2012/3 on fisheries management measures for conservation of sharks and rays in the GFCM area

Species	N specimens	Date	GSA	Fleet segment	Fishing gear	Main Target Species
Mustelus mustelus (Smooth-hound) [Annex III]	8	18-04-19	12 - Northern Tunisia	[OLD TASK 1] C - Polyvalent small-scale vessels with engine (6-12 metres)	Longlines (not specified)	
Prionace glauca (Blue shark) [Annex III]	1	17-02-19	13 - Gulf of Hammamet			
Mobula mobular (Devil fish) [Annex II]	1	03-05-19	12 - Northern Tunisia	[OLD TASK 1] G - Purse Seiners (6-12 metres)	Boat or vessel seines	
Mustelus mustelus (Smooth-hound) [Annex III]	1	18-01-19	12 - Northern Tunisia	[OLD TASK 1] C - Polyvalent small-scale vessels with engine (6-12 metres)		
Mustelus mustelus (Smooth-hound) [Annex III]	11	23-05-19	14 - Gulf of Gabes	[OLD TASK 1] B - Polyvalent small-scale vessels with engine (<6 metres)	Gillnets (not specified)	
Carcharodon carcharias (Great white shark) [Annex II]	1	12-04-19	12 - Northern Tunisia	[OLD TASK 1] G - Purse Seiners (6-12 metres)		
Alopias vulpinus (Thresher) [Annex III]	1	14-05-19	13 - Gulf of Hammamet	[OLD TASK 1] C - Polyvalent small-scale vessels with engine (6-12 metres)		
Rhinobatos rhinobatos (Common guitarfish) [Annex II]	2	12-04-19	14 - Gulf of Gabes	[OLD TASK 1] C - Polyvalent small-scale vessels with engine (6-12 metres)	Gillnets (not specified)	
Alopias vulpinus (Thresher) [Annex III]	1	15-04-19	13 - Gulf of Hammamet	[OLD TASK 1] C - Polyvalent small-scale vessels with engine (6-12 metres)		
Isurus oxyrinchus (Shortfin mako) [Annex II]	1	03-04-19	13 - Gulf of Hammamet	[OLD TASK 1] C - Polyvalent small-scale vessels with engine (6-12 metres)		
Mobula mobular (Devil fish) [Annex II]	9	08-04-19	12 - Northern Tunisia	[OLD TASK 1] G - Purse Seiners (6-12 metres)	Boat or vessel seines	
Cetorhinus maximus (Basking shark) [Annex II]	1	21-05-19	12 - Northern Tunisia	[OLD TASK 1] A - Polyvalent small-scale vessels without engine (<12 metres)	Gillnets (not specified)	
Alopias vulpinus (Thresher) [Annex III]	1	04-05-19	12 - Northern Tunisia	[OLD TASK 1] G - Purse Seiners (6-12 metres)		
Alopias vulpinus (Thresher) [Annex III]	2	29-03-19	13 - Gulf of Hammamet	[OLD TASK 1] H - Purse Seiners (>12 metres)		

Section 10 - Recommendation GFCM/35/2011/4 on the incidental by-catch of sea turtles in fisheries in the GFCM competence area

Species	N specimens	Date	GSA	Fleet Segment	Fishing Gear	Main Target Species
Caretta caretta (Loggerhead turtle)	1	15/05/2019	14 - Gulf of Gabes	[OLD TASK 1] B - Polyvalent small-scale vessels with engine (<6 metres)	Gillnets (not specified)	Diplodus annularis (Annular seabream)

Section 11 - Recommendation GFCM/35/2011/3 on reducing incidental catch of seabirds in fisheries in the GFCM Competence Area

Section 12 - Recommendation GFCM/35/2011/5 on fisheries measures for the conservation of the Mediterranean monk seal (*Monachus monachus*) in the GFCM Competence Area

Section 13 - Proposals for future research programmes

Étude de la pêche récréative dans les eaux tunisiennes
Étude d'impact des espèces invasives, particulièrement le crabe bleu Portunus segnis sur les pêcheries et les écosystèmes marins en Tunisie
Étude génétique de quelques espèces d'elasmobranches menacées telque le requin blanc dans les eaux tunisiennes.
Évaluation des stocks des crevettes de profondeur exploitées en Tunisie Aristeomorpha foliacea et Aristeus antennatus
Évaluation des stocks des principales espèces exploitées en Tunisie
Suivi et étude de l'impact du poisson lapin Lagocephalus sceleratus (espèces invasive) sur les pêcheries et les écosystèmes marins dans les eaux tunisiennes

TURKEY

Section 1 - Description of fisheries

A. Fishing grounds (GSAs): 22 – Aegean Sea; 24 – North Levant

B. Total landings: 61,488 tonnes (2017); 46,414 tonnes (2016); 45,383 tonnes (2015)

Main 10 species landed

Species	***Tonnes***
Sardina pilchardus	17,300
Engraulis encrasicolus	15,986
Boops boops	3,093
Scombridae	2,236
Mugilidae	1,670
Thunnus thynnus	1,515
Pagellus erythrinus	1,169
Trachurus mediterraneus	1,090
Mullus barbatus	1,075
Trachurus thrachurus	1,024

C. Fleet: 5,703 vessels (2018); 5734 vessels (2017); 5889 vessels (2016)
Total kW: 336,695 (2018); 316,949 (2017); 305,681 (2016)
Total GT: 37,892 (2018); 36739 (2017); 36347 (2016)
AVG LOA: 8.4 m (2018)
Min LOA: 3.5 m
Max LOA: 49.3 m
AVG LOA (previous year): 8.3 m

Section 2 - Status of stocks of priority species

Section 3 - Status of statistics and information system

A. Description of the national system of fishery statistics and/or any improvement/change occurred
Fisheries data have been collected by collabration with Turkish Statistics Institute and Ministry of Agriculture and Forestry.

B. National entities or authorities in charge for the collection of data pertaining the GFCM DCRF Tasks

Task I - Global Figures of National Fisheries	Task II - Catch	Task III - Bycatch	Task IV - Fleet	Task V - Effort	Task VI – Socio-Economic Data	Task VII - Biological Information
Turkish Statisticak Institute (in collabration with Ministry of Agriculture and Forestry)	Turkish Statisticak Institute (in collabration with Ministry of Agriculture and Forestry)	Ministry of Agriculture and Forestry	Ministry of Agriculture and Forestry	Turkish Statisticak Institute (in collabration with Ministry of Agriculture and Forestry)	Turkish Statisticak Institute	Ministry of Agriculture and Forestry

Section 4 - Status of research in progress (or recently concluded)

Section 5 - Involvement in activities of FAO regional projects

Section 6 - Management measures taken in direct response to GFCM decisions

Title/Reference to National Law	Related GFCM Decision(s)
Notification 4/1 Regulating Commercial Fishing	REC.CM-GFCM/42/2018/1

Section 7 - Environment protection measures

Name of the area	Type of spatial restriction	Year	Fleet segments	From	To	Objective
Mediterranean Sea (n 48 areas)	National closure to fisheries (nFRA)	From 1997	n/a	n/a	n/a	Protection of fish nurseries, Protection of fish feeding ground, Protection of spawners, Protection of sensitive benthic habitats, Protection of seabirds/turtles/monk seals

Section 8 - Recommendation GFCM/36/2012/2 on mitigation of incidental catches of cetaceans in the GFCM area

Section 9 - Recommendation GFCM/36/2012/3 on fisheries management measures for conservation of sharks and rays in the GFCM area

Section 10 - Recommendation GFCM/35/2011/4 on the incidental by-catch of sea turtles in fisheries in the GFCM competence area

Section 11 - Recommendation GFCM/35/2011/3 on reducing incidental catch of seabirds in fisheries in the GFCM Competence Area

Section 12 - Recommendation GFCM/35/2011/5 on fisheries measures for the conservation of the Mediterranean monk seal (*Monachus monachus*) in the GFCM Competence Area

Section 13 - Proposals for future research programmes

This report presents the outcomes of the twenty-first session of the Scientific Advisory Committee on Fisheries (SAC) of the General Fisheries Commission for the Mediterranean (GFCM) held in Cairo, Egypt, from 24 to 27 June 2019. During the session, the Committee reviewed the work carried out during the 2018–2019 intersession, including within its four subregional subsidiary bodies (Subregional Committee for the Adriatic Sea, Subregional Committee for the Central Mediterranean, Subregional Committee for the Eastern Mediterranean and Subregional Committee for the Western Mediterranean). Issues in relation to fisheries data quality and data collection were discussed. The implementation of the the mid-term strategy (2017–2020) towards the sustainability of Mediterranean and Black Sea fisheries and of the Regional Plan of Action for Small-Scale Fisheries in the Mediterranean and the Black Sea (RPOA-SSF) was also tackled. Furthermore, the Committee discussed a future approach for the provision of advice and formulated advice on the status of fisheries and technical management measures – namely overall status of stocks and management of European eel and red coral – as well as on interactions between fisheries, marine ecosystems and environment – namely i) management of deep-sea fisheries and protection of vulnerable marine ecosystems (VMEs); ii) advances in the establishment of a network of essential fish habitats; iii) adaptation strategies for climate change and non-indigenous species; and iv) anthropogenic underwater noise. In line with the subregional approach and based on the conclusions of the four subregional committees, the SAC also provided specific advice for each subregion. In particular, attention was paid to: i) blackspot seabream in the western Mediterranean; ii) demersal fisheries in the Strait of Sicily; iii) management of fisheries employing Fish Aggregating Devices (FAD); iv) small pelagic fisheries in the Adriatic Sea; v) demersal fisheries in the Adriatic Sea; and vi) deep-water red shrimps in the central and eastern Mediterranean and proposals for fisheries restricted areas. Finally, the Committee agreed upon its work plan for 2019–2021.

Ce rapport présente les résultats de la vingt et unième session du Comité scientifique consultatif des pêches (CSC) de la Commission générale des pêches pour la Méditerranée (CGPM) tenue au Caire, Égypte, du 24 au 27 juin 2019. Au cours de la session, le Comité a passé en revue les travaux réalisés pendant la période intersessions 2018-2019, notamment dans le cadre de ses quatre organes subsidiaires sous-régionaux (Comité sous-régional pour la mer Adriatique, Comité sous-régional pour la Méditerranée centrale, Comité sous régional pour la Méditerranée orientale et Comité sous-régional pour la Méditerranée occidentale). Il a examiné des questions portant sur la collecte et sur la qualité des données sur les pêches. Le Comité s'est en outre penché sur la mise en œuvre de la stratégie à moyen terme (2017-2020) en faveur de la durabilité des pêches en Méditerranée et en mer Noire et du Plan d'action régional pour la pêche artisanale en Méditerranée et en mer Noire. Par ailleurs, le Comité a débattu sur une future approche concernant la fourniture d'avis et a formulé des avis sur la situation des pêches et sur des mesures de gestion techniques – notamment l'état général des stocks et la gestion de l'anguille d'Europe et du corail rouge – ainsi que sur les interactions entre les pêches, les écosystèmes marins et l'environnement – notamment i) la gestion de la pêche en eaux profondes et la protection des écosystèmes marins vulnérables; ii) les progrès réalisés dans la mise en œuvre d'un réseau d'habitats essentiels aux ressources halieutiques; iii) les stratégies d'adaptation face au changement climatique et aux espèces non indigènes; et iv) le bruit anthropique en milieu marin. Conformément à l'approche sous-régionale mise en œuvre et à partir des conclusions des quatre comités sous-régionaux, le CSC a également fourni des avis spécifiques à chaque sous-région. Une attention particulière a été accordée à: i) la dorade rose en Méditerranée occidentale; ii) la pêche démersale dans le canal de Sicile; iii) la gestion des activités de pêche faisant appel à des dispositifs de concentration de poissons (DCP); iv) la pêche de petits pélagiques en mer Adriatique; v) la pêche démersale en mer Adriatique; et vi) les gambons et crevettes rouges en Méditerranée centrale et orientale ainsi que des propositions de zones de pêche réglementées. Enfin, le Comité est convenu de son programme de travail pour 2019-2021.

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