FIPI/R1102(Bi)

Food and Agriculture Organization
of the United Nations

Organisation des Nations Unies
pour l'alimentation et l'agriculture

FAO
Fisheries and
Aquaculture Report

Rapport sur les
pêches et l'aquaculture

ISSN 2070-6987

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

Report of the sixteenth session of the

SCIENTIFIC ADVISORY COMMITTEE

St. Julian's, Malta, 17–20 March 2014

Rapport de la seizième session du

COMITÉ SCIENTIFIQUE CONSULTATIF

Saint Julien, Malte, 17–20 mars 2014

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FAO, Rapport sur les pêches et l'aquaculture nº1102 FIPI/R1102 (Bi)

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FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
ORGANISATION DES NATIONS UNIES POUR L'ALIMENTATION ET L'AGRICULTURE
Rome, 2015

ISBN 978-92-5-008712-2

PREPARATION OF THIS DOCUMENT

This is the final report approved by the participants in the sixteenth session of the Scientific Advisory Committee of the General Fisheries Commission for the Mediterranean held in St. Julian's, Malta, from 17 to 20 March 2014.

PRÉPARATION DE CE DOCUMENT

Le présent document est le rapport final adopté par les participants de la seizième session du Comité scientifique consultatif de la Commission générale des pêches pour la Méditerranée tenue à Saint Julien, Malte, du 17 au 20 mars 2014.

FAO General Fisheries Commission for the Mediterranean/Commission générale des pêches pour la Méditerranée. Report of the sixteenth session of the Scientific Advisory Committee. St. Julian's, Malta, 17–20 March 2014/Rapport de la seizième session du Comité scientifique consultatif. Saint Julien, Malte, Malte, 17-20 mars 2014. *FAO Fisheries and Aquaculture Report*/FAO *Rapport sur les pêches et l'aquaculture.* No. R1102. Rome. 2015. 250 pp.

ABSTRACT

The Scientific Advisory Committee (SAC) of the General Fisheries Commission for the Mediterranean (GFCM) held its sixteenth session in St. Julian's, Malta, from 17 to 20 March 2014. The session was attended by 18 Contracting Parties, 7 observers, representatives of the FAO regional projects and the GFCM Secretariat. The Committee reviewed the issues addressed at 15 meetings held during the 2013–2014 intersession, including those of the four subcommittees and the Framework Programme (FWP). The main issues tackled included: i) scientific advice on the status of stocks, including proposals to improve the advice provided to the Commission; ii) analysis of research activities by Member Countries; iii) updates on the development of the GFCM Data Collection Reference Framework (DCRF); iv) updates on the development of management plans for Mediterranean and Black Sea fisheries and v) follow-up activities addressing SAC priorities, such as indicators on the state of marine populations, small-scale fisheries and the fight against IUU. The Committee highlighted the importance of establishing a GFCM DCRF and submitted its proposal for the consideration of the Commission. Also, it launched the preparation of a concept note for a regional programme on small-scale fisheries, and provided elements for the management of red coral and a number of selected fisheries for the consideration of the Commission. The achievements of the Working Group on the Black Sea, including through its Subregional Group on Stock Assessment for the Black Sea, were appraised. The SAC also agreed upon a framework for providing advice and formulated a set of recommendations regarding its functioning. Finally, it agreed upon its work plan for 2014–2015 and elected a new Bureau, paying tribute to the work done by the immediate past members of the Bureau.

RÉSUMÉ

Le Comité scientifique consultatif (CSC) de la Commission générale des pêches pour la Méditerranée (CGPM) a tenu sa seizième session à Saint Julien, Malte, du 17 au 20 mars 2014. Ont participé à cette session 18 parties contractantes, 7 observateurs, ainsi que des représentants des projets régionaux de la FAO et le Secrétariat de la CGPM. Le Comité a passé en revue les questions abordées lors des quinze réunions tenues pendant la période intersessions 2013-2014, notamment les sessions des quatre sous-comités et les réunions au titre du programme-cadre de la CGPM (FWP). Les principaux aspects abordés concernaient notamment: i) les avis scientifiques sur l'état des stocks, notamment des propositions visant à améliorer les avis donnés à la Commission; ii) l'analyse des activités de recherche menées par les États membres; iii) les mises à jour concernant l'élaboration du cadre de référence pour la collecte de données de la CGPM; iv) les mises à jour concernant l'élaboration de plans de gestion des pêches en Méditerranée et en mer Noire et v) les activités de suivi répondant aux priorités du CSC, telles que celles portnt sur les indicateurs de l'état des populations marines, la pêche artisanale et la lutte contre la pêche INDNR. Le Comité a souligné l'importance de la mise en place d'un cadre de référence pour la collecte de données de la CGPM et a soumis sa proposition à la Commission pour examen. Par ailleurs, il a lancé la préparation d'une note conceptuelle relative à la mise en place d'un programme régional sur la pêche artisanale, et a fourni des indications sur la gestion du corail rouge et de certaines pêches à soumettre à la Commission pour examen. Le Comité a fait le point sur les résultats du Groupe de travail sur la mer Noire, y compris ceux du Groupe sous-régional sur les évaluations de stocks en mer Noire. Il a également convenu d'un cadre pour fournir les avis et a formulé une série de recommandations concernant son fonctionnement. Enfin, le Comité a établi son plan de travail pour 2014-2015 et élu son nouveau Bureau, après avoir rendu hommage au travail de ses membres sortants.

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OPENING AND ARRANGEMENTS FOR THE SESSION

1. The sixteenth session of the Scientific Advisory Committee (SAC) of the General Fisheries Commission for the Mediterranean (GFCM) was held in St. Julian's, Malta, from 17 to 20 March 2014. The session was attended by delegates from 18 Contracting Parties, 7 observers, representatives of FAO regional projects and the GFCM Secretariat. The list of participants is reproduced as Appendix B.

2. The Honourable Leo Brincat, Minister for Sustainable Development, the Environment and Climate Change, welcomed participants stating Malta was proud to convene the SAC after the success of the First Regional Symposium on Sustainable Small-Scale Fisheries in the Mediterranean and Black Sea, also held in St Julian's in November 2013. He mentioned the role entrusted to the GFCM in the management of fisheries and insisted on the need for a collective effort of all Members towards the sustainable exploitation of resources and securing a level playing field for all parties involved.

3. The Honourable Roderick Galdes, Parliamentary Secretary for Agriculture, Fisheries and Animal Rights, also greeted participants appraising the remarkable efforts deployed by the SAC and the GFCM Secretariat, in particular in the development of the GFCM Data Collection Reference Framework (DCRF) and towards the elaboration of joint management plans for fisheries resources. In this latter regard, he mentioned the challenges faced in relation to stocks shared between different fleets and highlighted the importance of joint work among neighboring countries, acknowledging the support of the FAO regional projects in this respect.

4. Mr Abdellah Srour, GFCM Executive Secretary, expressed his thanks – personally and also on behalf of Mr Stefano Cataudella, GFCM Chairperson – to the Government of Malta for the kind hospitality and excellent organization of the meeting. He underscored the quality of the participation and of the contributions made during the intersessional period, which resulted in improved stock assessments and data collection, enhanced decision-making based on scientific advice, and greater focus on multiannual management plans. Yet, further steps towards the modernization of the GFCM were required, as recommended by the performance review. In wholeheartedly acknowledging the contribution by FAO and its regional projects, he eagerly looked towards renewed collaboration.

ADOPTION OF THE AGENDA

5. After having introduced participants and observers, Mr Henri Farrugio, SAC Chairperson, gave the floor to the GFCM Secretariat who informed the meeting about organizational arrangements.

6. The agenda was adopted with minor amendments and is attached under Appendix A. The list of documents is under Appendix C.

INTERSESSIONAL ACTIVITIES

Review of the recommendations of the thirty-seventh session of GFCM concerning the management of fisheries

7. The GFCM Executive Secretary recalled the main decisions adopted at the thirty-seventh session of the Commission, namely: i) Resolution GFCM/37/2013/1 on area-based management of fisheries, including through the establishment of fisheries restricted areas (FRAs) in the GFCM convention area and coordination with the UNEP-MAP initiatives on the establishment of SPAMIs; ii) Resolution GFCM/37/2013/2 on Guidelines on the management of fishing capacity in the GFCM area; iii) Recommendation GFCM/37/2013/1 on a multiannual management plan for fisheries on small pelagic stocks in the GFCM GSA 17 (Northern Adriatic Sea) and on transitional conservation measures for fisheries on small pelagic stocks in GSA 18 (Southern Adriatic Sea); and iv)

Recommendation GFCM/37/2013/2 on the establishment of a set of minimum standards for bottom-set gillnet fisheries for turbot and conservation of cetaceans in the Black Sea.

8. The Chairperson stressed that adopted recommendations often requested a follow-up by the SAC to review indicators or other scientific inputs. For this reason, he urged the countries concerned to ensure an appropriate transmission of the necessary data so as to allow SAC to carry out the tasks requested by the Commission, or else he indicated that SAC would have to advise the Commission on possible constraints in fulfilling this task.

Overview of SAC achievements during the intersession

9. On the basis of document GFCM:SAC16/2014/2, the Chairperson presented the activities undertaken by SAC during the intersession. He informed delegates that 15 meetings had been convened, including those of the four subcommittees and the First Regional Symposium on Sustainable Small-Scale Fisheries in the Mediterranean and the Black Sea, in addition to FWP workshops on illegal, unreported and unregulated (IUU) fishing and fisheries management plans.

10. The Chairperson first updated SAC on the Subcommittee on Statistics and Information (SCSI), highlighting the work done in relation to the analysis of the DCRF proposal, designed to serve as a reference for data collection and transmission at the subregional level. The status of Members' compliance regarding data and information reporting, with particular focus on vessel records (fleet data) and Task 1, were reviewed.

11. The Chairperson then informed SAC that the Subcommittee on Economic and Social Sciences (SCESS) paid special attention to the identification of a common methodology to carry out socioeconomic analysis and proposed socioeconomic variables and indicators to be included in the new DCRF.

12. In relation to the work carried out by the Subcommittee on Marine Environment and Ecosystems (SCMEE), which addressed specific issues within the framework of two technical workshops and one working group (on red coral, artificial reefs and marine protected areas, respectively), he pointed in particular to the operational objectives included in the draft Regional Management Plan for Red Coral (RMP-RC) and the draft Practical Guidelines for Artificial Reefs in the Mediterranean and the Black Sea.

13. The Chairperson reported that the Subcommittee on Stock Assessment (SCSA) had provided advice for 39 assessments, of which 34 in the Mediterranean (25 for demersal species and 9 for small pelagic species) and 5 in the Black Sea (3 for demersal species and 2 for small pelagic species). He expressed concern for the status of the demersal stocks as 21 of them were found to be in overfishing. As for small pelagic stocks, he recalled the outcomes of the 11 stock assessments performed and expressed similar concerns for those stocks in overfishing status.

14. Lastly, he also reported on the main activities carried out by the GFCM Working Group on the Black Sea (WGBS). He recalled that WGBS had provided management advice for five stocks assessed during the first meeting of the Subregional Group on Stock Assessment for the Black Sea (SGSABS), agreed on elements for the management of turbot in the Black Sea, and decided on activities related to the implementation of the existing memorandum of understanding (MoU) with the Black Sea Commission (BSC).

15. In the ensuing discussion, the delegate of Tunisia proposed to create a working group on fishing technologies operating under SAC auspices. Most participants supported this proposal although raising the need to better define the mandate of this group and to set priorities, given the broad range of issues that could be considered under the general term of "fishing technologies". The difficulties of dealing with multispecific fisheries and with the issues of discards and their reduction were mentioned as priority subjects that this group should address.

16. The Committee agreed to include in the SAC work plan the proposal to hold a first meeting of the Workshop on fishing technologies back-to-back with SCMEE. The FAO regional projects informed that they were already working on this issue and offered technical support to this activity.

Research activities by Member countries

17. The GFCM Secretariat, presented a synthesis of the information contained in 17 national reports received (Appendix I (a) and (b)) providing an overview of changes in fleet size and production among GFCM Members and highlighting: i) the increasing number of national stock assessments performed by GFCM Members, which regrettably were not always brought to GFCM working groups on stock assessment; ii) the remarkable progress in carrying out socioeconomic studies as well as sample-based catch effort and biological surveys, also with the support of FAO regional projects; and iii) the scarcity of information on by-catch of sharks, rays and cetaceans that should have been submitted according to relevant GFCM recommendations.

18. Following this presentation, the delegate of Croatia informed that the increase in the numbers of the Croatian fleet was due to the inclusion of small-scale vessels in the inventory, thanks to better data collection systems in place, rather than to the incorporation of new vessels into fishing activity. Similarly, the reduction of the fleet observed in Malta was also an artefact of a different way of collecting data and it was clarified that recreational vessels had not been taken into account, as opposed to the previous year for which data were more comprehensive as all sectors of the fleet were included. The delegate of Algeria explained that, despite their willingness to freeze the fleet as a precautionary management measure, a small increase in the number of small-scale fishing vessels had been allowed due to socioeconomic constraints, resulting in an increase of the total catches reported.

19. The preparation by the Secretariat of an online form to facilitate the transmission of national reports was regarded as a potentially good practice. This would enable, thanks to improved functionalities, to better specify the nature of research projects in place. It was agreed that, as a pilot test, national reports could be submitted the following year through this new online tool, on a voluntary basis. The new format would also allow the Secretariat to store data in a more standardized way and to perform comparative analysis between areas, countries and over several years.

Major activities and initiatives of the FAO regional projects

20. The activities carried out by the FAO regional projects (AdriaMed, CopeMed II, ArtFiMed, EastMed, MedSudMed, MedFisis, and MedLME) during the intersessional period were presented, including research activities, training programmes, workshops and working groups as well as technical assistance to the countries and to SAC activities. The delegates were reminded that detailed information on the activities and outputs of the projects could be found in the annual report of the coordination committees of the different projects and in document GFCM:SAC16/2014/Inf.22.

21. The SAC acknowledged the extensive work undertaken by the FAO regional projects as well as their valuable scientific contributions, and congratulated them for the efforts towards increased cooperation with the GFCM. Delegates also stressed the importance of the existence of the FAO regional projects for the support provided to the countries and to the GFCM.

22. In particular, the delegates of Albania and Montenegro reiterated the strategic role of the AdriaMed project, being the only project gathering all the Adriatic countries under a cooperative framework for relevant national institutions. Reference was made to the importance of AdriaMed for the future development of fisheries in the countries concerned and in the Adriatic Sea in general.

23. The delegates of Egypt and Lebanon acknowledged the role of EastMed in the area and stressed that without its support a number of activities concerning data collection and processing could not be implemented in their countries.

24. The delegate of Tunisia highlighted the important role of MedSudMed which had moved towards a new phase of cooperation with data sharing, joint analysis and support to the formulation of fisheries management in the area. He considered advisable that, taking advantage of the regional projects, topics such as fishing technologies could be tackled. In this regard, he proposed to prepare a catalogue of fishing gears of the Mediterranean, taking advantage of the documents and information issued at the national level (e.g. Tunisia, Algeria).

25. The Committee recalled the important role played over time by CopeMed (phase I and II), the first regional project in the Mediterranean to have launched the current cooperation activities in the area. It was recalled that the future phase of the regional projects would be addressed during the thirty-eighth session of the Commission (May 2014), which would constitute an occasion for Mediterranean countries to discuss about a new cooperation framework between the GFCM and the FAO regional projects.

REVIEW OF RELEVANT TASK FORCE AND FRAMEWORK PROGRAMME (FWP) ACTIVITIES CONCERNING THE SAC

Review of selected matters addressed within the GFCM amendment process of relevance to SAC

26. The Executive Secretary recalled the work that was performed by the Task Force for the modernization of the legal framework of the GFCM and the related activities carried out thanks to the Framework Programme (FWP). In particular, he focused on the bottom-up and participatory approach adopted by the GFCM so that all relevant actors could convey their views, thus contributing to the elaboration of a set of revised GFCM Agreement and associated rules. In the proposed texts, specific provisions would have a bearing on the SAC in the future, namely: i) the promotion of the subregional approach, ii) the establishment of the review mechanism for decision-making; iii) the possible use of the SAC glossary, which would call for a regular revision of its contents. The Executive Secretary recalled that the GFCM extraordinary session, scheduled to take place in April 2014, would continue the consultation process.

Review of activities carried out under the preliminary phase of the FWP and introduction of ongoing FWP activities

27. Mr Miguel Bernal, from the GFCM Secretariat, presented the achievements of the Framework Programme in 2013 and 2014, namely: i) the elaboration of elements for the management of selected fisheries in the Mediterranean and Black Sea, emanating from workshops on fisheries management held at the subregional level; ii) the roadmap on IUU fishing, developed for the Mediterranean following the example of the workshop held in the Black Sea during the previous intersession, and expected follow-up; iii) the finalisation of the draft DCRF and related data requirements; iv) the main conclusions of the First Regional Symposium on Sustainable Small-scale Fisheries (SSF) and foreseen actions for their implementation; v) the proposal of indicators and targets for the UNEP-MAP Ecological Objective 3 on commercially exploited fish; and vi) the ongoing cooperation with other agencies (ACCOBAMS, ICES, CIHEAM among others). The SAC was invited to give feedback on the technical contents of these activities, in particular regarding their complementarity with the work being carried out and the opportunities offered.

28. The SAC noted the many achievements made and appreciated the outcomes of the activities being carried out through the FWP as well as the work undertaken by the Secretariat. In particular, in relation to small-scale fisheries, the SAC commended the impact and interest raised by the Symposium and its follow-up activities.

29. The delegate of Morocco mentioned that the data collected through the DCRF should be first analysed by the Secretariat and then made available to the SAC and its subcommittees and working groups as a basis for advice. He added that the necessary funding sources to fulfil the requirements of the DCRF should be identified.

30. In the ensuing discussions, SAC questioned about the potential implications of the different activities for Members and was in favour of a prioritization of follow-up activities, suggesting that further information on available funds be provided.

31. The Secretariat clarified that, for most of the activities suggested through the FWP, funds were already available thanks to ongoing projects and explained that SAC was invited to provide its technical inputs, as appropriate, and to cooperate through national institutions in the proper implementation of these activities.

32. The Committee was informed about the MedSuit project – A Mediterranean Cooperation for the Sustainable Use of Marine Biological Resources. This project, funded by the Italian Ministry of Environment through the FWP, was recently established with the aim to: i) harmonize criteria to define environmental targets; ii) determine the status of exploited marine populations; and iii) design monitoring requirements to ensure the maintenance of good environmental status. The Committee strongly invited delegations to participate in the inception meeting, scheduled to take place in Italy during the second half of 2014, by coordinating with relevant national departments to ensure the involvement of experts in marine strategy issues.

FORMULATION OF ADVICE IN THE FIELD OF FISHERY MANAGEMENT AND RESEARCH

Conclusions and recommendations of the Subcommittee on Statistics and Information (SCSI)

33. Mr Alaa El-Haweet, SCSI coordinator, presented the conclusions and recommendations of the Subcommittee on the basis of the documents GFCM:SAC16/2014/2 and GFCM:SAC16/2014/Inf.6. He reported that SCSI had revised the DCRF proposal and provided technical inputs, including the addition of the IMO number as mandatory field in the fleet data component so as to be compatible with the FAO Global Record. He added that the SCSI had also suggested to organize a regional meeting to implement the DCRF, and stressed the need to: i) strengthen the national data collection and transmission (with particular focus on Task 1 and vessel records); ii) provide assistance to concerned countries in sampling programmes at the subregional level; and iii) improve data collection on small-scale fisheries.

34. The coordinator further reported that SCSI had suggested establishing a system for the transmission of relevant data from EU fleet register system to the GFCM Secretariat, and developing a strategy for the potential use of data collected through VMS for stock assessment and for the evaluation of fish populations. Finally, he informed that SCSI had strongly supported the development of cloud-based IT solutions for data/information dissemination undertaken by the GFCM Secretariat, and recalled the need to assess the technical implications of the harmonization of mismatching boundaries in the GFCM statistical grid with some geographical subareas (GSAs).

35. The delegate of Montenegro commented on the list of priority species in the DCRF by pointing out that some species listed in Appendix A of the DCRF were not important at the country level. The Secretariat confirmed that this issue was already addressed in the final draft of the DCRF, where exemption rules were foreseen in these cases.

36. The Tunisian delegate pointed out that vessel monitoring system (VMS) data were not part of the DCRF, although the implementation of VMS for vessels over 15 meters was foreseen within a GFCM recommendation starting from 2012. The relevance of VMS data in support of advice and its future inclusion in the DCRF was discussed, and the SAC proposed to organize a workshop, possibly within the FWP, to identify the best solutions to receive, incorporate and analyse VMS data using specific pilot case studies on the topic.

37. In relation to the fleet component of DCRF and to the question raised by Lebanon, the Secretariat clarified that the information on acquiring the International Maritime Organization (IMO) number would be made compulsory for vessels above 15 meters only.

38. The representative of Oceana recalled the suggestions made by the SCMEE regarding the importance of considering by-catch of vulnerable species within the new data collection framework. In this respect, the Committee was informed that this issue had already been addressed when updating the DCRF proposal.

39. Following the discussions, the Committee acknowledged the importance of establishing a DCRF for the submission of data to the GFCM, endorsed the DCRF and agreed on its submission to the thirty-eighth session of the Commission for consideration and possible adoption.

Conclusions and recommendations of the Subcommittee on Economic and Social Sciences (SCESS)

40. Mr Scander Ben Salem, SCESS coordinator, introduced the recommendations made by the subcommittee on the basis of documents GFCM:SAC16/2014/2 and GFCM:SAC16/2014/Inf.7. He recalled that, following the recommendation of SAC, SCESS had focused on a few selected issues, namely: i) the design of a common methodology to carry out socioeconomic analysis, ii) the revision of the socioeconomic variables included in the DCRF; iii) the need to continue working on small-scale fisheries (document GFCM:SAC16/2014/Inf.24), including through the development of a regional programme, and iv) the integration of socioeconomic studies in the management of stocks, using the common methodology proposed.

41. Mr Davide Fezzardi, from the GFCM Secretariat, reported about the progress made in developing a regional programme on SSF. Brief meetings were organized in parallel to SAC during the first two days of the SAC session and key elements for such regional programme (available in Appendix H) were prepared in cooperation with delegations, to be consolidated into a concept note in view of the thirty-eighth session of the Commission. The aspects discussed included mainly the identification of possible case studies on small-scale fisheries covering a range of geographic and socioeconomic situations and relating to the five thematic sessions of the First Regional Symposium on Sustainable Small-Scale Fisheries in the Mediterranean and Black Sea.

Conclusions and recommendations of the Subcommittee on Marine Environment and Ecosystems (SCMEE)

42. In the absence of the SCMEE coordinator, Mr Federico Alvarez, due to unforeseen circumstances, Ms Pilar Hernández, from the GFCM Secretariat, presented the conclusions and recommendations of the subcommittee on the basis of documents GFCM:SAC16/2014/2 and GFCM:SAC16/2016/Inf.5. She highlighted the most relevant outcomes from intersessional activities, including: (i) the production of Practical Guidelines for Artificial Reefs in the Mediterranean and Black Sea; (ii) the elements for a Regional Management Plan for red coral (GFCM:SAC16/2014/4); and (iii) the revision of the current status of fisheries restricted areas and the harmonization of templates for the request of new protected areas throughout the different international organisations, within the framework of the Working Group on Marine Protected Areas (WGMPA).

43. The representative of Oceana, in relation to the outcomes of the WGMPA, highlighted that several infringement cases had been revealed within fisheries restricted areas (FRAs) and asked about the procedure to be followed in cases of non-compliance with the existing recommendations related to FRAs. She also underlined the difficulties met in obtaining the fisheries data requested in the revised template for the proposal of a new FRA and called for some flexibility in the related fields of the template. In this regard, she drew the attention of delegates on the need to make the required data available and encouraged countries to make proposals and declare new FRAs, as well as to support research programmes, particularly in areas far from the coast. She finally highlighted the importance

of organizing a second meeting of the WGMPA. The Executive Secretary recalled that issues related to compliance should be treated within the context of the GFCM Compliance Committee.

44. The Executive Secretary of the Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area (ACCOBAMS) informed the Committee about an action plan for the conservation of cetaceans in the Black Sea, as well as the launch of a project to assess and reduce by-catch of cetaceans, sea turtles, sea birds and other threatened species in the Mediterranean, to be funded by the MAVA Foundation and to be carried out in collaboration with GFCM and RAC/SPA. The representative of the Regional Activity Centre for Specially Protected Areas (RAC/SPA) stressed the importance of this project and highlighted that the objectives were in line with the Barcelona Convention regional action plans.

45. With regards to red coral, the Committee endorsed the conclusions of the workshop and the elements for a Regional Management Plan for red coral (RMP-RC) to be submitted for consideration of the Commission.

46. The Practical Guidelines for Artificial Reefs in the Mediterranean and Black Sea as provided in document GFCM:SAC16/2014/Inf.21 were endorsed by the SAC.

47. The Secretariat recalled the proposal of indicators to assess the good environmental status (GES) of commercially exploited fish and shellfish, developed within the framework of the United Nations Environment Programme/Mediterranean Action Plan (UNEP/MAP) ecosystem approach process (EcAP) and the MoU between GFCM and UNEP/MAP (full proposal included in GFCM:SAC16/2014/Inf.25). The Secretariat pointed out that some of the indicators included in the proposal were regularly assessed for the main stocks in the GFCM area within the WGSAs (e.g. catch, fishing mortality, spawning stock biomass), while other indicators were not commonly assessed in the GFCM context, and some of them required information that is available only in some areas and not regularly submitted to the GFCM (e.g. scientific surveys at sea).

48. In the ensuing discussion, participants agreed that those indicators not routinely assessed during the WGSAs, as well as the requirements to obtain them, should be further analysed by the SAC and its subcommittees and working groups, and that a special agenda item on this issue should be included in the relevant subcommittees during the next intersessional period. Also, some participants highlighted the potential overlapping/synergies with the targets and indicators included in the EU Maritime Strategy Framework Directive (MSFD). In this regard, the Secretariat informed that a close collaboration of UNEP-MAP and GFCM with the European Commission (EC) on this issue was ensured through the participation of the former two in relevant EC fora.

Conclusions and recommendations of the Subcommittee on Stock Assessment (SCSA)

49. Mr Francesco Colloca, SCSA coordinator, presented the conclusions of the subcommittee on the basis of documents GFCM:SAC16/2014/2 and GFCM:SAC16/2014/Inf.14. He noted that advice had been provided for a total of 39 stocks, of which 34 in the Mediterranean (25 for demersal species and 9 for small pelagic species), and 5 in the Black Sea (3 for demersal species and 2 for small pelagic species). For Mediterranean stocks, three demersal and two small pelagic stocks were considered in sustainable exploitation status, while the 29 other stocks (22 for demersal species and 7 for small pelagic species) were considered under some kind of threat – overexploitation, being overexploited or ecologically unbalanced. In the Black Sea, two stocks of small pelagic species were considered to be sustainably exploited, while the three demersal stocks assessed were considered either depleted, overexploited or in overexploitation.

50. The coordinator then summarized the conclusions and recommendations from SCSA, which included: i) a proposal for a framework providing guidance in the formulation of advice and recommendations in relation to stock status and reference points, as well as in the presentation of advice emanating from the stock assessment working groups; ii) guidelines to improve the assessment

models used in the stock assessment working groups; iii) a revision of reference points for small pelagic species, based on the analysis carried out by the SCSA Working Group on stock assessment Small Pelagic Species (WGSASP); and iv) technical comments on Recommendation GFCM/37/2013/1 on the management of small pelagic fisheries in the Adriatic Sea.

51. The Chairperson acknowledged the continuous increase in the number and coverage of assessments provided by SCSA and suggested that, for some demersal stocks, the advice could be provided on a multiannual basis in order to reduce and prioritize the number of stocks analyzed yearly. He also acknowledged the harmonization of the methodology (reference points, description of the state of stocks and management advice) used by SCSA and its working groups for the formulation of advice.

52. The Committee expressed concern on the fact that only seven stocks were being sustainably exploited and that the fishing mortality for some stocks was much higher than the target one. Also, the delegate of Tunisia highlighted the subregional unbalances in the basic information available and number of assessed stocks, with southern and eastern areas having a small number of assessments provided by SCSA.

53. The EU delegate presented an overview of ongoing work towards the assessment of the status of Mediterranean stocks based on maximum sustainable yield (MSY) criteria, which also pointed to the geographical unbalance in stock assessment information and showed that the advice for most species which were regularly assessed was generally consistent over time and that the results of the analysis were coherent with those presented to SAC. He also mentioned that the preliminary results were indicating that the amount of stocks in overfishing status had increased in the time series analysed, highlighting that these results had to be confirmed.

54. The Committee noted that the stability of advice provided for regularly assessed species was in line with the suggestion to reduce the number of stocks analysed yearly. This would allow dedicating more time to an in-depth analysis of data, assumptions and models used, in order to provide advice on a multiannual basis. The coordinator of SCSA also commented that the improvement in geographical coverage should be linked to a better data collection on those areas for which information on status of stocks was currently limited and that this could be facilitated by the new DCRF.

55. The representative of Oceana pointed out that the conclusions from SCSA indicated that more than 85 percent of the stocks assessed were overexploited, stressing that immediate action should be taken to improve the situation. In light of these considerations, she urged delegates to notify their respective authorities about the alarming status of the stocks. The Chairperson highlighted that a general reduction of fishing mortality was needed and delegates underlined that management plans should be implemented to ensure sustainable exploitation.

56. The delegates of Egypt and Turkey discussed on how management advice for the lessepsian species *Saurida undosquamis* in GSAs 24 and 26 should be provided. The delegate of Egypt mentioned that the species had been present in the area for a long time, becoming the target of an important local fishery, and should therefore not continue to be considered as an invasive species. The delegate of Turkey mentioned that, since *Saurida undosquamis* was a piscivorous fish, the current management advice to reduce fishing mortality on this species in GSA 26 should consider the prey/predator balance and the level of predation mortality of other ecologically and commercially important species. In light of this discussion, SAC suggested that SCMEE and SCSA further investigate the role of this species in the area and how to best provide advice in this respect.

57. The Committee discussed on several aspects that should be incorporated in management plans, including fishing gear selectivity, VMS data, by-catch and the use of temporal and spatial closures as management measures. Also, the importance of factoring the views of professional fishers into the development of management plans was highlighted. The Committee stressed the importance

that the technical parts of GFCM management plans be discussed and adopted by SAC at its annual session.

58. For the case of anchovy in GSA17, the Committee extensively discussed about the assessment models, assumptions and input data used for this stock during the 2014 session of WGSASP and about the related comments made by SCSA. In this regard, the Committee noted in particular that more than one assessment model had been used, resulting in different historical perspectives on stock biomass and preventing WGSASP to provide updated reference points. Also, the Committee highlighted that there was a mistake in the reference points included in Recommendation GFCM/37/2013/1. In consideration of the above, the SAC invited the Commission to consider the possibility of revising the relevant technical elements in Recommendation GFCM/37/2013/1 taking into account the conclusions of SAC.

59. In light of the above discussions, the Committee endorsed the stock status and the advice to reduce fishing mortality for the anchovy and sardine stocks in GSA 17 as provided by SCSA and reported in Table 1 of Appendix D. However, the SAC considered that the adjustment in fishing mortality as proposed by Recommendation GFCM/37/2013/1 and tabled in SCSA advice might not be adequate due to the issues raised in paragraph 58. For all other stocks assessed, the Committee endorsed the SCSA advice as included in Appendix D. In addition, the Committee endorsed the Proposal for a Framework for describing stock status and providing management advice in relation to reference points as included in Appendix F.

60. The SAC also endorsed the proposals of technical elements for management plans, as included in Appendix G, to be submitted for the consideration of the thirty-eighth session of the Commission, namely: i) small pelagics in the Alboran Sea; ii) mixed fisheries of hake and shrimp in the Strait of Sicily; iii) deepwater shrimp in the eastern Mediterranean; and iv) turbot in the Black Sea,.

61. In light of the recognized need to transpose SAC advice into concrete actions to reduce fishing pressure on the stocks, the Executive Secretary proposed that delegations pinpoint those stocks that called for urgent action and for which adequate management measures to improve the situation were identified, coordinate with other delegations, as relevant, and prepare proposals on management recommendations for the consideration of the Commission. The SAC welcomed this proposal and suggested that in some cases this could be facilitated through dedicated workshops and/or with the support of the Secretariat.

Conclusions and recommendations of the Working Group on the Black Sea (WGBS)

62. Mr Violin Raykov, vice-coordinator of the WGBS, summarised the main activities undertaken in the Black Sea during the intersessional period on the basis of documents GFCM:SAC16/2014/Inf.10, Inf.11, Inf.17 and GFCM:SAC16/2014/7. He informed the Committee that the management advice provided by the SGSABS and validated by the SCSA for the five stocks assessed in the Black Sea had also been reviewed by the WGBS, which had provided comments on the necessary follow-up.

63. He also indicated that the WGBS had identified a series of activities to be carried out in collaboration with ACCOBAMS and the BSC, within the remit of the MoUs in place, and endorsed *the Elements for the management of turbot fisheries in the Black Sea.*

64. He emphasized that, in light of the assumed level of IUU catches for Black Sea stocks, the WGBS recommended to: i) improve the monitoring of the fisheries with the aim to reduce the level of unreported catches; ii) reduce IUU fishing as a fundamental step to achieve the reduction of fishing mortality advised for stocks such as turbot; and iii) incorporate estimates of IUU in the assessment of the status of stocks.

65. The Committee acknowledged the work performed by the WGBS and commended the substantial progress made in the Black Sea in the field of stock assessment and management plans. It also welcomed the continued cooperation within the framework of the MoU with the BSC. The involvement of both Members and non-Members in these activities was praised and the WGBS was encouraged to pursue its coordination efforts.

REVIEW OF THE SAC PRELIMINARY WORK PLAN FOR 2014–2015

66. The Secretariat introduced the work plan of the four SAC subcommittees and the WGBS on the basis of document GFCM:SAC16/2014/2 and related reports (documents GFCM:SAC16/2014/Inf.5 to Inf.10), also taking into consideration the suggestions put forth by the delegations during the discussions held at the session. The following activities for each subcommittee were agreed by SAC:

Subcommittee on Statistics and Information (SCSI)

- Carry out an assessment at national level in each GFCM Member for the improvement of data collection on small-scale fisheries;
- Organize a regional meeting to implement the DCRF within the FWP and in collaboration with the FAO regional projects.

Subcommittee on Economic and Social Sciences (SCESS)

- Develop a common methodology to carry out the collection of socioeconomic data for vessels without license;
- Convene the Second Regional Symposium on Sustainable Small-Scale Fisheries in the Mediterranean and the Black Sea in connection with the proposed regional programme on small-scale fisheries, in 2015 or 2016.

Subcommittee on Marine Environment and Ecosystems (SCMEE)

- Organize a FWP Workshop on Elasmobranchs in the Mediterranean and the Black Sea (terms of reference provided in Appendix E);
- On the reduction of by-catch of vulnerable species, within the framework of activities undertaken by GFCM, RAC/SPA, ACCOBAMS and some countries:
    - Produce informative material and leaflets on good practices to reduce the fishing mortality of sea turtles to be available for download on the GFCM website (taking into account the existing material);
    - Collate existing information on technical tools and management measures to reduce by-catch of seabirds and monk seals (taking into account the existing material).
- Carry out the following actions in view of future WGMPA meetings:
    - Compile a review of existing national areas subject to area-based fisheries management measures under the provisions of national legislation (e.g. seasonal closures, gear restrictions);
    - Explore the possibility of assigning IUCN protected areas management categories to GFCM FRAs and to the existing national areas subject to area-based fisheries management measures.
    - Within the GFCM–UNEP/MAP MoU and in collaboration with RAC/SPA envisage the possibility of carrying out:
        - A pilot study to test new joint designations of marine protected areas by more than one institution;

- A study on deep sea habitats and vulnerable marine ecosystems (VME) with the aim of assessing the feasibility of protecting areas shallower than 1 000 m and the related fisheries implications.

Subcommittee on Stock Assessment (SCSA)

- Incorporate in the next agenda of the stock assessment expert groups (i.e. WGSAs and SGSABS) a specific session to discuss the advice on the status of stocks included in Recommendation GFCM/37/2013/1;
- Regularly update the SAC glossary with the models used in the stock assessment expert groups.

Working Group on the Black Sea

- Perform a comparative analysis of stock assessment methods for the list of priority stocks identified;
- Develop elements for a management plan on turbot in the Black Sea, following the agreed Proposed minimum structure, criteria and measures for multiannual management plans for turbot fisheries in the Black Sea (document GFCM:SAC16/2014/7).

67. The Committee agreed on the list of meetings for 2014–2015 as provided below, subdividing the activities as follows in order to facilitate prioritization by the Commission: i) regular meetings of the SAC and its subcommittees and working groups; ii) meetings to be held within the FWP (already scheduled and for which extra-budgetary funds are identified); and iii) newly proposed meetings. In relation to activities on small-scale fisheries, the Secretariat specified that funds for the development of a concept note were already secured whereas further discussions on the launch of a regional programme on small-scale fisheries and the organization of the second Symposium were ongoing with the concerned stakeholders (i.e. FAO Fisheries Department, FAO regional projects, CIHEAM, MedPAN, WWF – partners of the first Symposium) and donors.

SAC meetings	Place/Date
SCSA Working Groups on stock assessment of Demersal and Small Pelagic Species (WGSAD and WGSASP), including a session on the assessment of data limited stocks in the Mediterranean and Black Sea	Rome, TBC October – November 2014
Meeting of the Subregional Group on Stock Assessment in the Black Sea (SGSABS) (possibly together with BSC Advisory Group on Fisheries)	TBD October – December 2014
Sessions of the SAC subcommittees (SCSI, SCESS, SCMEE, SCSA), including a session on fishing technologies	Rome, TBC October – November 2014
Coordination meeting of the subcommittees (CMSC)	TBD
Fourth meeting of the WGBS	Georgia, Early 2015
Seventeenth session of the Scientific Advisory Committee (SAC)	Rome, TBC March 2015

FWP meetings	Place/Date
Workshop on Black Sea scientific surveys at sea: harmonization of survey methodologies and analysis of data	TBD 2014/2015
Workshop on the implementation of the DCRF in the Mediterranean and Black Sea, including VMS data and common methodology for the collection and analysis of socioeconomic data	TBD 2014/2015
Follow-up workshop on the implementation of the IUU roadmap	TBD 2014/2015
Follow-up workshop for the implementation of management measures in selected case studies in the Mediterranean and the Black Sea	TBD 2014/2015
Workshop on the conservation of elasmobranchs	Sète, France 2014
MedSuit project inception meeting	Italy, 2014
Second Regional Symposium on Sustainable Small-Scale Fisheries in the Mediterranean and the Black Sea	Algeria 2015/2016

Newly proposed meetings	Place/Date
EIFAAC/GFCM/ICES Working Group on Eels (WGEEL)	Tunisia November 2014
Second meeting of the Working group on Marine Protected Areas (WGMPA) (possibly back-to-back with the RAC/SPA meeting on SPAMIs)	Tunisia June 2015

68. The SAC took note of the offer made by GFCM Members to host selected meetings, subject to confirmation by their relevant competent authorities. It was recalled that the implementation of activities would be subject to the availability of funds.

69. The representatives of ACCOBAMS, Oceana, UNEP-MAP, RAC/SPA, and WWF proposed terms of reference for the second meeting of the WGMPA (included in Appendix E). In relation to the potential venue and dates, UNEP-MAP and RAC/SPA commented that a meeting for the assessment of SPAMIs was already planned for June 2015 in Tunisia and that the WGMPA could be held back-to-back.

70. In order to facilitate the review by the Commission at its thirty-eighth session, for endorsement and allocation of related budgetary funds, SAC urged the concerned subcommittee coordinators and experts to provide terms of reference for all proposed activities.

ELECTION OF THE SAC BUREAU

71. All delegations paid special tribute to Mr Henri Farrugio (France) for his continuous efforts as Chairperson and for his dedication to the work of the SAC over the six years of his mandate, as well as to Mr Othman Jarboui (Tunisia) and Mr Atig Huni (Libya), first and second Vice-Chairperson respectively, expressing deep gratitude for the outstanding commitments shown during their mandate.

72. The Executive Secretary referred to Articles 7 and 8 of the GFCM Rules of Procedures related to the election and functions of the Bureau. On the basis on the information provided, the Committee unanimously elected Mr Othman Jarboui (Tunisia) as SAC Chairperson as well as Mr Ali Cemal Gucu (Turkey) and Ms Capucine Mellon (France) as first and second Vice-Chairperson, respectively.

73. The Secretariat was requested to send a letter to the countries of origin of the newly elected members of the Bureau in order to invite the relevant authorities to facilitate, as much as possible, the work of the Chairperson and Vice-Chairpersons as well as that of the SAC subcommittee and working groups coordinators.

ANY OTHER MATTER

74. The Committee identified some issues affecting the proper functioning of SAC and its subcommittees and working groups, namely: i) a low attendance at technical meetings, ii) the unclear definition of the respective roles of the SAC and its subcommittees and working groups, iii) the need for a stronger involvement of the coordinators and the Bureau in the activities of SAC; and iv) the need to enhance communication among SAC Members, including at the national level.

75. In relation to the issue of low participation in technical meetings, the Committee was reminded of the responsibility for the Contracting Parties to ensure the involvement of their delegates and national experts in the work of the SAC and its subcommittees and working groups. It was also underlined that, in the light of the current circumstances prevailing in the region, a mechanism to financially support attendance would be beneficial at the GFCM level; the need to enhance the role of the FAO regional projects in this regard was also raised.

76. The Committee advised – in reply to the need of defining the roles of SAC and its subcommittees and working groups – that clear terms of reference be revised and regularly updated, taking into consideration the ongoing modernization of the GFCM and the related discussions on the amendment of its legal and institutional framework.

77. In connection with the need to enhance communication between the Members and the Secretariat and to ensure a proper coordination at the national level, the Committee favored the option of scheduling videoconferences with focal points or among the Members of the Bureau. It also noted the SharePoint facilities being developed by the Secretariat would allow setting up dedicated GFCM e-mail accounts that would be ready to use in the near future would make interactive work possible.

78. The necessity of entrusting SAC focal points with a clear mandate was raised and the Committee agreed to draft terms of reference to be reviewed at the next session of the SAC. The focal points would be requested, *inter alia*, to submit to the Bureau and the Secretariat quarterly reports on progress and/or activities of relevance to SAC at the national level. The Committee suggested foreseeing the possibility to send the main SAC documentation to focal points via regular mail ahead of the sessions, upon agreement of the Commission on the related budgetary implications. Finally, the Committee urged delegations to submit ahead of the thirty-eighth session of the Commission an updated list of national focal points for the SAC and its subcommittees, on the basis of the template that would be circulated by the Secretariat.

79. Lastly, the Committee agreed to revitalize the Coordination meeting of the subcommittees (CMSC) and promote its original role aimed at facilitating and integrating the advice emanating from the SAC subcommittees and working groups. In this regard, it was decided to ensure that rapporteurs be designated at SAC meetings, besides the drafting work provided by the Secretariat.

80. The MedArtNet representative recalled the success of the First Regional Symposium on Sustainable Small-Scale Fisheries in the Mediterranean and the Black Sea and the historic signature of an agreement to establish a cooperation platform of fishers at the regional and sub-regional level. He thanked the GFCM for granting his association the observer status and referred to the invitation by

SAC to attend the session as an encouraging sign of the importance given by the GFCM to the involvement of fishers' organizations into the decision-making process.

81. The Committee extended its appreciation to the Maltese Government for hosting the session and for the great hospitality. In particular, it warmly thanked the Ministry for Sustainable Development, the Environment and Climate Change for the dedication and the excellent collaboration that made possible the organization and the success of the meeting. The exceptional working conditions kindly offered by Malta were highly appreciated by all delegates.

82. The Chairperson and the delegates congratulated the GFCM Secretariat for the excellent work done in the preparation and organization of the SAC as well as during the intersessional period.

DATE AND VENUE OF THE NEXT SESSION

83. The Committee agreed that a decision on the dates and venue of the next session of SAC would be taken at the thirty-eighth session of the Commission.

ADOPTION OF THE REPORT

84. The report, including its appendices, was adopted on Thursday 20th March 2014.

OUVERTURE ET ORGANISATION DE LA SESSION

1. Le Comité scientifique consultatif (CSC) de la Commission générale des pêches pour la Méditerranée (CGPM) a tenu sa seizième session à Saint-Julien (Malte) du 17 au 20 mars 2014. Ont participé à la session des délégués de 18 Parties contractantes, de sept observateurs ainsi que les représentants des projets régionaux de la FAO et du Secrétariat de la CGPM. La liste des participants fait l'objet de l'Annexe B.

2. M. Leo Brincat, Ministre du développement durable, de l'environnement et du changement climatique, a souhaité la bienvenue aux participants et déclaré que Malte était fière d'organiser la réunion du CSC après la réussite du premier Symposium régional sur la pêche artisanale durable en Méditerranée et dans la mer Noire, tenu également à Saint-Julien en novembre 2013. Il a évoqué le rôle confié à la CGPM en matière de gestion des pêches et insisté sur la nécessité d'un effort collectif de la part de tous les membres pour parvenir à une exploitation durable des ressources et garantir des règles du jeu équitables pour toutes les parties concernées.

3. M. Roderick Galdes, Secrétaire parlementaire chargé de l'agriculture, de la pêche et des droits des animaux, a lui aussi souhaité la bienvenue aux participants et salué les efforts remarquables du CSC et du Secrétariat de la CGPM, en particulier pour ce qui concerne l'élaboration du Cadre de référence pour la collecte des données de la CGPM (CRCD) et les activités menées en vue d'établir des plans de gestion commune des ressources halieutiques. À ce sujet, il a mentionné les problèmes afférents aux stocks partagés par différentes flottes et souligné l'importance de la collaboration entre les pays voisins, tout en saluant le soutien des projets régionaux de la FAO dans ce domaine.

4. M. Abdellah Srour, Secrétaire exécutif de la CGPM, a tenu à remercier en son nom et au nom de M. Stefano Cataudella, Président de la CGPM, le Gouvernement maltais pour son aimable hospitalité et l'excellente organisation de la réunion. Il a souligné la qualité de la participation et des contributions apportées pendant la période intersessions, qui ont permis d'améliorer les évaluations de stocks et la collecte de données, d'asseoir davantage les prises de décisions sur des avis scientifiques et de faire une plus grande place aux plans de gestion pluriannuels. Cependant, d'autres mesures devront être prises pour moderniser la CGPM, comme le recommande l'examen des performances. Saluant avec enthousiasme la contribution de la FAO et de ses projets régionaux, il a déclaré qu'il souhaitait ardemment que cette collaboration soit renouvelée.

ADOPTION DE L'ORDRE DU JOUR

5. Après avoir présenté les participants et les observateurs, M. Henri Farrugio, Président du CSC, a donné la parole au Secrétariat de la CGPM, qui a informé les participants des modalités d'organisation de la session.

6. L'ordre du jour a été adopté avec de petites modifications et figure à l'Annexe A. On trouvera la liste des documents à l'Annexe C.

ACTIVITÉS INTERSESSIONS

Examen des recommandations formulées par la CGPM à sa trente-septième session concernant la gestion des pêches

7. Le Secrétaire exécutif de la CGPM a rappelé les principales décisions adoptées à la trente-septième session de la Commission, à savoir: i) Résolution CGPM/37/2013/1 relative à la gestion des pêches par zone, notamment grâce à la création de zones de pêche réglementée dans la zone de compétence de la CGPM et à la coordination avec des initiatives du Plan d'action pour la Méditerranée du Programme des Nations Unies pour l'environnement (PNUE-PAM) concernant la création d'aires spécialement protégées d'intérêt méditerranéen (ASPIM); ii) Résolution CGPM/37/2013/2 concernant la gestion de la capacité de pêche dans la zone de compétence de la

CGPM ; iii) Recommandation CGPM/37/2013/1 relative à un plan de gestion pluriannuel des pêches pour les stocks de petits pélagiques dans la sous-région géographique 17 de la CGPM (Adriatique Nord) et relative à des mesures de conservation transitoires pour la pêche concernant les stocks de petits pélagiques dans la sous-région géographique 18 (Adriatique Sud) ; et iv) Recommandation CGPM/37/2013/2 relative à la définition d'un ensemble de normes minimales pour la pêche du turbot au filet maillant de fond et pour la conservation des cétacés en mer Noire.

8. Le Président a souligné que les recommandations adoptées nécessitaient souvent un suivi de la part du CSC afin d'analyser les indicateurs ou de fournir d'autres contributions scientifiques. C'est pourquoi il a invité instamment les pays concernés à veiller à ce que les données nécessaires soient bien transmises afin que le CSC puisse s'acquitter des tâches que la Commission lui confie, faute de quoi le CSC se verrait obligé d'informer la Commission d'éventuelles contraintes s'opposant à l'exercice de cette tâche.

Vue d'ensemble des réalisations du Comité scientifique consultatif entre les sessions

9. En s'appuyant sur le document GFCM:SAC16/2014/2, le Président a présenté les activités menées par le CSC entre les sessions. Il a informé les délégués que 15 réunions avaient été organisées, notamment celles des quatre sous-comités et du premier Symposium régional sur la pêche artisanale durable en Méditerranée et dans la mer Noire, outre des ateliers du Programme-cadre sur la pêche illicite, non déclarée et non réglementée (INDNR) et sur les plans de gestion des pêches.

10. Le Président a commencé par informer le CSC des activités du Sous-comité des statistiques et de l'information (SCSI), en soulignant le travail effectué en rapport avec l'analyse du projet de Cadre de référence pour la collecte des données qui doit servir de repère pour la collecte et la transmission de données au niveau sous-régional. Il a examiné la situation des membres au regard de l'application des mesures en matière de communication des données et des informations, notamment en ce qui concerne les registres des navires (données sur les flottes) et la Tâche 1.

11. Le Président a ensuite informé le CSC que le Sous-comité des sciences économiques et sociales (SCSES) avait accordé une attention particulière à la détermination d'une méthode commune d'analyse socioéconomique et proposé des variables et des indicateurs socioéconomiques à insérer dans le nouveau Cadre de référence pour la collecte des données de la CGPM.

12. En ce qui concerne le travail effectué par le Sous-comité de l'environnement et des écosystèmes marins (SCEEM), qui s'est penché sur des questions spécifiques dans le cadre de deux ateliers techniques et d'un groupe de travail (sur le corail rouge, les récifs artificiels et les aires marines protégées, respectivement), il a présenté en particulier les objectifs opérationnels figurant dans le projet de Plan de gestion du corail rouge et le projet de Directives pratiques pour les récifs artificiels en Méditerranée et en mer Noire.

13. Le Président a signalé que le Sous-comité de l'évaluation des stocks (SCES) avait émis des avis pour 39 évaluations, dont 34 en Méditerranée (25 relatifs aux espèces démersales et neuf aux espèces de petits pélagiques), et cinq dans la mer Noire (trois pour les espèces démersales et deux pour les espèces de petits pélagiques). Il s'est inquiété de l'état des stocks de poissons démersaux, compte tenu de la surexploitation constatée pour 21 d'entre eux. En ce qui concerne les stocks de petits pélagiques, il a rappelé les résultats des 11 évaluations de stocks effectuées et a exprimé les mêmes préoccupations au regard de la situation de surpêche de ces stocks.

14. Enfin, il a présenté les principales activités du Groupe de travail sur la mer Noire. Il a rappelé que ce dernier avait émis des avis de gestion pour les cinq stocks évalués au cours de la première réunion du Groupe sous-régional de l'évaluation des stocks pour la mer Noire, avait approuvé des éléments pour la gestion de la pêche au turbot en mer Noire, et décidé des activités à mener concernant la mise en œuvre du protocole d'accord existant avec la Commission de la mer Noire.

15. Lors des débats qui ont suivi, le délégué tunisien a proposé de créer un groupe de travail sur les technologies de la pêche opérant sous les auspices du CSC. La plupart des participants ont appuyé cette proposition mais ont souligné la nécessité de mieux définir le mandat de ce groupe et d'établir des priorités, compte tenu du large éventail de questions pouvant relever de l'expression générale «technologies de la pêche». Les difficultés inhérentes aux pêches plurispécifiques ainsi que le problème des rejets et leur réduction ont été mentionnés comme des thèmes prioritaires auxquels ce groupe devait travailler.

16. Le Comité est convenu d'insérer dans le plan de travail du CSC la proposition relative à la tenue d'une première réunion de l'atelier sur les technologies de la pêche en concomitance avec le SCEEM. Les représentants des projets régionaux de la FAO ont fait savoir qu'ils travaillaient déjà sur cette question et ont offert leur soutien technique à cette activité.

Activités de recherche menées par des États membres

17. Le Secrétariat de la CGPM a présenté une synthèse des informations figurant dans les 17 rapports nationaux reçus (Annexe I a) et b)) donnant une vue d'ensemble des changements relatifs à la taille et à la production des flottes des membres de la CGPM et mettant en évidence : i) le nombre croissant d'évaluations des stocks nationaux réalisées par des membres de la CGPM qui, malheureusement, ne les communiquaient pas systématiquement aux groupes de travail de la Commission chargés de ces questions; ii) une progression remarquable du nombre d'études socioéconomiques ainsi que du nombre d'enquêtes sur l'effort de pêche et de prospections biologiques avec, également, l'appui des projets régionaux de la FAO; iii) le manque d'informations sur les prises accidentelles de requins, de raies et de cétacés, informations qui auraient dû être transmises à la Commission en application de ses recommandations en la matière.

18. Après cette présentation, le délégué de la Croatie a informé les participants que l'augmentation de la taille de la flotte croate n'était pas due à l'ajout de nouveaux navires de pêche, mais à la prise en compte des bateaux de pêche artisanale dans l'inventaire, rendue possible par les nouveaux systèmes de collecte de données, plus performants. De même, la réduction observée de la flotte maltaise était due à un changement de méthode de collecte de données, étant entendu que les bateaux de plaisance n'avaient pas été pris en compte, contrairement à l'année précédente, où l'on avait communiqué, sur la flotte, des données plus complètes couvrant tous les secteurs. Le délégué de l'Algérie a expliqué que, malgré la volonté des autorités de son pays de geler la flotte à titre de mesure de gestion de précaution, une légère augmentation du nombre de bateaux de pêche petits métiers avait été autorisée en raison des contraintes socioéconomiques, et qu'elle avait entraîné une progression du volume total des prises déclarées.

19. L'élaboration par le Secrétariat d'un formulaire en ligne destiné à faciliter la transmission des rapports nationaux a été saluée comme une bonne pratique potentielle. Grâce à des fonctionnalités améliorées, cela permettrait de mieux préciser la nature des projets de recherche en place. Les participants sont convenus qu'à titre d'essai pilote, les rapports nationaux pourraient être transmis l'année suivante à l'aide de ce nouvel outil en ligne, et ce à titre volontaire. Cet outil permettrait en outre au Secrétariat de stocker des données selon un processus plus normalisé et d'effectuer des analyses comparatives entre les sous-régions, les pays et sur plusieurs années.

Principales activités et initiatives menées dans le cadre des projets régionaux de la FAO

20. Les activités réalisées dans le cadre des projets régionaux de la FAO (AdriaMed, CopeMed II, ArtFiMed, EastMed, MedSudMed, MedFisis, MedLME) durant la période intersessions ont été présentées, notamment les activités de recherche, les programmes de formation, les ateliers et les groupes de travail, ainsi que l'assistance technique apportée aux pays et aux activités du CSC. Il a été rappelé aux délégués qu'ils trouveraient des informations détaillées sur les activités et les produits des projets dans le rapport annuel des comités de coordination des différents projets et dans le document GFCM:SAC16/2014/Inf.22.

21. Le CSC a salué le travail considérable entrepris dans le cadre des projets régionaux de la FAO ainsi que la valeur de leurs contributions scientifiques, et a félicité chacun pour sa participation au renforcement de la coopération avec la CGPM. Les délégués ont également souligné l'importance des projets de la FAO compte tenu de l'appui que ceux-ci apportent aux pays et à la CGPM.

22. Les délégués de l'Albanie et du Monténégro, en particulier, ont rappelé le rôle stratégique joué par AdriaMed, seul projet à regrouper tous les pays de l'Adriatique dans un cadre de coopération mis à la disposition des institutions nationales compétentes. Ils ont évoqué l'importance d'AdriaMed pour le développement futur des pêches dans les pays concernés et dans la mer Adriatique de manière générale.

23. Les délégués de l'Égypte et du Liban ont salué le rôle d'EastMed dans leur sous-région, en insistant sur le fait que sans cet appui, plusieurs activités relatives à la collecte et au traitement de données ne pourraient pas être mises en œuvre dans leurs pays respectifs.

24. Le délégué de la Tunisie a mis en avant le rôle essentiel du projet MedSudMed, qui était entré dans une nouvelle phase de coopération, avec un partage et une analyse conjointe des données et un appui à la formulation de la gestion des pêches dans la sous-région. Il a indiqué qu'il serait souhaitable de tirer parti des projets régionaux pour s'attaquer à des sujets tels que les technologies de pêche. À cet égard, il a proposé de constituer un catalogue des engins de pêche utilisés en Méditerranée à partir des documents et des informations publiés au niveau national (Tunisie, Algérie, etc.).

25. Le Comité a rappelé le rôle important joué depuis longtemps par CopeMed (phases I et II), premier projet régional en Méditerranée à avoir lancé les activités de coopération actuellement menées dans la zone de la CGPM. Il a été rappelé que la future phase des projets régionaux serait examinée au cours de la trente-huitième session de la Commission, ce qui donnerait l'occasion aux pays méditerranéens de s'entendre sur un nouveau cadre de coopération entre la CGPM et les projets régionaux de la FAO.

EXAMEN DES ACTIVITÉS DU GROUPE SPÉCIAL ET DU PROGRAMME-CADRE QUI INTÉRESSENT LE COMITÉ SCIENTIFIQUE CONSULTATIF

Examen de questions intéressant le Comité scientifique consultatif traitées dans le cadre du processus d'amendement des textes de la Commission générale des pêches pour la Méditerranée

26. Le Secrétaire exécutif a rappelé le travail qui avait été accompli par le Groupe spécial pour la modernisation du cadre juridique de la CGPM ainsi que les activités connexes menées à bien grâce au programme-cadre. Il a souligné en particulier l'approche ascendante et participative que la CGPM avait adoptée pour que tous les acteurs concernés puissent donner leur avis, contribuant ainsi à l'élaboration d'une série de textes concernant la modification de l'Accord portant création de la CGPM et du règlement y afférent. Dans les textes proposés, plusieurs dispositions spécifiques pourraient avoir, à l'avenir, une incidence sur le Comité scientifique consultatif (CSC), entre autres: i) la promotion de l'approche sous-régionale; ii) la mise en place du mécanisme d'examen pour la prise de décision; iii) l'utilisation éventuelle du glossaire du CSC, dont le contenu exigerait d'être révisé périodiquement. Le Secrétaire exécutif a rappelé que le processus de consultation se poursuivrait lors de la session extraordinaire de la CGPM, qui devrait avoir lieu en avril 2014.

Examen des activités menées dans le cadre de la phase préliminaire du Programme-cadre et présentation des activités en cours du Programme-cadre

27. M. Miguel Bernal, du Secrétariat de la CGPM, a présenté les réalisations du Programme-cadre en 2013 et 2014, notamment: i) la détermination d'éléments pour la gestion de certaines pêches en Méditerranée et en mer Noire, émanant d'ateliers sur la gestion des pêches organisés au niveau sous-régional; ii) la feuille de route sur la pêche INDNR, qui a été élaborée pour la Méditerranée en s'inspirant de celle qui avait été validée durant l'atelier qui s'est tenu dans la région de la mer Noire

durant la période intersessions précédente, ainsi que les actions de suivi prévues dans ce domaine; iii) la mise au point définitive du projet de Cadre de référence pour la collecte de données et exigences connexes en matière de données à fournir; iv) les principales conclusions du premier Symposium sur la pêche artisanale durable et les mesures prévues pour leur mise en œuvre; v) les indicateurs et cibles proposés pour l'objectif écologique n° 3 du PNUE-PAM relatif aux espèces de poissons exploitées à des fins commerciales ; et iv) les activités de coopération en cours avec d'autres organisations (ACCOBAMS, CIEM, CIHEAM, etc.). Le CSC a été invité à donner un retour d'informations sur le contenu technique des activités, notamment en ce qui concerne leur complémentarité avec le travail effectué et les possibilités qui s'offrent dans ce domaine.

28. Le CSC a noté les nombreuses réalisations et s'est félicité des résultats des activités entreprises dans le contexte du Programme-cadre, ainsi que du travail accompli par le Secrétariat. Au sujet, en particulier, de la pêche artisanale, le CSC s'est félicité de l'intérêt suscité par le Symposium et ses activités de suivi, ainsi que de leur impact.

29. Le délégué du Maroc a indiqué que les données recueillies au moyen du Cadre de référence devraient être analysées en premier lieu par le Secrétariat avant d'être mises à la disposition du CSC et de ses sous-comités et groupes de travail, qui les utiliseront comme base pour donner des avis. Il a ajouté que les ressources financières nécessaires pour respecter les exigences du Cadre de référence devraient être identifiées.

30. Lors des débats qui ont suivi, le CSC s'est interrogé sur les conséquences potentielles des différentes activités pour les membres et s'est montré favorable à une hiérarchisation des activités de suivi en indiquant qu'il était nécessaire que de nouvelles informations sur les fonds disponibles soient fournies.

31. Le Secrétariat a précisé que pour la plupart des activités qui pourraient être entreprises dans le contexte du Programme-cadre, des fonds étaient déjà disponibles grâce aux projets en cours, et expliqué que le CSC était invité à fournir, le cas échéant, ses contributions techniques, et à coopérer, par l'intermédiaire d'institutions nationales, à la bonne mise en œuvre de ces activités.

32. Le Comité a été informé au sujet du projet de coopération pour l'utilisation durable des ressources biologiques marines en Méditerranée (MedSuit). Ce projet, financé par le Ministère italien de l'environnement par le biais du Programme-cadre de la CGPM, a récemment été créé afin: i) d'harmoniser les critères de définition d'objectifs environnementaux ii) de déterminer l'état des populations marines exploitées et iii) de définir les exigences en matière de suivi de sorte que puisse être conservé un bon niveau du point de vue environnemental. Le Comité a invité instamment les délégations à participer à la réunion de lancement, qui devrait avoir lieu en Italie dans le courant du deuxième semestre de 2014 et de veiller à cet effet à la coordination entre les administrations nationales concernées afin de faire en sorte que des spécialistes des questions marines stratégiques prennent part aux activités conduites dans le cadre de ce projet.

FORMULATION D'AVIS DANS LE DOMAINE DE LA GESTION ET DE LA RECHERCHE HALIEUTIQUES

Conclusions et recommandations du Sous-comité des statistiques et de l'information (SCSI)

33. M. Alaa El-Haweet, coordonnateur du SCSI, a présenté les conclusions et recommandations du Sous-comité en s'appuyant sur les documents GFCM:SAC16/2014/2 et GFCM:SAC16/2014/Inf.6. Il a indiqué que le SCSI avait examiné la proposition de Cadre de référence pour la collecte des données de la CGPM et avait apporté des contributions techniques, notamment l'ajout du numéro OMI comme champ obligatoire dans les données relatives aux flottes, aux fins de compatibilité avec le Fichier mondial de la FAO. Il a ajouté que le SCSI avait également suggéré que soit organisée une réunion régionale afin de mettre en œuvre le Cadre de référence pour la collecte des données et avait insisté sur la nécessité i) de renforcer les processus nationaux de collecte et de transmission de

données (notamment en ce qui concerne la Tâche 1 et les registres des navires), ii) d'apporter une assistance aux pays concernés dans le cadre des programmes d'échantillonnage menés au niveau sous-régional et iii) d'améliorer la collecte de données sur la pêche artisanale.

34. Le coordonnateur a précisé en outre que le SCSI avait proposé d'établir un système de transmission des données nécessaires entre le registre des flottes de l'Union européenne et le Secrétariat de la CGPM, et de mettre au point une stratégie qui permettrait éventuellement d'exploiter les données acquises au moyen du système de surveillance des navires par satellite (SSN) pour évaluer les stocks et les populations de poissons. Pour finir, il a informé les participants que le SCSI apportait tout son soutien au travail entrepris par le Secrétariat de la CGPM en vue de développer des solutions informatiques exploitant la technologie du « nuage » (ou *cloud*) pour diffuser les données/informations, et a rappelé la nécessité d'évaluer les incidences, sur le plan technique, de l'harmonisation des décalages entre les limites utilisées dans le quadrillage statistique de la CGPM et certaines sous-régions géographiques.

35. Le délégué du Monténégro a fait observer, au sujet de la liste des espèces prioritaires figurant dans le Cadre de référence pour la collecte de données, que certaines des espèces figurant à l'Annexe A du Cadre de référence revêtaient peu d'importance pour certains pays. Le Secrétariat a confirmé que ce problème avait été résolu dans le projet final du Cadre de référence, lequel prévoyait des dérogations dans ces cas de figure.

36. Le délégué de la Tunisie a fait remarquer que les données du système de surveillance des navires par satellite (SSN) ne figuraient pas dans le Cadre de référence pour la collecte de données, alors qu'une recommandation formulée au sein de la CGPM prévoyait la mise en œuvre de ce système à compter de 2012 pour les navires de plus de 15 mètres. Les participants ont débattu de l'utilité des données du SSN pour appuyer la formulation d'avis et de leur future intégration dans le Cadre de référence, et le CSC a proposé d'organiser un atelier, éventuellement au sein du Programme-cadre de la CGPM, afin de déterminer la meilleure façon de recevoir, d'intégrer et d'analyser les données du SSN, grâce à des études de cas pilotes spécifiques sur le sujet.

37. À propos de la composante du Cadre de référence relative aux flottes et de la question soulevée par le délégué du Liban, le Secrétariat a expliqué que les informations sur l'obtention du numéro de l'Organisation maritime internationale (OMI) ne seraient rendues obligatoires que pour les navires de plus de 15 mètres.

38. La représentante d'Oceana a rappelé les suggestions formulées par le SCEEM sur l'importance de tenir compte des prises accidentelles d'espèces vulnérables dans le nouveau cadre de collecte de données. À cet égard, le Comité a été informé que cette question avait déjà été traitée lors de la mise à jour de la proposition de Cadre de référence pour la collecte de données.

39. Au terme du débat, le Comité a pris acte de l'importance d'établir un Cadre de référence pour la transmission des données à la CGPM, a approuvé le cadre de référence et convenu de le soumettre à la Commission afin qu'elle puisse l'examiner et, éventuellement, l'adopter à sa trente-huitième session.

Conclusions et recommandations du Sous-comité des sciences économiques et sociales (SCSES)

40. M. Scander Ben Salem, coordonnateur du SCSES, a présenté les recommandations du Sous-comité en s'appuyant sur les documents GFCM:SAC16/2014/2 et GFCM:SAC16/2014/Inf.7. Il a rappelé que, donnant suite à la recommandation du CSC, le SCSES avait axé ses travaux sur quelques questions choisies, à savoir: i) la conception d'une méthode commune pour réaliser les analyses socioéconomiques; ii) la révision des variables socioéconomiques incluses dans le Cadre de référence pour la collecte de données; iii) la nécessité de continuer à travailler sur la pêche artisanale (document GFCM:SAC16/2014/Inf.24), y compris en élaborant un programme régional; et iv) l'intégration d'études socioéconomiques dans la gestion des stocks à l'aide de la méthode commune proposée.

41. M. Davide Fezzardi, du Secrétariat de la CGPM, a rendu compte des progrès accomplis dans l'élaboration d'un programme régional sur la pêche artisanale. De brèves réunions parallèles à celles du CSC ont été organisées durant les deux premiers jours de la session du CSC et des éléments fondamentaux pour la réalisation de ce programme (figurant à l'Annexe H) ont été rédigés en coopération avec les délégations et seront consolidés dans une note conceptuelle en vue de la trente-huitième session de la Commission. Les points abordés concernant essentiellement la définition d'études de cas possibles sur la pêche artisanale, sélectionnées de façon à couvrir un éventail de situations géographiques et socioéconomiques et en rapport avec les cinq séances thématiques tenues à l'occasion du premier Symposium régional sur la pêche artisanale durable en Méditerranée et en mer Noire.

Conclusions et recommandations du Sous-comité de l'environnement et des écosystèmes marins (SCEEM)

42. En l'absence de M. Federico Alvarez, coordonnateur du SCEEM, due à des circonstances imprévues, Mme Pilar Hernández, du Secrétariat de la CGPM, a présenté les conclusions et les recommandations du Sous-comité en s'appuyant sur les documents GFCM:SAC16/2014/2 et GFCM:SAC16/2016/Inf.5. Elle a insisté sur les principaux aboutissements des activités menées par le SCEEM pendant la période intersessions, à savoir: i) l'élaboration de directives pratiques sur les récifs artificiels en Méditerranée et en mer Noire; ii) les éléments d'un plan de gestion régional du corail rouge (GFCM:SAC16/2014/4); et iii) l'examen de la situation actuelle des zones de pêche à accès réglementé et l'harmonisation des modèles utilisés par les différentes organisations internationales pour la présentation des demandes d'établissement de nouvelles aires protégées dans le cadre du Groupe de travail sur les aires marines protégées

43. Se référant aux résultats des travaux du Groupe de travail sur les aires marines protégées, la représentante d'Oceana a souligné que des cas d'infractions avaient été observés dans des zones de pêche à accès réglementé et a demandé quelle était la procédure à suivre en cas de non-application des recommandations en vigueur concernant les zones de pêche à accès réglementé. Elle a également insisté sur les difficultés rencontrées pour obtenir les données relatives aux pêches que demandait le modèle révisé pour les propositions de création de nouvelles zones de pêche à accès réglementé, et a demandé que soit appliquée une certaine souplesse dans les champs du modèles concernés. À cet égard, elle a attiré l'attention des délégués sur la nécessité de mettre les données requises à disposition et a invité les pays à avancer des propositions pour la déclaration de nouvelles zones de pêche à accès réglementé ainsi que pour l'appui à des programmes de recherche, en particulier pour ce qui est des zones au large des côtes. Enfin, elle a recommandé la tenue d'une seconde réunion du Groupe de travail. Le Secrétaire exécutif a rappelé que les questions relatives à l'application devaient être traitées dans le cadre du Comité d'application de la CGPM.

44. Le Secrétaire exécutif de l'Accord de Monaco sur la conservation des cétacés de la mer Noire, de la Méditerranée et de la zone Atlantique adjacente (ACCOBAMS) a donné au Comité des informations sur un plan d'action pour la conservation des cétacés en mer Noire, et l'a informé du lancement d'un nouveau projet pour l'évaluation et la réduction des prises accidentelles de cétacés, de tortues de mer, d'oiseaux marins et autres espèces menacées en Méditerranée, qui devrait être financé par la Fondation MAVA et mis en œuvre en collaboration avec la CGPM et le Centre d'activités régionales pour les aires spécialement protégées (CAR/ASP). Le représentant du CAR/ASP a insisté sur l'importance de ce projet, dont les objectifs étaient en harmonie avec les plans d'action régionaux de la Convention de Barcelone.

45. S'agissant du corail rouge, le Comité a fait siennes les conclusions de l'atelier et les éléments d'un plan de gestion régional pour le corail rouge, qui seraient présentés à la Commission, pour examen.

46. Le Comité a approuvé les directives pratiques sur les récifs artificiels en Méditerranée et en mer Noire, telles qu'elles figurent dans le document GFCM:SAC16/2014/Inf.21.

47. Le Secrétariat a rappelé les indicateurs proposés pour l'évaluation du bon état écologique des poissons, des mollusques et des crustacés faisant l'objet d'une exploitation commerciale, tels qu'élaborés dans le cadre du processus de l'approche écosystémique du processus Programme des Nations Unies pour l'environnement / Plan d'action pour la Méditerranée (PNUE/PAM) et du protocole d'accord signé en 2012 entre la CGPM et le PNUE/PAM (on trouvera le texte intégral de la proposition dans le document GFCM:SAC16/2014/Inf.25). Il a souligné que certains des indicateurs proposés pour les principaux stocks halieutiques exploités dans la zone de compétence de la CGPM faisaient l'objet d'évaluations régulières au sein du Groupe de travail sur l'évaluation des stocks (prises, mortalité par pêche, biomasse du stock reproducteur, par exemple), précisant que d'autres indicateurs n'étaient généralement pas évalués dans le cadre de la Commission, ou exigeaient, pour certains, des informations qui n'étaient disponibles que dans certaines zones et n'étaient pas régulièrement fournies à la Commission (les prospections scientifiques en mer, par exemple).

48. Au cours des débats qui ont suivi, les participants sont convenus que le CSC et ses sous-comités et groupes de travail devaient procéder à une analyse plus approfondie des indicateurs qui ne faisaient pas l'objet d'évaluations régulières au sein des Groupes de travail sur l'évaluation des stocks, ainsi que des informations permettant de les obtenir, et ont indiqué qu'un point spécialement consacré à cette question devait être inscrit à l'ordre du jour des réunions que les sous-comités concernés tiendraient durant la période intersessions suivante. Par ailleurs, un certain nombre de participants ont insisté sur les synergies potentielles et le chevauchement possible avec les objectifs et les indicateurs figurant dans la Directive-cadre «stratégie pour le milieu marin» de l'Union européenne. À cet égard, le Secrétariat a informé que la participation du PNUE-PAM et de la CGPM au sein des instances européennes compétentes permettait d'assurer une étroite collaboration avec la Commission européenne sur cette question.

Conclusions et recommandations du Sous-comité sur l'évaluation de stocks (SCES)

49. M. Francesco Colloca, coordonnateur du SCES, a présenté les conclusions du Sous-comité en s'appuyant sur les documents GFCM:SAC16/2014/2 et GFCM:SAC16/2014/Inf.14. Il a noté que des avis ont été fournis pour 39 stocks au total, dont 34 en Méditerranée (25 pour les espèces démersales et 9 pour les espèces de petits pélagiques), et cinq dans la mer Noire (3 pour les espèces démersales et 2 pour les espèces de petits pélagiques). Pour ce qui concerne les stocks de la Méditerranée, on considère que trois stocks d'espèces démersales et deux stocks de petits pélagiques font l'objet d'une exploitation durable, tandis que 29 autres stocks (22 pour les espèces démersales et 7 pour les petits pélagiques) sont diversement menacés – surexploitation, étant soit surexploités, soit en déséquilibre écologique. Dans la mer Noire, on considère que deux stocks de petits pélagiques font l'objet d'une exploitation durable, tandis que les trois stocks d'espèces démersales évalués sont épuisés, surexploités ou en état de surexploitation.

50. Le coordonnateur a ensuite résumé les conclusions et les recommandations du SCES, qui comportent: i) une proposition de cadre donnant des conseils pour la formulation d'avis et de recommandations sur l'état des stocks et les points de référence, ainsi que sur la manière de présenter les avis émanant des groupes de travail sur l'évaluation des stocks; ii) des directives visant à améliorer les modèles d'évaluation utilisés dans les groupes de travail sur l'évaluation des stocks; iii) une révision des points de référence pour les espèces de petits pélagiques, sur la base de l'analyse effectuées par le Groupe de travail du SCES sur l'évaluation des stocks de petits pélagiques; et iv) des observations techniques au sujet de la Recommandation GFCM/37/2013/1 sur la gestion des pêches de petits pélagiques en mer Adriatique.

51. Le Président a pris acte de ce que le nombre et la couverture des évaluations présentées par le SCES ne cessaient de croître et suggéré, s'agissant de certains stocks d'espèces démersales, de fournir des avis sur une base pluriannuelle afin de réduire et de classer par ordre de priorité le nombre de stocks soumis à une évaluation annuelle. Il a aussi salué l'harmonisation de la méthodologie (points de référence, description de l'état des stocks et avis de gestion) utilisée par le SCES et ses groupes de travail associés pour formuler des avis.

52. Le Comité s'est déclaré préoccupé par le fait que seuls sept stocks étaient exploités de manière durable et que la mortalité par pêche pour certains stocks était beaucoup plus élevée que celle qui était fixée. Par ailleurs, le délégué tunisien a souligné les déséquilibres existant au niveau sous-régional en ce qui concerne les informations de base disponibles et le nombre de stocks évalués, comme en témoigne le nombre moins important d'évaluations fournies par le SCES pour les sous-régions du sud et de l'est.

53. Le délégué de l'UE a présenté un aperçu des activités menées actuellement en vue de l'évaluation des stocks de la Méditerranée en fonction des critères de production maximale équilibrée (PME). Il en ressort aussi qu'il existe un déséquilibre géographique en matière d'informations relatives à l'évaluation des stocks, que les avis relatifs à la plupart des espèces faisant l'objet d'évaluations régulières étaient en général cohérents au fil du temps, et que les résultats des analyses effectuées étaient en cohérence avec ceux présentés au CSC. Il a aussi indiqué que, d'après les premiers résultats, la quantité de stocks en état de surpêche avait augmenté dans les séries chronologiques analysées, tout en signalant qu'il s'agissait de résultats provisoires qui devaient être confirmés.

54. Le Comité a noté que la stabilité des avis fournis pour les espèces évaluées régulièrement allait dans le sens de la suggestion tendant à réduire le nombre de stocks faisant l'objet d'une analyse annuelle. Cela permettrait de consacrer plus de temps à l'analyse approfondie des données, des hypothèses et des modèles utilisés, afin de fournir des avis sur une base pluriannuelle. Le coordinateur du SCES a aussi fait observer qu'il fallait associer l'amélioration de la couverture géographique à celle de la collecte des données sur les sous-régions pour lesquelles les informations sur l'état des stocks sont actuellement réduites, ce que le nouveau Cadre de référence de la CGPM pour la collecte des données (CRCD) permettrait de faciliter.

55. La représentante d'Oceana a fait remarquer que, selon les conclusions du SCES, plus de 85 pour cent des stocks évalués étaient surexploités, et qu'il fallait donc prendre des mesures immédiates pour améliorer la situation. Au vu de ces observations, elle a demandé instamment aux délégués de communiquer à leurs autorités respectives l'état alarmant des stocks. Le Président a souligné qu'une réduction générale de la mortalité par pêche s'imposait et les délégués ont insisté sur le fait que des plans de gestion devaient être mis en œuvre afin de garantir une exploitation durable.

56. Les délégués égyptien et turc ont discuté de la manière dont il fallait fournir des avis de gestion sur *Saurida undosquamis* (espèce lessepsienne) dans les sous-régions géographiques 24 et 26. Le délégué égyptien a mentionné que l'espèce était présente dans la région depuis longtemps, qu'elle devenait la cible d'une importante pêche locale et qu'elle ne devait plus être considérée comme une espèce envahissante. Le délégué turc a indiqué que puisque *S. undosquamis* était un poisson piscivore, l'avis de gestion actuel préconisant de réduire la mortalité par pêche de cette espèce dans la sous-région géographique 26 devrait prendre en compte l'équilibre proie/prédateur ainsi que le niveau de mortalité par prédation d'autres espèces importantes sur le plan écologique et commercial. À la lumière de ce qui précède, le CSC a suggéré que le SCEEM et le SCES étudient plus à fond le rôle de cette espèce dans la région et la façon dont on pourrait fournir au mieux des avis à cet égard.

57. Le Comité a examiné plusieurs aspects qu'il conviendrait d'intégrer dans les plans de gestion, notamment la sélectivité des engins de pêche, les données obtenues au moyen du système de surveillance des navires par satellite, les prises accessoires et le recours à des fermetures spatiales et temporelles, en tant que mesures de gestion. Il a aussi été souligné qu'il était important de prendre en compte le point de vue des pêcheurs professionnels dans l'élaboration des plans de gestion. Le Comité a souligné qu'il était important que le CSC, à sa session annuelle, examine et adopte les aspects techniques des plans de gestion de la CGPM.

58. Dans le cas de l'anchois dans la sous-région géographique 17, le Comité a examiné de près les modèles d'évaluation, les hypothèses et les données utilisées pour ce stock durant la session de 2014 du Groupe de travail sur l'évaluation des stocks de petits pélagiques, ainsi que les observations

correspondantes du Sous-comité de l'évaluation des stocks. À cet égard, il a noté en particulier qu'on avait utilisé plus d'un modèle d'évaluation, ce qui avait abouti à plusieurs perspectives différentes concernant l'évolution de la biomasse du stock et avait empêché le Groupe de travail de proposer des points de référence actualisés. Le Comité a par ailleurs souligné qu'il y avait une erreur dans les points de référence visés dans la Recommandation CGPM/37/2013/1. Compte tenu de ce qui précède, le Comité a invité la Commission à envisager la possibilité de réviser les éléments techniques contenus dans la Recommandation CGPM/37/2013/1 en tenant compte des conclusions du CSC.

59. Au vu de l'examen ci-dessus, le Comité a approuvé l'évaluation de état des stocks et les avis préconisant de réduire la mortalité par pêche pour les stocks d'anchois et de sardines dans la sous-région géographique GSA 17 fournis par le Sous-comité de l'évaluation des stocks (SCES) tels qu'ils figurent au tableau 1 de l'Annexe D. Toutefois, le CSC a estimé que l'ajustement de la mortalité par pêche tel qu'il était proposé par la Recommandation CGPM/37/2013/1 et présenté dans l'avis du SCES pourrait ne pas être approprié, du fait des questions soulevées au paragraphe 58. Pour tous les autres stocks évalués, le Comité a fait sien les avis du SCES tel qu'ils figurent à l'Annexe D. En outre, il a appuyé la Proposition de cadre pour la description de l'état des stocks et la formulation d'avis de gestion en fonction des points de référence, présentée à l'Annexe F.

60. Le Comité a aussi fait siennes les propositions d'éléments techniques relatives aux plans de gestion énoncés à l'Annexe G, qui seront soumises à l'examen de la Commission à sa trente-huitième session, à savoir : i) petits pélagiques en mer d'Alboran; ii) populations mixtes de merlu et de crevettes dans le détroit de Sicile; iii) crevette rose du large en Méditerranée orientale; et iv) turbot en mer Noire.

61. Compte tenu de la nécessité reconnue de veiller à ce que les avis du Comité se traduisent par des actions concrètes pour réduire la pression de pêche sur les stocks, le Secrétaire exécutif a proposé que les délégations désignent les stocks pour lesquels il conviendrait d'agir d'urgence et pour lesquels des mesures de gestion propres à améliorer la situation ont été déterminées, qu'elles se mettent d'accord avec d'autres délégations selon qu'il conviendra, et qu'elles élaborent des projets de recommandation sur la gestion pour examen par la Commission. Le Comité s'est félicité de la proposition et a suggéré que dans certains cas celles-ci soient mises au point dans le cadre d'ateliers organisés à cette fin et/ou avec l'appui du Secrétariat.

Conclusions et recommandations du Groupe de travail ad hoc sur la mer Noire

62. M. Violin Raykov, vice-coordonnateur du Groupe de travail ad hoc sur la mer Noire, a fait un tour d'horizon des principales activités relatives à la mer Noire qui ont été menées pendant la période intersessions. Ces activités font l'objet des documents GFCM:SAC16/2014/Inf.10, Inf.11, Inf.17 et GFCM:SAC16/2014/7. Il a informé le Comité que les avis en matière de gestion, fournis par le Groupe sous-régional sur l'évaluation des stocks pour la mer Noire et validés par le Sous-comité de l'évaluation des stocks, en ce qui concerne les cinq stocks évalués en mer Noire, avaient également été examinés par le Groupe de travail ad hoc, qui avait formulé des observations sur la suite à donner.

63. Il a aussi indiqué que le Groupe de travail ad hoc sur la mer Noire avait recensé une série d'activités à réaliser dans le cadre de l'ACCOBAMS et en collaboration avec la Commission de la mer Noire, au titre des protocoles d'accord en vigueur, et approuvé les Éléments pour la gestion des pêches de turbot dans la région de la mer Noire.

64. Il a souligné que, compte tenu de l'importance présumée des captures liées à la pêche illicite, non déclarée et non réglementée concernant les stocks de la mer Noire, le Groupe de travail ad hoc recommandait ce qui suit: i) améliorer la surveillance des pêches dans la région afin de faire baisser le niveau des captures non déclarées; ii) réduire la pêche illicite, non déclarée et non réglementée, en tant que condition préalable indispensable à la réduction de la mortalité par pêche, qui a été conseillée pour des stocks tels que le turbot; et iii) incorporer les estimations relatives à la pêche illicite, non déclarée et non réglementée dans l'évaluation de l'état des stocks.

65. Le Comité a pris acte des travaux du Groupe de travail ad hoc sur la mer Noire et a salué les progrès significatifs accomplis en mer Noire pour ce qui est de l'évaluation des stocks et des plans de gestion. Il s'est aussi félicité de la poursuite de la coopération dans le cadre du protocole d'accord avec la Commission de la mer Noire. La participation à la fois des membres et de non-membres à ces activités a été saluée et le Groupe de travail ad hoc sur la mer Noire a été encouragé à poursuivre son action de coordination.

EXAMEN DU PLAN DE TRAVAIL PRÉLIMINAIRE DU CSC POUR 2014–2015

66. Le Secrétariat a présenté le plan de travail des quatre sous-comités du CSC et du Groupe de travail ad hoc sur la mer Noire, en s'appuyant sur le document GFCM:SAC16/2014/2 et les rapports connexes (documents GFCM:SAC16/2014/Inf.5 à Inf.10), et en tenant compte des propositions avancées par les délégations lors des débats qui se sont déroulés au cours de la session. Le CSC est convenu des activités suivantes pour chacun des sous-comités:

Sous-comité des statistiques et de l'information

- Effectuer une évaluation au niveau national dans chaque pays de la CGPM en vue d'améliorer la collecte de données sur la pêche artisanale;
- Organiser une réunion régionale afin de mettre en œuvre le Cadre de référence pour la collecte de données au titre du Programme-cadre de la CGPM et en collaboration avec les projets régionaux de la FAO.

Sous-comité des sciences économiques et sociales (SCSES)

- Élaborer une méthodologie commune pour réaliser la collecte de données socioéconomiques relatives aux navires de pêches sans licence;
- Réunir le deuxième Symposium régional sur la pêche artisanale durable en Méditerranée et en mer Noire en connexion avec le projet régional proposé sur la pêche artisanale, en 2015 ou 2016.

Sous-comité de l'environnement et des écosystèmes marins (SCEEM)

- Organiser un atelier au titre du programme-cadre sur les élasmobranches en Méditerranée et dans la mer Noire (dont le cadre de référence est fourni à l'Annexe E);
- S'agissant de la réduction des prises accidentelles d'espèces vulnérables, dans le cadre des activés menées par la CGPM, le CAR/ASP, l'ACCOBAMS et certains pays, notamment:
    - Produire du matériel et des brochures d'information sur les bonnes pratiques afin de réduire la mortalité par pêche des tortues de mer, qui pourront être téléchargés à partir du site web de la CGPM (compte tenu du matériel existant).
    - Rassembler les informations existantes sur les outils techniques et les mesures de gestion permettant de réduire les prises accidentelles d'oiseaux de mer et de phoques moines (compte tenu du matériel existant).
- Mettre en œuvre les actions suivantes en vue des futures réunions du Groupe de travail sur les aires marines protégées:
    - Recenser les zones nationales soumises à des mesures de gestion spatiale des activités de pêche conformément aux dispositions de la législation nationale (fermetures saisonnières, restrictions concernant les engins de pêche, etc.).
    - Étudier la possibilité d'attribuer des catégories de gestion des aires protégées de l'Union internationale pour la conservation de la nature (UICN) aux zones de pêche à accès réglementé de la CGPM et aux zones soumises à des mesures de gestion spatiale des activités de pêche.

- Dans le cadre du Protocole d'accord CGPM – PNUE-PAM et en collaboration avec le CAR/ASP, envisage la possibilité de réaliser:
    - une étude pilote afin de tester de nouvelles désignations conjointes des aires marines protégées adoptées par plusieurs institutions;
    - une étude sur les habitats profonds et les écosystèmes marins vulnérables en vue d'évaluer la faisabilité de protéger les zones de profondeur inférieure à 1000 mètres ainsi que les implications pour les pêches associées.

Sous-comité de l'évaluation des stocks (SCES)

- Incorporer dans le prochain ordre du jour des groupes d'experts chargés de l'évaluation des stocks (à savoir les Groupes de travail sur l'évaluation des stocks et le Groupe sous-régional sur l'évaluation des stocks en mer Noire) une séance spécialement consacrée à l'examen des avis relatifs à l'état des stocks figurant dans la Recommandation GFCM/37/2013/1;
- Régulièrement mettre à jour le glossaire du CSC en y versant les modèles utilisés par les groupes d'experts chargés de l'évaluation des stocks.

Groupe de travail sur la mer Noire

- Procéder à une analyse comparative des méthodes d'évaluation des stocks pour la liste des stocks prioritaires recensés;
- Mettre au point les éléments constitutifs d'un plan de gestion sur le turbot en mer Noire, en suivant la structure, les critères et les mesures minimaux proposés pour des plans de gestion pluriannuels relatifs à la pêche du turbot dans la mer Noire (GFCM:SAC16/2014/7).

67. Le Comité est convenu de la liste des sessions pour 2014-2015, telle qu'elle figure ci-après, et a subdivisé les activités comme suit, afin que la Commission puisse aisément les classer par ordre de priorité: i) sessions ordinaires du CSC et de ses sous-comités et groupes de travail; ii) réunions à tenir dans le contexte du programme-cadre (réunions déjà planifiées et pour lesquelles des fonds extrabudgétaires sont identifiés); et iii) réunions nouvellement proposées. S'agissant des activités relatives à la pêche artisanale, le Secrétariat a précisé que les fonds nécessaires à l'élaboration d'une note conceptuelle étaient déjà assurés, tandis que des discussions étaient en cours avec les parties prenantes concernées (Département des pêches et projets régionaux de la FAO, CIHEAM, MedPAN, WWF – tous partenaires du premier Symposium) et les donateurs pour le lancement d'un projet régional sur la pêche artisanale et l'organisation d'un deuxième symposium.

Réunions du CSC	Lieu/date
SCES Groupe de travail sur l'évaluation des stocks d'espèces démersales et de petits pélagiques, y compris une session sur l'évaluation des stocks de la Méditerranée et de la mer Noire pour lesquels on dispose de données limitées	Rome (à confirmer) Octobre-novembre 2014
Réunion du Groupe sous-régional sur l'évaluation des stocks en mer Noire (SGSABS) (éventuellement consécutive à la réunion du Groupe consultatif sur la pêche de la Commission de la mer Noire)	Seront fixés ultérieurement Octobre-décembre 2014
Session des sous-comités du CSC (SCES, SCEEM, SCSI, SCSES), y compris une session sur les technologies de pêche	Rome (à confirmer) Octobre-novembre 2014
Réunion de coordination des sous-comités	Seront fixés ultérieurement
Quatrième session du Groupe de travail sur la mer Noire	Géorgie Début 2015
Dix-septième session du Comité scientifique consultatif (CSC)	Rome (à confirmer) mars 2015

Réunions relevant du programme-cadre	Lieu/date
Atelier sur les études scientifiques en mer Noire: harmonisation des méthodes de sondage et d'analyse des données	Seront fixés ultérieurement, en 2014-2015
Atelier sur la mise en œuvre du Cadre de référence pour la collecte de données en Méditerranée et en mer Noire, y compris sur les données relatives au SSN et sur une méthodologie commune pour la collecte et l'analyse de données socioéconomiques	Seront fixés ultérieurement, en 2014-2015
Atelier de suivi sur l'application de la feuille de route concernant la pêche INDNR	Seront fixés ultérieurement, en 2014-2015
Atelier de suivi sur la mise en œuvre de mesures de gestion relatives à certaines études de cas en Méditerranée et en mer Noire	Seront fixés ultérieurement, en 2014-2015
Atelier sur la conservation des élasmobranches	Sète (France) 2014
Réunion initiale du projet MedSuit	Italie 2014
Deuxième Symposium régional sur la pêche artisanale durable en Méditerranée et en mer Noire	Algérie 2015/2016

Nouvelles réunions proposées	Lieu/date
Groupe de travail conjoint CEICPAI/CGPM/CIEM sur l'anguille (WGEEL)	Tunisie Novembre 2014
Deuxième réunion du Groupe de travail sur les aires marines protégées (WGMPA) (si possible consécutive à la réunion du CAR/ASP sur les ASPIM)	Tunisie Juin 2015

68. Le CSC a pris note de l'offre de membres de la CGPM qui ont proposé d'accueillir certaines réunions, sous réserve de confirmation par les autorités compétentes de leurs pays. Il a été rappelé que la réalisation des activités serait subordonnée à la disponibilité des fonds nécessaires.

69. Les représentants de l'ACCOBAMS, d'Oceana, du CAR/ASP, du PNUE-PAM et du WWF et du ont proposé un mandat pour la deuxième réunion du Groupe de travail sur les aires marines protégées (on trouvera le mandat à l'Annexe E). Soulignant le lieu et les dates potentiels, les représentants du PNUE-PAM et CAR/ASP ont fait valoir qu'une réunion sur l'évaluation des aires spécialement protégées d'intérêt méditerranéen (ASPIM) étant déjà prévue en juin 2015 en Tunisie, la réunion du Groupe de travail sur les aires marines protégées pourrait être tenue dans la foulée.

70. Le CSC a invité instamment les coordinateurs des sous-comités concernés à fournir le cadre de référence de toutes les activités proposés afin de faciliter leur examen par la Commission à sa trente-huitième session ainsi que leur approbation et l'octroi des fonds budgétaires s'y rapportant.

ÉLECTION DU BUREAU DU CSC

71. Toutes les délégations ont rendu un hommage appuyé à M. Henri Farrugio (France) pour son travail assidu en tant que Président et son investissement dans les travaux du CSC pendant les six années de son mandat, ainsi qu'à M. Othman Jarboui (Tunisie) et M. Atig Huni (Libye), premier vice-président et deuxième vice-président respectivement, et ont exprimé leur profonde gratitude pour le dévouement exceptionnel dont ils ont fait preuve durant leur mandat.

72. Le Secrétaire exécutif s'est référé aux articles 7 et 8 du règlement intérieur de la CGPM, relatifs à l'élection et aux fonctions du Bureau. Sur la base de l'information fournie, le Comité a élu à l'unanimité M. Othman Jarboui (Tunisie) au poste de Président du CSC et M. Ali Cemal Gucu (Turquie) et Mme Capucine Mellon (France) en tant que premier vice-président et deuxième vice-présidente respectivement.

73. Le Secrétariat a été invité à envoyer une lettre aux pays d'origine des membres du Bureau nouvellement élu afin de demander aux autorités compétentes de faciliter, dans la mesure du possible, les travaux du Président et des Vice-présidents ainsi que ceux des coordinateurs des sous-comités et groupes de travail du CSC.

QUESTIONS DIVERSES

74. Le Comité a recensé un certain nombre de facteurs qui nuisaient au bon fonctionnement du CSC et de ses sous-comités et groupes de travail, à savoir: i) une faible participation aux réunions techniques; ii) la définition pas assez précise des rôles respectifs du Comité et des sous-comités et groupes de travail; iii) la nécessité d'une plus forte participation des coordonnateurs et des bureaux aux activités du Comité; et iv) la nécessité d'assurer une meilleure communication entre les membres du CSC, y compris au niveau national.

75. S'agissant du problème du faible taux de participation aux réunions techniques, il a été rappelé au Comité qu'il appartenait aux Parties contractantes d'assurer la participation de leurs délégués et experts nationaux aux travaux du CSC et de ses sous-comités et groupes de travail. Il a également été souligné que, compte tenu de la situation actuelle dans la région, il serait profitable d'introduire, au niveau de la CGPM, un mécanisme financier permettant de faciliter la participation aux réunions; les participants ont également insisté sur la nécessité de renforcer le rôle des projets régionaux de la FAO à cet égard.

76. Concernant la nécessité d'une définition plus claire des fonctions du CSC et de ses sous-comités et groupes de travail, le Comité a indiqué que leurs mandats respectifs devaient être régulièrement révisés et mis à jour, compte tenu de la modernisation en cours de la CGPM et des discussions connexes relatives à la modification de son cadre juridique et institutionnel.

AUTRES QUESTIONS

77. Au sujet de la nécessité d'améliorer la communication entre les membres et le Secrétariat, et d'assurer une bonne coordination au niveau national, le Comité s'est dit favorable à la formule faisant appel à la visioconférence avec des points focaux ou entre membres du Bureau. Il a en outre pris note que les dispositifs SharePoint mis au point par le Secrétariat permettraient de créer des comptes de courriel réservés à la CGPM prêts à être utilisés prochainement, avec, à la clé, la possibilité de travailler de manière interactive.

78. Il a été question de la nécessité de confier aux points focaux du CSC un mandat clairement formulé; le Comité est convenu qu'il fallait en établir un projet qui serait porté à l'attention du CSC à sa session suivante. Il serait entre autres demandé aux points focaux de soumettre au Bureau et au Secrétariat des rapports trimestriels sur les progrès accomplis et/ou les activités conduites au niveau national intéressant le CSC. Le Comité a suggéré que soit étudiée la possibilité d'envoyer aux points focaux les principaux documents du CSC par voie postale avant les sessions, sous réserve de l'accord de la Commission quant aux répercussions budgétaires. Enfin, le Comité a invité instamment les délégations à communiquer, avant la tenue de la trente-huitième session de la Commission, une liste actualisée des points focaux nationaux au CSC et à ses sous-comités en se fondant sur le modèle que le Secrétariat aurait porté à leur connaissance.

79. Pour terminer, le Comité est convenu de donner un nouveau souffle à la Réunion de coordination des sous-comités et d'en promouvoir les fonctions d'origine afin de faciliter la formulation et l'intégration de conseils de diverses natures émanant des différents sous-comités et groupes de travail du CSC. Il a été décidé à cet effet de faire en sorte que des rapporteurs soient désignés pour les réunions du CSC, parallèlement aux travaux de rédaction de comptes rendus fournis par le Secrétariat.

80. Le représentant de MedArtNet a évoqué le succès du premier Symposium régional sur la pêche artisanale durable en Méditerranée et en mer Noire ainsi que la signature d'un accord historique pour la mise en place d'une plateforme de coopération entre pêcheurs à l'échelon régional et sous-régional. Il a remercié la CGPM d'avoir octroyé à son association le statut d'observateur et a souligné que l'invitation à assister à la session qui avait été faite par le CSC était un signe encourageant de l'importance accordée par la CGPM à la participation des organisations de pêcheurs au processus décisionnel.

81. Le Comité a remercié le Gouvernement maltais d'avoir accueilli la réunion avec beaucoup d'hospitalité. Il a plus particulièrement fait part de sa gratitude au Ministre du développement durable, de l'environnement et du changement climatique pour son zèle et pour son excellente collaboration, sans lesquels l'organisation et le bon déroulement des travaux n'auraient pas été possibles. Les conditions de travail exceptionnelles offertes par Malte ont été extrêmement appréciées de tous les délégués.

82. Le Président et les délégués ont félicité le Secrétariat de la CGPM pour l'excellent travail accompli entre les sessions, notamment dans la préparation et l'organisation de la réunion du CSC.

DATE ET LIEU DE LA PROCHAINE SESSION

83. Le Comité est convenu qu'une décision sur les dates et le lieu de la suivante session du CSC serait prise lors de la trente-huitième session de la Commission

ADOPTION DU RAPPORT

84. Le rapport, avec ses annexes, a été adopté jeudi 20 mars 2014.

Appendix A

Agenda

1. **Opening and arrangements for the session**
2. **Adoption of the agenda**
3. **Intersessional activities**
   - Review of the recommendations of the thirty-seventh session of GFCM concerning the management of fisheries
   - Report by the Chairperson: overview of SAC achievements during the intersession
   - Specific actions in the Black Sea
   - Research activities by Member Countries
   - Major activities and initiatives of the FAO regional projects
4. **Review of the relevant Task Force and Framework Programme (FWP) activities concerning the SAC**
   - Review of selected matters addressed within the GFCM amendment process of relevance to SAC
   - Review of activities carried out under the preliminary phase of the FWP and introduction of ongoing FWP activities
     - Activities related to governance, including management plans and environmental protection
     - Activities related to data collection
     - Activities related to small-scale fisheries
     - Sub-regional cooperation and cooperation with other agencies
5. **Formulation of advice in the field of fishery management and research**
     - Conclusions and recommendations related to statistics and information
     - Conclusions and recommendations related to economic and social sciences
     - Conclusions and recommendations related to marine environment and ecosystems
     - Conclusions and recommendations related to stock assessments
6. **Review of SAC preliminary work plan for 2014–2015**
7. **Election of the SAC Bureau**
8. **Any other matter: functioning of the GFCM**
9. **Date and place of the next session**
10. **Adoption of the report**

Annexe A

Ordre du jour

1. **Ouverture et organisation de la session**
2. **Adoption de l'ordre du jour**
3. **Activités intersessions**
   - Examen des recommandations formulées par la Commission générale des pêches pour la Méditerranée à sa trente-septième session concernant la gestion des pêches
   - Rapport du Président: vue d'ensemble des réalisations du Comité scientifique consultatif entre les sessions
   - Actions spécifiques relatives à la mer Noire
   - Activités de recherche menées par des États membres
   - Principales activités et initiatives menées dans le cadre des projets régionaux de la FAO
4. **Examen des activités du Groupe de travail pour la modernisation du cadre juridique et institutionnel de la CGPM et du Programme cadre intéressant le Comité scientifique consultatif**
   - Examen de questions intéressant le Comité scientifique consultatif traitées dans le cadre du processus d'amendement des textes de la Commission générale des pêches pour la Méditerranée
   - Examen des activités menées durant la phase préliminaire du Programme cadre et présentation des activités en cours du Programme cadre
     - Activités liées à la gouvernance, y compris les plans de gestion et la protection de l'environnement
     - Activités liées à la collecte de données
     - Activités liées à la pêche artisanale
     - Coopération sous-régionale et coopération avec d'autres organismes
5. **Formulation d'avis dans le domaine de la gestion et de la recherche halieutiques**
   - Conclusions et recommandations sur les statistiques et l'information
   - Conclusions et recommandations sur les sciences économiques et sociales
   - Conclusions et recommandations sur l'environnement et les écosystèmes marins
   - Conclusions et recommandations sur l'évaluation des stocks
6. **Examen du plan de travail préliminaire du Comité scientifique consultatif pour 2014-2015**
7. **Élection du Bureau du Comité scientifique consultatif**
8. **Questions diverses**
9. **Date et lieu de la prochaine session**
10. **Adoption du rapport**

Appendix B

List of participants/Liste des participants

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Appendix C

List of documents

GFCM:SAC16/2014/1	Provisional agenda and timetable
GFCM:SAC16/2014/2	Executive report for the SAC intersessional activities
GFCM:SAC16/2014/3	Proposal for a GFCM Data Collection Reference Framework (DCRF)
GFCM:SAC16/2014/4	Proposal for a regional management plan for red coral (excerpt from document GFCM:SAC16/2014/Inf.16)
GFCM:SAC16/2014/5	Proposal for a minimum structure of management plans in selected case studies in the Mediterranean (excerpt from document GFCM:SAC16/2014/Inf.18)
GFCM:SAC16/2014/6	Proposal for a GFCM Framework for describing stock status and providing management advice in relation to reference points
GFCM:SAC16/2014/**7**	Proposal for a minimum structure of management plans for turbot fisheries in the Black Sea (Available only in English)
GFCM:SAC16/2014/Inf.1	List of documents
GFCM:SAC16/2014/Inf.2	Provisional list of participants
GFCM:SAC16/2014/Inf.3	Report of the thirty-seventh session of the General Fisheries Commission for the Mediterranean (GFCM) (Croatia, 13–17 May 2013)
GFCM:SAC16/2014/Inf.4	Report of the fifteenth session of the Scientific Advisory Committee (SAC) (FAO HQ, 8–11 April 2013) (bilingual)
GFCM:SAC16/2014/Inf.5	Report of the fourteenth session of the Subcommittee on Marine Environment and Ecosystems (SCMEE) (Montenegro, 4–5 February 2014) (Available only in English)
GFCM:SAC16/2014/Inf.6	Report of the fourteenth session of the Subcommittee on Statistics and Information (SCSI) (Montenegro, 4–5 February 2014) (Available only in English)
GFCM:SAC16/2014/Inf.7	Report of the fourteenth session of the Subcommittee on Economic and Social Sciences (SCESS) (Montenegro, 4–5 February 2014) (Available only in English)
GFCM:SAC16/2014/Inf.8	Report of the fifteenth session of the Subcommittee on Stock Assessment (SCSA) (Montenegro, 3–4 February 2014) (Available only in English)
GFCM:SAC16/2014/Inf.9	Research activities in Member countries
GFCM:SAC16/2014/Inf.10	Report of the third meeting of the Working Group on the Black Sea (Turkey, 26–28 February 2014) (Available only in English)
GFCM:SAC16/2014/Inf.11	Report of the Workshop to test the feasibility of implementing multiannual management plans in the Black Sea (Turkey, 24–25 February 2014) (Available only in English)
GFCM:SAC16/2014/Inf.12	Report of the SCMEE First Working Group on Marine Protected Areas (Montenegro, 2 February 2014) (Available only in English)
GFCM:SAC16/2014/Inf.13	Report of the SCESS Working Group on Common methodology to carry out socio-economic analysis (Montenegro, 2 February 2014) (Available only in English)
GFCM:SAC16/2014/Inf.14	Report of the SCSA Working Group on Stock Assessment of Demersal Species (Montenegro, 28 January – 1 February 2014) (Available only in English)
GFCM:SAC16/2014/Inf.15	Report of the SCSA Working Group on Stock Assessment of Small Pelagic Species (Montenegro, 28 January – 1 February 2014) (Available only in English)
GFCM:SAC16/2014/Inf.16	Report of the Workshop on Regional Management Plan for red coral

	(Belgium, 21-22 January 2014) (Available only in English)
GFCM:SAC16/2014/Inf.17	Report of the Sub-regional group on stock assessment for the Black Sea (Romania, 14–16 January 2014) (Available only in English)
GFCM:SAC16/2014/Inf.18	Report of the Framework Programme (FWP) Sub-Regional Workshop on Fisheries Management for Western, Central and Eastern Mediterranean (Tunisia, 7–10 October 2013) (Available only in English)
GFCM:SAC16/2014/Inf.19	Report of the Workshop on IUU Fishing in the Mediterranean Sea (Tunisia, 3–4 October 2013) (Available only in English)
GFCM:SAC16/2014/Inf.20	Report of the CoC Working group on VMS and related control systems in the GFCM Area (Tunisia, 1–2 October 2013) (Available only in English)
GFCM:SAC16/2014/Inf.21	Report of the Workshop on Artificial Reefs in the Mediterranean and the Black Sea (Turkey, 27 September 2013) (Available only in English)
GFCM:SAC16/2014/Inf.22	Major activities of the FAO regional projects (Available only in English)
GFCM:SAC16/2014/Inf.23	Practical Guidelines for Artificial Reefs in the Mediterranean and Black Sea (final draft) (Available only in English)
GFCM:SAC16/2014/Inf.24	Conclusions of the First Regional Symposium on sustainable small-scale fisheries in the Mediterranean and the Black Sea (Malta, 27–30 November 2013) (Available only in English)
GFCM:SAC16/2014/Inf.25	Proposal on the definition of Good Environmental Status and associated indicators and targets for commercially exploited fish and shellfish populations (Available only in English)
GFCM:SAC16/2014/Inf.26	Summary of data collection gaps and needs of GFCM Members (outcomes of 2013 FWP questionnaires) (Available only in English)

Annexe C

Liste des documents

GFCM:SAC16/2014/1	Ordre du jour et calendrier provisoires
GFCM:SAC16/2014/2	Rapport exécutif du Comité scientifique consultative (CSC) durant la période intersessions
GFCM:SAC16/2014/3	Proposition de cadre de référence pour la collecte de données (DCRF)
GFCM:SAC16/2014/4	Proposition de plan de gestion régional du corail rouge (extrait du document GFCM:SAC16/2014/Inf.16)
GFCM:SAC16/2014/5	Structure minimum proposée pour la gestion des pêches relative à des études de cas choisies en Méditerranée (extrait du document GFCM:SAC16/2014/Inf.18)
GFCM:SAC16/2014/6	Proposition de cadre pour la description de l'état des stocks et la formulation d'avis de gestion en fonction des points de référence
GFCM:SAC16/2014/**7**	Proposition de structure minimale de plans de gestion pour la pêche au turbot en mer Noire (disponible en anglais seulement)
GFCM:SAC16/2014/Inf.1	Liste des documents
GFCM:SAC16/2014/Inf.2	Liste provisoire des participants
GFCM:SAC16/2014/Inf.3	Rapport de la trente-septième session de la Commission générale des pêches pour la Méditerranée (CGPM) (Croatie, 13-17 mai 2013)
GFCM:SAC16/2014/Inf.4	Rapport de la quinzième session du Comité scientifique consultatif (CSC) (Siège de la FAO, 8-11 avril 2013) (bilingue)
GFCM:SAC16/2014/Inf.5	Rapport de la quatorzième session du Sous-comité de l'environnement et des écosystèmes marins (SCEEM) (Monténégro, 4-5 février 2014) (disponible en anglais seulement)
GFCM:SAC16/2014/Inf.6	Rapport de la quatorzième session du Sous-comité des statistiques et de l'information (SCSI) (Monténégro, 4-5 février 2014) (disponible en anglais seulement)
GFCM:SAC16/2014/Inf.7	Rapport de la quatorzième session du Sous-comité des sciences économiques et sociales (SCSES) (Monténégro, 4-5 février 2014) (disponible en anglais seulement)
GFCM:SAC16/2014/Inf.8	Rapport de la quinzième session du Sous-comité de l'évaluation des stocks (SCES) (Monténégro, 3-4 février 2014) (disponible en anglais seulement)
GFCM:SAC16/2014/Inf.9	Activités de recherche dans les États membres
GFCM:SAC16/2014/Inf.10	Rapport de la troisième réunion du Groupe de travail sur la mer Noire (Turquie, 26-28 février 2014) (disponible en anglais seulement)
GFCM:SAC16/2014/Inf.11	Rapport de l'atelier visant à tester la faisabilité de plans de gestion pluriannuels en mer Noire (Turquie, 24-25 février 2014) (disponible en anglais seulement)
GFCM:SAC16/2014/Inf.12	Rapport de la première réunion du Groupe de travail du SCEEM sur les aires marines protégées (Monténégro, 2 février 2014) (disponible en anglais seulement)
GFCM:SAC16/2014/Inf.13	Rapport du Groupe de travail SCSES sur une méthodologie commune à des fins d'analyse socio-économique (Monténégro, 2 février 2014) (disponible en anglais seulement)
GFCM:SAC16/2014/Inf.14	Rapport du groupe de travail du SCES sur l'évaluation des stocks d'espèces démersales (Monténégro, 28 janvier - 1 février 2014) (disponible en anglais seulement)
GFCM:SAC16/2014/Inf.15	Rapport du groupe de travail du SCES sur l'évaluation des stocks de petits pélagiques (Monténégro, 28 janvier-1er février 2014) (disponible en anglais seulement)

GFCM:SAC16/2014/Inf.16	Rapport de l'Atelier sur un plan de gestion régional du corail rouge (Belgique, 21-22 janvier 2014) (disponible en anglais seulement)
GFCM:SAC16/2014/Inf.17	Rapport du Groupe sous-régional sur l'évaluation des stocks en mer Noire (Roumanie, 14-16 janvier 2014) (disponible en anglais seulement)
GFCM:SAC16/2014/Inf.18	Rapport de l'atelier sous-régional du Programme-cadre sur la gestion des pêches en Méditerranée occidentale, centrale et orientale (Tunisie, 7-10 octobre 2013) (disponible en anglais seulement)
GFCM:SAC16/2014/Inf.19	Rapport de l'atelier sur la pêche pêche illicite, non déclarée et non réglementée (INDNR) en Méditerranée (Tunisie, 3-4 octobre 2013) (disponible en anglais seulement)
GFCM:SAC16/2014/Inf.20	Rapport du groupe de travail du Comité d'application sur le SSN et les systèmes de contrôle connexes dans la zone de la CGPM (Tunisie, 1-2 octobre 2013) (disponible en anglais seulement)
GFCM:SAC16/2014/Inf.21	Rapport de l'atelier sur les récifs artificiels en Méditerranée et en mer Noire (Turquie, 27 septembre 2013) (disponible en anglais seulement)
GFCM:SAC16/2014/Inf.22	Principales activités des projets régionaux de la FAO (disponible en anglais seulement)
GFCM:SAC16/2014/Inf.23	Lignes guides pratiques sur les récifs artificiels en Méditerranée et en mer Noire (projet final) (disponible en anglais seulement)
GFCM:SAC16/2014/Inf.24	Conclusions du Premier symposium régional sur la pêche artisanale durable en Méditerranée et en mer Noire (Malte, 27-30 novembre 2013) (disponible en anglais seulement)
GFCM:SAC16/2014/Inf.25	Proposition pour la définition du bon état écologique, des indicateurs et cibles connexes pour les populations de poissons, crustacés et mollusques commercialement exploitées (disponible en anglais seulement)
GFCM:SAC16/2014/Inf.26	Synthèse des besoins et lacunes en matière de collecte de données des Membres de la CGPM (résultats issus des questionnaires 2013 du programme-cadre) (disponible en anglais seulement)

Appendix D

Stock assessments for small pelagic, demersal and Black Sea stocks, as reviewed by SAC

Table 1 – Assessments for small pelagic stocks, as reviewed by SAC

GSA	Species	Methodology used	Stock status	Management advice	WGSASP comments	SCSA comments	SAC comments
GSA 01	Sardine, *Sardina pilchardus*	Indirect method: BioDyn (Surplus production Model)	Sustainably exploited Trend in landings is stable. Exploitation rate is lower than the Patterson's reference point (E=0.36). B_{cur}/B_{MSY}=1.31 $F_{current}$ (0.33) is below $F_{0.1}$ (0.5).	Not to increase fishing mortality	Uncertainty in the assessment and methodological problems in incorporating acoustic time series in the production model, so the model only relies on CPUE, which is very similar to the landings. The WGSASP suggested to evaluate the trend in effort data and that CPUE is evaluated independently to its performance in the production model. The WGSASP recommended the use of available time series both for CPUE and acoustic abundance indices. In the case of fitting problems, alternative production model should be tested. The area should be covered yearly with an independent survey.	The SCSA endorsed stock status and advice and stressed the limitation of the use of only CPUE indexes on production model. The SCSA agreed with the comments of the WG.	The SAC endorsed the advice
GSA 06	Anchovy, *Engraulis encrasiclous*	Indirect method: BioDyn (Surplus production Model)	Sustainably exploited Increasing trend in landings and biomass from acoustic $F_{current}$ (0.18) is lower than F_{MSY} reference point (0.25). Exploitation rate is lower than the Patterson's reference point (E=0.24). Current biomass is above B_{MSY}.	Not to increase fishing mortality	Uncertainty in the assessment and methodological problems in incorporating acoustic time series in the production model, so the model only relies on CPUE which in this case is very similar to the landings. The WGSASP suggested that CPUE is evaluated independently to its performance in the production model. The WGSASP recommended the use of available time series both for CPUE and acoustic abundance indices. In the case of fitting problems, alternative production model should be tested. Empirical RP not reliable since an historical maximum or minimum is not obvious in the time series available.	The SCSA endorsed stock status and advice and stressed the limitation of the use of only CPUE indexes on production model. The SCSA agreed with the comments of the WG.	The SAC endorsed the advice

GSA	Species	Methodology used	Stock status	Management advice	WGSASP comments	SCSA comments	SAC comments
GSA 06	Sardine, *Sardina pilchardus*	Indirect method: BioDyn (Surplus production Model)	Overexploited and in Overexploitation. Both landings and CPUE decreasing. Exploitation rate is higher than the Patterson's reference point (E = 0.46). $F_{current}$ (0.42) is higher than the $F_{0.1}$ reference point (0.25). $B_{current}$ is below B_{MSY} (B_{curr}/B_{MSY}=0.37).	Reduce fishing mortality. Apply a multiannual management plan.	Uncertainty in the assessment and methodological problems in incorporating acoustic time series in the production model, so the model only relies on CPUE, which in this case is very similar to the landings. The WGSASP suggested that CPUE is evaluated independently to its performance in the production model. The WGSASP recommended the use of available time series both for CPUE and acoustic abundance indices. In the case of fitting problems, alternative production model should be tested. The declining trend is clear and in accordance with the acoustic. The exercise on reconstructed time series of biomass based on harvest rate seems to be coherent with acoustic estimates and point out for low biomass.	The SCSA endorsed stock status and advice and stressed the limitation of the use of only CPUE indexes on production model. The SCSA agreed with the comments of the WG. The SCSA recommended that the current Management Plan in place is confronted to these scientific advices.	The SAC endorsed the advice
GSA 07	Anchovy, *Engraulis encrasiclous*	Direct method by acoustics and harvest rate from catches / acoustic	Depleted Low exploitation rate and very low biomass, low commercial-sized anchovy abundance. Declining trend in landings and biomass. Current biomass is below B_{lim} (22,889).	Implement a recovery plan (including monitoring on biological parameters and limits on effort)	Biomass is more or less stable in this stock since 2005, with a slight increasing trend noted in 2012, but in 2013 the stock estimate decreased. Average size and condition of anchovy remains low. Unusual high acoustic energy close to the surface in all the area in 2013: extra uncertainty on the estimates due to difficulties in catch the signal and lower success in trawling.	The SCSA agreed with the comment from the WG but in line with the discussion on reference point at SC level, suggested to consider the stock status as "low biomass" and the management advice to be "reduce fishing mortality". The SCSA recommended that the current Management Plan in place is confronted to this scientific advice.	The SAC endorsed the advice
GSA 07	Sardine, *Sardina pilchardus*	Direct method by acoustics and harvest rate from catches / acoustic	Unbalanced Landings continue decreasing, the biomass is stable, high recruitments, but the fish are small, young and in poor conditions.	Fishing mortality should not be allowed to increase, monitoring of changes in the fishing effort/gears required.	This year the juvenile-adult partition was not done (disappearance of the two modes and changes in growth). There is a change in the fishery: in 2012 purse seiners contribute to 95% of the catch of sardine (previously around 20%). Measures of effort should be improved (e.g. number of "fishing sets" for purse seiners).	The SCSA endorsed stock status and advice and considered this assessment as qualitative. The SCSA recommended that the current Management Plan in place is confronted to this scientific advice.	The SAC consider the status of the stock as Ecologically unbalanced, in light of the analysis carried out

GSA	Species	Methodology used	Stock status	Management advice	WGSASP comments	SCSA comments	SAC comments
GSA 16	Sardine, *Sardina pilchardus*	Harvest Rate and Surplus production model (BioDyn)	Overexploited and in overexploitation $F_{Current}$ (0.18) is below the sustainable fishing mortality at current biomass levels (F_{cur}/F_{SYCur}=0.74) but above F_{MSY} (F_{MSY}=0.16; F_{cur}/F_{MSY}=1.11). B (16415) < B_{MSY} (32830) $B_{current}$ is above B_{lim} but below B_{pa}.	Fishing mortality should be reduced by means of a multi-annual management plan.	The role of the environmental index in the population and in the model fitting procedure is unclear. Further analysis in the model fitting behaviour should be investigated (e.g. testing other environmental factors, sensitivity analysis on seed values…). The WGSASP suggested to look at the monthly catches and the LFD of the catches.	The SCSA endorsed stock status and advice and pointed out that Fcurrent is 11% higher than FMSY. Given the low level of biomass it should be recommended to reduce fishing mortality immediately.	The SAC endorsed the advice
GSA 16	Anchovy, *Engraulis encrasiclous*	Harvest Rate and Surplus production model (BioDyn)	In overexploitation Exploitation rate is higher than the Patterson's reference point (E=0.42) Model trial provides a high exploitation rate.	Fishing mortality should be reduced by means of a multi-annual management plan.	The assessment is uncertain. The catches and the biomass estimates provide opposite trends and the performances of the model are low. The WGSASP suggested to look at the monthly catches and the LFD of the catches. The overall picture shows a decreasing trend in biomass, a harvest rate that is fluctuating up to really high values (in 2011 was about 80%) and an increase in F.Empirical RP not reliable since an historical maximum or minimum is not obvious in the time series available.	The SCSA endorsed stock status and advice and accepted that the assessment is considered to be qualitative.	The SAC endorsed the advice
GSA 17	Sardine, *Sardina pilchardus*	SAM tuned by acoustic Tests with ICA and ASAP tuned by acoustic	Increased risk of overexploitation. Exploitation rate is higher than the Patterson's reference point (E=0.42). $B_{current}$ is above both limit and precautionary reference point. Positive trend. Harvest rate is equal to 26%.	Do not increase fishing mortality and revise stock advice next year.	The WGSASP chose the SAM model as the final assessment due to better performance. All models tested provide similar estimates in the recent years, nevertheless there are discrepancies in the historical perspective. Catch data and acoustic data show some inconsistencies in the abundance by age trend (cohorts signal). Partial coverage of the eastern acoustic survey in the last two years: analysis of spatial variability should be desirable. Some differences in the ALK between the eastern and western data were identified. The WGSASP recommended a revision of the input-basic data (e.g. age structure) including testing the use of recent biological data (length structure and ALKs) from the Eastern area in the older part of the eastern landings time series, instead of data from the Western area.	In line with the discussion on reference point at SC level, SCSA suggested to consider the stock status as "increased risk of being overexploited and in overexploitation" and the management advice to be "reduce fishing mortality". In relation to the GFCM management plan approved for small pelagic fish in the Adriatic Sea the current status of the stock would be classified in option 16d – ii of the plan, and therefore the advice will be to adapt F by a ratio of 0.935	The SAC advice is to reduce fishing mortality

GSA	Species	Methodology used	Stock status	Management advice	WGSASP comments	SCSA comments	SAC comments
GSA 17	Anchovy, *Engraulis encrasiclous*	Both ICA and SAM with acoustic tuning are considered for the advice.	Overexploited and in overexploitation Exploitation rate is higher than the Patterson's reference point (E=0.48-0.57). Biomass level is at a low level (between 12-19 percentile of the biomass estimates)	Fishing mortality should be reduced and the existing management plan should be applied.	Both models were retained to provide a comprehensive advice. The recent perspective is consistent, but models provide a different historical perspective; ICA 2012, ICA 2013 and SAM all give a different perspective in both maximum and minimum biomass and some variability in F for the more recent years. Terminal F shows a large drop (probably unreliable) with a large CI. Due to unclear historical perspective, previously adopted reference points were considered not reliable. Advice was therefore provided on a precautionary basis (exploitation rate and biomass percentiles). The WGSASP recommended that the discrepancies of the different models should be further investigated. Partial coverage of the Eastern acoustic survey in the last two years: analysis of spatial variability should be desirable. Some differences in the ALK between the Eastern and Western data were identified. The WG recommends a revision of the input-basic data (e.g. age structure) including testing the use of recent biological data (length structure and ALKs) from the eastern area in the older part of the Eastern landings time series, instead of data from the Western area.	The SCSA endorsed stock status and advice. In relation to the GFCM management plan approved for small pelagic fish in the Adriatic Sea the current status of the stock would be classified in option 16d – ii of the plan, and therefore the advice will be to adapt F by a ratio of 0.935	The SAC advice is to reduce fishing mortality

Table 2 - Assessments for demersal stocks, as reviewed by SAC

GSA	Species	Data type	Years data	Methodology used	Stock status	Fcurr / F0.1	Management advice	WGSAD comments	SCSA comments	SAC comments
GSA 01	European hake, *Merluccius merluccius*	Catch, effort Lfreq catch & trawl surveys	2003-2012	XSA tuned with CPUE from commercial fleet and MEDITS data.	High overfishing Relative intermediate biomass	7.4	A reduction of the current fishing mortality is recommended by reducing the fishing effort and improving the selection pattern of the fishery.	No specific comments on this stock.	The SCSA endorsed the assessment and proposed to reduce fishing mortality. The SCSA pointed out that Fcurrent is about 7 times higher than the Fmsy.	The SAC endorsed the advice
GSA 03	European hake, *Merluccius merluccius*	Catch, CPUE, trawl surveys, Lfreq (commercial and surveys)	2003-2012	a) VIT (LCA,VPA,Y/R) b) ExcelSheet1 (Y/R) c) ExcelSheet2 (LCA, Y/R) M=0,2 d) ExcelSheet2 (LCA, Y/R) M=0,5 e) ExcelSheet2 (LCA, Y/R, M vector) f) Biodyn (Production Model)	Uncertain	a) 4.5-5 (2007, 2008) b) 8.3-9.1 (2007, 2008) c) 8,33 (2007, 2008) d)6,7 (2007, 2008) e) 2,9 (2007, 2008) f) 1.0 (2003-2012)	No management advice could be derived from the results. The assessment was not endorsed.	The original VPA showed some problems: it merged information from the fleet and from the surveys, M was used as a scalar not as a vector and the production model used a short data series, without clear contrasts reflecting substantial changes in fishing effort, as recommended last year. The assessment was re-run using VIT for the 2 years in which commercial data was available (2007-2008), but the results were not used for providing management advice as they were considered too old. A trial comparing trends from commercial CPUEs and survey data was carried out, trying to produce qualitative assessment, but there was not a clear correspondence between both series of data. It was recommended to use SURBA in the following years.	The SCSA agreed with the WG comments. However, considering the overfishing status of the fishery in 2007-2008, it was advised that any increase of fishing effort/catches of hake in this area should be avoided until a new assessment of the stock is available.	The SAC endorsed the advice
GSA 05	European hake, *Merluccius merluccius*	Catch, effort, Lfreq catch & trawl surveys	2000-2012	XSA and Y/R analysis	In high overfishing status with relative high biomass	8.4	To reduce fishing mortality.	No specific comments on this stock.	The SCSA endorsed the assessment and proposed to reduce fishing mortality. The SCSA pointed out that Fcurrent is about 8 times higher than the Fmsy.	The SAC endorsed the advice

GSA	Species	Data type	Years data	Methodology used	Stock status	Fcurr / F0.1	Management advice	WGSAD comments	SCSA comments	SAC comments
GSA 07	European hake *Merluccius merluccius*	Catch, effort, Lfreq catch (French and Spanish trawlers, French gillnetters and Spanish longliners), trawl surveys	1998-2012	XSA and Y/R analysis	In High overfishing status; relative low biomass	12.2	- Improve the fishing pattern of the trawlers so that the minimum length of catches is consistent with the minimum legal landing size - reduce the effort of trawlers, longliners and gillnetters. - Freezing of the effort in the Fishery Restricted Area	The WGSAD was informed that some management measures have been taken since 2011 (reduction from 2010 to 2012 by 20% of the number of trawlers). This measure was enforced in 2013. Also, temporary closure for the trawlers (1 month per year) is enforced since 2011.	The SCSA endorsed the assessment and proposed to reduce fishing mortality. The SCSA pointed out that Fcurrent is about 12 times higher than the Fmsy.	The SAC endorsed the advice
GSA 12, 13, 14, 15, 16	European hake, *Merluccius merluccius*	Catch & Lfreq catch	2010-2012	LCA, Y/R analysis	The stock is in high overfishing and low biomass level	5.8	F should be reduced and the fishing pattern improved by increasing the selectivity of gears	LCA run by year, and combining the last three years, showed similar results. The WGSAD agreed to consider the results of the last year (2012) as reference for advice. WGSAD agreed on assessment results and management advice provided.	The SCSA endorsed the assessment and proposed to reduce fishing mortality. SCSA pointed out that Fcurrent is about 8 times higher than the Fmsy.	The SAC endorsed the advice
GSA 18	European hake, *Merluccius merluccius*	Catch, effort, Lfreq catch, trawl surveys	survey data: 1996-2012; catch data: 2007-2012	XSA; ALADYM	High overfishing	5.6	Stock is in overfishing status and intermediate biomass (estimates on the MEDITS time series). The stock is characterized by fluctuations of recruitment and abundance, which contribute to sustain the catches. The stock is in overfishing as current fishing mortality exceeds the $F_{0.1}$ levels (1 vs. 0.18) and thus a considerable reduction of the fishing mortality is necessary to allow the achievement of $F_{0.1}$. Objectives of a more sustainable harvest strategy could be achieved with a multiannual plan that foresees a reduction of fishing mortality through fishing limitations. As observed in 2012, the production of hake in GSA 18 is split in 17% caught by Italian longlines, 74% by Italian trawlers, about 1% by Montenegrin trawlers and	No specific comments on this stock.	The endorsed the assessment and proposed to reduce fishing mortality. The SCSA pointed out that Fcurrent is about 5 times higher than the Fmsy.	The SAC endorsed the advice

GSA	Species	Data type	Years data	Methodology used	Stock status	Fcurr / F0.1	Management advice	WGSAD comments	SCSA comments	SAC comments
							about 8% by Albania trawlers.			
GSA 17	Common sole, *Solea solea*	Trawls surveys, catch, Lfreq catch & Lfreq catch	1970-2012 (SCA A); 2006-2012 (XSA)	XSA, SCAA with SS3	High overfishing with relative low biomass level.	3.0	A reduction of fishing mortality towards the proposed reference point is advised. Considering the overexploited situation and the low values of SSB and biomass of the sole stock in GSA 17 a reduction of fishing pressure and an improvement in exploitation pattern is advisable, especially of Italian rapido trawlers and gillnetters, which mainly exploit juveniles. The best option to reduce effort and improve the exploitation pattern for sole in GSA 17, would be to introduce a closure for rapido trawling within 17 km of the Italian coast during the summer-fall period (June- December). Moreover, it was noted that in the last years some Italian artisanal fleets fish with gill net in the main spawning area during periods when trawling is prohibited. Additional measures to restrict exploitation of sole in the spawning area are desirable, to afford further protection of the Adriatic sole stock.	The WGSAD appreciated the comparison between the two models provided, as requested by last year's WG.	The SCSA endorsed the assessment and proposed to reduce fishing mortality. The SCSA pointed out that Fcurrent is about 3 times higher than the Fmsy.	The SAC endorsed the advice
GSA 05	Red mullet, *Mullus barbatus*	Catch, trawl surveys & Lfreq catch.	2000-2012	XSA and Y/R	High overfishing status with relative low biomass level.	6.6	To reduce fishing mortality.	No specific comments on this stock.	The SCSA endorsed the assessment and proposed to reduce fishing mortality. SCSA pointed out that Fcurrent is about 6 times higher than the Fmsy	The SAC endorsed the advice

GSA	Species	Data type	Years data	Methodology used	Stock status	Fcurr / F0.1	Management advice	WGSAD comments	SCSA comments	SAC comments
GSA 06	Red mullet, *Mullus barbatus*	Total annual landings, annual catch in number by size class, abundance index from commercial fleet an MEDITS surveys	1995-2012	XSA, Y/R	High overfishing and relative intermediate biomass level.	1.8	A reduction in fishing mortality towards the $F_{0.1}$ level is advised. A progressive reduction in fishing effort is recommended.	The use of 40mm square or 50mm diamond mesh has improved the exploitation pattern. Age groups 0-1 were predominant in catches until 2010. From 2011 onwards age groups 1-2 are predominant.	The SCSA endorsed the assessment and proposed to reduce fishing mortality. The SCSA pointed out that Fcurrent is about 2 times higher than the Fmsy.	The SAC endorsed the advice
GSA 07	Red mullet, *Mullus barbatus*	Commercial and survey catch at age	2004-2012	XSA, Y/R	High Overfishing with relative high biomass level.	4.0	-Improve the fishing pattern of trawlers, so that the minimum length of catches is consistent with the minimum legal landing size -Reduce the effort of trawlers -Freezing the effort in the fishery Restricted Area	No specific comments on this stock.	The SCSA endorsed the assessment and proposed to reduce fishing mortality. The SCSA pointed out that Fcurrent is about 4 times higher than the Fmsy.	The SAC endorsed the advice
GSA 10	Red mullet, *Mullus barbatus*	Trawl surveys, catch & Lfreq catch.	survey data: 1994-2012; catch data: 2006-2012	XSA	Sustainably exploited with relative intermediate biomass level.	0.8	It is recommended to not increase the relevant fleets' effort and/or catches to maintain fishing mortality in line with the agreed reference point and to avoid future loss in stock productivity and landings.	No specific comments on this stock.	The SCSA endorsed the assessment and advice.	The SAC endorsed the advice

GSA	Species	Data type	Years data	Methodology used	Stock status	Fcurr / F0.1	Management advice	WGSAD comments	SCSA comments	SAC comments
GSA 17	Red mullet, *Mullus barbatus*	Trawls surveys, catch, Age freq catch	2006-2012	XSA, Y/R	High overfishing status with relatively intermediate high biomass level.	5.3	A reduction fishing mortality towards the proposed reference point is advised. Considering the overfishing situation of the red mullet stock in GSA 17 a reduction of fishing pressure and an improvement in exploitation pattern, especially of Italian trawlers exploiting a larger amount of Age 0+ group than Croatian and Slovenian trawlers, is advisable. However, from the analysis of the relative biomass observed in 2012 from MEDITS and from the SSB and total biomass estimated for the same year from XSA is possible to conclude that the abundance of the stock is high and there is not risk of stock depletion.	No specific comments on this stock.	The SCSA endorsed the assessment and proposed to reduce fishing mortality. The SCSA pointed out that Fcurrent is about 5 times higher than the Fmsy.	The SAC endorsed the advice
GSA 19	Red mullet, *Mullus barbatus*	Catch, Lfreq catch, trawl surveys	2006-2012 (commercial) 1994-2012 (survey)	LCA, Y/R	High overfishing status with relative intermediate biomass level.	3.1	Considering the results of the analyses, the objectives of a more sustainable harvest strategy could be achieved with a multiannual plan based on a reduction of the fishing mortality through fishing activity limitations and possibly fishing capacity decreasing, mostly focused on trawling.	No specific comments on this stock.	The SCSA endorsed the assessment and proposed to reduce fishing mortality. The SCSA pointed out that Fcurrent is about 3 times higher than the Fmsy.	The SAC endorsed the advice
GSA 05	Striped red mullet, *Mullus surmuletus*	Catch, trawl surveys & Lfreq catch.	2000-2012	XSA, Y/R and short term forecasts	High overfishing status with relative low biomass level.	3.0	To reduce fishing mortality.	The decrease in biomass and recruitment in the last two years is not connected with the dynamics of effort that is constant. This apparent contradiction is difficult to understand and could be related to changes in the fishing exploitation pattern related to market demands (it is a multispecific fishery), changes in selectivity or in the ecosystem.	The SCSA endorsed the assessment and proposed to reduce fishing mortality. The SCSA pointed out that Fcurrent is about 3 times higher than the Fmsy.	The SAC endorsed the advice

GSA	Species	Data type	Years data	Methodology used	Stock status	Fcurr / F0.1	Management advice	WGSAD comments	SCSA comments	SAC comments
GSA 15-16	Striped red mullet, *Mullus surmuletus*	Trawl surveys, catch & Lfreq catch	2002-2012	XSA, Y/R	High overfishing status with relative intermediate biomass level.	4.1	To reduce the current F toward the proposed FMSY, in order to avoid future loss in stock productivity and landings. This should be achieved by means of a multi-annual management plans, considering also reduction in the relevant fleets' effort and / or catches.	The reliability of MEDITS survey indices as tuning data was discussed. It is important to highlight that the XSA assessment would also benefit by the inclusion of time series of CPUE from gillnets and trammel nets to better reconstruct the dynamics of oldest age classes. It was suggested to repeat this assessment next year with the inclusion of Tunisian catch data if available.	The SCSA endorsed the assessment and proposed to reduce fishing mortality. The SCSA pointed out that Fcurrent is about 4 times higher than the Fmsy.	The SAC endorsed the advice
GSA 26	Striped red mullet, *Mullus surmuletus*	Catch & Lfreq catch	2011-2012	LCA, Y/R	High overfishing status	2.1	The objectives of a more sustainable harvest strategy could be achieved by reduction of fishing mortality through fishing activity limitations. Improve the selection pattern of the trawl fishery and enforcement of the application of the closed season will help in protecting the SSB. The lack of enforcement of the existing regulations, specifically the closed season during the last three years, can have a strong effect in this stock.	No specific comments on this stock.	The SCSA endorsed the assessment and proposed to reduce fishing mortality. The SCSA pointed out that Fcurrent is about 2 times higher than the Fmsy.	The SAC endorsed the advice

GSA	Species	Data type	Years data	Methodology used	Stock status	Fcurr / F0.1	Management advice	WGSAD comments	SCSA comments	SAC comments
GSA 26	Brush tooth lizard fish, *Saurida undosquamis*	Catch & Lfreq catch	2011-2012	LCA, Y/R	In high overfishing status.	2.2	- Reduce the fishing mortality to $F_{0.1}$ by limitation of trawl fishing activities. - Improvement of the selection pattern of the trawl fishery	No specific comments on this stock.	The SCSA endorsed the assessment and proposed to reduce fishing mortality. The SCSA pointed out that Fcurrent is about 2 times higher than the Fmsy.	The SAC endorsed the advice. SAC recommended that the ecological role and managment advice are further discussed in SCMEE and SCSA
GSA 25	Picarel, *Spicara smaris*	Catch, Age freq catch, CPUE as tuning index	2005-2012	XSA, Y/R	Sustainable exploitation with intermediate biomass	0.6	Do not increase the fishing mortality.	No specific comments on this stock.	The SCSA endorsed the assessment and advice.	The SAC endorsed the advice
GSA 05	Red shrimp, *Aristeus antennatus*	Catch, trawl surveys & Lfreq catch and commercial CPUE	1992-2012	LCA, XSA, VPA, Y/R	The stock is subject to high overfishing with relative low biomass level.	4.3	To reduce fishing mortality.	No specific comments on this stock.	The SCSA endorsed the assessment and proposed to reduce fishing mortality. The SCSA pointed out that Fcurrent is about 4 times higher than the Fmsy.	The SAC endorsed the advice
GSA 05	Deep-water pink shrimp, *Parapenaeus longirostris*	Catch, trawl surveys & Lfreq catch.	2002-2012	XSA, Y/R and short term forecasts	Low overfishing status with relative intermediate biomass level.	1.2	To reduce fishing mortality.	No specific comments on this stock.	The SCSA endorsed the assessment and proposed to reduce fishing mortality. The SCSA pointed out that Fcurrent is about 20% higher than the Fmsy.	The SAC endorsed the advice

GSA	Species	Data type	Years data	Methodology used	Stock status	Fcurr / F0.1	Management advice	WGSAD comments	SCSA comments	SAC comments
GSA 06	Deep-water pink shrimp, *Parapenaeus longirostris*	Catch, trawl surveys & Lfreq catch	2001-2012	XSA,Y/R	High overfishing. Relative intermediate biomass.	5.5	A reduction of the current fishing mortality is recommended by reducing the fishing effort.	Fluctuations found in this stock are in agreement with those observed in other areas, probably related to environmental variability. The WGSAD endorsed the assessment and recommendations.	The SCSA endorsed the assessment and proposed to reduce fishing mortality. The SCSA pointed out that Fcurrent is about 5 times higher than the Fmsy.	The SAC endorsed the advice
GSA 12-16	Deep-water pink shrimp, *Parapenaeus longirostris*	Catch, trawl surveys & Lfreq catch	2007-2012	LCA, Y/R	High overfishing.	1.8	To reduce fishing mortality. The protection of juveniles is also recommended. This objective can be achieved by improving the exploitation pattern of trawlers, and the protection of nursery areas.	No specific comments on this stock.	The SCSA endorsed the assessment and proposed to reduce fishing mortality. The SCSA pointed out that Fcurrent is about 2 times higher than the Fmsy.	The SAC endorsed the advice
GSA 18	Deep-water pink shrimp, *Parapenaeus longirostris*	Trawl surveys, catch & Lfreq catch	survey data: 1996-2007; catch data: 2007-2012	XSA, ALADYM	High overfishing.	1.8	It is necessary to consider a considerable reduction of the fishing mortality to allow the achievement of $F_{0.1}$. The reference point $F_{0.1}$ can be gradually achieved by multiannual management plans that foresee a reduction of fishing mortality through fishing limitations. As observed in 2012, the contribution of each country to the total production of P. longirostris in the GSA18 is the following: Italy 60 %, Albania 38% and Montenegro 2%.	No specific comments on this stock.	The SCSA endorsed the assessment and proposed to reduce fishing mortality. The SCSA pointed out that Fcurrent is about 2 times higher than the Fmsy.	The SAC endorsed the advice
GSA 19	Deep-water pink shrimp, *Parapenaeus longirostris*	Trawl surveys, catch & Lfreq catch	survey data: 1994-2007; catch data: 2006-2012	XSA, ALADYM	High overfishing with relative high biomass level.	2.4	It is necessary to consider a considerable reduction of the fishing mortality in order to achieve the estimated $F_{0.1}$ levels. Objectives of a more sustainable harvest strategy could be achieved with a multiannual plan that foresees a reduction of fishing mortality through fishing limitations and improving selectivity pattern	No specific comments on this stock.	The SCSA endorsed the assessment and proposed to reduce fishing mortality. The SCSA pointed out that Fcurrent is about 2 times higher than the Fmsy.	The SAC endorsed the advice

GSA	Species	Data type	Years data	Methodology used	Stock status	Fcur r / F0.1	Management advice	WGSAD comments	SCSA comments	SAC comments
GSA 15-16	Norway lobster, *Nephrops norvegicus*	Trawl surveys, catch & Lfreq catch	survey data: 2002-2012; catch data: 2002-2012	An SCA approach (Millar et al., 2012) using the a4a assessment model was performed on 2002-2012 catch data, tuned with Medits data	The estimated Fcur was below FMSY in 2012 indicating that in this year the stock was exploited sustainably	0.7	Not to increase relevant fleets' effort or catches to maintain fishing mortality below the proposed FMSY level, in order to avoid future loss in stock productivity and landings.	The WGSAD identified uncertainty on the way the model reconstructed recruitment with outliers values in 2011 and 2012. Assessment and recommendations were endorsed.	The SCSA endorsed the assessment and advice.	The SAC endorsed the advice

Table 3 - Assessments for Black Sea stocks, as reviewed by SAC

GSA	Species	Data type	Years data	Methodology used	Stock status	Fcurr / Flim	Advice	SGSABS Comments	SCSA Comments	WGBS Comments	SAC comments
GSA 29	Turbot	a) catch-at-age data age-classes 2 to 10+ b) Ukrainian catch-at-length	a) 1950-2012 b)	a) SAM b) LCA	Black Sea stock: Depleted and in overfishing Northwest population (Ukrainian waters): in overfishing, with a slight decreasing trend in SSB	a) 2.1 b) 3.8	A recovery plan is needed. Fishing mortality has to be reduced to allow the biomass to recover.	Two different assessments that cover different part of the Black Sea turbot populations were presented. Models differed in the estimation on IUU catches and in several technicalities. Model results are different, however both models agree that current fishing mortality is not sustainable. Some doubts on the estimate of F in the LCA remain. Further analysis of model differences should be investigated	The SCSA endorsed the advice. The SCSA recommended that an agreement on stock limits for the purpose of stock assessment is done.	The WGBS endorsed the advice. The WGBS recommended that a management plan be prepared following the "proposed minimal structure, criteria and measures for multiannual management plans for turbot fisheries in the Black Sea", especially in relation to the fight against IUU. The WG also agreed on the importance of improving the knowledge on stock limits and proposed that a project proposal be prepared.	The SAC endorsed the advice
GSA 29	Sprat	Catch-at-age	1992-2012	ICA	Moderate exploitation rate. Average biomass Sustainably exploited	--	F could be maintained at current levels. Due to fluctuations this should be revised related to next year recruitment	Further information on biological parameters and environmental relationships from analysis of catches is desirable.	The SCSA recommended the advice to be rephrased as do not increase the fishing mortality. The SCSA agreed on the importance of a recruitment estimate to provide advice.	The WGBS endorsed the advice. The WGBS pointed to the large fluctuation of catches of the different small pelagic species between years, which should be investigated.	The SAC endorsed the advice

GSA	Species	Data type	Years data	Methodology used	Stock status	Fcurr / Flim	Advice	SGSABS Comments	SCSA Comments	WGBS Comments	SAC comments
GSA 29-30	Anchovy *E. encrasicolus maeoticus*		1992-2012	Lampara surveys	Moderately exploited High biomass	0.25	F could be maintained at current levels.	Stock is managed using biomass reference points established based on time series. There are some uncertainties in the estimation of F (as assessment is only based on direct surveys and catches do not have complete coverage and do not include IUU), however biomass levels are high.	The SCSA recommended the advice to be rephrased as do not increase the fishing mortality.	The WGBS endorsed the advice. No further comments	The SAC endorsed the advice
GSA 29	Picked dogfish	--	--	--	depleted	--	Recovery plan needed. Some existing recommendations from GFCM apply, but further measures required to recover population	Only information on Ukrainian fisheries is presented. No formal assessment, however very low abundance and presence in catches confirm previous assessments that the stock is depleted	The SCSA endorsed the advice, but suggested that more detailed information on the available data is provided.	The WGBS endorsed the advice. The WGBS recommended that all riparian countries report catches.	The SAC endorsed the advice

- Flim =
  - Turbot model a): Flim10 (SAM - STECF)
  - Turbot model b): F0.1 (LCA)
  - Azov Anchovy : Fpa based on Biomass reference point (not considered fully reliable)

Appendix E

Draft terms of reference for selected meetings

A. Subregional Group on Stock Assessment in the Black Sea (SGSABS)

1. Revise the status of the main commercial stocks in the Black Sea, focusing on turbot and small pelagic stocks;
2. Review existing data and stock assessment methods for main stocks in the area, with a special focus on IUU estimation and discards required for stock assessment;
3. Review updated information on stocks identification;
4. Provide advice to GFCM and other relevant organizations on stock status and research priorities to improve the knowledge on status of stocks;

For 2014, the following two specific ToRs are proposed:

5. Evaluate biomass-based assessment methods for anchovy in Black Sea;
6. Attempt to define a precautionary reference point for anchovy in Black Sea.

B. Workshop on Black Sea scientific surveys at sea: harmonization of survey methodologies and analysis of data

1. Collect information on spatio-temporal coverage, methods and objectives of existing surveys in the Black Sea;
2. List and prioritize stocks that need a survey to obtain a reliable scientific assessment;
3. List a common set of environmental parameters -relevant from the point of view of fisheries- that can be collected in the different surveys;
4. Identify stocks and areas which could be assessed together in a coordinated survey;
5. List the requisites of the harmonized surveys identified, including:
   - A proposal of vessels, countries and spatiotemporal coverage of the different sections of the survey
   - A proposal of requirements for harmonization to make the results of the different sections comparable
   - A proposal on data sharing (including data structure, hosting of a common database, access rights, etc.)

C. EIFAAC/GFCM/ICES Working Group on Eels (October – December 2014)

1. Assess the latest trends in recruitment, stock and fisheries, including effort, and other anthropogenic factors indicative of the status of the stock, and report to ACOM, EIFAAC and GFCM Scientific Advisory Committee on the state of the international stock and its mortality;
2. Review the life-history traits and mortality factors by ecoregion;
3. Further develop the stock–recruitment relationship and associated reference points, using the latest available data;
4. Explore the standardization of methods for data collection, analysis and assessment, and work with ICES Data Centre to develop a database appropriate to eel along ICES standards (and wider geography);
5. Provide guidance on management measures that can be applied to both EU and non-EU waters;
6. Address the relevant generic ToR from ACOM for Regional and Species Working Groups;
7. WGEEL will report by (details to be determined) for the attention of ACOM, WGRECORDS, SSGEF and FAO, EIFAAC and GFCM.

D. Workshop on Elasmobranchs in the Mediterranean and Black Sea

1. Collate historical datasets and review all the ongoing research programs in the region to update previous 2010 publication;
2. Identify main fisheries and other human activities impacting sharks;
3. Identify sensitive areas for Elasmobranchs;
4. Assess by-catch rates in selected fisheries and other mortality rates induced by human activities;
5. Make proposals to improve i) the monitoring of by-catch; ii) stock assessments and iii) the control of illegal finning;
6. Make proposals for a series of technical measures to mitigate by-catch;
7. Create a community of practice for elasmobranchs in the Mediterranean and Black Sea hosted at the GFCM Secretariat IT platform.

E. Second Meeting of the GFCM Working Group on Marine Protected Areas

1. Assess the efficacy, performance and benefits of FRAs;
2. Assess the information regarding time/area closures and other protection ;
3. Follow-up on MPA developments under the MoU between GFCM and UNEP-MAP;
4. Follow up developments related to Vulnerable Marine Ecosystems (VMEs);
5. Evaluate and eventually propose to the SAC new FRA proposals based on new scientific information;
6. Compile Mediterranean best practices showing evidence of the role of time/area closures and MPAs in enhancing fishing stocks health and fishermen's income.

Appendix F

Framework for describing stock status and providing management advice in relation to reference points

INTRODUCTION

1. One of the main purposes of the Scientific Advisory Committee (SAC) of the GFCM is to assess the status of exploited populations of fish and other marine living resources in the Mediterranean and the Black Sea and provide management advice to ensure the sustainable exploitation of these resources. The SAC assessment of stock status and related management advice emanates from dedicated expert groups (e.g. the working groups on stock assessment for small pelagics and demersal species or the recent Subregional group for the assessment of Black Sea stocks), which are revised by the Subcommittee on Stock Assessment (SCSA) and provided to the SAC for endorsement and final advice to the GFCM Commission.
2. Within the expert groups on stock assessment, advice has been provided following terms of reference and recommendations from the SAC, and also in accordance with FAO and international standards and guidelines. In 2012, following several recommendations made on the management of different fisheries in the Mediterranean and Black Sea (e.g. Recommendations GFCM/27/2002/1, GFCM/30/2006/1 and Resolution GFCM 33/2009/1 on the management of certain fisheries exploiting demersal and small pelagic), and on the basis of SAC advice on the need to develop multiannual management plans based on agreed reference points, the GFCM formulated at its thirty-sixth session "Guidelines on a general management framework and presentation of scientific information for multiannual management plans for sustainable fisheries in the GFCM area"1. These guidelines include clear indications on suitable objectives and procedures to implement a management plan, and provide a clear definition of the requirements to provide scientific advice useful for management. The framework is based on the definition of reference points related to key indicators of the status of stocks, such as stock biomass and fishing mortality.
3. In order to further standardize and simplify the definitions of stock status as well as management advice provided by the expert groups, the thirty-seventh session of the Commission agreed to organize a workshop on the definition and use of reference points to provide advice on stock status and management measures. The main conclusions of this workshop were revised by the both working groups on stock assessment and the SCSA and then endorsed by the SAC at its sixteenth session. This document contains a framework on how to describe status of stocks and provide management advice for those stocks for which reference points are adopted by the SAC.

GENERAL CONSIDERATIONS

4. This document provides definitions for stock status and management advice on stocks for which reference points related to indicators of biomass and/or exploitation are available. The GFCM Guidelines on management plans define three categories of reference points to be used to provide advice:

    - target reference point, i.e. a management objective that points to a state of a fishing and/or biological resource which is considered to be desirable. Target reference points should be set sufficiently far away from a limit reference so that the probability that the limits will be exceeded is low. The trajectory toward the target(s) may be represented either on a linear plot with a single target reference point or on a two-dimension plot using two target reference points or on a multidimensional plot when more than two target reference points are used.

[1] These guidelines are referred to as Resolution OTH-GFCM/36/2012/1 in the Compendium of GFCM decisions.

- threshold reference point, i.e. a precautionary reference point expressed either as fishing mortality rate or a level of biomass or another agreed indicator. They are between the limit and target reference points and used to reduce the probability that the limit reference point will be exceeded. They serve as a red flag and may trigger particular management actions designed to reduce fishing pressure and mortality. After this point pre-negotiated management measures to reverse the situation should be initiated.
- limit reference point, i.e. a conservation reference point expressed either as a fishing mortality rate or level of biomass or another agreed indicator that indicates to a state of a fishery and/or a resource which is considered to be undesirable and which management actions should avoid with high probability. After this point pre-negotiated management measures to reverse the situation should be initiated.

5. In addition to these definitions, the following considerations are proposed in this document:

In relation to reference points and stock status:

- Suitable indicators for biomass can be either **Total Biomass** or **Spawning Stock Biomass**, while suitable indicators for exploitation can be either **Fishing mortality** or **Exploitation rate** (ratio between fishing mortality and total mortality). In all cases, reference points should be defined in relation to the indicator used. For simplification, in this document the acronym "**B"** refers to any biomass indicator, while the acronym "**F"** refers to any indicator of exploitation.
- Following the recommendations from the SAC, the advice should be based, if possible, on both indicators of biomass and exploitation, and for each indicator ideally target, threshold and limit (e.g. F_{tgt}, F_{thr}, F_{lim}) reference points should be defined. When only one indicator is available, there should be a clear advice to explore the possibility of having indicators for both biomass and exploitation.
- In general terms, a suggested target reference point for biomass and exploitation is that value of the indicator at which maximum sustainable yield (MSY) is obtained from the fishery, in accordance with the 1995 UN Fish Stocks Agreement (UNFSA), while limit and threshold reference points should be established based on precautionary principles.
- When only one reference point is available for a given indicator, the reference point is referred to as unique reference point (B_{unique} or F_{unique}), and it should refer to MSY.
- When the exploitation rate is used as an indicator, and in absence of a stock-specific reference point, F_{unique} for small pelagics can be defined as E=0.4 following the proposal of Patterson (1999).
- When fishing mortality is used as an indicator, $F_{0.1}$ (defined as the fishing mortality rate at which the slope of the yield-per-recruit curve is only one-tenth the slope of the curve at its origin) can be used as a proxy for F_{MSY}. If possible $F_{0.1}$ should be complemented with an additional estimate of F_{lim} (e.g. from an independent B_{lim} estimate) and F_{thr} should be defined in relation to F_{lim}. In that case F_{MSY} will be considered as a target. Alternatively, if only $F_{0.1}$ is available, it will be considered as F_{unique}.
- For small pelagic fish, a threshold and limit reference point for biomass, based on reproductive capacity should be established to maximize probability of obtaining good recruitments. In the absence of precise stock recruitment relationships that allow estimating it, B_{lim} is proposed to be defined as the lowest biomass from which a recovery has been confirmed (B_{loss}), estimated from an analysis of time series of biomass estimates. Time series should be sufficiently long and only if the analysis provides consistent perspective in the historical and the recent part of the time series this reference points is to be considered. Whenever similar minima that meet the required criteria (recovery) exist in the time series the upper value should be chosen as a precautionary approach. B_{thr} is defined as a point at which the probability to be below B_{lim} is lower than 5%. In absence of precise estimates of the

distribution of the biomass estimate, a lognormal distribution of B_{lim} should be assumed, with a coefficient of variation of 40%. This approximately results in $B_{thr} = 2 * B_{lim}$

In relation to management advice:

- Management advice is provided based on both the assessment of the status of the stock and the reference points used for this assessment. If the assessment is based on the full range of indicators (i.e. F and B) and reference points (i.e. target, threshold and limit), then a more precise advice can be provided. If on the other hand the assessment is based on a reduced number of indicators or reference points, then a more precautionary advice is provided due to limited information which could result in increasing risk for the sustainability of the fishery.
- When a reduction of fishing mortality is advised, it should be implemented by means of a multiannual management plan, done in accordance with the GFCM guidelines for management plans. The amount of reduction in fishing mortality resulting from the implementation of the plan should be proportional to the distance between the target fishing mortality and the current fishing mortality. Management advice emanating from the expert groups should therefore include the ratio between current estimate of the indicator of F and either its target or the unique reference point for F (i.e. F_{curr} / F_{target} or F_{curr} / F_{unique})
- When the status of stock is outside biological limits (as indicated by one or both indicators used), a recovery plan should be established. Minimum objectives for recovery plan should ensure that human pressure (direct and indirect) on the population is reduced to minimum and a close monitoring of population condition is established.

STOCK STATUS AND MANAGEMENT ADVICE IN RELATION TO REFERENCE POINTS

6. Stock status and proposed management advice for different combinations of indicators (only F, only B or both) and reference points (a unique reference point, precautionary – limit and threshold – reference points, or a full set of target, threshold or limit reference points) available for a given stock are provided in Tables 1 – 15. The diagram included in Figure 1 identifies the appropriate table for the different combinations of indicators and reference points available.

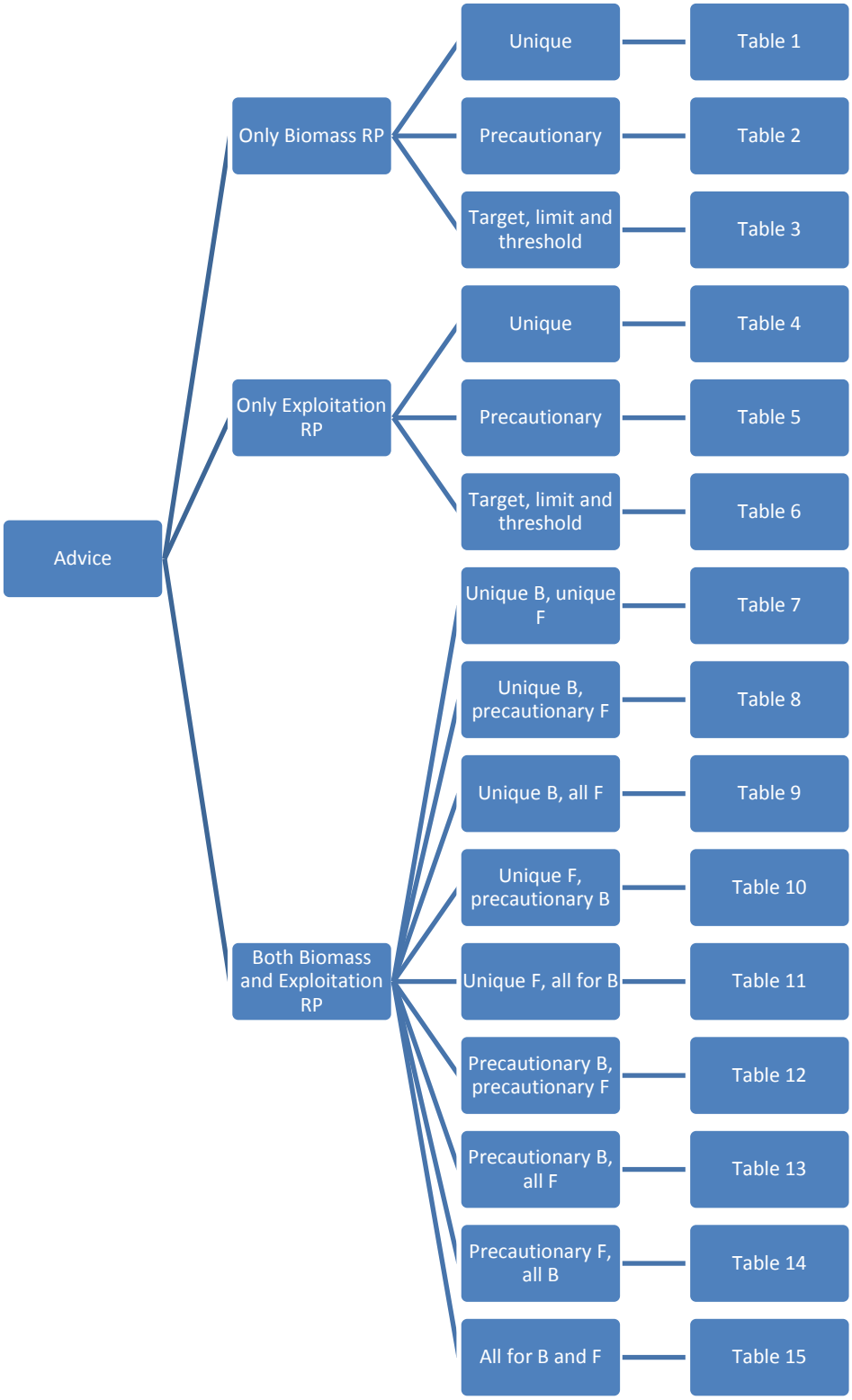

Figure 1: Diagram for the different stock assessment and management advice situations based on the indicators used and the reference points adopted. For each stock, the diagram indicates the adequate table to provide an assessment of stock status and its associated management advice.

Table 1: Advice for stocks that only have a single reference point for biomass

Current assessment	Status of stock	Advice
$B > B_{unique}$	No signals of overexploitation	Do not increase fishing mortality
$B < B_{unique}$	Overexploited	Reduce fishing mortality

Table 2: Advice for stocks that have precautionary reference points only for biomass (threshold and limit)

Current assessment	Status of stock	Advice
$B > B_{thr}$	No signals of overexploitation	Do not increase fishing mortality
$B_{thr} > B > B_{lim}$	Low biomass	Reduce fishing mortality
$B < B_{lim}$	Depleted / Collapsed	Implement a recovery plan

Table 3: Advice for stocks that have all reference points (target, threshold and limit) for biomass only

Current assessment	Status of stock	Advice
$B > B_{trg}$	Sustainably exploited	Do not increase fishing mortality
$B_{trg} > B > B_{thr}$	Biomass below target	Reduce fishing mortality
$B_{thr} > B > B_{lim}$	Low biomass	Reduce fishing mortality
$B < B_{lim}$	Depleted / Collapsed	Implement a recovery plan

Table 4: Advice for stocks that only have a single reference points for exploitation

Current assessment	Status of stock	Advice
$F < F_{unique}$	Sustainable exploitation	Do not increase fishing mortality
$F > F_{unique}$	In overexploitation	Reduce fishing mortality

Table 5: Advice for stocks that only have precautionary reference points for exploitation (threshold and limit)

Current assessment	Status of stock	Advice
$F < F_{thr}$	Sustainable exploitation	Do not increase fishing mortality
$F_{thr} < F < F_{lim}$	In overexploitation	Reduce fishing mortality
$F > F_{lim}$	In severe overexploitation	Immediate action to ensure a reduction in fishing mortality *

Table 6: Advice for stocks that have all reference points (target, threshold and limit) for exploitation only

Current assessment	Status of stock	Advice
$F < F_{trg}$	Sustainable exploitation	Do not increase fishing mortality
$F_{trg} < F < F_{thr}$	In low overexploitation	Reduce fishing mortality
$F_{thr} < F < F_{lim}$	In overexploitation	Reduce fishing mortality
$F > F_{lim}$	In severe overexploitation	Immediate action to ensure a reduction in fishing mortality *

*Monitoring that the level of fishing mortality actually decreases should be ensured.

Table 7: Advice for stocks with a unique reference point for both biomass and exploitation

Current assessment	Status of stock	Advice
$B > B_{unique}$	Sustainably exploited	Evaluate potential fishing opportunities*
$F < F_{unique}$		
$B > B_{unique}$	Biomass above reference point and in overexploitation	Reduce fishing mortality
$F > F_{unique}$		
$B < B_{unique}$	Overexploited with a low fishing mortality or ecologically unbalanced but with a low fishing mortality**	Reduce fishing mortality and/or implement a recovery plan
$F < F_{unique}$		
$B < B_{unique}$	Overexploited and in overexploitation	Immediate action to ensure a reduction in fishing mortality ***
$F > F_{unique}$		

- *Fishing opportunities should be evaluated taking into account ecosystem and socio-economic considerations and future risks for the target stock.
- ** Ecologically unbalanced refers to situations in which the low biomass is not believed to be caused by continuous human pressure, but else to changes in the ecosystem that prevents higher biomass.
- ***Monitoring that the level of fishing mortality actually decreases should be ensured.

Table 8: Advice for stocks with precautionary (limit and threshold) reference points for exploitation and unique reference points for biomass

Current assessment	Status of stock	Advice
$B > B_{unique}$	Sustainably exploited	Evaluate potential fishing opportunities*
$F < F_{thr}$		
$B > B_{unique}$	Biomass above reference point and in overexploitation	Reduce fishing mortality
$F_{lim} > F > F_{thr}$		
$B > B_{unique}$	Biomass above reference point and in severe overexploitation	Reduce fishing mortality immediately
$F > F_{lim}$		
$B < B_{unique}$	Overexploited with a low fishing mortality or ecologically unbalanced with a low fishing mortality**	Reduce fishing mortality and/or implement a recovery plan
$F < F_{thr}$		
$B < B_{unique}$	Overexploited and in overexploitation	Reduce fishing mortality and/or implement a recovery plan
$F_{lim} > F > F_{thr}$		
$B < B_{unique}$	Overexploited and in severe overexploitation	Immediate action to ensure a reduction in fishing mortality ***
$F > F_{lim}$		

- *Fishing opportunities should be evaluated taking into account ecosystem and socio-economic considerations and future risks for the target stock.
- ** Ecologically unbalanced refers to situations in which the low biomass is not believed to be caused by continuous human pressure, but else to changes in the ecosystem that prevents higher biomass.
- ***Monitoring that the level of fishing mortality actually decreases should be ensured.

Table 9: Advice for stocks with limit, threshold and target reference points for exploitation and unique reference points for biomass

Current assessment	Status of stock	Advice
$B > B_{unique}$	Sustainably exploited	Evaluate potential fishing opportunities*
$F < F_{tr}$		
$B > B_{unique}$	Biomass above reference point and in low overexploitation	Reduce fishing mortality
$F_{thr} > F > F_{tr}$		
$B > B_{unique}$	Biomass above reference point and in high overexploitation	Reduce fishing mortality
$F_{lim} > F > F_{thr}$		
$B > B_{unique}$	Biomass above reference point and in severe overexploitation	Reduce fishing mortality immediately
$F > F_{lim}$		
$B < B_{unique}$	Overexploited with a low fishing mortality or ecologically unbalanced with a low fishing mortality**	Reduce fishing mortality and/or implement a recovery plan
$F < F_{tr}$		
$B < B_{unique}$	Overexploited and in low overexploitation	Reduce fishing mortality and/or implement a recovery plan
$F_{thr} > F > F_{tr}$		
$B < B_{unique}$	Overexploited and in overexploitation	Reduce fishing mortality and/or implement a recovery plan
$F_{lim} > F > F_{thr}$		
$B < B_{unique}$	Overexploited and in severe overexploitation	Immediate action to ensure a reduction in fishing mortality ***
$F > F_{lim}$ or		

- *Fishing opportunities should be evaluated taking into account ecosystem and socio-economic considerations and future risks for the target stock.
- ** Ecologically unbalanced refers to situations in which the low biomass is not believed to be caused by continuous human pressure, but else to changes in the ecosystem that prevents higher biomass.
- ***Monitoring that the level of fishing mortality actually decreases should be ensured.

Table 10: Advice for stocks with precautionary reference points for biomass (B_{thr} and B_{lim}) and unique reference points for exploitation

Current assessment	Status of stock	Advice
$B > B_{thr}$	Sustainably exploited	Evaluate potential fishing opportunities*
$F < F_{unique}$		
$B > B_{thr}$	Biomass above reference point and in overexploitation	Reduce fishing mortality
$F > F_{unique}$		
$B_{lim} < B < B_{thr}$	Overexploited with a low fishing mortality or ecologically unbalanced with a low fishing mortality**	Reduce fishing mortality or implement a recovery plan
$F < F_{unique}$		
$B < B_{lim}$	Depleted with a low fishing mortality or ecologically unbalanced with a low fishing mortality**	Immediate reduction of fishing mortality and implement a recovery plan
$F < F_{unique}$		
$B_{lim} < B < B_{thr}$	Overexploited and in overexploitation	Reduce fishing mortality immediately
$F > F_{unique}$		
$B < B_{lim}$	Depleted and in overexploitation	Implement recovery plan
$F > F_{unique}$		

- *Fishing opportunities should be evaluated taking into account ecosystem and socio-economic considerations and future risks for the target stock.
- ** Ecologically unbalanced refers to situations in which the low biomass is not believed to be caused by continuous human pressure, but else to changes in the ecosystem that prevents higher biomass.
- ***Monitoring that the level of fishing mortality actually decreases should be ensured.

Table 11: Advice for stocks with limit, threshold and target reference points for biomass and unique reference points for exploitation

Current assessment	Status of stock	Advice
$B > B_{tr}$ $F < F_{unique}$	Sustainably exploited	Evaluate potential fishing opportunities*
$B > B_{tr}$ $F > F_{unique}$	Biomass above reference point and in overexploitation	Reduce fishing mortality
$B_{thr} < B < B_{tr}$ $F < F_{unique}$	Increased risk of being overexploited	Do not increase fishing mortality and close monitoring of the stock status
$B_{thr} < B < B_{tr}$ $F > F_{unique}$	Increased risk of being overexploited and in overexploitation	Reduce fishing mortality
$B_{lim} < B < B_{thr}$ $F < F_{unique}$	Overexploited with a low fishing mortality or ecologically unbalanced with a low fishing mortality**	Reduce fishing mortality or Implement a recovery plan
$B < B_{lim}$ $F < F_{unique}$	Depleted with a low fishing mortality or ecologically unbalanced with a low fishing mortality**	Immediate reduction of fishing mortality and implement a recovery plan
$B_{lim} < B < B_{thr}$ $F > F_{unique}$	Overexploited and in overexploitation	Reduce fishing mortality immediately
$B < B_{lim}$ $F > F_{unique}$	Depleted and in overexploitation	Implement recovery plan

Table 12: Advice for stocks with precautionary (limit and threshold) reference points for biomass and exploitation

Current assessment	Status of stock	Advice
$B > B_{thr}$ $F < F_{thr}$	Sustainably exploited	Evaluate potential fishing opportunities*
$B > B_{thr}$ $F_{lim} > F > F_{thr}$	Biomass above reference point and in overexploitation	Reduce fishing mortality
$B > B_{thr}$ $F > F_{lim}$	Biomass above reference point and in severe overexploitation	Reduce fishing mortality immediately
$B_{lim} < B < B_{thr}$ $F < F_{thr}$	Overexploited or ecologically unbalanced	Reduce fishing mortality or Implement a recovery plan
$B_{lim} < B < B_{thr}$ $F_{lim} > F > F_{thr}$	Overexploited and in overexploitation	Reduce fishing mortality
$B_{lim} < B < B_{thr}$ $F > F_{lim}$	Overexploited and in severe Overexploitation	Reduce fishing mortality immediately
$B < B_{lim}$ $F < F_{thr}$	Depleted with a low fishing mortality or ecologically unbalanced with a low fishing mortality**	Immediate reduction of fishing mortality and implement a recovery plan
$B < B_{lim}$ $F_{lim} > F > F_{thr}$	Depleted and in overexploitation	Close the fishery and implement a recovery plan
$B < B_{lim}$ $F > F_{lim}$	Depleted with immediate risk of collapse	Close the fishery and implement a recovery plan

Table 13: Advice for stocks with precautionary (limit and threshold) reference points for biomass and limit, threshold and target reference points for exploitation

Current assessment	Status of stock	Advice
$B > B_{thr}$ $F < F_{tr}$	Sustainably exploited	Evaluate potential fishing opportunities*
$B > B_{thr}$ $F_{thr} > F > F_{tr}$	Increased risk of overexploitation	Do not increase fishing mortality and close monitoring of the stock status
$B > B_{thr}$ $F_{lim} > F > F_{thr}$	Biomass above reference point and in overexploitation	Reduce fishing mortality
$B > B_{thr}$ $F > F_{lim}$	Biomass above reference point and in severe overexploitation	Reduce fishing mortality immediately
$B_{lim} < B < B_{thr}$ $F < F_{tr}$	Overexploited or ecologically unbalanced	Reduce fishing mortality or Implement a recovery plan
$B_{lim} < B < B_{thr}$ $F_{thr} > F > F_{tr}$	Overexploited and in risk of being in overexploitation	Reduce fishing mortality
$B_{lim} < B < B_{thr}$ $F_{lim} > F > F_{thr}$	Overexploited and in overexploitation	Reduce fishing mortality
$B_{lim} < B < B_{thr}$ $F > F_{lim}$	Overexploited and in severe overexploitation	Reduce fishing mortality immediately
$B < B_{lim}$ $F < F_{tr}$	Depleted with a low fishing mortality or ecologically unbalanced with a low fishing mortality**	Immediate reduction of fishing mortality and implement a recovery plan
$B < B_{lim}$ $F_{thr} > F > F_{tr}$	Depleted with unsustainable exploitation or ecologically unbalanced with unsustainable exploitation **	Immediate reduction of fishing mortality and implement a recovery plan
$B < B_{lim}$ $F_{lim} > F > F_{thr}$	Depleted and in overexploitation	Close the fishery and implement a recovery plan
$B < B_{lim}$ $F > F_{lim}$	Depleted with immediate risk of collapse	Close the fishery and implement a recovery plan

Table 14: Advice for stocks with precautionary (limit and threshold) reference points for exploitation and limit, threshold and target reference points for biomass

Current assessment	Status of stock	Advice
$B > B_{tr}$ $F < F_{thr}$	Sustainably exploited	Evaluate potential fishing opportunities*
$B > B_{tr}$ $F_{lim} > F > F_{thr}$	Biomass above reference point and in overexploitation	Reduce fishing mortality
$B > B_{tr}$ $F > F_{lim}$	Biomass above reference point and in severe overexploitation	Reduce fishing mortality immediately
$B_{thr} < B < B_{tr}$ $F < F_{thr}$	Increased risk of being overexploited	Do not increase fishing mortality and close monitoring of the stock status
$B_{lim} < B < B_{thr}$ $F < F_{thr}$	Overexploited or Ecologically unbalanced	Reduce fishing mortality or Implement a recovery plan
$B_{lim} < B < B_{thr}$ $F_{lim} > F > F_{thr}$	Overexploited and in overexploitation	Reduce fishing mortality
$B_{lim} < B < B_{thr}$ $F > F_{lim}$	Overexploited and in severe Overexploitation	Reduce fishing mortality immediately
$B < B_{lim}$ $F < F_{thr}$	Depleted with a low fishing mortality or ecologically unbalanced with a low fishing mortality**	Immediate reduction of fishing mortality and implement a recovery plan
$B < B_{lim}$ $F_{lim} > F > F_{thr}$	Depleted and in overexploitation	Close the fishery and implement a recovery plan
$B < B_{lim}$ $F > F_{lim}$	Depleted with immediate risk of collapse	Close the fishery and implement a recovery plan

Table 15: Advice for stocks with limit, threshold and target accepted reference points for both biomass and exploitation

Current assessment	Status of stock	Advice
$B > B_{tr}$	Sustainably exploited	Evaluate potential fishing opportunities*
$F < F_{tr}$		
$B > B_{tr}$	Increased risk of overexploitation	Do not increase fishing mortality and close monitoring of the stock status
$F_{thr} > F > F_{tr}$		
$B > B_{tr}$	Biomass above reference point and in Overexploitation	Reduce fishing mortality
$F_{lim} > F > F_{thr}$		
$B > B_{tr}$	Biomass above reference point and in severe overexploitation	Reduce fishing mortality immediately
$F > F_{lim}$		
$B_{thr} < B < B_{tr}$	Increased risk of being overexploited	Do not increase fishing mortality and close monitoring of the stock status
$F < F_{tr}$		
$B_{lim} < B < B_{thr}$	Overexploited or ecologically unbalanced	Reduce fishing mortality or Implement a recovery plan
$F < F_{tr}$		
$B_{thr} < B < B_{tr}$	Increased risk of being both overexploited and in overexploitation	Reduce fishing mortality
$F_{thr} > F > F_{tr}$		
$B_{lim} < B < B_{thr}$	Overexploited and in risk of being in overexploitation	Reduce fishing mortality
$F_{thr} > F > F_{tr}$		
$B_{lim} < B < B_{thr}$	Overexploited and in overexploitation	Reduce fishing mortality
$F_{lim} > F > F_{thr}$		
$B_{lim} < B < B_{thr}$	Overexploited and in severe overexploitation	Reduce fishing mortality immediately
$F > F_{lim}$		
$B < B_{lim}$	Depleted with a low fishing mortality or ecologically unbalanced with a low fishing mortality**	Immediate reduction of fishing mortality and implement a recovery plan
$F < F_{tr}$		
$B < B_{lim}$	Depleted with unsustainable exploitation or ecologically unbalanced with unsustainable exploitation **	Immediate reduction of fishing mortality and implement a recovery plan
$F_{thr} > F > F_{tr}$		
$B < B_{lim}$	Depleted and in overexploitation	Close the fishery and implement a recovery plan
$F_{lim} > F > F_{thr}$		
$B < B_{lim}$	Depleted with immediate risk of collapse	Close the fishery and implement a recovery plan
$F > F_{lim}$		

Appendix G

Elements for the management of selected case studies in the Mediterranean and Black Sea

Elements for the management of small pelagic fisheries in the Alboran Sea

1. Scope of this proposal

A definition of the area covered by this proposal (the *Alborán Sea*) as well as the fisheries included in this proposal (*small pelagic fisheries in the Alborán sea*) and species concerned (*target* and *associated* species) will be needed.

A definition of the stock units and limits in the area is not currently clear; therefore it will not become part of the scope, but else become a key research priority within this proposal.

2. Objectives

Following the GFCM guidelines on management plans (GFCM/36/2012), management plans should consider inter alia the following objectives:

- To prevent overfishing of small pelagics in the Alborán Sea area with a view to ensure the sustainable economic viability of fisheries;
- To maintain the stock of sardine in the area at levels that can produce the maximum sustainable yield and to facilitate the restoration of anchovy stocks to historical levels;
- To guarantee a low risk of sardine and anchovy stocks in the area falling outside safe biological limits;
- To ensure protection of biodiversity in the Alborán Sea to avoid undermining ecosystems' structure and functioning;

Operational objectives

- To maintain the biomass of sardine and anchovy above agreed precautionary biological reference points ($B > B_{pa}$ and $F<F_{pa}$)
- To minimize the risk that small pelagic fisheries in Alboran Sea put the population of other accompanying and non-target species at risk of falling below its safe biological limits (if exist) or in risk of collapse.
- To minimize bycatch of endangered or protected species
- To minimize any potential effect of small pelagic fisheries in Alboran Sea in the Alboran Sea habitat

3. Indicators and reference points

Both biomass and fishing mortality indicators should be used in order to incorporate natural fluctuations and minimize risk of collapse. Current stock assessment methods should be improved following the recommendations of SAC and reference points should be based on these models, once validated. Also, reference points should take into account the role of small pelagics in the trophic web. For biomass, the following reference points should be attempted:

- B_{lim}: a biomass level which is considered undesirable and which management actions should avoid with high probability.
- B_{pa}: a threshold level of biomass established to reduce the probability that the limit reference point will be exceeded.

The possibility to use generic reference points (e.g. $E < 0.4$ or $F_{0.1}$ for fishing mortality) while specific points of reference are designed for the stock should be evaluated.

Pending the availability of stock biomass and fishing mortality estimates and the identification of appropriate reference points, the following indicators and reference points could be used.

Indicator of stock abundance*	Reference point
Standardized catch-per-unit-of-effort (CPUE) data from the fishery	- Historical level - Trend (e.g. increase by x% per year)
As secondary indicator: Catch or trade data without information on effort	- Historical level - Trend (e.g. increase by x% per year)
Indicator of stock status	**Reference point**
Mean body size in the catch (Lt)	Lt > Lm; Lm = minimum conservation size.
Indicator of fishing pressure	**Reference point**
Fleet size	- Historical level - Trend (e.g. decrease by x% per year)
Fishing effort	- Historical level - Trend (e.g. decrease by x% per year)

The following indicator could be used for non-target species, and some reference points could be established:

- Landings of main non-target species defined in each fishery

The following indicators could be used for ecosystem status, and some reference points could be established:

- Presence and volume of catches of alien species
- Composition of the catch
- Mean length of the catches
- Any information on cetaceans and sea birds abundance and distribution

4. Fisheries management measures

In order to reach the objectives of this proposal, and without prejudice to stricter measures adopted nationally, the following tools can be used and the following potential measures are provided as options:

Management tools	Potential measures
Spatial restrictions	- (low impact on the plan) Seagrass beds, - (low impact on the plan) Coralligenous habitats and mäerl beds. - Nursery areas - Minimum distance to the coast - Minimum bottom depth - Protected areas
Gear restriction	Specific for the different operational units. Minimum mesh size and the way to be measures. - Purse seiners: o Minimum mesh size (potentially easily to be harmonized) o Maximum dimensions (length and depth) - Trawl nets: o Minimum mesh size o Cod-end o Dimensions - Accessories: characteristics of the light,
Minimum landing size	Minimum size – current measures are similar. To be checked on a technical forum. Use length weight conversions from each area <u>Minimal proposal:</u> *E. encrasicolus*: 9 cm. *S. pilchardus*: 11 cm *Trachurus* spp: 15 cm to be checked against ind./kg *Scomber* spp: 18 cm to be checked against ind./kg *Sardinella spp*: 15 cm to be evaluated Mininum sizes should be converted to ind./kg
Limits to fishing capacity	Pending the availability of sound scientific evidence indicating the existence of unutilized fishing opportunities, Countries shall not increase the number of vessels authorized to operate in this fishery. The allowance of changes in fishing capacity for existing vessels should be revised at national level.
MCS measures	Vessel information submitted to GFCM Regional Fleet Register. Record of fishing vessels larger than 15 metres authorized to fish in the GFCM Area. Satellite-based VMS required for vessels >15 meters authorized to fish in the GFCM area.

Management tools	Potential measures
	The submission of information from smaller vessels in this fishery could be evaluated Required submission of data on vessels engaged in IUU fishing (IUU Vessel List). Required logbook for vessels exceeding 15 meters authorized to fish in GFCM area. Logbook shall register quantities of each species caught and kept on board, above 50kg in live weight. Adoption of Port State measures to prevent, deter and eliminate IUU fishing.

5. Decision rules

Management plans will include decision rules with pre-agreed measures to be adopted under different conditions of the stock and other indicators such as fisheries activity, revenues, etc. in relation to agreed reference points. The specific technical measures to be adopted under each scenario for each indicator (stock status, economic indicator) are to be defined in appropriate national and sub-regional working groups.

6. Scientific monitoring

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

Adequate annual scientific monitoring of fisheries and exploited stocks at national level should be ensured so that SAC is in a position to provide scientific advice.

7. Research priorities

1. Definition of stock structure (stock identification, existence of metapopulations, stock boundaries, migration flows) with a view of determining if fisheries are sharing the same stock in the sub-region and the interconnectivity between areas.
2. Research towards improvement of the assessment of stock status, including:
    a. Improve biological information of target species (sardine and anchovy)
    b. Identify main accessory species for the fishery object of the plan in relation to the volume of catches and obtain a minimum of information on them (e.g. catches)
    c. Improve the assessment model used, including:
        i. Identification of the most adequate assessment model given the information foreseen
        ii. Definition of minimum information on biological parameters, catches and effort required to perform an assessment of the status of the stock using the preferred model
        iii. Investigation of the possibility to have a minimum set of data harmonized between countries in the region to compile a common dataset and apply a common assessment model
        iv. Recover data on direct surveys in the area, continue with the national survey that combined cover all the area, make the indicators compatible (single coordinated survey, calibrated surveys, etc.)

   d. Improve the knowledge of natural fluctuations of small pelagics in the Alboran Sea, including range of fluctuations, periodicity and causes.

3. Socioeconomic impacts of the implementation of management measures and plans, including:
   a. Socioeconomic impacts of the plan: short and long term potential negative effects, medium and long term potential positive impacts.
   b. Improvement of value chain, and conditions of the people working in the fisheries (security on board, etc.)
   c. Requirements for the preparation of the plan: technical meetings, meetings with stakeholders, studies needed (socioeconomic indicators)
   d. Requirements for the implementation of the plan, including;
      i. Analysis of the expected impact of the implementation of the measures proposed
      ii. Capacity building to implement the management measures proposed (control, etc.)
      iii. Requirements to implement research lines

8. Fisheries Monitoring, Control and Surveillance

To ensure compliance with the measures to be adopted in the management plan, the following actions are to be implemented:

- Concerned Parties should make efforts to implement GFCM recommendations related to MCS, including those listed under the section on management measures.
- Concerned Parties are responsible for implementing the adopted management measures in their jurisdictional waters and by vessels flying their flag beyond national jurisdiction.
- Development of a specific mechanism for MCS in areas beyond national jurisdictions covered by the management plan.

9. Review of the management plan

The contents of the management plans should be periodically reviewed in order to accommodate changes in the fisheries system. The review should be carried out as follows:

<u>To be done by SAC</u>:

- Status of stocks assessed yearly.
- Status of the fishery (e.g. economic indicators)
- Reference points should be proposed by the SAC once indicators are available.
- Once reference points are establish, the SAC should propose a review term for them.

<u>To be done by Concerned Parties</u>:

Management action taken based on stock status and fishery conditions (socioeconomic indicators) and according to the decision rules and management tools described.

10. Compliance with the plan

Management actions, modifications of the plan and compliance with the plan should be reported to the GFCM within the National Report submitted yearly to the GFCM. The Compliance Committee of the GFCM shall review this report and take necessary actions.

Elements for the management of bottom trawling fisheries for deep-water rose shrimp (*P. longirostris*) and associated species in the Strait of Sicily (GSA12 – 16)

1. Scope of the management plan

Need to define the species, the fleets and the areas that will be covered by the management plan.

2. Objectives

Following the GFCM guidelines on management plans (GFCM/36/2012), the regional plan should consider inter alia the following options:

To counteract and/or to prevent overfishing with a view to ensure the sustainable economic viability of fisheries;

To maintain and/or to restore, to the extent possible, the stock size of harvested species at least at levels which can produce the maximum sustainable yield;

To guarantee a low risk of stocks falling outside safe biological limits;

To ensure protection of biodiversity to avoid undermining ecosystems' structure and functioning.

Operational objectives

The plan should define, for each agreed objective, specific operational objectives that have practical interpretation, can clearly describe expected outcomes and can be measured with indicators. For example, in relation to the objective of "guarantee a low risk of stocks falling outside safe biological limits" the following operational objective could be applied:

- To maintain the biomass of target species above agreed precautionary biological reference points ($B > B_{pa}$ and $F<F_{0.1}$).
- To maintain indicators of stock status and fishing pressure (according to the Table on alternative indicators and reference points) at levels which ensure the sustainability of the fishery.

In relation to the objective of "ensure protection of biodiversity to avoid undermining ecosystem's structure and functioning", the following operational objective could be applied:

- To decrease discards of commercial and non-commercial species by (x)% in (y) years.
- To decrease the incidental catch of protected and endangered species.
- To prevent significant adverse impacts of bottom trawling fisheries on sensitive habitats by increasing the protection of areas where these habitats are known or are likely to occur.

3. Indicators and reference points

In situations where stock biomass is used as indicator of status of the stock, the following reference points could be used:

B_{lim}: a biomass level which is considered undesirable and which management actions should avoid with high probability.

B_{pa}: a threshold level of biomass established to reduce the probability that the limit reference point will be exceeded.

Bmsy: as a possible target reference point.

In situations where fishing mortality is used as an indicator of fishing pressure, the following reference point could be used:

$F_{0.1}$: The fishing mortality rate at which the slope of the yield-per-recruit curve is only one-tenth the slope of the curve at its origin.

Pending the availability of stock biomass and fishing mortality estimates and the identification of appropriate reference points, the following indicators and reference points could be used.

Indicator of stock abundance*	**Reference point**
Standardized index from scientific surveys (3)	- Historical level - Trend (e.g. increase by x% per year)
Standardized catch-per-unit-of-effort (CPUE) data from the fishery (2), assuming fishing pattern remained constant.	- Historical level - Trend (e.g. increase by x% per year)
Unstandardized CPUE data from the fishery (1), assuming fishing pattern remained constant.	- Historical level - Trend (e.g. increase by x% per year)
Indicator of stock status	**Reference point**
Mean body size in the catch (Lt), assuming that selectivity pattern is kept constant.	Lt > Lm; Lm = minimum conservation size.
Indicator of fishing pressure	**Reference point**
Fleet size (by operational units as defined by GFCM Task 1)	- Historical level - Trend (e.g. decrease by x% per year)
Fishing effort (accounting for capacity and activity, including vessel tonnage, power and days at sea)	- Optimal Effort to reach MSY - Historical level - Trend (e.g. decrease by x% per year)

*In brackets the relative level of reliability of the indicators of stock abundance (1 lower level, 3 higher level).

Concerning the objective of ensure protection of biodiversity to avoid undermining ecosystem's structure and functioning, the following indicators and references points could be used:

Indicator	**Reference point**
Discard rate (%)	- Historical - Trend (% over time)
Bycatch of protected/endangered species	- Historical - Trend (% over time)
Area of sensitive habitats under protection	- Historical - Trend (% over time)

4. Fisheries management measures

In order to reach the objectives of the regional management plan, and without prejudice to stricter measures adopted nationally, countries should consider the adoption of the following minimum conservation measures for the bottom trawling fisheries targeting deep water rose shrimp.

Rank (effectiveness)	Management measures	Examples
High	Spatial restrictions	Prohibited fishing above coralligenous habitats and mäerl beds. Protection of nursery areas.
Low	Temporal restrictions	Adopting common closed seasons by GSAs.
High	Gear restrictions	Minimum 40 mm square mesh or a diamond mesh size of at least 50 mm in the codend (according to Recommendation GFCM/ /33/2009/2). Improve the selectivity of the gear to reduce the capture of immature individuals and bycatch (e.g. through the implementation of Bycatch Reduction Devices)
High	Minimum size	Minimum conservation sizes should be defined and harmonized in the sub-region, based on the best scientific knowledge about maturity. Obs: Minimum conservation sizes should be used as reference points on the monitoring of the efficiency of the management plan.
High	Habitat protection	Establishment of provisions to minimize the encounter of bottom trawlers with unmapped sensitive habitats (e.g. through “move-on” rules).
Medium	Participatory restrictions	Consider mechanisms to control access in order to adapt the fishing effort and fishing capacity according to the status of the resource.

5. Decision rules

Management plans 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 socio-economic impacts of the proposed measures.

6. 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.

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

- Assessment of socioeconomic impacts of the management plan

(the assessment of socioeconomic impact of the proposed management measures should be carried out prior to and during the implementation of the management plan)

- Research on the valorisation of fish products.
- Research to improve the selectivity of fishing gear.
- Assessment of bycatch and discards.
- Improvement of the knowledge on stock boundaries
- Advance in the application of ecosystem/multispecies approaches.
- Improvement of the assessment of the status of associated species taking into account the multi-species characteristics of the fisheries.
- Advance in the application of bioeconomic analysis of fisheries.

8. Fisheries Monitoring, Control and Surveillance

To ensure compliance with the measures to be adopted in the management plan, the following actions are to be implemented:

- Concerned Parties should make efforts to implement GFCM recommendations related to MCS, including those listed below:

- Vessel information submitted to GFCM Regional Fleet Register.
- Record of fishing vessels larger than 15 metres authorized to fish in the GFCM Area.
- Satellite-based VMS required for vessels >15 meters authorized to fish in the GFCM area.
- Required submission of data on vessels engaged in IUU fishing (IUU Vessel List).
- Required logbook for vessels exceeding 15 meters authorized to fish in GFCM area. Logbook shall register quantities of each species caught and kept on board, above 50 kg in live weight.
- Adoption of Port State measures to prevent, deter and eliminate IUU fishing.

- Strengthen national capacities for fisheries monitoring, control and surveillance.
- Concerned Parties are responsible for implementing the adopted management measures in their jurisdictional waters and by vessels flying their flag beyond national jurisdiction.
- Development of a specific mechanism for MCS in areas beyond national jurisdictions covered by the management plan.
- Improve the collection of fisheries statistical data, including social and economic data.

9. Review of the management plan

The contents of the management plans should be periodically reviewed in order to accommodate changes in the fisheries system. The review should be carried out as follows:

To be done by SAC:

- Status of stocks assessed yearly.
- Status of the fishery (e.g., economic indicators)
- Reference points should be proposed by the SAC once indicators are available.
- Once reference points are establish, the SAC should propose a review term for them.

To be done by Concerned Parties:

Management action taken based on stock status and fishery conditions (socioeconomic indicators) and according to the decision rules and management tools described.

Elements for the management of bottom trawling fisheries for deep-water red shrimps (*A. foliacea* and *A. antennatus*) in the Central-Eastern Mediterranean (GSA12 – 16; 19 -27)

1. Scope of the management plan

Need to define the species, the fleets and the areas that will be covered by the management plan.

2. Objectives

Following the GFCM guidelines on management plans (GFCM/36/2012), the regional plan should consider inter alia the following options:

To counteract and/or to prevent overfishing with a view to ensure the sustainable economic viability of fisheries;

To maintain and/or to restore, to the extent possible, the stock size of harvested species at least at levels which can produce the maximum sustainable yield;

To guarantee a low risk of stocks falling outside safe biological limits;

To ensure protection of biodiversity to avoid undermining ecosystems' structure and functioning;

Operational objectives

The plan should define, for each agreed objective, specific operational objectives that have practical interpretation, can clearly describe expected outcomes and can be measured with indicators. For example, in relation to the objective of "guarantee a low risk of stocks falling outside safe biological limits" the following operational objectives could be applied:

- To maintain the biomass of target species above agreed precautionary biological reference points ($B > B_{pa}$ and $F<F_{0.1}$).
- To maintain indicators of stock status and fishing pressure (according to the Table on alternative indicators and reference points) at levels which ensure the sustainability of the fishery.

In relation to the objective of "ensure protection of biodiversity to avoid undermining ecosystem's structure and functioning", the following operational objectives could be applied:

- To decrease discards of commercial and non-commercial species by (x)% in (y) years.
- To decrease the incidental catch of protected and endangered species.
- To prevent significant adverse impacts of bottom trawling fisheries on sensitive habitats by increasing the protection of areas where these habitats are known or are likely to occur.

3. Indicators and reference points

In situations where stock biomass is used as indicator of status of the stock, the following reference points could be used:

B_{lim}: a biomass level which is considered undesirable and which management actions should avoid with high probability.

B_{pa}: a threshold level of biomass established to reduce the probability that the limit reference point will be exceeded.

Bmsy: as a possible target reference point.

In situations where fishing mortality is used as an indicator of fishing pressure, the following reference points could be used:

$F_{0.1}$: The fishing mortality rate at which the slope of the yield-per-recruit curve is only one-tenth the slope of the curve at its origin.

Pending the availability of stock biomass and fishing mortality estimates and the identification of appropriate reference points, the following indicators and reference points could be used.

Indicator of stock abundance*	**Reference point**
Standardized index from scientific surveys (3)	- Historical level - Trend (e.g. increase by x% per year)
Standardized catch-per-unit-of-effort (CPUE) data from the fishery (2), assuming fishing pattern remained constant.	- Historical level - Trend (e.g. increase by x% per year)
Unstandardized CPUE data from the fishery (1), assuming fishing pattern remained constant.	- Historical level - Trend (e.g. increase by x% per year)
Indicator of stock status	**Reference point**
Mean body size in the catch (Lt), assuming that selectivity pattern is kept constant.	Lt > Lm; Lm = minimum conservation size.
Indicator of fishing pressure	**Reference point**
Fleet size (by operational units as defined by GFCM Task 1)	- Historical level - Trend (e.g. decrease by x% per year)
Fishing effort (accounting for capacity and activity, including vessel tonnage, power and days at sea)	- Optimal Effort to reach MSY - Historical level - Trend (e.g. decrease by x% per year)

*In brackets the relative level of reliability of the indicators of stock abundance (1 lower level, 3 higher level).

Concerning the objective of ensure protection of biodiversity to avoid undermining ecosystem's structure and functioning, the following indicators and references points could be used:

Indicator	**Reference point**
Discard rate (%)	- Historical - Trend (% over time)
Bycatch of protected/endangered species	- Historical - Trend (% over time)
Area of sensitive habitats under protection	- Historical - Trend (% over time)

4. Fisheries management measures

In order to reach the objectives of the regional management plan, and without prejudice to stricter measures adopted nationally, countries should consider the adoption of the following minimum conservation measures for the bottom trawling fisheries targeting deep water red shrimp.

Rank (effectiveness)	Management measures	Examples
High	Spatial restrictions	Prohibited fishing above coralligenous habitats. Protection of nursery areas (likely lower effectiveness for the species). Consider additional measures, such as depth limits to the fishing operation. Trawling is forbidden below 1000m depth (recommendation GFCM 29/2005/01)
Higher for *A. foliacea*	Temporal restrictions	Adopting common closed seasons for red shrimp and associated species by GSAs.
High	Gear restrictions	Minimum 40 mm square mesh or a diamond mesh size of at least 50 mm in the codend (according to Recommendation GFCM/ /33/2009/2). (Measure is expected to have a high economic impact on some segments of the fleet – multipurpose. An assessment of the impact should be carried out and measures to counteract it should be sought – see research priorities) Improve the selectivity of the gear to reduce the capture of immature individuals and bycatch (e.g. through the implementation of Bycatch Reduction Devices).
High	Minimum size	Minimum conservation sizes should be defined and harmonized in the sub-region, based on the best scientific knowledge about maturity**.

Rank (effectiveness)	Management measures	Examples
		Obs: Minimum conservation sizes should be used as reference points on the monitoring of the efficiency of the management plan.
High	Habitat protection	Establishment of provisions to minimize the encounter of bottom trawlers with unmapped sensitive habitats (e.g. through the implementation of "move-on" rules).
Medium	Participatory restrictions	Consider mechanisms to control access in order to adapt the fishing effort and fishing capacity according to the status of the resource. In view of the limited information about the stock and habitats in many GSAs, consider additional mechanisms that condition the development of fishing capacity to the acquisition of new knowledge.

**See for instance: AAVV (2008). Status of deep-sea Red Shrimps in the Central and Eastern Mediterranean Sea, Final Report. Project Ref FISH/2004/03-32; Deval, M. C. (unpublished). Some useful information for the stock assessment of giant red shrimp (*Aristaemorpha foliacea*, Risso 1827) in the Golf of Antalya, eastern Mediterranean; INTERREG II GREECE-ITALY project: New perspectives for the investigation and management of shared deep-water resources in the Ionian Sea.

5. 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.

6. 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.

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

- Assessment of socioeconomic impact of the management plan.
  (the assessment of socioeconomic impact of the proposed management measures should be carried out prior to and during the implementation of the management plan)
- Research on the valorisation of fish products through improvement in product quality (e.g. preservation techniques) and ecolabelling.
- Research to improve the selectivity of fishing gear.

- Assessment of bycatch and discards.
- Improvement of the knowledge on stock boundaries .
- Advance in the application of ecosystem/multispecies approaches.
- Improvement of the assessment of the status of associated species taking into account the multi-species characteristics of the fisheries.
- Advance in the application of bioeconomic analysis of fisheries.
- Identification of sensitive areas (VMEs) that will need to be protected from the impact of bottom trawl gears. Use of fishers knowledge complementary to scientific knowledge.
- Research aimed at understanding the relationship between deep water corals and red shrimps.
- Research to improve knowledge on the relationship between habitat characteristics (depth, sea bottom morphology and other environmental factors) on resource availability.
- Studies on the effect of horsepower on trawling operation and selectivity.

8. Fisheries Monitoring, Control and Surveillance

To ensure compliance with the measures to be adopted in the management plan, the following actions are to be implemented:

- Concerned Parties should make efforts to implement GFCM recommendations related to MCS, including those listed below:

- Vessel information submitted to GFCM Regional Fleet Register.
- Record of fishing vessels larger than 15 metres authorized to fish in the GFCM Area.
- Satellite-based VMS required for vessels >15 meters authorized to fish in the GFCM area.
- Required submission of data on vessels engaged in IUU fishing (IUU Vessel List).
- Required logbook for vessels exceeding 15 meters authorized to fish in GFCM area. Logbook shall register quantities of each species caught and kept on board, above 50 kg in live weight.
- Adoption of Port State measures to prevent, deter and eliminate IUU fishing.

- Strengthen national capacities for fisheries monitoring, control and surveillance.
- Concerned Parties are responsible for implementing the adopted management measures in their jurisdictional waters and by vessels flying their flag beyond national jurisdiction.
- Development of a specific mechanism for MCS in areas beyond national jurisdictions covered by the management plan.
- Improve the collection of fisheries statistical data, including social and economic data.

9. Review of the management plan

The contents of the management plans should be periodically reviewed in order to accommodate changes in the fisheries system. The review should be carried out as follows:

<u>To be done by SAC</u>:

- Status of stocks assessed yearly.
- Status of the fishery (e.g. economic indicators)
- Reference points should be proposed by the SAC once indicators are available.
- Once reference points are establish, the SAC should propose a review term for them.

<u>To be done by Concerned Parties</u>:

Management action taken based on stock status and fishery conditions (socioeconomic indicators) and according to the decision rules and management tools described.

Elements for the management of turbot fisheries in the Black Sea

1. Scope of this proposal

A definition of the area covered by this proposal (the *Black Sea, GSA 29*) as well as the fisheries included in this proposal and species concerned (*target* and *associated* species) will be needed.

Target fisheries:

- bottom set gillnet,

Other fisheries affecting turbot:

- Bottom trawl,
- Rapana beam trawl and dredges
- Hydraulic dredges (venus)
- midwater trawls
- longlines for dogfish

Target species:

Turbot (*Psetta maxima*). The structure of Turbot population at Black Sea is uncertain (limit between populations, degree of mixing/independency). However, ecology, biology and fishing gears are similar through all the Black Sea, and similar issues exist in the different areas, including high fishing pressure (high fishing effort, overfishing and indirect mortality e.g. bycatch) and high IUU fishing pressure due to economic value. A main research priority should be improved knowledge on population structure, but this should not prevent common management framework.

Associated species:

Bottom gillnet:

- Cetaceans
- Picked dogfish
- Thomback ray
- Common stingray

2. Objectives

Two options could be considered: a common sub-regional management plan or a common management plan structure to be implemented through national management plans. Any discrepancies with national legislations should be evaluated.

Following the GFCM guidelines on management plans (GFCM/36/2012), and in agreement with the established roadmap for fighting IUU fishing, the regional plan should consider inter alia the following options:

To counteract and/or to prevent overfishing (both direct and indirect e.g. bycatch) with a view to ensure the sustainable economic viability of fisheries;

To restore, to the extent possible, the size of Black Sea turbot stocks at least at levels which can produce the maximum sustainable yield

To guarantee a low risk of stocks of the associated species falling outside safe biological limits;

To reduce the extent of IUU fishing on turbot.

To ensure protection of biodiversity to avoid undermining ecosystems' structure and functioning;

Operational objectives

The plan should define, for each agreed objective, specific operational objectives that have practical interpretation, can clearly describe expected outcomes and can be measured with indicators. For example,

Objective

To restore, to the extent possible, the size of Black Sea turbot stocks at least at levels which can produce the maximum sustainable yield

Operational objective

- To restore the biomass of turbot above agreed precautionary biological reference points (e.g. $B > B_{target}$).

In the case that SAC has accepted different assessments for different areas, all of the accepted assessments should comply with this operational objective.

Objective

To counteract and/or to prevent overfishing (both direct and indirect e.g. bycatch) with a view to ensure the sustainable economic viability of fisheries;

Operational objective

- To maintain fishing mortality within agreed precautionary fishing mortality reference points (e.g. $F<F_{target}$)

In the case that SAC has accepted different assessments for different areas, all of the accepted assessments should comply with this operational objective. In the absence of an accepted assessment or a fishing mortality reference point, a precautionary limit should be established.

Objective

To guarantee a low risk of stocks of the associated species falling outside safe biological limits;

Operational objective

- To keep fishing mortality of the associated species at levels that allow them to be within safe biological limits.

Objective

To reduce the extent of IUU fishing on turbot.

Operational objective

- To implement by priority actions within the Roadmap for fighting IUU fishing (reference) which are relevant to turbot.
- To develop specific cooperation (exchange of information, trainning, port State measures) at Black Sea scale regarding control of turbot fishery

Objective

To ensure protection of biodiversity to avoid undermining ecosystems' structure and functioning.

Operational objective

- To decrease discards of commercial and non-commercial species by (x)% in (y) years.
- To decrease the incidental catch of protected and endangered species.
- To reduce the amount of lost fishing gear and cage nets.

3. Indicators and reference points

The indicators and reference points accepted by the SAC should be used in the management plan.

In situations where stock biomass is used as indicator of status of the stock, the following reference points could be used:

B_{lim}: a biomass level which is considered undesirable and which management actions should avoid with high probability.

$B_{threshold}$: a threshold level of biomass established to reduce the probability that the limit reference point will be exceeded.

B_{target}: B_{msyy} as a possible target reference point.

Spawning stock biomass: ratio between the spawning stock biomass and the total biomass.

In situations where fishing mortality is used as an indicator of fishing pressure, the following reference point could be used:

$F_{0.1}$: The fishing mortality rate at which the slope of the yield-per-recruit curve is only one-tenth the slope of the curve at its origin.

Concerning the objective of ensure protection of biodiversity to avoid undermining ecosystem's structure and functioning, the following indicators and references points could be used:

Indicator	**Reference point**
Discard rate of undersized turbot and associated species (%)	- Historical - Trend (% over time)
Bycatch of protected/endangered species	- Historical - Trend (% over time)
Lost and abandoned	- Recovery of a number of lost/abandoned gears - Trend (% over time)

Indicators for environmental and other anthropogenic effects on the fishery

Considering the relevance of external impacts on the performance of fisheries management, the plan should indicate a set of indicators to be monitored in connection to known environmental and other anthropogenic effects on the stocks. For turbot, the following indicators of environmental status are considered important:

- Water temperature in the spawning period
- Water temperature stratification
- Spatial extent of hypoxia

4. Fisheries management measures

In order to reach the objectives of the management plan, and without prejudice to stricter measures adopted nationally, countries should consider the adoption of the following minimum conservation measures for the turbot fisheries covered by this plan.

Management tools	Potential measures	Rank (effectiveness)
Spatial restrictions	Areas restricted to trawling Areas resticted to gillnet fisheries Areas restricted to other fisheries catching turbot as bycatch No-take areas	High High High Medium (because no-takes are usually small)
Temporal restrictions	Close fishery during spawning season. If similar spawning season occur in diffreent areas, a common closed season should be established.	High
Effort restrictions	Limit the overall capacity of the authorized fleet Number of days. hours at sea	High Medium
Minimum size	Minimum size 45 cm TL (Ukraine 35 cm SL) Minimum sizes should be established for: - Picked dogfish[1] - Thomback ray - Common stingray	High High
Participatory restrictions	Adoption of special authorizations for turbot fishing	High

Management tools	Potential measures	Rank (effectiveness)
Others…	- Catch restrictions (e.g. TAC or Limit) - Bycatch restrictions (e.g. maximum number or weight of turbot allowed to be caught as bycatch) - Restocking	Medium (high IUU catches) Medium High

1. Currently minimum sizes for picked dogfish have defined in Ukraine (85 cm SL), Romania (120 cm TL), Bulgaria (90 cm TL)

5. Decision rules

Management plans 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 socioeconomic impacts of the proposed measures.

6. Scientific monitoring

The Scientific Advisory Committee (SAC) of the GFCM should be responsible for advice on status of stocks and economic indicators of fisheries, taking into account the work performed by its subsidiary bodies. The Working Group of the Black Sea should oversee the implementation of the management plan.

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.

In line with the roadmap for fighting IUU fishing, the management plan should develop and agree on standard methodologies to evaluate illegal, unreported and unregulated catches in support of stock assessments.

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

- Stock identification
- Improving data collection, especially for small scale fisheries
- Estimation of bycatch, discard and IUU catches
- Improvement of the selectivity of the fishery, including more ecosystem friendly fishing gears
- Cooperation among countries and Black Sea Commission
- Assessment of the socioeconomic importance of the fisheries and the socioeconomic impacts of the proposed measures in the management plan both at national and regional level

8. Fisheries Monitoring, Control and Surveillance

To ensure compliance with the measures to be adopted in the management plan, the following actions are to be implemented:

- Concerned Parties should make efforts to implement GFCM recommendations related to MCS, including those listed below:
- Vessel information submitted to GFCM Regional Fleet Register.
- Record of fishing vessels larger than 15 metres authorized to fish in the GFCM Area.
- Satellite-based VMS required for vessels >15 meters authorized to fish in the GFCM area.
- Required submission of data on vessels engaged in IUU fishing (IUU Vessel List).
- Required logbook for vessels exceeding 15 meters authorized to fish in GFCM area. Logbook shall register quantities of each species caught and kept on board, above 50 kg in live weight.
- Adoption of Port State measures to prevent, deter and eliminate IUU fishing.

These obligations are already in place for the GFCM members but the possibility that some of them are used in the management plan for turbot by members and non-members of GFCM should be explored.

Additional actions to combat IUU fishing should be considered. The proposed actions should build on the elements of the roadmap elaborated in the "Joint GFCM-BSC Workshop on IUU Fishing in the Black Sea", Istanbul, Turkey, 25-27 February 2013. Specific reference to the following action in the roadmap should be made:

- Improve market control and traceability mechanisms and take measures to minimize the trade of IUU products.
- Joint adaptive inspection schemes and national observer programmes have to be envisaged.
- Carry out joint training of fisheries inspectors and other enforcement authorities
- Awareness campaigns for the protection of Black Sea fisheries against IUU fishing should be launched

9. Review of the management plan

The contents of the management plans should be periodically reviewed in order to accommodate changes (past and foreseen) in the fisheries system. The review should be carried out as follows:

To be done by SAC:

- Status of stocks assessed yearly.
- Status of the fishery (e.g. economic indicators)
- Reference points should be proposed by the SAC once indicators are available.
- Once reference points are establish, the SAC should propose a review term for them.

To be done by Concerned Parties:

Management action taken based on stock status and fishery conditions (socioeconomic indicators) and according to the decision rules and management tools described.

10. Compliance with the plan

Management actions, modifications of the plan and compliance with the plan should be reported to the GFCM within the National Report submitted yearly to the GFCM (the use of the common format decided for the GFCM and Black Sea Commission is recommended). The Compliance Committee of the GFCM shall review this report and take necessary actions.

Appendix H

Elements for the concept note: First regional programme on small-scale fisheries

General structure

The regional programme on small-scale fisheries would be articulated around the following five thematic/strategic areas as identified by the Symposium:

- Current situation of small-scale fisheries in the Mediterranean and the Black Sea: strategies and methodologies for an effective analysis of the sector
- Management and co-management options for small-scale fisheries in the Mediterranean and Black Sea
- Integration of small-scale fisheries in marine protected areas (MPAs)
- Enhancing small-scale fisheries value chains in the Mediterranean and Black Sea
- Setting up a regional platform to promote the implementation of the voluntary Guidelines for Securing Sustainable Small-Scale Fisheries (SSF Guidelines)

The workplan and outputs of the programme will build on the conclusions of the Symposium and will be jointly decided in a participatory process with organizations joining the programme. The SSF regional programme will be used as a framework to develop specific projects with any of the organizations or consortia of organizations joining the programme.

General objectives

The overall focus of the first regional programme on small-scale fisheries is to promote the successful management of SSF in the Mediterranean and Black Sea, delivering on the ecosystem approach to fisheries (EAF) while improving livelihoods, economies and food security of coastal communities.

GFCM Framework Programme in support of Task Force activities (FWP)

The regional programme on small-scale fisheries builds on and is consistent with the FWP work package (WP) 4: "Enhancing the development of artisanal fisheries. Assessing the status of recreational fisheries". More specifically, it shares the WP4 overarching outcomes: "better management and control of artisanal fisheries to support fisheries-dependent coastal communities relying on these resources" as well as output "strategic and programmatic interventions to improve the livelihoods and sustainability of artisanal coastal fishing communities implemented; fishers' organizations strengthened and co-management regimes in place".

Strategy

During the first year of the programme, a series of case studies on SSF covering a range of geographic and socioeconomic situations related to the five thematic areas will be undertaken. The selected case studies should be balanced in their geographical coverage taking into account well-known and new cases on SFF. An analytical framework to analyze the case studies will be developed and existing data will be used as starting point to identify gaps and needs.

Specific objectives

Provisional identified specific objectives include the following:

- Identify existing good practices in SSF at the national level concerning governance, management measures (including area management/MPAs), value chain and diversification of economic activities. Good practices can range from single specific issues to comprehensive management schemes;

- Establish a Mediterranean and Black Sea regional network of good practices (see above point) and try to include at least one case study per GFCM country;
- Establish in parallel a regional network of pilot multi-stakeholder co-managed fisheries; the network would include 1–2 fisheries case studies per subregion. Case studies will be comprehensive and address governance (e.g. co-management committees, community-based data collection programmes, stakeholder involvement in MCS, etc.), management and value chain issues;
- Establish national fora gathering multi-stakeholder platforms supporting the regional programme (i.e. "Sustainable Fisheries Forum"); support and empower such platforms;
- Identify capacity-building needs (training, technical assistance, etc.), design and implement related programmes covering governance, management measures (i.e. EAF toolkit), value chain and diversification of economic activities;
- Establish a well-designed exchange programme targeted primarily to fishers to spread/replicate good practices across the region.

Implementation

GFCM Secretariat and relevant party organizations.

Programme duration

2014–2018: 4 years

Funding

The implementation of the regional programme will be subject to available extrabudgetary resources. It will be supported by *ad hoc* funding mechanisms (e.g. through multilateral trust-funds settings). Potential donors include GFCM Members, non-Members, international organizations and private foundations/entities.

List of case studies for the first year of the regional programme

- **Algeria**: one case study in Hadjrat Ennas, and one case study in Taza
- **Egypt**: one case study in Alessandria and in areas where there are conflicts between SSF and recreational fisheries
- **FAO regional project AdriaMed**: one case study in the Adriatic Sea
- **France**: case studies to cover interactions between SSF in lagoons, marine areas and SSF and MPAs in the Gulf of Lion
- **Italy**: one case study in the Egadi Islands in NW Sicily where conflicts between trawling, purse seine, MPA and SSF occur. Possibly other case studies
- **MedArtNet**: one case study on the Mediterranean Platform of Artisanal Fishers (MedArtNet)
- **Morocco**: one case study linking SSF and MPA in Morocco
- **Spain**: one case on spiny lobster and associated artisanal fisheries in the Minorca channel (Balearic islands, western Mediterranean); one case study on bivalves fisheries in the northern Alborán Sea (western Mediterranean); one case study on eel fisheries in the Mar Menor
- **Tunisia**: one case study on the Kerkennah islands and one case study on the Bahiret el Bibane lagoon
- **Turkey**: one or more case study/ies in the Black Sea in cooperation with the Coast-to-Coast NETworks Project (CoCoNET)
- **WWF**: one case study on sand eel SSF in Catalonia, Spain

Course of action

GFCM will contact proponents of case study to get details to complete the concept note which will be submitted for review and validation. Once the concept note is finalized, it will be presented to the thirty-eight session of the GFCM Commission for endorsement.

Outline of small-scale fisheries case studies for the preparation of a concept note (max. 3 pages)

1. Name and geographical location of the case study area
2. Environmental and socioeconomic characteristics of the study area
3. Data availability and stakeholders implication for data gathering
4. Basic information regarding on-going projects on small-scale fisheries (if available)
5. Description of small-scale fisheries and other fisheries in the area (management plan if any, etc.)
6. Value chain profile and existing examples of diversification (if any)
7. Description of fisheries co-management regimes in place, planned or about to be established
8. Existing Marine Protected Area (MPA) in the study area (if any)
9. Interactions between small-scale fisheries and other activities in the study area (aquaculture, fisheries, tourism, etc.)
10. Examples of best practices concerning governance and management measures in the study area
11. Pictures and maps of the proposed study area if available
12. Any other relevant information

Appendix I(a)

Summary tables of national reports 2014

Albania

Section 1 - Description of fisheries

A. Fishing grounds (GSAs): 18
B. Total landings: 3 889 tonnes (2013, 9 months); 4 919 tonnes (2012)
C. Fleet: 584 vessels (2013); 597 vessels (2012)

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
National system for fisheries statistics is not in place.

VMS system built based on: "Politics and the procedures of functioning of Inter-institutional Operational Maritime Centre (IMOC) in all fishing vessels over 12 m to strengthen the surveillance of the fishing fleet and ensuring reliable, systematic and improved collection of data on the fishing fleet, catches, landings and the biological status of the stocks.

B. Indicate whether or not progress in activities related to the collection and processing of fishery statistics have been done with the assistance of FAO regional projects
C. Type of data collected, transmission to GFCM Secretariat and other international bodies
GFCM Task 1 data

D. Existing databases and synergies with other applications
Newly developed Catch Information Data Base, Fishery Inspector Information Support System and Catch Validation Data Base.

Section 4 - Status of research in progress

A. Fisheries research with emphasis on management oriented assessment and GFCM priority species

Research/project title	Duration	Main topic	Description
Bottom fish reserve monitoring in Albanian seawaters		Biological sampling	Biological material obtained through random sampling from bottom trawlers in four ports (main species: haddock, mullet, anchovy, pink shrimp, sardines)

B. Socio-economic studies of fishing communities and fishing sector

Research/project title	Duration	Main topic	Description
Survey on socio-economic data of Albanian fisheries	May 2013	Collection of socio-economic data	More than one hundred interviews were carried out covering the four main ports of Albania. All fishing fleet segments were covered. Passive gears and trawlers appeared to be economically profitable in 2012, with a moderate rate of return on investment for artisanal vessels (around 9%) and a high rate (around 46%) for big trawlers.

C. Marine environment studies

Research/project title	Duration	Main topic	Description

Section 5 - Involvement in activities of FAO regional projects

A. Description of activities carried out with FAO regional projects, results obtained and assistance received
AdriaMed project in 2013:

- Monitoring activities of small pelagic and demersal species and necessary workshops and working groups to analyze results;
- National Survey on economic and social aspects;
- National survey on Small Scale Fisheries;

Section 6 - Management measures

A. Description of the management measures (legislation, regulations, etc) taken in direct response to GFCM recommendations including assessment of their effects

- "Establishment of a National framework for the collection, management and use of data in the fisheries sector and support for scientific advice regarding the Albanian Fisheries Policy"
- "Establishment of a control system for ensuring compliance with the rules of the management fisheries policy"
- "Management measures for the sustainable exploitation of fishery resources in the Mediterranean Sea"
- "Establishment of a system to prevent, deter and eliminate illegal, unreported and unregulated fishing"

Section 7 - Environment protection measures

A. Description of recent activities in establishing protected areas (e.g. fishing reserves, MPAs, and other spatial restrictions)

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

A. By-catch events
No data on the incidental catches of cetaceans in Albanian waters.

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

A. Catch data, incidental taking, release and/or discarding events for sharks species listed either in Annex II or III of the SPA/BD Protocol

Section 10 - Proposals for future research programmes

Algeria

Section 1 - Description of fisheries

A. Fishing grounds (GSAs): 04
B. Total landings: 108 207 tonnes (2012); 104 008 tonnes (2011)
C. Fleet: 4 403 vessels (2012); 4 316 (2011)

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
Le secteur de la pêche et des ressources halieutiques algérien, déploie de nombreux efforts pour améliorer son système statistique existant à travers un suivi quotidien des informations statistiques récoltées au niveau local et qui sont transmises à l'administration centrale pour qu'elles soient introduites automatiquement dans une base de données nationale.

B. Indicate whether or not progress in activities related to the collection and processing of fishery statistics have been done with the assistance of FAO regional projects
En ce qui concerne les engins de pêche, il est à rappeler qu'une étude inscrite dans le cadre du projet FAO CopeMed II relative à la sélectivité du chalut à mailles carrées a été lancée et les résultats sont en cours d'analyse.

C. Type of data collected, transmission to GFCM Secretariat and other international bodies
Pour ce qui est de la transmission des données statistiques à la CGPM et à toute autre institution internationale, l'Algérie a régulièrement communiqué les informations demandées.

D. Existing databases and synergies with other applications

Section 4 - Status of research in progress

A. Fisheries research with emphasis on management oriented assessment and GFCM priority species

Research/project title	Duration	Main topic	Description
Suivi de l'écosystème pélagique exploité		Dynamique des écosystèmes exploités	
Suivi de l'écosystème démersale exploité		Dynamique des écosystèmes exploités	
Suivi des grands pélagiques et des thonidés mineurs		Dynamique des écosystèmes exploités	

B. Socio-economic studies of fishing communities and fishing sector

Research/project title	Duration	Main topic	Description
Survey on socio-economic data of Albanian fisheries	May 2013	Indicateurs socio-économiques	Programme d'enquêtes socioéconomiques sur la population des marins pêcheurs à l'échelle nationale est mis en place dans l'objectif de combler le vide en matière d'informations et afin de disposer des éléments qui viennent pour accompagner la stratégie du développement de la pêche.

C. Marine environment studies

Research/project title	Duration	Main topic	Description

Section 5 - Involvement in activities of FAO regional projects

A. Description of activities carried out with FAO regional projects, results obtained and assistance received

Le projet de coopération avec FAO relatif à la mise en place de l'observatoire socio-économique des pêches et de l'Aquaculture cité au chapitre « État des statistiques et du système d'information » et ayant pour mission la redynamisation du réseau d'information et d'harmonisation des méthodes de collecte de données de débarquement avec l'application de l'outil SSPAL a été menée et clôturé en juin 2013.

Les principaux résultats obtenus du projet suscité sont :

- Formation de plus de 240 personnes, en matière d'échantillonnage des pêches, d'identification des espèces et des engins de pêche, d'analyse et de traitement des données, d'aménagement des pêcheries et Socio-économie des pêches.
- Mise en place d'un système d'échantillonnage des débarquements des pêches, avec l'installation d'un logiciel spécifique au niveau de trois wilayas pilotes (Alger, Ain-Temouchent et Jijel);
- Élaboration de deux rapports du diagnostic (Système statistiques des pêches en Algérie, Aménagement des pêcheries en Algérie);
- Publication d'un guide des principales espèces débarquées en Algérie;
- Acquisition des équipements bureautiques et informatiques.

Section 6 - Management measures

A. Description of the management measures (legislation, regulations, etc) taken in direct response to GFCM recommendations including assessment of their effects

Section 7 - Environment protection measures

A. Description of recent activities in establishing protected areas (e.g. fishing reserves, MPAs, and other spatial restrictions)

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

A. By-catch events

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

A. Catch data, incidental taking, release and/or discarding events for sharks species listed either in Annex II or III of the SPA/BD Protocol

Section 10 - Proposals for future research programmes

Bulgaria

Section 1 - Description of fisheries

A. Fishing grounds (GSAs): 29
B. Total landings: 9 507 tonnes (2013); 7 974 tonnes (2012)
C. Fleet: 2 043 vessels (2013); 2 366 (2012)

Section 2 - Status of stocks of priority species

Species/Stock	Ref. year	Stock status	GSA	Presented to GFCM WGs?	Presented to any other forum?
Psetta maxima		depleted/overfishing	29	Y	
Sprattus sprattus		sustainably exploited	29	Y	
Squalus acanthias		depleted	29	Y	

Section 3 - Status of statistics and information system

A. Description of the national system of fishery statistics and/or any improvement/change occurred
Two information systems to serve the needs of different management and operative levels – Information Statistical system (ISS) and Vessels Monitoring system (VMS)

B. Indicate whether or not progress in activities related to the collection and processing of fishery statistics have been done with the assistance of FAO regional projects
C. Type of data collected, transmission to GFCM Secretariat and other international bodies
D. Existing databases and synergies with other applications

Section 4 - Status of research in progress

A. Fisheries research with emphasis on management oriented assessment and GFCM priority species

Research/project title	Duration	Main topic	Description
ComFish FP7		Stakeholders involvement	ComFish aims to identify important fisheries topics with long term impacts and ascertain whether scientific results have been properly communicated to fisheries stakeholders.

B. Socio-economic studies of fishing communities and fishing sector

Research/project title	Duration	Main topic	Description

C. Marine environment studies

Research/project title	Duration	Main topic	Description
FP7 EU MISIS		Environmental status	Environmental monitoring of the Black Sea Basin and a common European framework programme for the development of the Black Sea region.
COCONET FP7		MPAs, renewable energy	Towards networks of marine protected areas (from the shore to the high and deep sea), coupled with sea-based wind energy potential.
PERSEUS FP7			Policy-oriented marine Environmental Research for the Southern European Seas.
DEVOTES FP7	2012-2016	Environmental status	This project aims at improving understanding of human activities impacts (cumulative, synergistic, antagonistic) and variations due to climate change on marine biodiversity, using long-term series (pelagic and benthic).
Monitoring of the coastal marine waters		Environmental status	Biological quality elements investigated in 2013 were phytoplankton, macrozoobenthos and macroalgae.

Section 5 - Involvement in activities of FAO regional projects

A. Description of activities carried out with FAO regional projects, results obtained and assistance received
No involvement.

Section 6 - Management measures

A. Description of the management measures (legislation, regulations, etc) taken in direct response to GFCM recommendations including assessment of their effects

- Council regulation (EU) No 5/2012 from 19th December 2012: Fixing for 2012 fishing opportunities for certain fish stocks and groups of fish stocks applicable in the Black Sea
- Council implementation regulation (EU) No 672/2013 amending Regulation (EU) No 468/2010 establishing the EU list of vessels engaged in illegal, unreported and unregulated fishing

Section 7 - Environment protection measures

A. Description of recent activities in establishing protected areas (e.g. fishing reserves, MPAs, and other spatial restrictions)

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

A. By-catch events

Call for tenders MARE/2011/16 “Adverse fisheries impacts on cetacean populations in the Black Sea” is in progress and will bring data and results related to by0-catch and mitigation measures.

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

A. Catch data, incidental taking, release and/or discarding events for sharks species listed either in Annex II or III of the SPA/BD Protocol

Section 10 - Proposals for future research programmes

- Age reading of anchovy, red mullet and turbot
- Stock identification study for turbot (*Psetta maxima*)
- BlackSeaFish project proposal
- Effects of beam trawling on the seabed habitats and mussel beds
- Promote and integrate fisheries research as part of Ecosystem Based Management

Croatia

Section 1 - Description of fisheries

A. Fishing grounds (GSAs): 18, 19
B. Total landings: 62 297 tonnes (2012); 69 700 tonnes (2011)
C. Fleet: 7 770 vessels (2012); 4 232 vessels (2011)

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	2012	high risk of overexploitation	17	Y	
Engraulis encrasicolus	2012	overexploited and in overexploitation	17	Y	
Solea solea	2012	overfished	17	Y	
Mullus barbatus	2012	overfished	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
Croatian Fishing Fleet Register is an electronically-kept register, now web-based, in which relevant data on vessels and vessel activities are registered. At the moment, data are being entered and cross-checked.

B. Indicate whether or not progress in activities related to the collection and processing of fishery statistics have been done with the assistance of FAO regional projects
C. Type of data collected, transmission to GFCM Secretariat and other international bodies
D. Existing databases and synergies with other applications
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.

Section 4 - Status of research in progress

A. Fisheries research with emphasis on management oriented assessment and GFCM priority species

Research/project title	Duration	Main topic	Description
DEMMON		Evaluation of demersal resources	Fisheries and biological data collection includes on board sampling and laboratory analysis, sampling on the landing ports and gathering basic socio-economic data.
PRIMO		Monitoring of coastal fisheries	
MEDITS	Since 1996	Biological sampling	Mediterranean International Bottom Trawl Survey.
SOLEMON		Evaluation of demersal resources	Evaluation of stock of common Sole (*Solea solea*) and other flatfish in the Adriatic Sea.
DEEP SEA	Since 2008	Evaluation of resources	Investigation of distribution and status of biological resources in deep south Adriatic.
UWTV	Since 2011	Evaluation of resources	Alternative assessment of biomass stock of Norway lobster.

B. Socio-economic studies of fishing communities and fishing sector

Research/project title	Duration	Main topic	Description

C. Marine environment studies

Research/project title	Duration	Main topic	Description
Systematic exploration of the Adriatic Sea as basis for sustainable resources management		Environmental status, renewable energy	Monitoring of biotic and abiotic parameters relevant to the marine environmental and renewable resources.

Section 5 - Involvement in activities of FAO regional projects

A. Description of activities carried out with FAO regional projects, results obtained and assistance received
Croatia is fully involved in all activities carried out by AdriaMed project.

Section 6 - Management measures

A. Description of the management measures (legislation, regulations, etc) taken in direct response to GFCM recommendations including assessment of their effects

Section 7 - Environment protection measures

A. Description of recent activities in establishing protected areas (e.g. fishing reserves, MPAs, and other spatial restrictions)

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

A. By-catch events
No by-catches of cetaceans were recorded in 2013.

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

B. Catch data, incidental taking, release and/or discarding events for sharks species listed either in Annex II or III of the SPA/BD Protocol
There were no recorded by-catches of Annex II or III shark species.

Section 10 - Proposals for future research programmes

- Concerning small pelagic fish species, determination and monitoring of spawning grounds as well as nursery area is necessary
- International monitoring of demersal resources in Jabuka Pit. Jabuka/Pommo Pit as principal fishing ground in the Adriatic Sea for Croatian and Italian bottom trawl fisheries fleet.

Egypt

Section 1 - Description of fisheries

A. Fishing grounds (GSAs): 26
B. Total landings: 69 332 tonnes (2012); 77 799 tonnes (2011)
C. Fleet: 4464 vessels (2012); 4 529 (2011)

Section 2 - Status of stocks of priority species

Species/Stock	Ref. year	Stock status	GSA	Presented to GFCM WGs?	Presented to any other forum?
Metapenaeus stebbingi		in overfishing	26	N	
Euthynnus alletteratus	2013	overexploited	26	N	
Saurida undosquamis	2012	in overfishing (high)	26	Y	
Mullus surmuletus	2012	in overfishing (high)	26	Y	

Section 3 - Status of statistics and information system

A. Description of the national system of fishery statistics and/or any improvement/change occurred
The General Authority for Fish Resources Development (GAFRD) collects fisheries data. The statistics collection procedures have recently been upgraded and monitoring, control and surveillance activities have been improved.

B. Indicate whether or not progress in activities related to the collection and processing of fishery statistics have been done with the assistance of FAO regional projects
Evaluation of lizard fish, red mullet, shrimp, sepia and sardine with the support of FAO EastMed project.

C. Type of data collected, transmission to GFCM Secretariat and other international bodies

D. Existing databases and synergies with other applications

Section 4 - Status of research in progress

A. Fisheries research with emphasis on management oriented assessment and GFCM priority species

Research/project title	Duration	Main topic	Description
		Stock assessment	Scattered stock assessment studies are conducted by different universities and by the National Institute of Fisheries and Oceanography.
		Gear selectivity	The Arab Academy for Science and Technology and Maritime Transport started a study to improve the Egyptian bottom trawl selectivity and reduce the high rate of by-catch in trawling activities.

B. Socio-economic studies of fishing communities and fishing sector

Research/project title	Duration	Main topic	Description
		Socio-economic data	A sampling survey in order to investigate the main socio-economic characteristics of the fishing vessels by type of fishery, the study was conducted with the EastMed project support.

C. Marine environment studies

Research/project title	Duration	Main topic	Description

Section 5 - Involvement in activities of FAO regional projects

A. Description of activities carried out with FAO regional projects, results obtained and assistance received

Section 6 - Management measures

A. Description of the management measures (legislation, regulations, etc) taken in direct response to GFCM recommendations including assessment of their effects

Section 7 - Environment protection measures

A. Description of recent activities in establishing protected areas (e.g. fishing reserves, MPAs, and other spatial restrictions)

The Gulf of Sallum was declared as the first marine Egyptian protected area in the Mediterranean Sea by the Egyptian Prime Minister's decision No. 533 (2010) for the purpose of fisheries and biodiversity conservation.

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

A. By-catch events

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

A. Catch data, incidental taking, release and/or discarding events for sharks species listed either in Annex II or III of the SPA/BD Protocol

Section 10 - Proposals for future research programmes

- Research on stock status and exploitation levels of the main pelagic fisheries.
- Fishing harbour facilities need to be improved at strategic sites.
- Enlarge and modernize offshore fishing in the Egyptian EEZ and international waters.

France

Section 1 - Description of fisheries

A. Fishing grounds (GSAs): 08, 09
B. Total landings:
C. Fleet: 1 455 vessels (2012); 1 325 vessels (2011)

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		high overexploitation	07		
Mullus barbatus		high overexploitation	07		
Engraulis encrasicolus		stable biomass, decreasing production	07		
Sardina pilchardus		stable biomass, increasing abundance	07		

Section 3 - Status of statistics and information system

A. Description of the national system of fishery statistics and/or any improvement/change occurred
Système d'Information Halieutique (SIH) de l'Ifremer.

B. Indicate whether or not progress in activities related to the collection and processing of fishery statistics have been done with the assistance of FAO regional projects

C. Type of data collected, transmission to GFCM Secretariat and other international bodies
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.

D. Existing databases and synergies with other applications
Données intégrées dans la base HARMONIE et les protocoles sont disponibles sur un site web dédié (www.ifremer.fr/sih). La collecte des données de Méditerranée sur les ressources exploitées par la pêche professionnelle est réalisée dans le cadre de la DCF (Data Collection Framework).

Section 4 - Status of research in progress

A. Fisheries research with emphasis on management oriented assessment and GFCM priority species

Research/project title	Duration	Main topic	Description
Programme d'échantillonnage biologique et paramètres biologiques		Echantillonnage biologique	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.
ObsDeb		Enquêtes d'activités et des ébarquements des navires de moins de 12 mètres	Enquêtes mensuelles sont conduites pour estimer le calendrier d'activité de chaque navire de pêche professionnelle < 12 m en mer et en lagune, et l'effort de pêche et la production des navires par échantillonnage aléatoire des marées, de la frontière italienne à la frontière espagnole (GSA 07). En Corse (GSA 08), l'activité des navires est recensée par enquête chaque année.
ObsMer		Observation des captures	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.
ObsMam		Observation des captures accidentelles de mammifères marins	Ce programme d'observation a été tenu d'assurer chaque année une couverture de 5% de la flottille pratiquant le chalutage pélagique. Depuis 2008, ce programme est inclus dans le programme OBSMER.
Programme d'observations du thon rouge	depuis 2009	Thon rouge	Prospections aériennes du thon rouge dans le golfe du Lion.
SELPAL		Thon rouge	Programme sélectivité de la flottille palangrière ciblant le thon rouge dans le golfe du Lion.
MEDITS	depuis 1993	Pratiques d'échantillonnage	Campagne française de chalutage annuelle d'évaluation des ressources démersales.
PELMED	depuis 1993	Évaluation des stocks de petits pélagiques	Évaluation des stocks de petits pélagiques menée une fois par an en juillet avec l'aide de prospections acoustiques, par la méthode d'écho intégration (à l'aide du logiciel Movies+) et de chalutages d'identification associés.
RECOPESCA		Géolocalisation	Projet pilote pour tester un système de géolocalisation de navires de pêches exploitant la technologie RECOPESCA, pour caractériser précisément l'effort de pêche de métiers ou de navires concernés par les plans de gestion européens et non équipés de système VMS.

B. Socio-economic studies of fishing communities and fishing sector

Research/project title	Duration	Main topic	Description

C. Marine environment studies

Research/project title	Duration	Main topic	Description
EcoPelGol	2012- 2015	Etude de la dynamique de l'Ecosystème Pélagique du Golfe du Lion	Ce projet s'attache mécanismes gouvernant la dynamique et l'état des populations de petits pélagiques dans le Golfe du Lion à partir des données PELMED ainsi que des échantillons biologiques reçus mensuellement.
IPEP	depuis 2010	Impact de la pêche sur les espèces protégées	Ce projet a pour objectif d'acquérir des connaissances sur l'écologie des requins pélagiques et des tortues marines et d'identifier les interactions avec les engins de pêche

Section 5 - Involvement in activities of FAO regional projects

A. Description of activities carried out with FAO regional projects, results obtained and assistance received

Section 6 - Management measures

A. Description of the management measures (legislation, regulations, etc) taken in direct response to GFCM recommendations including assessment of their effects

- "Elaboration de Plans de Gestion en application du règlement européen (CE) 1967/2006"

Section 7 - Environment protection measures

A. Description of recent activities in establishing protected areas (e.g. fishing reserves, MPAs, and other spatial restrictions)

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

A. By-catch events

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

A. Catch data, incidental taking, release and/or discarding events for sharks species listed either in Annex II or III of the SPA/BD Protocol

Section 10 - Proposals for future research programmes

Section 11 - Recommendation GFCM/35/2011/4 on the incidental by-catch of sea turtles in fisheries in the GFCM competence area

A. By-catch events

Species	N specimen	Day/month/year	Vessels' type	Gear	GSA or statistical grid	Main target species	N discarded dead	N released alive	N unknown
Caretta caretta	48	2010-2013	Trawlers				3	44	1
Caretta caretta	7	2010-2013		Hooks and lines			1	6	
Caretta caretta	62	2010-2013		Lift/sourrounding nets			18	21	23
Dermochelys coriacea	1	2010-2013		Lift/sourrounding nets				1	
Dermochelys coriacea	2	2010-2013		*unknown*				2	

Greece

Section 1 - Description of fisheries

A. Fishing grounds (GSAs):
B. Total landings: 60 090 tonnes (2012, provisional data); 62 847 tonnes (2011)
C. Fleet: 15 844 vessels (31/12/2013); 16 696 (31/12/2012)

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	2000-2008	Fully exploited	22		
Sardina pilchardus	2000-2008		22		
Mullus barbatus	2009		22, 23		
M. surmuletus	2009		22, 23		
Merluccius merluccius	2009		22, 23		
Parapeneus longirostris	2009		22, 23		

Section 3 - Status of statistics and information system

A. Description of the national system of fishery statistics and/or any improvement/change occurred
The Hellenic Statistical Authority (EL.STAT). No significant changes of the pattern of collecting fisheries data have taken place during the last years.

The Directorate General for Fisheries (Ministry of Rural Development, and Food) collects data on: a) fish landing data for specific species (bluefin, swordfish and albacore); b) statistical trade data concerning imports, exports and re-exports of swordfish and bigeyed tuna; c) statistical data concerning imports of fishery products from third countries; d) fish landing data from vessels that land catches to foreign ports.

B. Indicate whether or not progress in activities related to the collection and processing of fishery statistics have been done with the assistance of FAO regional projects
C. Type of data collected, transmission to GFCM Secretariat and other international bodies
D. Existing databases and synergies with other applications

Section 4 - Status of research in progress

A. Fisheries research with emphasis on management oriented assessment and GFCM priority species

Research/project title	Duration	Main topic	Description
National Fisheries Data Collection Programme	2011-2013	Biological-Metier-related variables	Data on landings and discards for all the métiers were collected for the last quarter of 2013 through on-board and on-shore sampling. The data collection has covered the 70- 90% of the sampling goal for the given period depending on the métier and region.
National Fisheries Data Collection Programme	2011-2013	Stock-related variables	Data collection for the stock-related variables (age, length, weight, sex, maturity and fecundity).
National Fisheries Data Collection Programme	2011-2013	Eel monitoring	Annual and the monthly eel productions (t) per lagoon were recorded; eel samples were collected and for each sample all the biological characteristics (length, weight, diameter of the eye, length of pectoral fin) were measured, while biological samples, i.e. parasites, otoliths and gonads, were also collected.
MEDITS	2011-2013	Biological sampling	
MEDIAS	2011-2013	Biological sampling	
Estimation of Biological Parameters and transversal variables relating to the fishing activity of drifting long lines	2013	Biological sampling	Length composition and the age structure of catches of swordfish estimated from random measurements of individuals landed from drifting long line fishery which targets swordfish (*Xiphias gladius*), blue-fin tuna (*Thunnus thynnus*) and albacore (*Thunnus alalunga*).
Management plan for the operation of traditional Hellenic boat seines		Management plan	Management plan focused on the traditional seines called 'vintzotrates' operating in Hellenic waters.
TrawlPlan		Management plan	Management plan for the demersal trawl fisheries in the Aegean and Ionian seas.
Molecular methods for marine biodiversity assessment, the traceability of fisheries products and the identification of fish populations		Identification of fish species	Molecular methods applied in defining potential genetic population structures within the area of repartition of a particular fish species.
Archimedes		Fisheries controls	Estimation of maximum net length of trammel nets, gillnets and combined bottom set nets by using an algorithm based on the technical characteristics of these gears to enable the Fisheries Inspectors to estimate the length of the net using its volume or weight.
DeepFishMan		Deep-sea fisheries	Management and Monitoring of deep-sea fisheries and stocks with the objectives of: i) identifying and developing new and more effective monitoring and assessment methods, reference points, control rules and a management framework to be used in the short term and ii) developing a long-term monitoring and management framework to achieve reliable long-term management requirements.
Stock units in the Mediterranean		Identification of stock units	Identification of distinct biological units (stock units) for different fish and shellfish species and among different GFCM-GSAs.
MESMA		Spatial planning	MESMA project focuses on marine spatial planning and aims to produce integrated management tools (concepts, models and guidelines) for monitoring, evaluation and implementation of Spatially Managed Areas (SMAs).
MEDPEL		Catch and by-catch rate	Catch rate determination of albacore, swordfish and bluefin tuna and the characterization and quantification of associated by-catch and discards in Mediterranean pelagic long-lines fisheries.
CREAM		EAF	Coordinating research in support to application of EAF (Ecosystem Approach to Fisheries) and management advice in the Mediterranean and Black Seas.

B. Socio-economic studies of fishing communities and fishing sector

Research/project title	Duration	Main topic	Description
National Fisheries Data Collection Programme	2011-2013	Economic variables	Collection of the socio-economic variables
BEMTool		Bio-Economic Modelling tools	Development of an integrated bio-economic modeling tool to develop and support multi-objective approaches for fisheries management.
JAKFISH		Stakeholders	Judgment And Knowledge in Fisheries Involving StakeHolders is a project to examine and develop the institutions, practices and tools that allow complexity and uncertainty in fisheries management to be effectively taken into consideration within participatory decision-making processes.
MAREA		Knowledge transfer	Mediterranean hAlieutic Resources Evaluation and Advice – Horizontal Services is a project which aims to organize a consortium of European research Institutes and Centre with expertise in fisheries research and which will be readily available to offer scientific advice on fisheries issues.
FISHINMED		Sustainable small-scale fishing communities	Mediterranean Network linking public and private institutions to support the social-economic local development of small-scale fishing communities thus favouring the diversification of fishing activities and the socio-economic relations for an integrated valorisation of the coastal area.
SOCIOEC		Stakeholders	European wide project bringing together scientists from several fisheries sciences with industry partners and other key stakeholders to work in an integrated manner on solutions for future fisheries management that can be implemented at a regional level.
MYFISH	2009-2015	MSY	Maximising yield of fisheries while balancing ecosystem, economic and social concerns. This project will: i) provide definitions of MSY variants which maximize other measures of "yield" than biomass and which account for the fact that single species rarely exist in isolation; ii) redefine the term "sustainable" to signify that Good Environmental Status (MSFD) is achieved and economically and socially unacceptable situations are avoided, all with acceptable levels of risk.

C. Marine environment studies

Research/project title	Duration	Main topic	Description
Albamonte		Alien species	Assessment of distributional patterns of a selected number of invasive alien marine species in the Albanian and Montenegrin coasts.
MIAS		Alien species	Inventory of marine invasive alien species across European seas.
ARCHITECTURE		Coastal ecosystems	Architecture and roadmap to manage multiple pressures on lagoons; the project aims to the study and management of coastal marine aquatic ecosystems such as coastal wetlands.
DEVOTES		Environmental status	Development of innovative tools for understanding marine biodiversity and assessing good environmental status.
Monitoring of protected coastal marine areas	2013	MPAs	Scientific monitoring of three protected marine areas, created around artificial reefs in the Aegean and Ionian Sea.
BENTHIS		Benthos	Study of the diversity of benthic ecosystem in European waters and the role of benthic species in the ecosystem functioning. Fisheries impact is studied on benthic organisms and on the geo-chemistry.
ODEMM		Coastal ecosystems	The overall aim of the ODEMM project is to develop a set of ecosystem management options that would deliver the objectives of the Marine Strategy Framework Directive, the Habitats Directive, the European Commission Blue Book and the Guidelines for the Integrated Approach to Maritime Policy.
ConShagAudMIBAGR		Seabirds	Concrete Conservation Actions for the Mediterranean Shag and Audouin's Gull in Greece, including the inventory of relevant marine Important Bird Areas (mIBAs).
CoralFISH		Corals	Assessment of the interactions between corals, fish and fisheries, in order to develop monitoring and predictive modelling tools for ecosystem based management in the deep waters of Europe and beyond.
Kouponia		Coastal ecosystems	Collection of environmental, ecological, oceanographic and fisheries data for the Argolikos gulf.
MEDISEH		Sensitive habitats	This study aims at the compilation and mapping of environmental and fisheries related information in the Mediterranean Sea by means of Geographical Information Systems (GIS). Integration and mapping of the spatial information on sensitive habitats.
NETMED		MPAs	Design of an ecologically coherent network of marine protected areas for the entire Mediterranean basin, based on the principles of systematic conservation planning; an efficient, transparent and holistic approach for marine reserves design, which informs their location, configuration and management.
PEGASO		ICZM	Building on existing capacities and develop common novel approaches to support integrated policies for the coastal, marine and maritime realms of the Mediterranean and Black Sea Basins in ways that are consistent with and relevant to the implementation of the ICZM Protocol for the Mediterranean.
WISER		Environmental status	Integrative system to assess ecological status and recovery by developing tools for the integrated assessment of the ecological status of the European surface waters.

Section 5 - Involvement in activities of FAO regional projects

A. Description of activities carried out with FAO regional projects, results obtained and assistance received

Participation in EastMed FAO Project activities (April 2013-February 2013):

- Training course improving the analysis of fisheries data (Rome, Italy, November 2013), co-organised by EU, FAO, EastMEd and other FAO sub-regional projects.
- Annual meeting of the permanent working group of EastMed Project on stock assessment (Kavala, Greece, September 2013)

Section 6 - Management measures

A. Description of the management measures (legislation, regulations, etc.) taken in direct response to GFCM recommendations including assessment of their effects

- National management plan for small pelagics establishing annual license systems, defining reference points and targets for the sustainable exploitation of sardine and anchovy. Implemented in 2012.
- Progress in the development of national management plans for trawling and for eel.

Section 7 - Environment protection measures

A. Description of recent activities in establishing protected areas (e.g. fishing reserves, MPAs, and other spatial restrictions)

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

A. By-catch events

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

A. Catch data, incidental taking, release and/or discarding events for sharks species listed either in Annex II or III of the SPA/BD Protocol

Section 10 - Proposals for future research programmes

Italy

Section 1 - Description of fisheries

A. Fishing grounds (GSAs): 09, 10, 11, 15, 16, 17, 18
B. Total landings: 195 800 tonnes (2012); 210 324 tonnes (2011)
C. Fleet: 12 897 vessels (2012); 13 078 (2011)

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	2012	high overfishing	12, 13, 14, 15, 16	Y	
M. merluccius	2012	high overfishing	18	Y	
M. merluccius	2010	overexploited	09	Y	
Mullus barbatus	2011	overexploited	15, 16	Y	
M.barbatus	2012	sustainable exploitation	10	Y	
M. barbatus	2010	overexploited	09	Y	
Solea vulgaris	2012	high overfishing status	17	Y	
Pagellus erythrinus	2011	overexploited	15, 16	Y	
P. erythrinus	2009	overexploited	09	Y[2]	
Mullus surmuletus	2010	overexploited	09	Y	
Lophius budegassa	2010	overexploited	15, 16	Y	
Nephrops norvegicus	2010	overexploited	09	Y	
Squilla mantis	2011	overexploited	17	Y	
S.mantis		overfishing	09	N	
Parapenaeus longirostris	2012	high overfishing status	18	Y	
P. longirostris	2012	high overfishing status	12, 13, 14, 15, 16	Y	
P. longirostris	2010	moderately exploited	09	Y	
Aristaeomorpha foliacea	2010	overexploited	15, 16	Y	
A. foliacea		overfishing	11	N	
A. foliacea		overfishing	09	N	
A. antennatus	2010	overexploited	09	Y	
Engraulis encrasicolus	2012	overexploitation	16	Y	
E. encrasicolus	2012	overexploited and in overexploitation	17	Y	
Sardina pilchardus	2012	overexploited and in overexploitation	16	Y	
S. pilchardus	2012	high risk of 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
Fishery statistics are collected within the European Regulation on Data Collection (EU reg. n. 199/2008). Statistics are produced on the basis of a sample of national fishing fleet, yearly updated, and their reliability is guaranteed by specific validation software. The General Directorate for Fisheries and Aquaculture (MIPAAF) is in charge of the overall coordination of the implementation of the National Data Collection Programme.

B. Indicate whether or not progress in activities related to the collection and processing of fishery statistics have been done with the assistance of FAO regional projects

C. Type of data collected, transmission to GFCM Secretariat and other international bodies
Fishery statistics are transferred to GFCM (through the Task 1 tool), 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.

D. Existing databases and synergies with other applications
Within the European Regulation on Data Collection (EU reg. n. 199/2008) 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.

[2] not validated

Section 4 - Status of research in progress

A. Fisheries research with emphasis on management oriented assessment and GFCM priority species

Research/project title	Duration	Main topic	Description
		Knowledge transfer	Development of a net for the exchange of information between national researchers
		GIS tools	Development of the System GIS-PESCA on the entire coastline also including aquaculture sites.
		Fish products safety	Nutritional and safety aspects of fish species from fishery and aquaculture
		Eel	Assessment of *Anguilla anguilla* in the framework of UE Reg. 1100/2007.
		Stock assessment	Preliminary assessment of the main species of Elasmobranchs.
		Fish parasites	Diffusion of *Anisakis sp* and potential risks.
		Fish products safety	Species identification of fishery products.
		Knowledge transfer	Dissemination of scientific data, stock assessment data among fishers.
		Stock assessment	Optimization of methodologies of sampling for stock assessment
		Bio-economy	Bio-economic models

B. Socio-economic studies of fishing communities and fishing sector

Research/project title	Duration	Main topic	Description
		Socio-economics indicators	Productive structures analyses and socio-economic characteristics of Italian Fisheries.
			Sustainability and management tools for Italian fishery: an impact assessment of TURF.

C. Marine environment studies

Research/project title	Duration	Main topic	Description
		By-catch	Assessment of by-catch of protected species in the pelagic trawl
		Red coral	Assessment of the red coral in the Italian seas

Section 5 - Involvement in activities of FAO regional projects

A. Description of activities carried out with FAO regional projects, results obtained and assistance received

AdriaMed, MedSudMed and EastMed projects:

- 5 joint scientific surveys have been jointly carried out in the Adriatic Sea;
- 2 joint stock assessment (*Parapnaeus longirostris*, *Merluccius merluccius*) have been produced in the south-central Mediterranean (Straits of Sicily);
- 6 joint stock assessment (*Parapnaeus longirostris*, *Merluccius merluccius*, *Mullus barbatus*, *Solea solea*, *Engraulis encrasicolus*, *Sardina pilchardus*) have been produced in the Adriatic Sea;
- 4 stock assessment (*Mullus barbatus*, *Saurida undosquamis*, *Metapenaeus stebbingi*, *Spicara smaris*) have been produced with the support of the EastMed Project.
- Involvement either trainer and/or trainees in 12 theoretical or on-the-job training activities on the collection, storing and processing of fishery related data;
- Involvement in 17 technical meetings in the Adriatic Sea, the Straits of Sicily and the Eastern Mediterranean including working groups on demersal and small pelagic fisheries resources, study groups, seminars and technical meetings.
- Technical supported has been provided to Turkey, Egypt, Lebanon, Albania and WBGS for the establishment of a monitoring system for fisheries (socio-economic and catch and effort).
- Within the EastMed Project a fisheries independent survey was in conduct in Egypt to explore the possibility of exploiting the venus clam *Chamelea gallina*.

Section 6 - Management measures

A. Description of the management measures (legislation, regulations, etc) taken in direct response to GFCM recommendations including assessment of their effects

Section 7 - Environment protection measures

A. Description of recent activities in establishing protected areas (e.g. fishing reserves, MPAs, and other spatial restrictions)

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

A. By-catch events

Species	N specimen	Day/month/ year	Vessels' type	Gear	GSA or statistical grid	Main target species	N discarded dead	N released alive	N unknown
Tursiops truncatus	31/year	2006-2013	mid-water pair trawlers		17				

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

A. Catch data, incidental taking, release and/or discarding events for sharks species listed either in Annex II or III of the SPA/BD Protocol

Species	Annex	N specimen	Weight (tonnes)	Day/month/ year	Vessels' type	Gear	GSA	Retained for sale?	N discarded dead	N released alive
Alopias vulpinus	III							Y		
Prionace glauca	III									
Pteromylaeus bovinus	n. a.									
Mustelus spp.	III							Y		
Pteroplatytrygon violacea	n. a.									
Raja spp.	n. a.									
Squalus acanthias	III							Y		
Myliobatis aquila	n. a.									

Section 10 - Proposals for future research programmes

From a general point of view, the following lines of research are proposed:

- evaluating optimal exploitation strategies and adequate indicators and reference points for multispecies fisheries;
- studying stock-recruitment relationships;
- improving knowledge on population biology and to identify the population units (stock boundaries);
- revising borders of some GSAs on the basis of available information
- mapping spawning grounds and other essential fish habitats
- assessing impact of fishing on communities and ecosystems
- investigating effect of climate change on stock dynamics
- evaluating spatial management measures (no take zones, fishery restricted areas, marine protected areas)
- improving knowledge on the effect of fishery at ecosystem level, performing specific studies on discards and impact on the sea bottoms.
- developing the assessments by bio-economic models

In special areas such as the Strait of Sicily and the Adriatic Sea, where straddling and transboundary stocks are shared by fisheries of several countries, it is considered relevant:

- improving knowledge on population biology and the identification of population units, including genetic approaches, to clarify relationships and connectivity among populations;
- supporting a common collection of data on stocks and fisheries, based on both fishery independent and dependent approaches, within the framework of an international program;
- assisting the develop of a common geo referred data base reporting both bathymetric, substratum features, biocenoses, and fishing grounds at regional level.

Section 11 - Recommendation GFCM/35/2011/4 on the incidental by-catch of sea turtles in fisheries in the GFCM competence area

A. By-catch events

Species	N specimen	Day/month/year	Vessels' type	Gear	GSA or statistical grid	Main target species	N discarded dead	N released alive	N unknown
Caretta caretta								95%	

Lebanon

Section 1 - Description of fisheries

A. Fishing grounds (GSAs): 27
B. Total landings: 4 540 t (2012)
C. Fleet: 2 662 vessels (2004)

Section 2 - Status of stocks of priority species

Species/Stock	Ref. year	Stock status	GSA	Presented to GFCM WGs?	Presented to any other forum?

Section 3 - Status of statistics and information system

A. Description of the national system of fishery statistics and/or any improvement/change occurred
Country-wide data collection carried out by the Institute of the Environment, University of Balamand (IOE-UOB). CIHEAM Pesca Libano Project developed a Marine Coastal Information System (MCIS) which is a multipurpose, interoperable and extensible platform based on a spatial relational database in a modular server/client structure, remotely accessible by multiple users and with different software tools, and with a set of dedicated web-based tools to explore and manage the wide range of fisheries related data collected and organized by the Pesca Libano project.

B. Indicate whether or not progress in activities related to the collection and processing of fishery statistics have been done with the assistance of FAO regional projects
Ministry of Agriculture (MOA) through the assistance of FAO EastMed Project (in collaboration with University of Balamand) started a pilot project to collect catch data for the whole Lebanese coast as of the second half of 2013. MOA staff is receiving training and collecting data that should cater for Task 1 requirements. Major difficulties were encountered by data collectors. Data entry is supposed to follow FLOUCA model, but expected to be web-based. The system is expected to be fully operational in 2015.

C. Type of data collected, transmission to GFCM Secretariat and other international bodies

D. Existing databases and synergies with other applications
FLOUCA (Fish Landing Operational Utility for Catch Assessment) based on the generic software and standard statistical methodology available on the web by the FAO (ARTFIAH).

Section 4 - Status of research in progress

A. Fisheries research with emphasis on management oriented assessment and GFCM priority species

Research/project title	Duration	Main topic	Description
National Artisanal Fisheries Dependent Data Collection Program	2013-2014	Data collection	Pilot survey on fisheries dependent data collection in Lebanon, including training. Activities will contribute into the development of regionally consistent fisheries management plans among the Eastern Mediterranean countries through the monitoring of commercial fisheries and the initialization of fishery management capacity in Lebanon.

B. Socio-economic studies of fishing communities and fishing sector

Research/project title	Duration	Main topic	Description
Wide socio-economic survey	2013	Socio-economic data collection	Sample based country wide socio-economic survey was conducted in 2013 in collaboration with FAO EastMed Project. Data are still being analyzed.

C. Marine environment studies

Research/project title	Duration	Main topic	Description
PEGASO	2010-2014	ICZM	
	2011-2013	Environmental status	Evaluating coastal risk on the Chekka El Heri beach through the assessment of the physical oceanographic parameters.
	2013	MPAs	Marine Surveys to enhance the effective conservation of regionally important coastal and marine biodiversity features, through the creation of an ecologically coherent MPA network in the Mediterranean region.

Section 5 - Involvement in activities of FAO regional projects

A. Description of activities carried out with FAO regional projects, results obtained and assistance received
Participation in EastMed FAO Project activities:

- Fishing Licensing System
- Catch assessment pilot study in collaboration with University of Balamand
- Feasibility study for a new fishing vessels design and/or new vessel building materials
- Pilot country-wide socio-economic survey

Section 6 - Management measures

A. Description of the management measures (legislation, regulations, etc) taken in direct response to GFCM recommendations including assessment of their effects

- Minister Decision 1154 on 9/12/2013 "General conditions for the protection of cetaceans"
- Minister Decision 1160 on 10/12/2013-"General conditions for the fishing of sharks"
- Minister Decision 1163 on 12/12/2013-"General conditions for the protection of seabirds"

Section 7 - Environment protection measures

A. Description of recent activities in establishing protected areas (e.g. fishing reserves, MPAs, and other spatial restrictions)

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

A. By-catch events
Information not available.

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

A. Catch data, incidental taking, release and/or discarding events for sharks species listed either in Annex II or III of the SPA/BD Protocol
Information not available.

Section 10 - Proposals for future research programmes

- Promote and integrate fisheries research as part of Ecosystem Based Management
- Develop a sustainable national "information system" for artisanal fisheries in collaboration with the different research centers in the Lebanon and the region (East-Mediterranean Basin)
- Assess stocks of commercial fish species in Lebanon
- Identify and assess common stocks in the East-Mediterranean Basin
- Monitor invasive species in Lebanese waters and their population dynamics

Malta

Section 1 - Description of fisheries

A. Fishing grounds (GSAs): 15
B. Total landings: 2 357 tonnes (2013); 1 527 tonnes (2012)
C. Fleet: 1 040 vessels (31/12/2013); 2 989 vessels (31/12/12)

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	2012	high overfishing	12-16	Y	
Parapenaeus longirostris	2012	high overfishing	12-16	Y	
Mullus surmuletus	2012	high overfishing	15-16	Y	
Nephrops norvegicus	2012	sustainable exploitation	15-16	Y	

Section 3 - Status of statistics and information system

A. Description of the national system of fishery statistics and/or any improvement/change occurred
Malta is at present developing a Fisheries Information System (FIS). The FIS under development will be an integrated system whereby the databases related to the fleet register, catch assessment survey, logbooks, biological sampling, biological surveys and economic surveys will be consolidated. All data submission obligations in connection with GFCM, EC and ICCAT will in the future be handled through the new FIS.

B. Indicate whether or not progress in activities related to the collection and processing of fishery statistics have been done with the assistance of FAO regional projects

C. Type of data collected, transmission to GFCM Secretariat and other international bodies
Malta collects data on catch and effort for each segment by species, by quarter and by geographical origin. Catch and effort figures are based on data reported in logbooks (for vessels over 10 m LOA) and by sampling the small-scale fishery (for vessels less than 10 m LOA) through an exhaustive sampling survey questionnaire, on sales notes from the official fish market and from direct sales data. The data collected is in line with the EU Data Collection Framework (DCF) EC 199/2008, EC 949/2008, EC 93/2010. In 2013 Malta submitted data collected within the framework of the DCF to several international bodies / for use by several projects:

i) Joint Research Centre (JRC) of the European Commission
ii) International Commission for the Conservation of Atlantic Tunas (ICCAT) through Task I and Task II forms.
iii) General Fisheries Commission for the Mediterranean (GFCM) including dolphin fish annual reporting form and Task I statistical matrix.
iv) FAO regional projects MedSudMed, CopeMed
v) EU horizontal framework project MAREA

D. Existing databases and synergies with other applications

Section 4 - Status of research in progress

A. Fisheries research with emphasis on management oriented assessment and GFCM priority species

Research/project title	Duration	Main topic	Description
MEDITS		Data collection	Fisheries-independent data for demersal resources.
MEDIAS		Data collection	Fisheries-independent data for pelagic resources.
MESMA		Spatial based approach	Monitoring and evaluating of spatially managed marine areas
CREAM		EAF	Coordinating research in support to application of EAF (Ecosystem Approach to Fisheries) and management advice in the Mediterranean and Black Seas.
GAP		Sensitive habitats	Bridging the gap between fisheries scientists and fishers - nursery and spawning ground of commercially important demersal species within the Malta FMZ were identified.
STOCKMED		Bibliographic review	Literature review conducted on *Octopus vulgaris, Eledone cirrhosa, Eledone moscata* and *Galeus melastomus* and compilation fishing grounds' maps of the Maltese trawling fleet.

B. Socio-economic studies of fishing communities and fishing sector

Research/project title	Duration	Main topic	Description

C. Marine environment studies

Research/project title	Duration	Main topic	Description
LIFE + BAĦAR	2013-?	Benthic habitats	Collection of data on the location of 4 habitats (*Posidonia* beds, sandbanks, reefs and submerged or partially submerged caves) within the 25 nm Malta FMZ under the Habitats Directive in order to protect them by creating NATURA 2000 sites.

Section 5 - Involvement in activities of FAO regional projects

A. Description of activities carried out with FAO regional projects, results obtained and assistance received

In 2013, Malta participated in two meetings held within the MedSudMed project. These include the 11th Coordination Committee Meeting (23-24 April 2013, Sliema, Malta) and the FAO-MedSudMed and CopeMed II Working Group on Demersal Fishery Resources (Gammarth, Tunisia, 23-27 September 2013).

Section 6 - Management measures

A. Description of the management measures (legislation, regulations, etc) taken in direct response to GFCM recommendations including assessment of their effects

Section 7 - Environment protection measures

A. Description of recent activities in establishing protected areas (e.g. fishing reserves, MPAs, and other spatial restrictions)

- Restricted area between 'Ponta ta' l-Ahrax' and 'Dahlet ix-Xilep: (Notice to Mariners No 2 of 2010) The purpose of this environment protection measure is to protect the Yelkouan Shearwaters (Garnija) seabirds that breed on cliffs. Implementation of this measure is held between 1st February and 30th July every year, applicable 2 hours before sunset till 2 hours after sunrise.

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

A. By-catch events

Efforts are being made to include the collection of this data through electronic logbooks.

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

A. Catch data, incidental taking, release and/or discarding events for sharks species listed either in Annex II or III of the SPA/BD Protocol

Efforts are being made to include the collection of this data through electronic logbooks.

Section 10 - Proposals for future research programmes

Montenegro

Section 1 - Description of fisheries

A. Fishing grounds (GSAs): 18
B. Total landings: 623 tonnes (2012);
C. Fleet: 117 vessels (2013); 112 vessels (2012)

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		in high overfishing	18	Y	
Parapenaeus longirostris		in high overfishing	18	Y	

Section 3 - Status of statistics and information system

A. Description of the national system of fishery statistics and/or any improvement/change occurred
Fisheries Information System (FIS). At present FIS is not fully operating, because of ongoing system updates.

B. Indicate whether or not progress in activities related to the collection and processing of fishery statistics have been done with the assistance of FAO regional projects
The software ATrIs (Adriamed Trawl Survey Information System), provided by the FAO AdriaMed project, was used for data input gathered during MEDITS campaigns and for processing.

C. Type of data collected, transmission to GFCM Secretariat and other international bodies
Vessel register; Logbook & landings declaration; Monthly report for vessels under 10m LOA; Licenses management sub-system; Common alarm system; VMS – Vessels over 10m LOA; In the programming fase are: Fishermen register; Electronic logbook; Sales notes; Bilogical and sampling data; GFCM Task 1 report.

D. Existing databases and synergies with other applications

Section 4 - Status of research in progress

A. Fisheries research with emphasis on management oriented assessment and GFCM priority species

Research/project title	Duration	Main topic	Description
MEDIAS		Biological sampling	Biomass estimation of small pelagic species in GSA 18 using DEPM and Acoustic methods.
MEDITS		Biological sampling	Biomass estimation of demersal resources.
HERD SEAMED	2012-2014	Fisheries development	Strengthening education, applied research and marine development in West-Balkan.
MORM-MONT	2012-2014	Fisheries development	Monitoring of coastal fisheries and fish fry composition along the Montenegrin coast, with the aim of conservation and sustainable management of marine fisheries.

B. Socio-economic studies of fishing communities and fishing sector

Research/project title	Duration	Main topic	Description
MAREA SEDAF	2013- ?	Socio-economic data	Improve knowledge of the main socio-economic aspects related to the most important fisheries in the Adriatic Sea.

C. Marine environment studies

Research/project title	Duration	Main topic	Description
CAMP		Coastal ecosystems	Coastal Area Management Programme
PPPOP			Special Plan for the Coastal Area of Montenegro

Section 5 - Involvement in activities of FAO regional projects

A. Description of activities carried out with FAO regional projects, results obtained and assistance received

Section 6 - Management measures

A. Description of the management measures (legislation, regulations, etc) taken in direct response to GFCM recommendations including assessment of their effects

- Rulebook on determining the line where the water ceases to be steady salty in rivers flowing into the sea and defining the boundaries of fishing protected areas ('Official Gazette MNE' no 39/13)
- Rulebook on form of the permit, method of payment of fees, form, content and method of keeping the register of permits for mariculture ('Official Gazette MNE' no 39/13)
- Rulebook on the type of satellite monitoring system of fishing vessels and type of fishing vessels for which the system is established ('Official Gazette MNE' no 39/13)

Section 7 - Environment protection measures

A. Description of recent activities in establishing protected areas (e.g. fishing reserves, MPAs, and other spatial restrictions)

Katić MPA. Establishment of the MPA zones, along with protected land areas are of great importance for the diversity of plants, animals, and natural habitats represent an effective tool for providing permanent protection and wise use of natural resources. By 2015, "Katić" MPA will be set up and it will be considered as an operational model for the development of a national system of MPAs in Montenegro

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

A. By-catch events

No incidental catches of cetaceans have been reported.

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

A. Catch data, incidental taking, release and/or discarding events for sharks species listed either in Annex II or III of the SPA/BD Protocol

Currently being considered for integration of the legal acts.

Section 10 - Proposals for future research programmes

Morocco

Section 1 - Description of fisheries

A. Fishing grounds (GSAs): 03
B. Total landings: 35 937 tonnes (2012); 31 711 tonnes (2011)
C. Fleet: 3 437 vessels (2012); 3 403 vessels (2011)

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	2012	in overexploitation and overfished	03	Y[3]	
Sardina plichardus	2012	fully exploited	03	Y[1]	

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 statistique marocain est un système qui gère la collecte de données sur les pêcheries à travers trois établissements l'Office national des pêches (ONP), le Département des Pêches Maritimes (DPM) et l'Institut National de Recherche Halieutique (INRH)

B. Indicate whether or not progress in activities related to the collection and processing of fishery statistics have been done with the assistance of FAO regional projects

C. Type of data collected, transmission to GFCM Secretariat and other international bodies
Les données transmises à la CGPM sont gérées de la manière suivante : Base de données Registre de Flottille ; Base de données des bateaux autorisés pour la pêche et ayant une taille supérieure à 15 m ; Base de données « Task 1 »

D. Existing databases and synergies with other applications

Section 4 - Status of research in progress

A. Fisheries research with emphasis on management oriented assessment and GFCM priority species

Research/project title	Duration	Main topic	Description
		Stock assessment	Évaluations des stocks des principales espèces
		Fish biology	Études des cycles de vie des espèces à haute valeur commerciale
			Études de l'interaction entre l'activité de pêche et son environnement
			Recherches sur la révision des tailles marchandes des principales espèces exploitées

B. Socio-economic studies of fishing communities and fishing sector

Research/project title	Duration	Main topic	Description
		Bio-economy	Modélisation bioéconomique sur la pêcherie sardinière
		Small-scale fisheries	Analyse socioéconomique du secteur de la pêcherie artisanale
		Coastal fisheries	Etude sur la rentabilité économique de la pêche côtière

C. Marine environment studies

Research/project title	Duration	Main topic	Description
		Elasmobranchs	Etudes sur l'inventaire des espèces des Elasmobranches peuplant la méditerranée marocaine.
		Cetaceans	Etude des interactions entre les Cétacés et la pêche.
		MPAs, artificial reefs	Etude 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.
		Environmental status	État de la salubrité du milieu marin (études chimiques, accumulation des biotoxines dans les bivalves, études microbiologiques).
		Environmental parameters	Effet des facteurs environnementaux (principalement la salinité et la température) sur la biologie et le cycle de vie des espèces pélagiques et des espèces demersales à durée de vie courte (crevette rose du large).

[3] not validated by the GFCM Working Group

Section 5 - Involvement in activities of FAO regional projects

A. Description of activities carried out with FAO regional projects, results obtained and assistance received

Section 6 - Management measures

A. Description of the management measures (legislation, regulations, etc) taken in direct response to GFCM recommendations including assessment of their effects

- Limitation de la taille des espèces pêchées dans les eaux marocaines;
- Limitation de l'effort de pêche : les investissements en matière de nouvelle construction navale ont été suspendus depuis 1992 (gel d'investissement) ;
- Le contrôle strict des activités de pêche de long de la chaîne de valeur et l'application d'une procédure de certification et traçabilité des captures depuis janvier 2010 ;
- La mise en place depuis octobre 2011 de système de suivi et de transmission de données par satellite (VMS) à bord des navires ayant un tonnage supérieur à 2 unités de jauge brute. (Décret n°2-09-674 du 17 mars 2010) ;
- Plan d'aménagement de la pêcherie crevettière (depuis 2012);
- Plan de gestion du thon rouge selon les recommandations ICCAT;
- Plan d'aménagement de l'espadon (Arrêté n°1666-12 du 17 avril 2012, et l'Arrêté n°1176-13 du 08 avril 2013) ;
- Plan d'aménagement des espèces littorales (algues, corail rouge, coquillages, etc) (Arrêté n°955-10 du 15 mai 2006) ;
- Plan d'aménagement du poulpe depuis juillet 2011;
- Projet de plan d'aménagement de la pêcherie des petits pélagiques prévus en 2014 ;
- Publication de la loi 19-07 interdisant les filets maillants dérivants et son texte d'application ;
- Plan de conservation des requins ;

Section 7 - Environment protection measures

A. Description of recent activities in establishing protected areas (e.g. fishing reserves, MPAs, and other spatial restrictions)

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

A. By-catch events

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

A. Catch data, incidental taking, release and/or discarding events for sharks species listed either in Annex II or III of the SPA/BD Protocol

Species	N specimen	Weight (tonnes)	Day/month/year	Fleet segment	Gear	GSA	N Retained for sale	N discarded dead	N released alive
Galeorhinus galeus		6	2011			03			
Galeorhinus galeus		2	2012			03			
Other		87	2010			03			
Other		61	2011			03			
Other		177	2012			03			

Section 10 - Proposals for future research programmes

- L'identification et la cartographie des zones de ponte et de nourriceries des principales espèces exploitées.
- L'identification de toutes les espèces des Elasmobranches peuplant la GSA 03.
- L'étude de l'effet des changements climatiques sur l'écosystème marin et sur la biodiversité dans le GSA 03.
- L'étude de l'effet des facteurs environnementaux sur les cycles biologiques de toutes les espèces au niveau de la GSA 03.
- L'adoption de modèles intégrant l'effet des changements globaux et des facteurs environnementaux pour l'évaluation de l'état des stocks exploitées.

Romania

Section 1 - Description of fisheries

A. Fishing grounds (GSAs): 29
B. Total landings: 835 tonnes (2012); 568 tonnes (2011)
C. Fleet: 261 (2012); 488 (2011)

Section 2 - Status of stocks of priority species

Species/Stock	Ref. year	Stock status	GSA	Presented to GFCM WGs?	Presented to any other forum?

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 obtained in the different projects by National Institute for Marine Research and Development (NIMRD) are incorporated in database of institute. Reports and data are transmitted to Romanian NAFA in the frame of National Data Collection Program, NAFA/EC-DG Mare.

B. Indicate whether or not progress in activities related to the collection and processing of fishery statistics have been done with the assistance of FAO regional projects

C. Type of data collected, transmission to GFCM Secretariat and other international bodies

D. Existing databases and synergies with other applications

Section 4 - Status of research in progress

A. Fisheries research with emphasis on management oriented assessment and GFCM priority species

Research/project title	Duration	Main topic	Description
PN 09320206			Reducing the impact of marine bio-resources exploitation by developing eco-efficient solutions.
PN II - Capacity, Module III		EAF	Investigation and applied studies of the ecosystem approach to fishery in the Ionian Sea (Greece) and Black Sea (Romania) Romania-Greece bilateral cooperation.
SRCSSMBSF			Strengthening the regional capacity to support the sustainable management of the Black Sea Fisheries.
CREAM		EAF	Coordinating research in support to application of EAF (Ecosystem Approach to Fisheries) and management advice in the Mediterranean and Black Seas.

B. Socio-economic studies of fishing communities and fishing sector

Research/project title	Duration	Main topic	Description

C. Marine environment studies

Research/project title	Duration	Main topic	Description
FP7 EU MISIS		Environmental status	Environmental monitoring of the Black Sea Basin and a common European framework programme for the development of the Black Sea region.
PN 09320103			Influence of river contribution on the chemical composition and trophic status of Romanian transitional and coastal waters to joint implement the Water Framework Directives and Marine Strategy.
PN 09320202		Marine biodiversity	Characterization of the benthic and planktonic communities on the Romanian continental shelf.
RACE		Coastal environment	Radiation background of Black Sea coastal environment
MARCY		Algal blooms	Molecular approaches for rapid and quantitative detection of cyanobacteria and their toxins from coastal Black Sea.
ECOMAGIS		GIS tools	Implementation of a complex GIS for Ecosystem-based Management, through integrated monitoring and assessment of the biocoenosis status and its evolution trends in the fast changing environment.
ODEMM		Ecosystem-based management	Options for Delivering Ecosystem-based of marine management
COCONET FP7		MPAs, renewable energy	Towards networks of marine protected areas (from the shore to the high and deep sea), coupled with sea-based wind energy potential.
PERSEUS FP7			Policy-oriented marine Environmental Research for the Southern European Seas.

Section 5 - Involvement in activities of FAO regional projects

A. Description of activities carried out with FAO regional projects, results obtained and assistance received

So far, FAO has not developed any Black Sea Regional Project.

Section 6 - Management measures

A. Description of the management measures (legislation, regulations, etc) taken in direct response to GFCM recommendations including assessment of their effects

Section 7 - Environment protection measures

A. Description of recent activities in establishing protected areas (e.g. fishing reserves, MPAs, and other spatial restrictions)

- Obtaining the updated information to expand the European ecological network Natura 2000 (Special Areas of Conservation) in the Romanian marine

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

A. By-catch events

Species	N specimen	Day/month/year	Vessels' type	Gear	GSA or statistical grid	Main target species	N discarded dead	N released alive	N unknown
Phocoena phocoena	0	2012							
Delphinus delphis	0	2012							
Tursiops truncatus	0	2012							

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

A. Catch data, incidental taking, release and/or discarding events for sharks species listed either in Annex II or III of the SPA/BD Protocol

Species	Annex	N specimen	Weight (tonnes)	Day/month/year	Vessels' type	Gear	GSA	Retained for sale?	N discarded dead	N released alive
Squalus acanthias	III		20	2012			29	Y		

Section 10 - Proposals for future research programmes

- Distribution and abundance of the two main species in the Black Sea: turbot and dogfish.

Slovenia

Section 1 - Description of fisheries

A. Fishing grounds (GSAs): 17
B. Total landings: 238 tonnes (2013); 329 tonnes (2012)
C. Fleet: 170 vessels (01/01/2014); 175 vessels (01/01/2013)

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		in overexploitation and overfished	17	Y	
Sardina plichardus			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
InfoRib is the main system.

B. Indicate whether or not progress in activities related to the collection and processing of fishery statistics have been done with the assistance of FAO regional projects

C. Type of data collected, transmission to GFCM Secretariat and other international bodies
InfoRib is the centralized information system which contains all the relevant data on fisheries in Slovenia: 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 permanently stored in the Fisheries Research Institute database (BIOS).

D. Existing databases and synergies with other applications
InfoRib is interconnected with VMS data base and soon it will be interconnected also with ESR data. In the future the interconnection with the Aquaspec system, with the BIOS database and with the central node for fisheries data at the European Commission will be improved.

Section 4 - Status of research in progress

A. Fisheries research with emphasis on management oriented assessment and GFCM priority species

Research/project title	Duration	Main topic	Description
MEDITS		Biological sampling	Collection and management of data
MEDIAS		Biological sampling	Collection and management of data
SOLEMON			

B. Socio-economic studies of fishing communities and fishing sector

Research/project title	Duration	Main topic	Description
		Economy	Evaluation of the fishing sector
		Economy	Evaluation of the economic situation of the aquaculture sector
		Economy	Evaluation of the economic situation of the processing industry

C. Marine environment studies

Research/project title	Duration	Main topic	Description

Section 5 - Involvement in activities of FAO regional projects

A. Description of activities carried out with FAO regional projects, results obtained and assistance received
AdriaMed project:

- stock assessment
- cooperation in the framework of SOLEMON project

Section 6 - Management measures

A. Description of the management measures (legislation, regulations, etc) taken in direct response to GFCM recommendations including assessment of their effects

GFCM/37/2013/1 on a multiannual management plan for fisheries on small pelagic stocks in the GFCM-GSA 17 (Northern Adriatic Sea) and on transitional conservation measures for fisheries on small pelagic stocks in GSA 18 (Southern Adriatic Sea) (hereinafter: "Multiannual plan"):

- In line with the provisions of the "Multiannual plan", Slovenia prepared and sent to the GFCM secretariat, before the end of October 2013, its national Monitoring and control plan for its fisheries targeting small pelagic stocks. In addition, Slovenia submitted to the GFCM secretariat also a list of the vessels authorized to fish for small pelagic stocks that are registered in harbors located in GSA 17.

Section 7 - Environment protection measures

A. Description of recent activities in establishing protected areas (e.g. fishing reserves, MPAs, and other spatial restrictions)

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

A. By-catch events

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

A. Catch data, incidental taking, release and/or discarding events for sharks species listed either in Annex II or III of the SPA/BD Protocol

Section 10 - Proposals for future research programmes

- Conduct a preliminary survey to determine the spatial and seasonal distribution of planktonic stages of European anchovy and sardine in the Slovenian seas. This would enable us to determine the appropriate number and position of sampling stations and the period in which to collect the samples for the DEPM. Addition of this data to the joint stock assessment would further improve the precision of the results.

Spain

Section 1 - Description of fisheries

A. Fishing grounds (GSAs): 01, 02, 05, 06, 07
B. Total landings: 59 703 tonnes (2012); 60 031 tonnes (2011)
C. Fleet: 2 843 vessels (31/12/2012); 2 972 vessels (31/12/2011)

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	2012	in high overfishing	01	Y	
Aristeus antennatus	2012	in high overfishing	05	Y	
M. merluccius	2012	in high overfishing	05	Y	
Mullus surmuletus	2012	in high overfishing	05	Y	
M. barbatus	2012	in high overfishing	05	Y	
Parapenaeus longirostris	2012	low overfishing	05	Y	
M. barbatus	2012	in high overfishing	06	Y	
P. longirostris	2012	high overfishing status	06	Y	
Merluccius merluccius	2012	high overfishing status	07	Y	
Mullus barbatus	2012	high overfishing status	07	Y	
Engraulis encrasicolus	2012	uncertain	01	Y	
Sardina pilchardus	2012	sustainably exploited	01	Y	
E. encrasicolus	2012	sustainably exploited	06	Y	
S. pilchardus	2012	overexploited and in overexploitation	06	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. Indicate whether or not progress in activities related to the collection and processing of fishery statistics have been done with the assistance of FAO regional projects
C. Type of data collected, transmission to GFCM Secretariat and other international bodies
IEO collects length and biological data of main commercial species under the guidelines of the National Program supported by the EU for the collection and management of fisheries data in accordance with Community programmes (Reg. (EC) 199/2008). Data information is managed in the framework of the SIRENO database developed by the IEO. SIRENO moreover stores fish market information, observers on board information and research surveys data. Moreover, the General Subdirectorate for Statistics collects and processes the economic information on fisheries.
D. Existing databases and synergies with other applications

Section 4 - Status of research in progress

A. Fisheries research with emphasis on management oriented assessment and GFCM priority species

Research/project title	Duration	Main topic	Description
MEDITS		Biological sampling	Collection and management of data
MEDIAS		Biological sampling	Collection and management of data
REMARAN		Management plans	Improve the knowledge of the status of the different stocks including aspects of the impact of the fishery in the benthic community in order to set up a management plan.
REMALA		Spatial based approach	Analysis of the adequateness of the Bay of Málaga (GSA01) for the creation of a fishing protected area, due to its importance as areas of reproduction, spawning, nursery and growth of several commercial species.

B. Socio-economic studies of fishing communities and fishing sector

Research/project title	Duration	Main topic	Description

C. Marine environment studies

Research/project title	Duration	Main topic	Description
TROFOALBORAN		Pelagic ecosystem	Pelagic ecosystem trophic web dynamics influencing the early life stages of sardine and anchovy off their main nursery grounds in the Bays of Málaga and Almería.
	2011-2013	MPAs/Spill-over effects	Effects of Marine Protected Areas (MPAs) on exploited communities, species and artisanal fisheries have been continued, quantifying benefits of spill-over to adjacent fisheries and increased reproductive potential at regional level as a result the MPA protection.
Azimut CENIT		Renewable energy	Study the offshore wind farms OWF impacts on marine biota.
COCONET FP7		MPAs, renewable energy	Towards networks of marine protected areas (from the shore to the high and deep sea), coupled with sea-based wind energy potential.
INDEMARES	2009-2014	Sea habitats of special importance	Promote research, conservation and assessment of the sea and its habitats in order to comply with commitments regarding the Marine European Natura 2000 network and reinforce the application of international conventions on the sea (as OSPAR and Barcelona).

Section 5 - Involvement in activities of FAO regional projects

A. Description of activities carried out with FAO regional projects, results obtained and assistance received

Section 6 - Management measures

A. Description of the management measures (legislation, regulations, etc) taken in direct response to GFCM recommendations including assessment of their effects

Regarding Red Coral, national regulation has been modified and adapted to the last GFCM Recommendations through Royal Decree 629/2013.

Section 7 - Environment protection measures

A. Description of recent activities in establishing protected areas (e.g. fishing reserves, MPAs, and other spatial restrictions)

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

A. By-catch events

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

A. Catch data, incidental taking, release and/or discarding events for sharks species listed either in Annex II or III of the SPA/BD Protocol

Section 10 - Proposals for future research programmes

- For the assessment of marine resources much greater attention is needed in taking into ecological considerations for the implementation of ecosystem based approach in fisheries. Studies focusing on the impact of environmental changes (climatic variability, increase of gelatinous plankton, etc.) and on the variability of marine resources, as well as, on their effect on fishing catchability and fleet efficiency are recommended.

Tunisia

Section 1 - Description of fisheries

A. Fishing grounds (GSAs): 12, 13, 14
B. Total landings: 117 637 tonnes (2012); 109 160 tonnes (2011)
C. Fleet: 12 000 vessels

Section 2 - Status of stocks of priority species

Species/Stock	Ref. year	Stock status	GSA	Presented to GFCM WGs?	Presented to any other forum?

Section 3 - Status of statistics and information system

A. Description of the national system of fishery statistics and/or any improvement/change occurred
la collecte, l'archivage et l'élaboration des bases de données des statistiques de la pêche (production, effort, flottille) sont assurés par les services du Ministère de l'Agriculture, plus particulièrement la Direction Générale de la Pêche et de l'Aquaculture (DGPA).

B. Indicate whether or not progress in activities related to the collection and processing of fishery statistics have been done with the assistance of FAO regional projects
Depuis l'année dernière, la DGPA appuyée par la CopeMedII Projet a lancé une opération pilote de collecte et d'amélioration des données statistiques de la pêche artisanale.

C. Type of data collected, transmission to GFCM Secretariat and other international bodies

D. Existing databases and synergies with other applications

Section 4 - Status of research in progress

A. Fisheries research with emphasis on management oriented assessment and GFCM priority species

Research/project title	Duration	Main topic	Description
		Stock assessment	Ressources benthiques exploitables des eaux tunisiennes : Evaluation des stocks et aménagement des pêcheries.
		Stock assessment	Ressources pélagiques exploitables : Evaluation des stocks et aménagement des pêcheries
		Gear selectivity	Amélioration de la sélectivité des engins de pêche
ECOSAFIM		EAF	Approche écosystémique comme outil d'aménagement

B. Socio-economic studies of fishing communities and fishing sector

Research/project title	Duration	Main topic	Description

C. Marine environment studies

Research/project title	Duration	Main topic	Description
		Sea turtles	Monitoring du site de nidification des îles Kuriat qui a permis d'enrichir davantage la base des données relative aux paramètres de nidification. Un nouveau site de ponte de la tortue marine Caretta caretta a été découvert à la Chebba (côtes sud-est de la Tunisie) l'été 2013. Des rencontres de sensibilisation des pêcheurs ont été organisées dans les ports pour une bonne conservation des tortues marines. Des dépliants et livrets ont été édités dans le même cadre de conservation.
		Sea turtles	Etude de l'importance et de la répartition spatiotemporelle des échouages sur les côtes tunisiennes dans le cadre du réseau national d'échouage. Dans le cadre de ce réseau, des échantillons sont conservés pour les scientifiques. Ceux-ci ont servi en premier temps pour mener des études de génétique (caractérisation génétique des populations) et de parasitologie.
		Sharks taxonomy	Étude systématique (morphologique, anatomique, parasitologique et génétique) a mis en évidence la validité d'une pastenague *Dasyatis tortonesi* qui posait un problème de confusion avec une autre espèce du même genre *Dasyatis pastinaca*.
		Sharks biology	Délimitation des zones de nurseries pour quelques espèces de poissons cartilagineux
		Corals	Campagnes de prospections effectuées ont permis d'établir une première liste d'espèces du coralligène au nord de la Tunisie
		Seagrasses	Étude des herbiers de posidonie dans le gouvernorat de Mahdia a permis de décrire plusieurs types d'herbiers dont les plus répandus sont les herbiers de plaine, mais aussi les herbiers à statut particulier, les récifs frangeants et les micro-atolls dans la région de La Chebba.
		Climate change	Étude de la biodiversité de la faune ichthyologique a été entamée dans un contexte de changement climatique.
		Cetaceans	Recensement des échouages de cétacés.

Section 5 - Involvement in activities of FAO regional projects

A. Description of activities carried out with FAO regional projects, results obtained and assistance received

L'INSTM continue régulièrement ses activités de recherche et entretient une collaboration assez étroite avec les deux projets régionaux MedSudMed et CopeMedII.

Section 6 - Management measures

A. Description of the management measures (legislation, regulations, etc) taken in direct response to GFCM recommendations including assessment of their effects

- Fermeture au chalut sur la région Sud (GSA 14 Golfe de Gabès) pour un période de trois mois (1 juillet au 30 Septembre).

Section 7 - Environment protection measures

A. Description of recent activities in establishing protected areas (e.g. fishing reserves, MPAs, and other spatial restrictions)

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

A. By-catch events

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

A. Catch data, incidental taking, release and/or discarding events for sharks species listed either in Annex II or III of the SPA/BD Protocol

Species	N specimen	Weight (tonnes)	Day/month/year	Fleet segment	Gear	GSA	N Retained for sale	N discarded dead	N released alive

Section 10 - Proposals for future research programmes

- L'identification et la cartographie des zones de ponte et de nourriceries des principales espèces exploitées.
- L'identification de toutes les espèces des Elasmobranches peuplant la GSA 03.
- L'étude de l'effet des changements climatiques sur l'écosystème marin et sur la biodiversité dans le GSA 03.
- L'étude de l'effet des facteurs environnementaux sur les cycles biologiques de toutes les espèces au niveau de la GSA 03.
- L'adoption de modèles intégrant l'effet des changements globaux et des facteurs environnementaux pour l'évaluation de l'état des stocks exploitées.

Turkey

Section 1 - Description of fisheries

A. Fishing grounds (GSAs): 28, 29, 22, 24
B. Total landings: 396 322 tonnes (2012); 477 658 tonnes (2011)
C. Fleet: 17 165 vessels (2011)

Section 2 - Status of stocks of priority species

Species/Stock	Ref. year	Stock status	GSA	Presented to GFCM WGs?	Presented to any other forum?

Section 3 - Status of statistics and information system

A. Description of the national system of fishery statistics and/or any improvement/change occurred
B. Indicate whether or not progress in activities related to the collection and processing of fishery statistics have been done with the assistance of FAO regional projects
C. Type of data collected, transmission to GFCM Secretariat and other international bodies
D. Existing databases and synergies with other applications
The Fisheries Information System (FIS), an integrated Web-based database, has been developed. FIS is subject to routine updates, comprises a combination of resources organized to collect, process, transmit, and disseminate fisheries relevant data.

Section 4 - Status of research in progress

A. Fisheries research with emphasis on management oriented assessment and GFCM priority species

Research/project title	Duration	Main topic	Description

B. Socio-economic studies of fishing communities and fishing sector

Research/project title	Duration	Main topic	Description

C. Marine environment studies

Research/project title	Duration	Main topic	Description
"Strengthening Protected Area Network of Turkey: Catalyzing Sustainability of Marine and Coastal Protected Areas"		MPAs	The project aims to facilitate expansion of the national system of marine and coastal protected areas, including fisheries protected areas, and improve their management effectiveness.

Section 5 - Involvement in activities of FAO regional projects

A. Description of activities carried out with FAO regional projects, results obtained and assistance received

Section 6 - Management measures

A. Description of the management measures (legislation, regulations, etc) taken in direct response to GFCM recommendations including assessment of their effects
- Notification regulating commercial fisheries has been revised for 2012-2016 fishing season
- Minimum size restrictions have been enhanced for some species
- Prohibitions for use of some fishing gear and for some fishing zones have been introduced
- No fishing activity for turbot shall be permitted from 15 April to 15 June. The minimum landing size for turbot shall be 45 cm total length. The minimum legal mesh size for bottom-set nets used to catch turbot shall be 400 mm.

Section 7 - Environment protection measures

A. Description of recent activities in establishing protected areas (e.g. fishing reserves, MPAs, and other spatial restrictions)

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

A. By-catch events

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

A. Catch data, incidental taking, release and/or discarding events for sharks species listed either in Annex II or III of the SPA/BD Protocol

Section 10 - Proposals for future research programmes

- None

Appendix I(b)

National reports/Rapports nationaux

(in original language/dans la langue d'origine)

- **Albania/Albanie**
- **Algeria/Algérie**
- **Bulgaria/Bulgarie**
- **Croatia/Croatie**
- **Egypt/Égypte**
- **France**
- **Greece/Grèce**
- **Italy/Italie**
- **Lebanon/Liban**
- **Malta/Malte**
- **Montenegro/Monténégro**
- **Morocco/Maroc**
- **Romania/Roumanie**
- **Slovenia/Slovénie**
- **Spain/Espagne**
- **Tunisia/Tunisie**
- **Turkey/Turquie**

ALBANIA/ALBANIE

Description of the fisheries

Description of the fishing grounds and GSA

The main categories of Albanian fisheries are divided as follows:

- ☐ Marine fisheries **(GSA 18)**
  - ✓ *Professional industrial fishing*
  - ✓ *Professional artisanal fishing*
- ☐ Aquaculture
  - ✓ *Marine Cage Culture*
  - ✓ *Trout Culture*
  - ✓ *Mollusk Culture*
  - ✓ *Carp Culture*
  - ✓ *Natural Lake Fisheries*
  - ✓ *Lagoon Fisheries*
  - ✓ *Artificial Lake Fisheries*
- ☐ Rivers

Total landings by group of targeted species

Nr	Water category	2012 (tonnes)	2013 (9 months)
I	TOTAL (1+2+3+4)	4 919	3 889
1.	Marine	2 374	1 875
2.	Coastal	506	581
3.	Lagoon	369	193
4.	*Internal waters*	1 670	1 240
II.	*Aquaculture*	1 250	1 260
III.	*Mollusk farming*	760	750
	TOTAL (I+II+III)	6 929	5 899

Fishing fleet:

Distribution of vessels by vessel type:

Vessel Type	Number	%
Multipurpose vessels/Multipurpose vessels	9	1.5%
Lift Netters/Lift Netters	1	0.2%
Purse seiners/Purse seiners	5	0.9%
Gill netters/Gill netters	371	63.5%
Trawlers/Trawlers	198	33.9%
	584	

Fishing vessels according the fishing forms

LOA

Vessel Type	< 12m.	%	>= 12m.	%	Total
Multipurpose vessels/Multipurpose vessels	0	0.0%	9	3.8%	9
Trawlers/Trawlers	2	0.6%	196	82.0%	198
Purse seiners/Purse seiners	1	0.3%	4	1.7%	5
Lift Netters/Lift Netters	1	0.3%	0	0.0%	1
Gill netters/Gill netters	341	98.8%	30	12.6%	371
	345		239		584

Vessel power

Vessel Type	Number	Total Power
Multipurpose vessels/Multipurpose vessels	39	12675.05
Lift Netters/Lift Netters	3	100.68
Purse seiners/Purse seiners	39	2928.92
Gill netters/Gill netters	974	35444.26
Seiners/Seiners	446	18112.70
Trawlers/Trawlers	872	238126.00
	2373	307387.61

Status of stocks of priority species

Status of the statistics and information system

Albania fulfills every year the Task 1 of GFCM.
The VMS system was built based on the document: "Politics and the procedures of functioning of Inter-institutional Operational Maritime Centre (IMOC)". A VMS ('Blue boxes') has been installed in

all fishing vessels over 12m to strengthen the surveillance of the fishing fleet. Ensuring reliable, systematic and improved collection of data on the fishing fleet, catches, landings and the biological status of the stocks in Albanian waters has been implemented using the newly developed Catch Information Data Base, Fishery Inspector Information Support System and Catch Validation Data Base. Implementation of these tools has been programmed to be completed and implemented during 2012 for all the main fish landing centres as the obligations of fishing vessel operators are stated in the new legislation "On Fisheries" and in the DCM.

Med-Stat software is available for the processing of data

- An electronic logbook is foreseen to be incorporated in the VMS System.
- A necessary legal base is approved, like DCM "Establishment of a National framework for the collection, management and use of data in the fisheries sector and support for scientific advice regarding the Albanian Fisheries Policy", adopting a Multiannual Community Programme for the collection, management and use of data in the fisheries sector.

But, even the above developments, Albania don't have yet a real the national system of fishery statistics. The proper structure, starting from the statistical data unit in the Ministry and the structure in the field that should collect those data's and transmit to the unit for processing and analyzing doesn't exist. By approving the above DCM it has been programmed to establish this system, but transferring from Ministry of Environment to Ministry of Agriculture is rather holding back this process. The Fishery Inspectorate Structure is under transferring procedures.

Status of research in progress

Bottom fish reserve monitoring in Albanian seawaters

The methodology consisting on:
Biological materials sampling by using the vessel fishing survey on the bottom trawling. The biological material obtained through random sampling, from 4 ports: Shengjini, Durresi, Vlora, Saranda. Types that are under study are the main ones such as haddock, mullet, vops, anchovy, pink shrimp, sardines, etc. Biometric measurements were carried out, length, weight, maturity stage of an occasional sampling of these different important demersal fish of the Albanian marine area.

Status of the social sciences studies in progress or achieved during inter sessional period (economy, relevant legislation, sociology, etc.)

Description of the achievement and/or progress in activities related to the national research on the socio-economic aspects of the fishing communities and fishing sector.
The Survey regarding social-economic data on Albanian fisheries was carried up by support of AdriaMED in May 2013, the data collected referred to the previous year (2012) by using a single stage sample stratified over 3 variables (geographical, technical and dimensional)
A total of 130 interviews were carried out covering the four main ports of Albania. All the fishing fleet segments were covered.
Out of 468 fishing vessels (active and not active) registered in the Albanian Fishing Fleet Register, the 70% is represented by polyvalent passive vessels (small scale fisheries) and remain 30% is represented by trawlers that account for the 60% of total GT. This may generate interactions/conflicts between the two segments (e.g. overlapping of fishing areas, competition for resources);
Passive gears and trawlers appear to be economically profitable in 2012, with a moderate rate of return on investment for artisanal vessels (around 9%) and a high rate (around 46%) for big trawlers.
The data with some preliminary analysis are included in the file Socio-economic-data 2012_ALB.xlsx (these data should be considered a very preliminary, they are still analyzing)
The data collected allows the fulfillment of GFCM requirements on Task1, namely the GFCM Task 1.3.

Marine environmental studies in progress

Involvement in activities of FAO regional projects

With the support of the AdriaMed project, during 2013 has been carried out:

- Monitoring activities of small pelagic and demersal species and necessary workshops and working groups to analyze results;
- National survey on economic and social aspects;
- National survey on small-scale fisheries.

Management measures

The new Law on Aquaculture is in the final drafting and is based on GFCM recommendation and AZA concept (Allocation Zone for Aquaculture)
As implementation of the new fisheries law has been prepared and approved 4 Decision of Council of the Ministers:

- "Establishment of a National framework for the collection, management and use of data in the fisheries sector and support for scientific advice regarding the Albanian Fisheries Policy" adopting a Multiannual Community Programme for the collection, management and use of data in the fisheries sector;
- "Establishing a control system for ensuring compliance with the rules of the management fisheries policy";
- "Management measures for the sustainable exploitation of fishery resources in the Mediterranean Sea";
- "Establishing a system to prevent, deter and eliminate illegal, unreported and unregulated fishing";

Environment protection measures

Not any activity on environmental protection during this period. The proclaimed marine protected areas are the same as years ago**.**

With regard to: *Recommendation GFCM/35/2011/2 on the exploitation of red coral in the GFCM Competence Area*

If derogation of Paragraph 4 *"CPCs shall ensure the prohibition of the exploitation of red coral populations at depth less than 50 m until scientific studies, as validated by GFCM-SAC, indicate otherwise"* is applicable, provide detailed information on the national management framework and the studies carried out at national level to apply this derogation.

Albanian Legislation on Fisheries prohibits at all the exploitation of all corals, in every depth.

With regard to: *Recommendation GFCM/36/2012/2 on mitigation of incidental catches of cetaceans in the GFCM area*

Provide information on by-catch rates of cetaceans taking into account, amongst other relevant information: fisheries concerned characteristics of gear type, times, locations (either by GSA or statistical rectangles) and affected cetacean species.

No data on the incidental catches of cetaceans in Albanian waters. By the law "On Fisheries" the cetaceans are protected.

With regard to: *Recommendation GFCM/36/2012/3 on fisheries management measures for conservation of sharks and rays in the GFCM area*

Provide information on fishing activities, catch data, incidental taking, release and/or discarding events for sharks species listed either in Annex II or III of the SPA/BD Protocol.

No data on the incidental catches of sharks in Albanian waters. By the law "On Fisheries" some shark species are protected.

Proposals for future research programmes

- Continuing monitoring of the most important pelagic and demersal species;
- Continuing surveys on economic/social in Albanian Fisheries and Small Scale Fisheries as well;
- Continuing supporting on aquaculture and inland waters data on production, economic, biological, technological, etc.
- Support on legislative aspects, especially on AZA preparing, GIS-system used on AZA instrument; etc.

ALGERIA/ALGÉRIE

Description des pêcheries

La production nationale des produits de la pêche et de l'aquaculture en Algérie a enregistré un total de 108 207 tonnes au titre de l'année 2012, soit une légère augmentation par rapport à l'année 2011 (104 008 tonnes), prés de 4 199 tonnes. Cette production est répartie comme suit:

- Poissons démersaux: **7 999 tonnes** soit **7%** par rapport à la production totale ;
- Poissons pélagiques: **80 902 tonnes**, soit **75%** par rapport à la production totale ;
- Crustacés: **2 310 tonnes**, soit **2%** par rapport à la production totale ;
- Mollusques: **1 472 tonnes**, soit **1%** par rapport à la production totale ;
- Autres produits (productions aquacole et plaisancière): **15 524 tonnes** soit **14%** par rapport à la production totale.

Cette production a été réalisée au moyen d'une flottille de pêche répartie autour de trois grands groupes, il s'agit de chalutiers, de senneurs et de petits métiers. La flottille de pêche enregistrée en **2012** est de 4 403 unités dont la puissance totale est de 501 113 Kw et d'une jauge brute totale de 65 941TJB.

État des stocks des principales espèces

Une étude d'évaluation des ressources halieutiques le long du littoral algérien a été menée en 2013 par le Centre National de Recherche et de Développement de la Pêche et de l'Aquaculture au moyen du navire de recherche scientifique Algérien Grine Belkacem, nouvellement acquis. Dans le cadre de cette étude, deux campagnes ont été réalisées :

1. Évaluation des ressources démersales ALDEM 2013

Cette campagne a été réalisée durant le mois de juin, sur des fonds chalutables au niveau du plateau continental et du talus, entre les isobathes de 20 à 800 mètres. Les principales espèces ciblées sont : merlu (*M. merluccius*), merlan (*M. poutassou*), rouget de roche (*M. surmuletus*), rouget de vase (*M. barbatus*), pageot (*P. acarné*), mustelle (*Physis blennoides*), crevette rouge (*A. antennatus*), crevette rose profonde (*P. longirostis*), langoustine (*N. norvegicus*), baudroie (*L. piscatorius et L. budegassa*), seiche (*Sepia officinalis*), poulpe (*Octopus vulagris*), calamar (*L. vulgaris*).

Les résultats préliminaires de cette évaluation ne permettent pas encore d'indiquer l'état d'exploitation des stocks ciblés. Néanmoins, à l'issu de l'analyse des paramètres biologiques calculés pour ces espèces ont fait ressortir quelques indicateurs relatifs à la dynamique de ces stocks, notamment :

Les espèces dominantes en termes d'effectif et de poids dans les captures totales sont le saurel *Trachurus trachurus,* le rouget de vase *Mullus barbatus et* le pageot *pagellus acarne*. Par contre, les espèces dont les rendements étaient les plus faibles sont la langoustine *Nephrops.norvegicus*, la baudroie *lophius budegassa*, le merlan bleu *Micromesiteus poutassou*. D'autre part, la plupart des espèces cibles présentaient des stades de maturité avancés indiquant qu'elles étaient en période de reproduction.

Aussi, il ressort clairement de cette prospection, que les rendements fournis par les zones profondes de plus de 500 m sont faibles, notamment ceux de la crevette rouge.

La crevette rouge *Aristeus antennatus,* la taille moyenne obtenue varie d'une région à une autre, elle est de l'ordre de 29,01 mm à 34,68 mm, avec une mortalité totale (Z) dont la valeur varie entre 3,37 et 2,26. Pour la mortalité naturelle (M), la valeur obtenue est de 1,16. La mortalité par pêche (F) varie également de 2,31 à 0,14.

Pour le rouget de vase *Mullus barbatus*, la taille de cette espèce présente un large éventail qui est d'une valeur minimale de 7,33 mm à Béjaia dans la région Est et d'une valeur maximale de 13 mm à Ain Temouchent, dans la région Ouest. La mortalité totale (Z) de cette espèce estimée varie de l'Est à l'Ouest entre 0,62 et 0,65.

2. Évaluation des ressources pélagiques ALPEM 2013

Cette campagne a été réalisée le long du littoral algérien durant la période hivernale du 15 février au 16 mars. La prospection acoustique a concerné les isobathes allant de 20 à 500m, à travers la réalisation de 67 radiales. Au cours de celle-ci, 24 pêches d'identification ont été effectuées obéissant aux critères de détections des bancs de poisson lors de la prospection acoustique. Les petits pélagiques représentent 81% des captures totales avec une dominance en nombre et en poids des saurels, suivis de la sardine. Les résultats de cette campagne ne peuvent fournir avec certitude le niveau d'exploitation du stock petit pélagique, néanmoins ils font ressortir quelques indicateurs d'une situation temporelle relatifs à cette ressource notamment la sardine *sardina pilchardus* : une augmentation de la taille moyenne entre la campagne Vizconde De Eza (2003) et celle-ci est passé respectivement de 13,54 cm à 14,89 cm. La taille de la 1ère maturité sexuelle est de 11, 9 cm, il s'agit des reproducteurs du fait que cette période coïncide à celle de la fin ponte de cette espèce. Pour le cas de l'anchois, cette espèce fait sa réapparition dans la pêcherie algérienne, avec une taille moyenne qui passe de 8,9 cm à 11,7 cm. La structure de taille montre une distribution polymodale, avec des cohortes de 5,5 à 7,5 cm. Il s'agit bien des individus issus de la ponte estivale ou automnale.

Il est à signaler, que les résultats de ces campagnes n'ont pas encore fait l'objet de comparaison dans le groupe de travail CGPM relatif à l'évaluation des stocks en Méditerranée.

État des statistiques et du système d'information

Le secteur de la pêche et des ressources halieutiques algérien, déploie de nombreux efforts pour améliorer son système statistique existant à travers un suivi quotidien des informations statistiques récoltées au niveau local et qui sont transmises à l'administration centrale pour qu'elles soient introduites automatiquement dans une base de données nationale.

Aussi et dans le cadre de la coopération internationale entre l'Algérie et les instances internationales, le secteur de la pêche a lancé en 2011, un projet de coopération technique avec la FAO, il s'agit du projet TCP/ALG/3301 « Assistance pour la mise en place de l'Observatoire Socio économique et Statistique National des Pêches » Ce dernier a été inscrit dans l'objectif principal est de renforcer notre système statistique, notamment en termes d'expertise et de formation des agents collecteurs en prenant comme référence les mesures et les recommandations des Organisations Régionales et Internationales spécialisées notamment celles de la FAO, l'ICCAT et la CGPM.

Ce projet est une opération d'appui pour la mise en place d'un observatoire socio-économique et statistique national des pêches et aussi s'est proposé d'être un outil capable de fournir des recommandations pertinentes à travers des études et analyses socioéconomiques approfondies et fiables. Il est clair que l'objectif principal de l'observatoire était de proposer des améliorations au système statistique actuel. La démarche proposée dans ce cadre consiste à l'allègement du système statistique national des pêches par l'introduction, dans un contexte d'échantillonnage, d'une pratique statistique fiable augmentant l'exactitude au-delà du seuil de 90%. Les informations statistiques du secteur représentent deux types de données, celles relatives aux débarquements d'une part, et les moyens de production ou effort de pêche (flottille, engins, etc.) d'autre part. Ces données sont utiles à l'analyse et la modélisation dans le cadre de l'aménagement des pêcheries. Pour ce qui est de la transmission des données statistiques à la CGPM et à toute autre institution internationale, l'Algérie a régulièrement communiqué les informations demandées.

État de la recherche en cours

Dans le cadre du redéploiement de la stratégie de recherche du Centre National de Recherche et de Développement de la pêche et de l'aquaculture (CNRDPA), des actions ont été inscrites et lancées, il s'agit, notamment de la :

- Dynamique des écosystèmes exploités:
  - *Suivi de l'écosystème pélagique exploité*
  - *Suivi de l'écosystème démersale exploité*
  - *Suivi des grands pélagiques et des thonidés mineurs.*
- Dynamique des systèmes d'exploitation et l'analyse des outils de gestion. Pour cette action un diagnostic et des plans opérationnels sont en cours de préparation.

En ce qui concerne les engins de pêche, il est à rappeler qu'une étude inscrite dans le cadre du projet FAO CopeMed II relative à la sélectivité du chalut à mailles carrées a été lancée et les résultats sont en cours d'analyse.

Par ailleurs, un travail de recherche relatif au recensement des caractéristiques des engins de pêche utilisés par les professionnels algériens est mené actuellement par le Centre de recherche.

Aussi et en matière d'aquaculture, les études concernant la reproduction du Tilapia, de la sandre et de la crevette, l'intégration de la pisciculture à l'agriculture, l'essai de la reproduction artificielle et d'élevage larvaire des espèces marines et une étude comparative des stocks, de biologie et de la qualité des mollusques bivalves issus des deux sites dans la baie de Bou- Ismail sont en cours.

Aspects socioéconomiques

Un programme d'enquêtes socioéconomiques sur la population des marins pêcheurs à l'échelle nationale est mis en place dans l'objectif de combler le vide en matière d'informations et afin de disposer des éléments qui viennent pour accompagner la stratégie du développement de la pêche. Il s'agit d'identifier les indicateurs socio-économiques des pêcheries algériennes. Dans le même contexte une étude bioéconomique des pêcheries des petits pélagiques de la côte Algérienne est en cours de réalisation.

Aussi, d'autres enquêtes sont en cours permettant la réalisation d'espaces économiques et viables, et offrant des perspectives de développement de zones éparses et enclavées afin de prendre en charge la pêche artisanale et pour améliorer les conditions socioéconomiques des populations constituées de milliers de professionnels et ce, à travers la réalisation, l'équipement et l'organisation d'infrastructures légères dites « plages d'échouages », au niveau des zones de pêche exploitées par les petites embarcations.

De ce fait, des études pour la réalisation des sites d'échouage ont été lancées et sont en cours d'analyse, il s'agit de :

- Enquête socioéconomique du site d'échouage de Fouka Marine, wilaya Tipaza ;
- Enquête socioéconomique du site d'échouage d'El Galta, Ténes ;
- Enquête socioéconomique du site d'échouage de Souk El thenine, wilaya de Béjaia ;
- Enquête socioéconomique du site d'échouage de Hadjret Ennous, wilaya de Tipaza.

Participation à des activités de projets régionaux de la FAO :

Le projet de coopération avec FAO relatif à la mise en place de l'observatoire socio-économique des pêches et de l'aquaculture cité au chapitre « État des statistiques et du système d'information » et ayant pour mission la redynamisation du réseau d'information et d'harmonisation des méthodes de collecte de données de débarquement avec l'application de l'outil SSPAL a été menée et clôturé en juin 2013. Une demande d'extension du projet est formulé et en cours de négociation pour la généralisation du système d'échantillonnage à l'ensemble des wilayas maritimes, la réalisation des enquêtes sur terrain, le soutien en matière du matériels et d'équipements, etc.

Les principaux résultats obtenus du projet suscité sont :

- Formation de plus de 240 personnes, en matière d'échantillonnage des pêches, d'identification des espèces et des engins de pêche, d'analyse et de traitement des données, d'aménagement des pêcheries et Socio-économie des pêches.
- Mise en place d'un système d'échantillonnage des débarquements des pêches, avec l'installation d'un logiciel spécifique au niveau de trois wilayas pilotes (Alger, Ain-Temouchent et Jijel);
- Élaboration de deux rapports du diagnostic (Système statistiques des pêches en Algérie, Aménagement des pêcheries en Algérie);
- Publication d'un guide des principales espèces débarquées en Algérie;
- Acquisition des équipements bureautiques et informatiques.

Par ailleurs, l'Algérie a inscrit au cours de cette année un projet d'appui à la formulation de la stratégie nationale de développement de la pêche et de l'aquaculture avec une attention particulière à la pêche artisanale avec l'appui de partenaire PNUD/FAO pour une période de deux années (2014-2015). La formulation du projet a été conclue entre l'État algérien et le PNUD. Aussi, une Task Force sera mise en place dans les jours qui suivent pour le suivi des activités inscrites dans le cadre de ce projet.

Les mesures de gestion

L'Algérie a inscrit dans son programme de développement un projet relatif à l'élaboration d'un Plan d'Aménagement et de Gestion des Pêcheries Algériennes (PAGPA). Les objectifs de ce projet sont :

- La mise en place d'un Système d'Information Géographique (SIG) dédié à la gestion des pêcheries nationales ;
- La représentation cartographique des différentes composantes de l'activité de la pêche (paramètres environnementaux, état de la ressource, outil de production, infrastructures portuaires, données socio-économiques, réglementation des pêches, dispositif de suivi, de contrôle et de surveillance)
- L'élaboration et la présentation d'un plan d'aménagement des activités de la pêche en faisant ressortir essentiellement, les zones de pêche sensibles, les zones d'activités pour les différents type de métier, les zones de conflit et la localisation de l'effort de pêche.

En ce qui concerne: Recommandation GFCM/35/2011/2 sur l'exploitation du corail rouge dans la zone de compétence de la CGPM

La pêche au corail dans les eaux sous juridiction a été interdite depuis 2001 par décret exécutif n°01 - 56 du 15 février 2001 portant suspension de la pêche du corail et ce, en attendant de réaliser une étude d'évaluation des ressources coralliennes et d'élaborer un plan de gestion de cette ressource.

Dans ce sens, en 2009 une étude a été réalisée et qui a concerné l'évaluation de l'ensemble du potentiel corallien de la frontière Est algéro- tunisienne à la frontière Ouest algéro- marocaine à une tranche bathymétrique qui se situe entre 0 et 200m.

Sur la base des résultats de l'étude sus citée, le Gouvernement algérien a pris la décision de réouvrir cette pêcherie à compter de 2014. Dans ce contexte, un dispositif réglementaire relatif aux conditions et aux modalités d'exercice de la pêche du corail est en cours d'élaboration, lequel prendra en charge et sera en conformité avec les dispositions des recommandations de la CGPM sur le corail rouge.

BULGARIA/BULGARIE

Description of the fisheries

The Bulgarian marine fishery is taking place in the Black Sea (GFCM Fishing Sub-area 37.4 (Division 37.4.2), and Geographical Sub-area (GSA) 29). The opportunities of marine fishing in the country are limited by the specific characteristics of the Black Sea. The fishing grounds of the Bulgarian sector are with small depths (up to 100-120m.) – from Cape Kartalburun (close to the Romanian border) to the river Rezovo (close to the Turkish border). The exploitation of the fish recourses is limited in the helf area (depths under 100–150 m concentrate high amounts of H2S that limits the life). Fishing by active fishing gears is carried out on small fishing vessels (>12m) in the 3-miles zone offshore. During summer (July-August), most abundant fish species in front of the Bulgarian Black Sea coast is the sprat, dwelling in the water column under the termocline (usually under 10.5 C) - under 20 m. Stationary uncovered pound nets are distributed along the coastline (on average depth of 12 m) being operational from Mart till November, depending on the weather conditions. The warm period (May-October) is the main fishing season along the entire Bulgarian coast.

The total landings from Black Sea for 2013 were 9507.6 t. The catches realized by LOA segments 5.99 to 11.99m was 2513.7t; 12 to 23.99 LOA were 3999.3t and the fishing fleet LOA over 24m realized 2994.6 t.

Table 1. Landings of major fish and shellfish species from Black Sea, 2013

Species	Code	LOA segment					Total
		to 5.99 m.	06-11.99 m.	12-17.99 m.	18-23.99 m.	over 24m.	
Atherina sp.	SIL	3690,40	5445,00		500,00	160,00	**9 795,4**
Mullus sp.	MUR	61,00	2252,00	1710,00	4851,00	5768,00	**14 642,0**
V.galina	CLS		10621,00				**10 621,0**
Nereis	NER		4,00				**4,0**
B.belone	GAR	2086,80	2618,10				**4 704,9**
Liza saliens	LZS	6616,95	5568,40	576,40		300,00	**13 061,8**
Psetta maxima	TUR	514,60	13419,58	18043,98	4800,40	2798,42	**39 577,0**
Alosa immaculata	SHC	11559,75	12755,45	221,50		5,00	**24 541,7**
Mugil so-ouy	MYZ	14,00	49,00				**63,0**
Morone morone	BSS		34,00				**34,0**
Pomatomus saltatrix	BLU	7623,30	10729,30	9420,70	2648,00	18603,00	**49 024,3**
Dasiatys pastinaca	JDP	52,00	500,00	759,00	110,00	492,00	**1 913,0**
Raja clavata	RJC	25,00	13330,70	30321,71	10846,20	1591,10	**56 114,7**
Lophius sp.	ANF		600,00				**600,0**
Mugil cephalus	MUF	5085,25	3474,45			470,00	**9 029,7**
Palaemon sp.		1709,55	767,30				**2 476,9**
Eriphya verucosa	EIK	122,40	56,00				**178,4**
Sarda sarda	BON	1428,10	4702,90				**6 131,0**
Palthynichtis flesus	FLE	12,00	103,70				**115,7**
Mugil aureus	MGA	1175,20	825,00	0,00	0,00	0,00	**2 000,2**
Gobidae	GPA	34108,83	39831,20	53,00		8,00	**74 001,0**
Leander sp.	CSH	255,90	13,50				**269,4**
Rapana venosa	RPN	327978,50	1697259,50	1966266,46	764588,00	62969,00	**4 819 061,5**
Sardina pilchardus	PIL	62,70	944,00				**1 006,7**
Trachurus mediterraneus pon	HMM	18616,90	80480,12	78388,85	47209,00	46682,00	**271 376,9**
Spicara smaris	PIC	3,00					**3,0**
Engraulisencrasicholus	ANE	2271,50	7107,00	323,00	294,00		**9 995,5**
Sprattus sprattus	SPR	50024,80	77022,30	365390,00	472831,00	2818924,00	**3 784 192,1**
Mitilus galloprovincialis	MSM	5843,00	4206,00				**10 049,0**
Mullus barbatus	MUT	2038,40	19989,20	136262,90	62859,50	35625,00	**256 775,0**
Squalus acanthias	DGS	4063,00	10202,75	15377,30	1139,60	165,00	**30 947,7**
Merlangus merlangius	WHG	17,00	1741,20	1629,50	1907,00		**5 294,7**

The targeted species landings are listed on table 1. The major share belong to the sprat (Sprattus sprattus – 3784 t) and Rapa whelk (Rapana venosa – 4819 t), as the quantities increase (for Rapa whelk) and stood at almost the same level for sprat in comparison with the previous year reported landings. Turbot (P.maxima) together with sprat catch is under regulation and community TACs have been set for both species (TAC2013 = 43.2 t (turbot); TAC2013= 8032.5 t (sprat) for Bulgaria. The

reported landings of turbot are 39.577 t (2013). The rest of the reported landings are in the state of subordination in comparison with the sprat and Rapa whelk.

The total fishing capacity in 2013 is presented on table 2. The total number of the vessels decreased to 2043 (2336 in 2011).

Table 2. Capacity of the fishing fleet in 2013

LOAm	Number of vessels	GT	kW	Average age
till 6 m	700	515,8	6 044,4	16
6 to 12 m	1249	2653	34 126,8	21
12 to 18 m	60	1 181,7	9 163,2	15
18 to 24 m	22	926,9	4 538,8	40
over 24 m	12	1 310,0	3 509,6	29
Total	**2 043**	**6 587,42**	**57 382,77**	

Status of stocks of priority species

Stock assessment and stock assessment advice was provided (by the SGSABS, GFCM) for five stocks in the Black Sea: Turbot, Sprat, Anchovy (E. encrasicolus ponticus and E. encrasicolus maeoticus) and Picked Dogfish. Information on stock status for two other stocks (Atlantic Bonito and Rapa whelk) was also analyzed but no stock status or advice was provided due to lack of sufficient information. The stock status for turbot Black Sea stock was assessed as depleted and in overfishing (Fcurr/Flim = 2.1) and for Northwest population (Ukrainian waters): in overfishing, with a slight decreasing trend in SSB (Fcurr/Flim = 3.8). A recovery plan is needed. Fishing mortality has to be reduced to allow the biomass to recover. Sprat was with moderate exploitation rate average biomass: sustainably exploited. F could be maintained at current levels. Due to fluctuations this should be revised related t next year recruitment. Anchovy (E. encrasicolus ponticus): Although the assessment is inconclusive, an exercise of estimating a virgin biomass and applying some precautionary concepts suggest that current F could be higher than a precautionary F.

Rapa whelk: No advice, abundance and distribution of Rapa whelk in the Black Sea is unknown. Surveys are required. Picked dogfish is accounted as depleted and Recovery plan needed. Some existing recommendations from GFCM apply, but further measures required recovering population. The majority of the important stocks need to be covered by coordinated and standardised national and international data collec-tion programmes monitoring both catches and fish stocks in the sea.

Status of the statistics and information system

NAFA - Bulgaria developed and implemented two information systems to serve the needs of different management and operative levels – Information Statistical system (ISS) and Vessels Monitoring system (VMS). The information-statistics system (ISS) of NAFA Bulgaria has been created in relation with the engagements of Bulgaria, based on the EU legislation, which after the country accession to the EU (01.01.2007) became compulsory. With ISS creation centralized collection and storage of the information has been initiated. The data are in numerical format which is base for:

- Check of confidentiality of the input data;
- Analysis of data and possibility to detect the unconformities;
- Control on the activities;
- Data summarize aiming the presentation to the EU and other international and national organizations.
- NAFA supports trough ISS the following registers:
- Register of the commercial fishery permissions issued;
- Register of the issued tickets for recreational fishery;
- Register of the persons, dealing with aquaculture;

- Fishing fleet register;
- First sale centers registers;
- Traders register;
- Producers register;
- Register of fish producers and other aquatic products branch organizations;
- Fishery permissions for scientific purposes register;

Status of research in progress

FP7 EU MISIS - Environmental monitoring of the Black Sea Basin and a common European framework programme for the development of the Black Sea region – www.misisproject.eu

PERSEUS FP7 - Policy-oriented marine Environmental Research for the Southern European Seas - www.perseus-fp7.eu

COCONET FP7 - Towards COast to COast NETworks of marine protected areas (from the shore to the high and deep sea), coupled with sea-based wind energy potential - www.coconet-fp7.eu

ComFish FP7 - http://ec.europa.eu/research/bioeconomy/agriculture/projects/comfish_en.htm

DEVOTES FP7 - http://www.devotes-project.eu/

Ref. No MARE/2011/01 - Study in support of the review of the EU regime on the small-scale driftnet fisheries http://ec.europa.eu/smart-regulation/impact/planned_ia/docs/2013_mare_107_small_scale_fisheries_driftnets_regime_en.pdf

Call for tenders MARE/2011/16 Adverse fisheries impacts on cetacean populations in the Black Sea*

http://ec.europa.eu/dgs/maritimeaffairs_fisheries/contracts_and_funding/calls_for_tender/2011_16/index_en.htm

"Technical and administrative support for the joint implementation of the Marine Strategy Framework Directive (MSFD) in Bulgaria and Romania"

Status of the social sciences studies in progress or achieved during the intersessional period (economy, relevant legislation, sociology, etc.)

The alternative chosen for the present investigation are widely used tools for fishing effort limitation with well expressed positive effects on fish stocks all over the world. The choice of the alternatives was made by the authors on the base of known impact of these measures on different stocks, and including in the Black Sea.

Fishing effort control has been examined as multi aspect task with the following directions:

1. Reducing the fishing fleet capacity trough multi annual fishing fleet management programs;
2. Control through reducing days at sea (fishing effort is the vessel number multiplied by number of the days of fishing activities);
3. Total allowable catch and quotas of the species with great commercial interest and with local or shared stocks;
4. Applying concrete technical measures such as selectivity of the fishing gears used for catching vulnerable or over exploited stocks. Discard and by catch restrictions;
5. Closed zones and seasons – zones closed for fishing activities, after given scientific advice;

Marine environmental studies in progress

Monitoring of the coastal marine waters (1 mile zone) under the Directive 2000/60/EC, WFD. Biological quality elements investigated in 2013 were phytoplankton, macrozoobenthos and macroalgae;

Involvement in activities of FAO regional projects

No involvement till now.

Management measures

New regulations in force:

1. Council regulation (EU) No 5/2012 from 19th December 2012: Fixing for 2012 fishing opportunities for certain fish stocks and groups of fish stocks applicable in the Black Sea;

2. Council implementation regulation (EU) No 672/2013 amending Regulation (EU) No 468/2010 establishing the EU list of vessels engaged in illegal, unreported and unregulated fishing.

Environment protection measures

In relation with Recommendation GFCM/36/2012/2 on mitigation of incidental catches of cetaceans in the GFCM area, study Call for tenders MARE/2011/16 "Adverse fisheries impacts on cetacean populations in the Black Sea" is in progress and will bring data and results related to by0-catch and mitigation measures.

Proposals for future research programmes

- Age reading of anchovy, red mullet and turbot
- Stock identification study for turbot (Psetta maxima)
- BlackSeaFish project proposal
- Effects of beam trawling on the seabed habitats and mussel beds

CROATIA/CROATIE

Description of the fisheries

Croatian fisheries are carried out within the GSA 17 – Northern Adriatic and GSA 18 – Southern Adriatic. Majority of catches are realized within the GSA 17. Fisheries are divided in several main segments – small pelagic (purse seine) fishery, bottom trawl and other towed fishery, fixed gear fishery, bluefin tuna fishery and coastal (artisanal) fishery.

Total landings by main targeted species (in tonnes) in 2012

	2012
Sardina pilchardus	43 769,93
Engraulis encrasicolus	8 289,58
Scomber japonicus	685,92
Mullus barbatus	1 240,25
Merluccius merluccius	887,85
Eledone spp	454,33
Trachurus spp	313,73
Nephrops norvegicus	229,02
Spicara spp	175,63
Octopus vulgaris	162,99
Solea solea	189,04
Boops boops	145,42
Sprattus sprattus	141,97
Parapenaeus longirostris	164,24
Oblada melanura	49,23
Loligo vulgaris	107,77
Pagellus erythrinus	78,23
Sarpa salpa	64,55
Triglidae	58,29
Lophius spp.	101,56

Note: Total landings in 2012 in Croatia were 62297,55 tonnes.

Vessels registered for commercial fishing
(source: Croatian Fleet register):

number of vessels	7 770	
LOA (range and average)	**Number**	
< 12 metres	7 114	
12 - 24 metres	526	
more than 24 metres	130	
Total kW + GT	53 452 GT	426 064 KW

Note: In the data provided vessels from small scale artesanal fisheries fleet for personal needs are included.

Status of stocks of priority species

Small pelagics

SAM assessment and ICA assessment tuned by acoustic was preformed within AdriaMed Project framework (Drač, 2013: The AdriaMed Working Group on Small Pelagic Fishery Resources in the Adriatic Sea) and presented to SCSA-WG on stock assessment of small pelagic species (Bar, 2014).

Outputs of these assessments demonstrated that sardine in GSA 17 is in Increased risk of overexploitation, as Exploitation rate is higher than the Patterson's reference point (E=0.42); Bcurrent is above both limit and precautionary reference point with positive trend; and Harvest rate is equal to 26%. Recommendations of the WG was Do not increase fishing mortality and revise stock advice next year. SCSA revised WG proposals as "increased risk of being overexploited and in overexploitation" and the management advice to be "reduce fishing mortality".

For anchovy stock in the GSA 17 both ICA and SAM assessment with acoustic tuning are considered for the advice, but for both some inconsistencies were noted and therefore no reference point was accepted for this stock. WG considered anchovy as Overexploited and in overexploitation, since Exploitation rate is higher than the Patterson's reference point (E=0.48-0.57) and Biomass level is at a low level (between 12-19 percentile of the biomass estimates). Managment advice was given as Fishing mortality should be reduced and the existing management plan should be applied.

Demersal resources

Assessment of common sole *(Solea solea)* stock in GSA 17 has been performed and presented to SCSA (Rome, 23 - 26 Jan. 2012). According to this assessment, as in previous year, recent state of stock is characterized as "overfished". Management advice is similar as the previous years: reduction of fishing mortality, especially by rapido trawling along western Adriatic coast. Also - stock assessment document has been performed and presented to the SCSA for red mullet *(Mullus barbatus)* according which stock is also characterized as overfished and management advice is to reduce fishing mortality.

According to the scientific surveys MEDITS, long-term trends in biomass index in Croatian fishing sea shows high fluctuation with negative changes in last few years for the most stocks as, Norway lobster, selachians, some cephalopos etc.. Those changes are visible primarily in the decrease in the biomass of recruits in the extraterritorial waters in the open Adriatic Sea (Jabuka pit) which are known as spawning and nursery areas for majority of demersal stocks. Situation with the most important demersal stocks hake and red mullet show increase in the index of biomass and index of abundance, mainly due to the good recruitment in the last year.

Status of the statistics and information system

Croatian Fishing Fleet Register is an electronically-kept register, now web-based, in which relevant data on vessels and vessel activities are registered. At the moment, data are being entered and cross-

checked. 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).

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 2000 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 10 kg has to be entered into the logbook for all species.

First sales of catches are regulated as has been explained in the report for previous years.

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.

Croatia has in 2011 embarked on installation of electronic logbooks on all its vessels over 15 m in length (since 1st.January 2012 the system is operational on all vessels over 18 m LoA). The process is continuing.

Status of research in progress

Monitoring of small pelagic stock by acoustic survey as independent evaluations of stocks abundance as well as collection of biological and fisheries related data has been undertaken through national data collection framework (DCF).

Project "DEMMON", monitoring of demersal stocks has been continued, aiming at status evaluation of demersal resources in the Croatian fishing sea. Fisheries and biological data collection includes on board sampling and laboratory analysis, sampling on the landing ports and gathering basic socio-economic data.

Monitoring of coastal fisheries is organized through PRIMO project, and it includes fisheries biological sampling on most important fishing gears (trammel and gill nets, as well as long lines and traps). Croatian scientists are included in project *"MEDITS" Mediterranean International Bottom Trawl Survey* permanently since 1996.

All monitoring projects have in 2013 been included in the data collection framework for 2012-2013, pursuant to EU regulation in force (DCF).

Project "*SOLEMON" Evaluation of stock of Common Sole (Solea solea) and other flatfish in the Adriatic sea* is an international project under umbrella of FAO AdriaMed for evaluations of common sole and other flatfish using "beam trawl" (rapido).

Project "*DEEP SEA*" is an international project started in 2008 under framework of FAO AdriaMed. The aim of the project is investigation of distribution and status of biological resources in deep south Adriatic.)

Project "*UWTV Survey*" is an international project under umbrella of FAO AdriaMed for alternative assessment of biomass stock of Norway lobster in the Jabuka/Pommo pit using underwater camera. Survey was conducted in 2011 together with scientists from Ancona.

Status of the social sciences studies in progress or achieved during the intersessional period (economy, relevant legislation, sociology, etc.).

Social and economic studies are currently being developed within the definition of the national data collection program fully in line with the EU DCF rules.

Marine environmental studies in progress

Croatia has been conducting a permanent national monitoring project "Systematic exploration of the Adriatic Sea as basis for sustainable resources management" which includes monitoring of biotic and abiotic parameters relevant to the marine environmental and renewable resources. Environmental data related to the marine ecosystems are also gathered in the framework of monitoring programs for fishery resources.

Involvement in activities of FAO Regional Projects

Croatia is fully involved in all activities conducting within Regional FAO AdriaMed project.

Management measures

All recommendations on bluefin tuna and swordfish in Mediterranean Sea as adopted by ICCAT and GFCM are fully incorporated in Croatian legislation and have been implemented in the inter-sessional period.

With regard to: *Recommendation GFCM/35/2011/2 on the exploitation of red coral in the GFCM Competence Area*

Provisions of GFCM related to the red coral are incorporated into Croatian legislation.

Traditional areas for collecting red coral are in the territorial waters of the Croatian open fishing sea mostly in central and southern parts at depths greater than 50 m.

With regard to: *Recommendation GFCM/36/2012/2 on mitigation of incidental catches of cetaceans in the GFCM area*

No by-catches of cetaceans were recorded in 2013.

With regard to: *Recommendation GFCM/36/2012/3 on fisheries management measures for conservation of sharks and rays in the GFCM area*

Ban on use bottom-set nets to catch certain species of sharks including: *Hexanchus griseus*, *Cetorhinus maximus* and all species of the families *Alopiidae*, *Carcharhinidae, Sphyrnidae* and *Lamnidae*, is in force since 2010. There were no recorded by-catches of Annex II or III shark species.

Proposal for future research programmes

Support from Regional FAO AdriaMed Project related to fisheries research and management within Adriatic Sea (GSA 17&18) has been very important. It is deemed necessary to continue with the activities in this framework.

Consideration should be given to international monitoring of demersal resources in Jabuka Pit. Jabuka/Pommo Pit is a principal fishing ground in the Adriatic Sea for Croatian and Italian bottom trawl fisheries fleet.

Concerning small pelagic fish species, particularly sardine and anchovy, determination and monitoring of spawning grounds as well as nursery area is necessary; hence those studies should be continued.

EGYPT/ÉGYPTE

Description of the fisheries

Egypt is situated in the eastern part of North Africa, Southern Mediterranean Sea (nominated according to GSA as 26 - South Levant). The country has borders with Libya in the West and Gaza Strip in the East. Coastline of Egypt on the Mediterranean Sea is about 1 100 km long, extending from Sallum in the West to Rafah in the East, and contains six Northern coastal lagoons opening to the Mediterranean Sea (Maruit, Edku, Burollus, Manzala, Port Fouad and Bardawil).

The main fishing ground used by Egyptian vessels is the continental shelf off the Nile delta; recently extend to the eastern side off Sinai and seasonally to the western side of Alexandria. The continental shelf is narrow in western area comparable to the wider central delta region and its eastern side. The seabed is flat, mostly muddy to sandy along the middle and eastern coast. Limited grounds for trawling are available on the western coast; the area is sandy and rocky. Inshore fisheries are widespread, with artisanal fishermen along the coast.

Total landings by main targeted species

According to the General Authority for Fish Resources Development (GAFRD, 2013), during 2012 about 69332 MT were landed at different fishing ports from the Egyptian Mediterranean coast.

Species / group	**Scientific name**	**Catch**(MT)	**%**
Sardinellas nei	*Sardinella spp.& Sardine*	10 634	15.3
Shrimp	*Penaeus & Metapenaeus spp*	6 636	9.6
Molluscs	*Ex Mollusca*	4 006	5.8
Bogue	Boops boops	3 625	5.2
Gray mullet	*Mugil spp.& Liza spp*	3 619	5.2
Anchovy & small sardine	*Engraulis encrasicolus*	2 903	4.2
Red porgy	*Pagrus spp.& Pagellus spp.*	2 884	4.2
Red mullet	*Mullus spp.*	2 623	3.8
Crabs	*Portunus spp*	2 475	3.6
Cuttlefish	*Sepia officinalis*	2 421	3.5
Meagre	*Argyrosomus regius*	2 387	3.4
Sharks, Rays, etc	*Chondrichthyes spp.*	2 338	3.4
Annular Seabream	Diplodus annularis	1 439	2.1
Lizardfish	*Saurida undosquamis*	1 304	1.9
Hairtail	*Trichiurus lepturus*	1 125	1.6
Gilthead Sea bream	*Sparus aurata*	1 096	1.6
Gurnard	*Eutrigla gurnardus*	1 091	1.6
Med. horse mackerel	*Trachurus mediterraneus*	995	1.4
Sea bass	*Dicentrarchus labrax*	969	1.4
Barracudas	*Sphyraena spp.*	966	1.4
Spinefeet	*Siganus spp.*	903	1.3
Sea breams	*Diplodus spp*	808	1.2

Species / group	Scientific name	Catch(MT)	%
Little tuna	*Euthynnus alletteratus*	712	1.0
Sole	*Solea spp.*	634	0.9
Grouper	*Epinephelus spp.*	549	0.8
Others		10 190	15.2

Fleet

The fleet composed from 3046 motorized vessels and 1418 un-motorized boats used sail.

Fishing method		Number	Length (m)	GT	HP
Gill & Trammel nets	Average	478	9.8	8.5	38.7
	Range		4-25.2m	0.7-72.7	3.3-106
Hooks & line	Average	1233	13.2	14.6	70.6
	Range		3-26.3	0.7-86.3	6-350
Purse Seine	Average	237	17.9	31.0	185.5
	Range		10.5-23.5	7.6-66.7	45-425
Trawl	Average	1098	19.7	40.3	206.1
	Range		12.3-38	8.9-132.8	10-850

Status of stocks of priority species

Assessment of the round sardinella (*Sardinella aurita),* in the East Mediterranean sea (North Sinai) by using length frequency and yield per recruit analysis indicated that the stock is in balanced position and the current exploitation rate is less than the predicted (E_{Max}) and ($E_{0.1}$) (Abdel Hakim *et al*., 2012).

Shrimp form an important demersal fishery resource off the Egyptian Mediterranean coast (GSA 26). Mahmoud *et al.* (2013-a) found that, six Penaied species contributed to the shrimp fishery of which, *Metapenaeus stebbingi* formed about 24% of shrimp landings. The Y/R analysis implemented in the VIT was applied for the calculation of the reference point F0.1. The Y/R analysis indicates a current level of fishing mortality of 0.436. The target reference point F0.1 is 0.275. The ratio $F_{cur}/F_{0.1}$ is 1.587 indicating that the peregrine shrimp stock in the eastern Mediterranean is medium overfishing and needs a considerable reduction of the fishing mortality to allow the achievement of $F_{0.1}$.

The biological reference points and the effect of age at first capture on Y/R, also cohort analysis (VPA, age based) were used to study the fisheries status of *Euthynnus alletteratus* in Eastern Coast of Alexandria, Egypt by El Haweet *et al.* (2013). They found the fisheries status of this species is overexploited.

Brush tooth lizard fish, *Saurida undosquamis* is represented by about 70% (912 tonnes) of the total landing of the family Synodontidae during 2012, which is nearly equal to 2% of the total Egyptian Mediterranean landed catch (GAFRD, 2013). Length cohort analysis and Beverton & Holt Yield per recruit analysis were performed in order to estimate the limit and target reference points by using (FiSAT, LFDA, Vit 4 win & ProdBiom, 2009). According to the results obtained the current fishing level of the lizard fish is higher than the biological reference points ($F_{0.1}$ & F_{max}) which shows that the lizard fish *Saurida undosquamis* resources in GSA 26 is in a state of medium overfishing (according to GFCM recommendations 2012). Based on the fact that the length at first capture

(L_c= 15.75 cm) is almost equal with the length at first maturity (L_{50}= 15 cm), it seems that fishery is focused on spawners (Mahmoud *et al*., 2013-b).

Four species (*Mullus surmuletus, Mullus barbatus, Upeneus moluccensis* and *Upeneus asymmetricus*) of Family Mullidae were recorded in the catch of eastern Mediterranean (GSA 26). *Mullus sermuletus* constituted about 55% of red mullets (2 268 tonnes during 2011 and 1 443 tonnes during 2012). Mahmoud *et al*. (2013-c) found the ratio between F_{cur} and $F_{0.1}$ indicate that, the stock of *Mullus surmuletus* is in medium overfishing during 2011 and in high overfishing during 2012.

Status of the statistics and information system

GAFRD collects fisheries data by two methods (whole survey and Sampling), this system is going to be computerized for registering every fishing unit and recording the catch by fleet segment as recommended by GFCM.

The statistics collection procedures have recently been upgraded and monitoring, control and surveillance activities have been improved. However, as welcome as these initiatives are, both surveillance activities (including prosecution) and the fisheries statistics collection system (particularly the number of data collectors) requires further improvement.

Both data groups (whole survey and Sampling) are validating by the fisheries data collection committee. Members of the fisheries data collection committee are appointing by the Minister of Agriculture and Land Reclamation. Currently the Committee consists of a representative from GAFRD, representatives from the Planning Institute, the Fisheries Union, an aquaculture scientist, and scientists from the National Institute of Oceanography & fisheries, and Arab Academy for Science & Technology.

Status of research in progress

The regional project “Scientific and Institutional Cooperation to Support Responsible Fisheries in the Eastern Mediterranean” (EastMed) support the development of regionally-consistent fisheries management plans among the Eastern Mediterranean countries. The project was started in September 2009 for five years, stock of five important species are evaluating lizard fish, red mullet, shrimp, sepia and sardine.

The Arab Academy for Science and Technology and Maritime Transport started a study to improvement the Egyptian bottom trawl selectivity and reduction of its high percentage by-catch. Change the foot rope, Square mesh size, different types of panels were examined.

Scattered stock assessment of single species studies are conducting at different universities and National Institute of Fisheries and Oceanography, eg. Buffer fish and sole.

Status of the social sciences studies achieved during the intercessional period (economy, relevant legislation, sociology, etc.)

A sampling survey in order to investigate the main socio-economic characteristics of the fishing vessels by type of fishery, the study was conducted with the EastMed project support. A relatively higher salary for fishermen comes from the fact that the industry is heavily subsidized by the very low cost of fuel. The main problem in Egyptian fisheries seems to be the overcapacity of the trawl fleet, which has led to the limited use of passive gears and the small scale fishery in general, and overexploitation of resources. The employment and salaries are the factors with a higher risk.

Marine environmental studies

The Gulf of Sallum (at western coast of Egyptian Mediterranean water) was declared as the first marine Egyptian protected area in the Mediterranean Sea by the Egyptian Prime Minister's decision No. 533 for the year 2010 for the purpose of fisheries and biodiversity conservation. The area consider as a nursing ground for many fish and crustacean species that was destroyed by trawlers last few years (El-Haweet et al, 2011).

Management measures

Specific management regulations are limited to freeze on the issue of additional fishing boats licenses and a closed season for all fishing activities from 1 May to 30 June each year.

Research suggestions for consideration by SAC

- There is a little scientific knowledge on stock status and exploitation levels for the main pelagic fishery and some demersal resources. It may cover by EastMed project.
- Fishing harbour facilities need to be improved at strategic sites.
- Enlarge and modernize offshore fishing in the Egyptian EEZ and international waters.

References

Abdel Hakim, N.F.; Omar, A.M.; Hussien, M. S.; Kamal, S. M.; Desouki, M. G.; Agouz, H. M. (2012): Stock Assessment and Potential management of *Sardinella aurita* Fisheries in the East Mediterranean sea (North Sinai coast). Egypt. J. Aquat. Biol. & Fish., Vol. 16, No. 2: 121 – 132.

El-Haweet A., Sabry E. and Mohamed H. (2013): Fishery and population characteristics of *Euthynnus alletteratus* (Rafinesque 1810) in the Eastern Coast of Alexandria, Egypt.

(GAFRD) General Authority for Fisheries Resources Development (2013): Ministry of Agriculture and land Reclamation. Fish Statistics Book.

Mahmoud H., Osman A, Ezzat A. and Saleh A. (2010-a): Biological status and management of *Diplodus vulgaris* (Geoffroy Saint-Hilaire, 1817) in Abu Qir Bay, Egypt. Egyptian Journal of Aquatic Research, 36(1), 115-122.

Mahmoud H., Osman A, Ezzat A. and Saleh A. (2010-b): Fisheries biology and management of *Diplodus Sargus Sargus* (Linnaeus, 1758) in Abu Qir Bay, Egypt. Egyptian Journal of Aquatic Research, 36(1), 123-131.

Mahmoud H.H., El ganainy A.A., El-Haweet A.A.K., Scarcella G. and Riga C. (2013-a): Population structure of the peregrine shrimp *Metapenaeus stebbingi* from the eastern Mediterranean, Egypt (GSA 26). Second working group on stock assessment. EastMed project, FAO. Kavala, Greece.

Mahmoud H.H., El-Haweet A.A.K., Scarcella G. and Riga C. (2013-b): Fishery biology and fisheries of Brush tooth lizard fish, *Saurida undosquamis* in the Egyptian Mediterranean coast. Second working group on stock assessment. EastMed project, FAO. Kavala, Greece.

Mahmoud H.H., El-Haweet A.A.K., Scarcella G. and Riga C. (2013-c): Stock assessment of stripped red mullets "Mullus sermulatus" from the eastern Mediterranean, Egypt (GSA 26). Second working group on stock assessment. EastMed project, FAO. Kavala, Greece.

FRANCE

Description des pêcheries

Les pêcheries françaises de Méditerranée sont réparties entre deux GSA: la GSA 07 qui regroupe les zones de pêche du golfe du Lion et celles des côtes continentales françaises à l'ouest du golfe de Gênes et la GSA 08 couvrant les zones de pêche de Corse. A ces pêches maritimes, littorales, et du large, s'ajoutent d'une part une activité de pêche lagunaire intéressant plus d'une vingtaine de lagunes dont la majeure partie borde le littoral du golfe du Lion et d'autre part, une activité hauturière couvrant l'ensemble de la Méditerranée, la pêche du thon rouge à la senne tournante. A l'exception de cette dernière, le golfe du Lion, grâce à son large plateau continental (15 000 km²) et l'importance de ses lagunes (49 734 ha) sur le littoral, regroupe la majeure partie de l'activité halieutique française en Méditerranée et de sa production. Les différents métiers peuvent se définir en 3 grands groupes: le chalutage, la pêche des poissons pélagiques à la senne tournante, et un ensemble de métiers divers pratiqués d'une façon polyvalente et à petite échelle, principalement à la côte et dans les lagunes. Ces flottilles et leur production se répartissent de la manière suivante :

GSA 07 – Golfe du Lion et côtes provençales [(1)]

	Nombre de navires	**Longueur**			**Puissance totale (kW)**	**Jauge totale (U.M.S.)**
Flottille		min	moy	max		
Senneurs à thons rouge	12	24.3	34.5	42.0	7 150	2 862
Senneurs (hors thons rouges)	39	5.7	12.9	21.5	6 522	668
Chalutiers de fond	69	12.4	22.3	26.0	20 761	6 059
Chalutiers pélagiques et mixtes	15	20	24.4	24.9	4 740	1 982
Ganguis	20	5.5	8.7	12.0	1 062	101
Dragueurs	15	4.2	9.4	12.0	1 374	83
Fileyeurs exclusifs	333	3.5	7.8	18.0	24 635	1 124
Fileyeurs polyvalents	297	3.9	8.3	17.8	29 345	1 181
Telliniers	26	2.9	5.8	10.0	1 090	38
Capéchades	136	3.3	5.7	9.5	4 248	142
Métiers de l'hameçon	34	5.0	7.8	11.9	2 794	132
Plongeurs mer	29	4.0	6.3	8.6	1 972	50
Plongeurs étang	42	5.0	6.3	8.4	2 077	46
Divers petits métiers mer	30	4.4	7.1	10.0	2 316	77
Divers petits métiers étang	101	3.7	6.1	10.8	5 491	140
Divers petits métiers étang-mer	76	3.5	6.6	11.6	4 840	134
Total	1 274				120 417	

[(1)] Source SIH/IFREMER : Synthèse des flottilles de pêche 2011, Façade Méditerranée (hors Corse) GSA 08 (Corse)

L'activité de pêche en Corse en 2011 est répartie sur l'ensemble de son littoral (1 043 km) avec 72% des unités de pêche regroupés dans le golfe d'Ajaccio. La flottille est composée de 181 unités artisanales réparties entre 144 petits métiers côtiers <3 milles (principalement des navires de 6 à 10 mètres), 61 fileyeurs exclusifs et 92 fileyeurs polyvalents, 6 chalutiers de fond, et 3 senneurs (hors

thon rouge). Les fileyeurs ciblent surtout la langouste (mars à septembre), mais aussi rouget barbet, daurades et homard. Les quelques chalutiers pêchent sur le petit plateau continental et en bordure du talus de la côte Est de l'île, et ciblent rouget barbet, St-Pierre et langoustines.

État des stocks des principales espèces

Évaluation du stock partagé franco-espagnol de merlu (Merluccius merluccius) du golfe du Lion (GSA 07)

Le stock de merlu est dans un état de forte surexploitation (forte mortalité par pêche et abondance relative faible) et est caractérisé par une surexploitation de croissance avec des recrutements périodiquement forts (1998, 2001-2002 et 2007) ayant assuré le maintien du stock à un niveau de très faible abondance. Depuis 2007, le recrutement a atteint le plus faible niveau de la période 1998-2012. Une analyse prospective a montré pour le point de référence (F0.1) une valeur de 0.15, avec un F actuel de 1.83. Les recommandations de gestion ont été d'améliorer le diagramme d'exploitation des chalutiers pour amener la taille minimale de capture au niveau de la taille minimale légale des débarquements, de maintenir les mesures de gestion mises en place (arrêts temporaires d'exploitation des chalutiers sur les nourriceries), diminuer l'effort des chalutiers, des palangriers et des fileyeurs. De plus, le respect du gel de l'effort dans la FRA est recommandé.

Évaluation du stock partagé franco-espagnol de rouget (Mullus barbatus) du golfe du Lion (GSA 07)

Le stock du rouget de vase est dans un état de forte surexploitation (forte mortalité par pêche et abondance relative forte) avec périodiquement de plus forts recrutements (2005, 2006, 2007 et 2010). Cependant la mortalité par pêche est la plus faible de la série et la biomasse des reproducteurs suit une tendance croissante. La biomasse actuelle (2010-2012) est au-delà des 66th percentile. Une analyse prospective a montré pour le point de référence (F0.1) une valeur de 0.14, avec un F actuel de 0.56.

Évaluation du stock partagé franco-espagnol d'anchois et de sardine du golfe du Lion (GSA 07)

Les biomasses d'anchois (*Engraulis encrasicolus*) et sardine (*Sardina pilchardus*) sont évaluées à partir des campagnes acoustiques PELMED.

Sardine : (1) depuis 2012 la biomasse s'est stabilisée à une valeur intermédiaire (~80 000 tonnes). Ces valeurs restent faibles comparé aux plus de 250 000 tonnes observées en 2005, mais sont supérieures à ce qui avait été observées en 2009-2010-2011 (~50 000 tonnes) (2) fort recrutement depuis 2008 (3) abondance totale en nombre d'individus en augmentation (4) chute de la production : 3 620 t en 2009 et 700 t de 2010 à 2012.

Anchois : (1) biomasse relativement stable à des niveaux faibles de 2004 à 2013, (2) production en baisse : 2 500 t, 2 300 t, 1 600 t et 1 500 t de 2009 à 2012.

A l'inverse une très forte augmentation de la biomasse de sprat a été observée depuis 2008.

La taille des individus de ces 2 espèces a fortement diminué, expliquant la chute importante des débarquements. Des études complémentaires ont montré que les individus avaient une croissance plus lente et une condition corporelle faible. Enfin, pour la sardine un rajeunissement très net de la population a été observé (avec une population composée quasi uniquement d'individus de 0 et 1 an depuis 2012).

Recommandation de réduire l'effort de pêche sur ces deux espèces tel que déjà appliqué par la pêcherie française depuis 2010 et de respecter la réglementation européenne sur la taille minimale de prise, > 9 cm pour l'anchois et 11 cm pour la sardine (UE 1976/2006) pour préserver les âges 1+.

La pêcherie sur les petits pélagiques est multispécifique et l'effort de pêche réalisé sur la sardine ne peut pas être dissocié de celui appliqué à l'anchois. La plupart des décisions de gestion doivent donc être prises en considérant les deux espèces. Néanmoins, les sardines qui étaient jusqu'à présent majoritairement débarquées par les chalutiers (à hauteur de 80% environ) sont dorénavant pêchées principalement par les senneurs depuis 2 ans. En 2012, 93% des sardines débarquées provenaient de senneurs. Ce renversement important entraîne la nécessité d'avoir un meilleur suivi de l'effort de pêche et des captures par les senneurs pour les sardines. Les anchois quant à eux sont pêchés quasi uniquement par les chalutiers.

Information sur les pêcheries thon rouge

Les captures françaises de thon rouge en Méditerranée s'élèvent à 2 199 t en 2013, 799 t 2012, à 792 t en 2011, 1 528 t en 2010, 3 087 t en 2009, 2 922 t en 2008 et 10 157 t en 2007. Cette très forte diminution depuis 2007 résulte de plusieurs facteurs liés au plan de reconstitution du thon rouge (CICTA): forte baisse du TAC depuis 2010, remboursement du dépassement de quota 2007 (de l'ordre de 1500 t en 2011 et 2012), restriction de la saison de pêche à la senne et fermeture avancée (15 juin), renforcement des contrôles, mise en place de quotas individuels pour les senneurs. En Méditerranée, le thon rouge est pêché principalement par des senneurs depuis les années 1970. Leurs captures sont en partie déterminées par des facteurs environnementaux influençant la disponibilité du thon vis-à-vis de l'engin de pêche. La pêche aux Baléares et en Libye (mi-mai à mi-juin) se focalise sur des prises entre 180 et 250cm (140 à 250kg). Le développement du commerce avec le Japon mi 1990, puis de l'embouche, est à l'origine de cette pêche ciblée sur les gros. Ces prises sont surtout destinées aux cages d'engraissement et ne sont pas débarquées. Les autres saisons de pêche (mars-avril, août-octobre) étaient auparavant axées sur des poissons de 10-30kg (âge 2 et 3), surtout sur les côtes franco-catalanes, et secondairement au large des côtes d'Afrique du Nord, jusqu'en 2006 (et en partie 2007). Suite au plan de reconstitution, les senneurs ne pêchent plus à ces périodes. La pêcherie artisanale (canne ou palangre) a un quota de 100 à 200 t selon les années (en 2013, 250 t ont été déclarées) qu'elle pêche essentiellement de mai à octobre le long des côtes françaises méditerranéennes.

État des statistiques et Système d'information halieutique de l'Ifremer

Le Système d'information halieutique (SIH) de l'Ifremer constitue un réseau d'observation scientifique des ressources halieutiques et des usages associés. 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 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 et paramètres biologiques

Les actions « échantillonnages 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 240 sorties/an). Les métiers identifiés ciblent préférentiellement daurade, loup, sole, merlu, rouget de roche et de vase, 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 mètres

Des enquêtes mensuelles sont conduites pour estimer le calendrier d'activité de chaque navire de pêche professionnelle < 12 m en mer et en lagune, et l'effort de pêche et la production des navires par échantillonnage aléatoire des marées, de la frontière italienne à la frontière espagnole (GSA 7). En Corse (GSA 8), l'activité des navires est recensée par enquête chaque année.

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 2012, 47 marées de chalutiers ont été échantillonnées dans le Golfe du Lion (GSA7).

Programme ObsMam d'observation des captures accidentelles de mammifères marins

Conformément aux dispositions du règlement (CE) n°812/2004 ce programme d'observation a été tenu d'assurer chaque année une couverture de 5% de la flottille pratiquant le chalutage pélagique. Depuis 2008, ce programme est inclus dans le programme OBSMER.

Programme d'observations aériennes du thon rouge dans le golfe du Lion

Depuis 2009, l'Ifremer conduit des prospections aériennes du thon rouge dans le golfe du Lion (même protocole qu'en 2000-2003) : 25 survols en 2009, 17 en 2010, 13 en 2011 et 6 en 2012 entre juin et octobre. Les positions GPS des bancs repérés en surface ainsi que les tailles estimées des bancs et des individus sont relevées. Les densités observées sur la période 2009-2011 sont environ quatre fois supérieures à celles observées en 2000-2003, probablement en réponse au plan de reconstitution du thon rouge (mise en place d'une taille minimale de 30 kg depuis 2007). Ces résultats sont cohérents avec les observations aériennes de 2009 des scientifiques espagnols en Méditerranée Nord Occidentale. Ces campagnes confirment l'intérêt des survols pour suivre l'abondance des juvéniles sur ces aires de nutrition, mais pour améliorer le diagnostic scientifique, des opérations similaires devront être conduites sur plusieurs années et étendues en Méditerranée centrale et orientale.

Programme sélectivité de la flottille palangrière ciblant le thon rouge dans le golfe du Lion (SELPAL)

La généralisation de mesures de limitation de captures accidentelles à un niveau européen ne pourra se faire sans passer au préalable par des solutions locales, adaptées à chaque pêcherie, et proportionnelles au risque identifié. Il est important d'avoir une connaissance préalable et approfondie des captures accidentelles et de mettre en place des mesures adéquates et proportionnées lorsque cela s'avère nécessaire. Aussi, les mesures prises pour limiter les captures d'espèces sensibles par les palangriers ciblant le thon rouge, relèvent d'une approche raisonnée et concertée. France Filière Pêche (FFP) a accordé un financement un programme de recherche ayant pour objectif principal de quantifier l'impact de la pêcherie palangrière ciblant le thon rouge sur les espèces sensibles et de tester des mesures pour augmenter la sélectivité et atténuer ces impacts défavorables. Ce projet de deux ans porté par la profession en partenariat avec l'IFREMER et l'IRD (UMR-EME) souhaite mettre l'accent sur l'identification des problèmes et évaluer l'importance des captures accessoires d'espadons de petite tailles non commercialisés, requins/raies pélagiques, tortues marines et oiseaux marins. L'utilisation de marqueurs génétiques permettra de tester deux des hypothèses importantes concernant les populations de requin peau bleue. D'une part des réseaux de génotypes seront réalisés sur les individus échantillonnés, afin d'inférer l'existence ou non de plusieurs clusters d'individus révélant l'existence de plusieurs stocks.

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 (66 traits) et dans le golfe du Lion (24 traits), en fin de printemps. Elle a lieu à la même période en France, Espagne, Italie, Slovénie, Croatie, Monténégro, Albanie, Malte,

Grèce et Chypre. 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 » (version 7, mars 2013 sur le site du SIH). 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).

Programme PELMED (GSA 07)

L'évaluation des stocks de petits pélagiques est menée une fois par an en juillet à l'aide de prospections acoustiques, par la méthode d'écho intégration (à l'aide du logiciel Movies+) et de chalutages d'identification associés. Les campagnes annuelles PELMED couvrent l'ensemble du golfe du Lion (GSA07) et appliquent un protocole strictement identique depuis 1993. Toutes les principales espèces de petits pélagiques sont évaluées mais seules les biomasses de l'anchois et de la sardine font l'objet d'une fiche d'évaluation, l'évolution des biomasses des autres espèces étant montrée à titre de tendance comme pouvant servir à l'explication du niveau des stocks des deux espèces principales. Les résultats de ces campagnes sont discutés aux sessions des groupes de travail sur les petits pélagiques du SCSA. Depuis la mise en place de l'harmonisation des campagnes acoustiques en Méditerranée à travers le protocole MEDIAS, les campagnes PELMED rejoignent les priorités internationales pour les campagnes financées par l'UE et couvrent le nord de la mer Catalane depuis 2008.

État des recherches en cours

Projet EcoPelGol (Déc 2012-Nov. 2015)

« Étude de la dynamique de l'Ecosystème Pélagique du Golfe du Lion »

Ce projet financé par France Filière Pêche, s'attache à comprendre les mécanismes gouvernant la dynamique et l'état des populations de petits pélagiques dans le Golfe du Lion à partir des données PELMED ainsi que des échantillons biologiques reçus mensuellement. Il a pour but de tester l'hypothèse de contrôle bottom-up de ces populations de petits pélagiques via l'étude de la structure en taille et en âge de la population ainsi que de sa condition en lien avec l'environnement et le plancton (thèse + post-doc) ainsi que de réaliser une première évaluation de la pression de prédation exercée par les thons et les mammifères marins sur ces populations. Outre, l'Ifremer-EME, les partenaires sont l'IRD-EME et le MIO (Marseille).

Recherche sur le thon rouge

Depuis 2006, les travaux de marquage électronique et conventionnel tendent à montrer un fort taux de résidence en Méditerranée des jeunes adultes et met en évidence une zone d'hivernage en Méditerranée Nord Occidentale inconnue jusqu'à lors. En 2011, démarrage d'une étude sur l'écologie trophique dans le golfe du lion (Mermex) dont l'un des objectifs est d'évaluer l'impact de la prédation du thon rouge sur les petits pélagiques (lié au projet EcoPelGol). Ifremer a participé en 2011 et 2012 à l'échantillonnage biologique et génétique du thon rouge (programme de recherche de la CICTA). Depuis 2012, une thèse a démarré sur la calibration du indice d'abondance des juvéniles de thon rouge à partir des données de suivis aériens (projet co-financé par France Filière Pêche). De plus, un postdoctorat étudie l'influence des conditions environnementales dans les zones de ponte sur la croissance et la survie des larves de thon rouge (projet co-financé par France Filière Pêche).

Projet IPEP (Impact de la pêche sur les espèces protégées)

Ce projet a pour objectif d'acquérir des connaissances sur l'écologie des requins pélagiques et des tortues marines et d'identifier les interactions avec les engins de pêche. L'intensification de l'effort des importantes pêches pélagiques dans toute la Méditerranée au cours des 30 dernières années, a eu, sans nul doute, un impact considérable sur ces deux taxons. En Méditerranée aussi les pratiques de pêche non durables risquent d'entrainer l'effondrement des populations d'espèces sensibles. Le manque actuel d'évaluations fiables de l'état des stocks de requins en Méditerranée crée un problème grave pour la CGPM (Commission Générale des pêches pour la Méditerranée). Au cours des deux

dernières années, l'Ifremer a mis en place un programme pilote de marquages ayant pour but d'identifier les zones à risques et déterminer des mesures de gestion adéquates pour assurer la conservation requin peau bleue *(Prionace glauca*), espèce la plus commune en Méditerranée. Ces actions vont se poursuivre dans le cadre du projet SELPAL présenté plus haut. Le Groupe « tortues marines France (GTMF) » du service du Patrimoine National, le Réseau « tortues marines de Méditerranée Française » et l'Ifremer UMR–EME ont effectué une synthèse des données disponibles sur les prises accidentelles de tortues marines par type d'engins de pêche sur la façade française Méditerranéenne à partir de diverses bases de données existantes (Recommandation GFCM/35/2011/4).

Bilan des captures de tortues marines (et mortalité) enregistrées par type d'engins de pêche sur la côte française entre 2000 et 2013 (Sources : Réseau tortues marines de Méditerranée Française (RTMMF) et Ifremer (Programme Obsmer), CestMed : Centre d'études et de sauvegarde des tortues marines en Méditerranée, et autres données bibliographiques).

Espèce	**Etat**	**Engin**				
		CHALUT	FILET	HAMECON	Non déterminé	Total
Caretta caretta						**165**
	Indéterminé	1	23			*24*
	Mort	3	18	1	1	*23*
	Vivant	44	21	6	47	*118*
Dermochelys coriacea	Vivant		1		2	**3**
Lepidochelys kempii	Mort		1			**1**
	Non identifiée					**55**
	Indéterminé				3	*3*
	Mort		2		7	*9*
	Vivant	1	1	1	40	*43*
	Total général	**49**	**67**	**8**	**100**	**224**

Projet RECOPESCA

Ce projet pilote à tester un système de géolocalisation de navires de pêches exploitant la technologie RECOPESCA, pour caractériser précisément l'effort de pêche de métiers ou de navires concernés par les plans de gestion européens et non équipés de système VMS.

Basé sur le volontariat de patrons pêcheur, ce projet a permis d'équiper 27 navires pratiquant différents métiers, souvent polyvalents, et situés sur l'ensemble de la côte continentale de Méditerranée française. Les données collectées par plusieurs capteurs (GPS, sondes d'immersion fixées sur les engins de pêche, sondes sur les roues hydrauliques) sont utilisées pour qualifier précisément l'effort de pêche dans ses différentes composantes, dont la quantification de l'exploitation par type d'habitats.

Projet MARE-CPOA Requin

Le rapport final du projet « Provision of scientific advice for the purpose of the implementation of the EUPOA sharks. Final Report. European Commission, Studies for Carrying out the Common Fisheries Policy (MARE/2010/11 - LOT 2) » est disponible sur le site de la Commission européenne (http://ec.europa.eu/fisheries/documentation/studies/sharks/index_en.htm)

Mesures de gestion

Elaboration de Plans de Gestion en application du règlement européen (CE) 1967/2006

L'État français a poursuivi en 2012-2013, l'élaboration des plans de gestion dans le cadre de l'article 19 du règlement européen (CE) 1967/2006 pour l'exploitation durable des ressources halieutiques en Méditerranée. Le Plan de gestion chalut a été déclaré conforme par la Commission Européenne en juillet 2013. Les Plans de gestion dragues, sennes tournantes coulissantes, ganguis et sennes de plage sont en phase de finalisation.

L'Ifremer a produit plusieurs documents et avis scientifiques, et participé aux réunions de travail, afin de fournir à l'ensemble des acteurs une information scientifique sur la situation actuelle de ces activités de pêche et sur les évolutions prévisibles de ces activités selon différents scénarios.

Ces plans de gestion reprennent une partie des dispositifs de régulation et de gestion qui fonctionnaient à une échelle géographique inférieure à la façade de Méditerranée française. L'articulation ou l'homogénéisation de ces règlements a d'abord permis d'ajuster les différents paramètres à l'échelle nationale, puis d'adopter ces règlements à un niveau national, ce qui augmente et renforce la régulation des pêches.

De nouveaux objectifs de gestion ont été adoptés dans ces plans de gestion, qui transposent des recommandations scientifiques nationales ou issues de la CGPM, et en accord avec les conventions internationales. Il s'agit principalement de :

- Le plan de gestion chalut « contribue à l'atteinte du rendement maximum durable pour le merlu. Le point de référence retenu par les scientifiques est F0.1, comme étant le niveau de mortalité par pêche permettant d'atteindre le rendement maximal durable (RMD) [FRMD = F0.1]. L'objectif est d'adopter pour cette flottille, au plus tard en septembre 2015, une configuration qui permette de contribuer à l'atteinte à partir de 2015 et au plus tard en 2020 de F0.1 = 0,20 (résultat de l'analyse de données 2010, dernière estimation de la CGPM) ou la nouvelle valeur de référence équivalente, en cas d'une modification du diagramme d'exploitation. »
- Le plan de gestion chalut et le plan de gestion senne tournante coulissante « contribuent au respect des points de référence limite pour les espèces de petits pélagiques anchois et sardine. Le point de référence retenu par les scientifiques est le taux d'exploitation sur les plus vieux individus, catégorie dont le seuil inférieur est défini par la longueur moyenne des poissons d'âge 1 an. L'objectif est que ce taux d'exploitation, cumulant les captures de tous les métiers ciblant ces espèces, ne dépasse pas la valeur de 40 % pour chacune de ces deux espèces ».

Les plans de gestion pour les petits métiers que sont la drague, la senne de plage, le gangui et la senne tournante coulissante prévoient des objectifs pour les principales espèces cibles de ces métiers, sous la forme de captures par unités d'effort (CPUE).

De nouveaux outils de régulation de l'effort de pêche ont été introduits pour permettre d'atteindre les objectifs adoptés, et principalement :

- L'encadrement par autorisation européenne de pêche, avec numerus clausus, nombre de jour, horaires ou lieu de pêche autorisés pour chaque activité,
- L'instauration d'un régime d'effort de pêche pour le chalut, avec un plafond d'effort maximum en nombre de jour de pêche, effectif au 1er janvier 2013.
- L'introduction de mesures de gestion supplémentaires en cas d'atteinte ou de non atteinte des objectifs de gestion, sous la forme d'une modification du contingent d'autorisations européennes de pêche et/ou de l'effort de pêche maximal autorisé

Après la déclaration conforme du Plan de gestion chalut, l'État français a transposé ce document en texte réglementaire. Des règlements complémentaires ont précisés les modalités opérationnelles mises en œuvre, et en particulier l'instauration d'un régime d'encadrement de l'effort de pêche des chalutiers, initialement défini à un quota de 200 jours de pêche par navire et par an.

GREECE/GRÈCE

Description of fisheries

Table 1. Provisional landing data for 2012 and final data for 2011

BFT data include both landings and transfers to fishfarms

	Common name	Scientific name	Landings '12 (tonnes)	Landings '11 (tonnes)
	Sole	*Solea vulgaris*	500	544
	Other		60	62
Flatfish			560	606
	Hake	*Merluccius merluccius*	4 000	4113
	Other		6 500	6 922
Groundfish			10 500	11 035
	Horse mackerels	*Trachurus spp*	2 500	2 516
	Mackerel	*Scomber scombrus*	130	127
	Sardine	*Sardina pilchardus*	5 800	5 809
	Anchovy	*Engraulis encrasicolus*	8 800	8 897
	Other pelagics		8 200	8 318
Pelagics			25 430	25 667
	Bluefin tuna	*Thunnus thynnus*	176	172
	Albacore	*Thunnus alalunga*	165	165
	Other tuna		1 082	1 228
	Swordfish	*Xiphias gladius*	877	1 306
Tunas			2 300	2 871
Other fish			11 200	11 744
Total fish			49 990	52 529
	Lobster	*Palinurus elephas*	300	310
	Norway lobster	*Nephrops norvegicus*	350	375
	Shrimp	*Parapenaeus longirostris*	2 200	2 224
	Other crustaceans		1 500	1 599
Total crustaceans			4 350	4 508
	Mussel	*Mytilus galloprovincialis*	50	47
	Other shellfish		350	356
	Squid	*Loligo vulgaris*	650	636

	Common name	Scientific name	Landings '12 (tonnes)	Landings '11 (tonnes)
	Cuttlefish	*Sepia officinalis*	1 400	1 447
	Octopus	*Octopus vulgaris*	1 700	1 717
	Other mollusks		1 600	1 607
Total mollusks			5 750	5 809
Grand total			**60 090**	**62 847**

The Greek marine fishery includes more than 96% of small scale inshore fishing vessels. A small percentage of the Greek fishing fleet comprises of vessels that operate trawling and purse seine fishing gear.

The following Table 2 shows the main fishing characteristics of the Greek fishing fleet according to the National Fleet Register (31/12/2013).

Table 2. Fishing fleet characteristics

LOA (m)	No of vessels	Capacity (GT)	Engine Power (KW)
0-9.99	14 389	25 537,64	248 877,44
10-14.99	860	9 286,37	65 620,56
15-23.99	390	15 946,83	76 805,93
24-49.99	205	27 321,8	65 641,19
TOTAL	15 844	78 092,64	456 945,32

Range of LOA	Min.: 2,56	Max: 48,95
Average LOA	7,44	

Status of stocks of priority species

The information given below and presented to the national report of last year remain unchanged since the fishing pressure in these stocks has not changed significantly during the intersessional period

Anchovy, *Engraulis encrasicolus* – GSA22 (Aegean Sea-NWpart)

In GSA 22 the Greek anchovy fishery is almost exclusively exploited by the purse seine fleet. Regarding the regulations enforced they concern a closed period from the mid December till the end of February and technical measures such as minimum distance from shore, gear and mesh size, vessel capacity, power of engine. There is a minimum landing size at 9 cm. Discards values are less than 1%, reaching approximately 0.06% data for GSA 22. Data of the landings per vessel class indicate that small vessels (12-24 m) are mainly responsible for anchovy catches (>70% of sardine catches).

The assessment of the stock has been based on fishery independent surveys information as well as on Integrated Catch at Age (ICA) analysis model. Acoustic surveys estimations were used for Total Biomass estimates. ICA assessment method uses separable virtual population analysis (VPA) with weighted tuning indices. The application of ICA was based on commercial catch data (2000–2008) and as tuning indices were used the biomass estimates from acoustic surveys estimates and DEPM surveys estimates over the period 2003–2008 with a gap in 2007, as no surveys data were available for this year. The stock was found as fully exploited with no expected room for further expansion. The exploitation rate was found to produce moderate to high fishing mortality and the stock abundance

was estimated as intermediate. No further surveys and assessments were carried out in 2009. No further surveys and assessments were carried out in 2009, while landings reduced of about 2000 tonnes in 2009.

Sardine, *Sardina pilchardus* in the Aegean sea – GSA22 (Aegean Sea-NW part)

In GSA 22 the Greek sardine fishery is almost exclusively exploited by the purse seine fleet. Regarding the regulations enforced they concern a closed period from the mid December till the end of February and technical measures such as minimum distance from shore, gear and mesh size, vessel capacity, power of engine. There is a minimum landing size at 11 cm. Discards values are less than 1%, reaching approximately 0.3% data for GSA 22. Data of the landings per vessel class indicate that small vessels (12–24 m) are mainly responsible for sardine catches (>88% of sardine catches).

The assessment of the stock has been based on fishery independent surveys information as well as on Integrated Catch at Age (ICA) analysis model. Acoustic surveys estimations were used for Total Biomass estimates. ICA assessment method uses separable virtual population analysis (VPA) with weighted tuning indices. The application of ICA was based on commercial catch data (2000–2008) and as tuning indices were used the biomass estimates from acoustic surveys estimates over the period 2003-2008 with a gap in 2007, as no acoustic survey data were available for this year. The exploitation rate was found to produce high fishing mortality and the stock abundance was estimated as intermediate. No further surveys and assessments were carried out in 2009 while landings remain stable since 2008. No further surveys and assessments were carried out in 2009, while landings remained stable since 2008.

Conclusions for both anchovy and sardine

The conclusions based on those assessments should be considered preliminary and cautionary because they are based on a short time series of data. Based on the assessment results the anchovy stock is considered to be harvested sustainably, operating below but close to an optimal yield level, with no however expected room for further expansion. On the other hand the stock of sardine was found to be exploited above but close to the empirical level for stock decline. Thus the management advice is not to increase the fishing effort. The sustainability for harvesting of both stocks has to be confirmed in following years, while the stocks should be monitored in an annual basis with direct assessment surveys.

Red mullet (*Mullus barbatus*) – GSAs 22&23

The species is mainly fished by bottom trawlers and is one of the most important target species of the gear. Minor catches are also reported from artisanal fleets using various gillnet types. Management regulations include seasonal (June 1 – September 30) and spatial closures of the bottom trawl fishery, as well as a minimum landing size. The most recent assessment has been based on production modeling using survey (MEDITS) and catch data up to 2009.

Assessment results demonstrated that the stocks are at a healthy state and their current (2009) exploitation rates are at safe levels. The stocks of this species were over-fished till the late 1990s but improvement has been observed thereafter. Given the relatively small size of the species and its depth preferences (more abundant over the continental shelf), it seems that the progressive implementation of increases in the trawl codend mesh-size and the prohibition of bottom trawling in depths < 50m had positively affected the state of their stocks.

Striped mullet (*Mullus surmuletus*) – GSAs 22&23

The species is fished by bottom trawlers and artisanal fleets. Management regulations include seasonal (June 1 – September 30) and spatial closures of the bottom trawl fishery, as well as a minimum landing size. The most recent assessment has been based on production modeling using survey (MEDITS) and catch data up to 2009.

Assessment results demonstrated that the stocks are at a healthy state and their current (2009) exploitation rates are at safe levels. The stocks of the aforementioned species were over-fished till the late 90's but improvement has been observed thereafter. Given the relatively small size of the species and its depth preferences (more abundant over the continental shelf), it seems that the progressive

implementation of increases in the trawl codend mesh-size and the prohibition of bottom trawling in depths < 50m had positively affected the state of their stocks.

Hake (*Merluccius merluccius*) – GSAs 22&23

The species is fished by bottom trawlers and various artisanal fleets that use gillnets and longlines. Management regulations include seasonal (June 1 – September 30) and spatial closures of the bottom trawl fishery, as well as a minimum landing size. The most recent assessment has been based on production modeling using survey (MEDITS) and catch data up to 2009.

Assessment results have demonstrated that, in both GSAs, stock biomass shows a general decreasing trend in the last 4–5 years of the study. Both hake stocks undergo slight overfishing and their biomass is just above the estimated safe levels. Although there are not any relevant data, it is reasonable to assume that the recent banning of bottom trawling in depths < 50m resulted in shifts of fishing effort at deeper waters producing a negative impact on species, such as hake, mainly inhibiting the slope region. A fishing effort reduction of bottom trawlers and artisanal metier targeting hake has been recommended to keep stock biomass at safe levels.

Pink shrimp (*Parapeneus longirostris*) – GSAs 22&23

Pink shrimp is fished by bottom trawlers and it is one of the main target species of the gear. Management regulations include seasonal (June 1 – September 30) and spatial closures of the bottom trawl fishery. The most recent assessment has been based on production modeling using survey (MEDITS) and catch data up to 2009.

Assessment results have demonstrated that, in both GSAs, stock biomass shows a general decreasing trend in the last 4-5 years of the study and current fishing pressure is at marginally safe levels. The Aegean stock (GSA 22) is slightly overfished (biomass below safe levels), while the Ionian stock (GSA 20) is still at safe levels. Although there are not any relevant data, it is reasonable to assume that the recent banning of bottom trawling in depths < 50m resulted in shifts of fishing effort at deeper waters producing a negative impact on species, such as pink shrimp, mainly inhibiting the slope region. A fishing effort reduction of bottom trawlers has been recommended to keep stock biomass at safe levels.

Status of the statistics and the information system

No significant changes of the pattern of collecting fisheries data have taken place during the last years. The Hellenic Statistical Authority (EL.STAT) remains the main and only, until the full implementation of Electronic Reporting System (ERS), administrative body gathering fisheries data from vessels having a motor engine exceeding 19HP. At the moment, there is a slight time lag of finalizing statistical data.

The Directorate General for Fisheries now supervised by the Ministry of Rural Development, and Food collects various data concerning among others the following:

a) fish landing data for specific species (bluefin, swordfish and albacore) are collected daily, under the provision of being validated by the local port authorities, according to ICCAT Recommendations and the EU legislation. Moreover, in case of bluefin tuna, the BCD (bluefin catch document) is also collected daily with details about the caught specimens' presentation.

b) statistical trade data concerning imports, exports and re-exports of swordfish and bigeyed tuna are kept, using the statistical documents of REG (EC) 1984/2003.

c) statistical data concerning imports of fishery products from third countries as written down in the REG 1005/2008 as amended

d) fish landing data from vessels that land catches to foreign ports.

The Ministry of Rural Development and Food / General Directorate of Fisheries and Local Prefectures keep data of the fishing fleet, which include vessel technical characteristics. All these data are inputted in the National Fleet Registry. The Ministry updates the Community Fleet Registry which is kept by the European Commission and allows for updating in terms of fishing vessels characteristics.

Status of research in progress

In Greece, the Mediterranean fisheries research is carried out primarily by the Hellenic Centre for Marine Research and the Fisheries Research Institute that belongs to the Hellenic Agricultural Organisation (DEMETRA). In addition to these two research institutes there are other departments in universities that carry out similar research work in fisheries. The following research projects are part of the ongoing research work.

National Fisheries Data Collection Programme 2011–2013

The following actions were carried out in 2013

Evaluation of the fishing sector

Economic variables: For the collection of the socioeconomic variables the target population of the survey was estimated through the National Vessel Register for 2012. The population was segmented in accordance with the technical specification of the Appendix III of the Commission Decision 2010/93/EU and the variables that were used for the segmentation were the Geographical Sub Areas (GSA), the main fishing gear and the overall length (LOA). The sample that was derived consists of 1 449 vessels. A questionnaire that consisted of closed-ended questions was developed for the collection of all economic variables described in Appendix VI of Commission Decision 2010/93/EC.

Biological-Metier-related variables: Data on landings and discards for all the métiers foreseen in the NP were collected for the last quarter of 2013 through on-board and on-shore sampling. The data collection has covered the 70– 90% of the sampling goal for the given period depending on the métier and region.

Stock-related variables: The data collection for the stock- related variables (age, length, weight, sex, maturity and fecundity) according to the Appendix VII of the Commission Decision 2010/93/EU, has been completed for all the stocks included in the sampling scheme which was foreseen in the NP. Also, the collection of the necessary data for the stocks of group 3 (G3 species) has been completed for the majority of the species.

Eel monitoring: In the framework of the *"National Programme for the collection of fishing data 2013 – Action for the eel 2013"* from January until December 2013, the annual and the monthly eel productions (t) per lagoon were recorded, as they were stated to the Regional Authorities of Eastern Macedonia and Thrace (EMU-3) and Western Greece (EMU-1 & 2).

Eel samples were collected from the aforementioned areas and for each sample all the biological characteristics (length, weight, diameter of the eye, length of pectoral fin) were measured, while biological samples, i.e. parasites, otoliths and gonads, were also collected. These were kept in order to estimate the age structure of the population, the fecundity and the parasite abundance.

Moreover, according to the Ministerial Decision 643/39462/01, the release of elvers back to the sea became mandatory for the year 2013 for eel aquaculture units and silver eel from lagoons (30% of their total catch). Thus these activities were recorded both in Western Greece for elvers and in North Greece for silver eels. Before the eels were released the basic biological characteristics (length, weight) were measured.

Transversal variables: The data collection on effort and landings was achieved based on the sampling scheme described in the NP. For 2013, only the last quarter of the year was covered and the data collection covered the 70% -90% of the objectives of the sampling for the above mentioned period.

Research surveys at sea

MEDITS: Regarding the MEDITS survey, the sampling was fully implemented only in the northern and central Aegean which is half of GSA 22. In GSA 21 and 23 the sampling was not carried out.

MEDIAS: Regarding the MEDIAS survey, this has been already accomplished covering about 90% of the stock habitats, with an overall spatial coverage of about 70% in relation to the foreseen sampling scheme.

Evaluation of the effects of the fishing sector on the marine ecosystem

In the context of scientific research survey at sea MEDITS and MEDIAS data were collected to determine some of the indicators listed in Appendix XIII of the Commission Decision 93/2010.

Management and use of data

The National data bases have adapted completely DCF standards and structures in order to support data storing and analysis for the following actions: MEDITS and MEDIAS surveys, onboard sampling, biological sampling, transversal variables, economic data, aquaculture, processing and eel survey. Most of the data are already stored in the database. The COST package was evaluated and historical data sets were used for testing the functionality and the produced output of the COST routines.

Estimation of Biological Parameters and transversal variables relating to the fishing activity of drifting long lines: The drifting long line fishery, in Greece targets swordfish (*Xiphias gladius*), blue fin tuna (*Thunnus thynnus*) and albacore (*Thunnus alalunga*) which is bycatch in swordfish fishery. The length composition and the age structure of catches of swordfish were estimated from random measurements of individuals landed in the areas of Crete and Dodecanese. In addition, data collected concerning fishing effort expressed in fishing days and number of hooks and fishing production of the target species (swordfish) and main collateral fish (tuna, sharks). The data collection covered the entire fishing season of 2013

Scientific documentation for the adoption of a management plan for the operation of traditional Hellenic boat seines in Hellenic waters: The management plan, focused on the traditional seines called 'vintzotrates' operating in Hellenic waters, aims to fully implement the framework of Council Regulation (EC) No 1967/2006 regarding management measures for the sustainable exploitation of fishery resources in the Mediterranean Sea, amending Regulation (EEC) No 2847/93 and repealing Regulation (EC) No 1626/94. The proposal was formed according to article 6, paragraphs 2, 3 and 4 of Regulation (EC) 2371/2002 regarding the conservation and sustainable exploitation of fisheries resources under the Common Fisheries Policy.

Management plan for the demersal trawl fisheries in the Aegean and Ionian seas. (TRAWLPLAN): The Greek fishery is managed through control effort regimes accompanied by various technical measures. Direct effort is controlled through limitations in the the number of fishing licenses, as well as through seasonal and spatial closures. The applied technical measures include minimum catching size (MCS) regulations for several commercial species and control of gear characteristics (mainly codend mesh-size). The specific management measures imposed by the Community legislation through the Common Fisheries Policy (CFP) include: (a) prohibition of fishing in depths less than 50m or at a distance less than 3 miles from the coast (whatever it comes first), (b) prohibition of fishing at a distance less than 1.5 mile from the coast independently of depth and, (c) MCS regulations and gear specifications. Apart from the Community legislation, according to preexisting Greek legislation, the bottom trawl fishery in the national waters is closed from June to September (4 months) and it is not allowed at a distance less than one mile from the coast. The latter measure has outweighed by the 1.5 mile trawl ban established through the EC legislation.

The present study examines the main characteristics of the Greek bottom trawl fishery and the state of the stocks of certain species that are important targets of the fishery in order to propose a management plan that can ensure the rational management of the demersal resources in the Aegean (including Cretan) and Ionian seas. Besides aspects related with the environmental impact of the fishery (e.g. discarding practices) and the socio-economic impact of the proposed management measures have been also considered.

Rapid assessment of alien marine species in the Albanian and Montenegrin coast (ALBAMONTE): In the proposed study, the distributional patterns of a selected number of invasive alien marine species along the coasts of Albania and Montenegro will be investigated. Presence/absence surveys of the target species will be conducted at a large number of sites (~30 sites) in the study area. The present study will provide valuable insight on the invasion patterns of alien marine species in the area (North Ionian – South Adriatic Sea), it will reveal the hotspots of the distribution of alien species in the area, and will form the baseline for monitoring trends in the

establishment of alien marine species and invasion rates. Distribution maps will be produced for each of the studied species, by integrating the developed occupancy models with a GIS application. An inventory of the marine alien species of Albania and Montenegro will be created, based on the results of the field survey and of a questionnaire-based survey targeting fishermen, divers, scientists, tourists, and the wider public.

Molecular methods for marine biodiversity assessment, the traceability of fisheries products and the identification of fish populations: Molecular genetic methods constitute a powerful tool for the indisputable identification of fish species, thus contributing towards an accurate account of the biodiversity level in a particular area. Furthermore, molecular methods are widely applied in defining potential genetic population structures within the area of repartition of a particular fish species. Genetic information at both the species and population levels is becoming indispensable to traceability issues. Such applications include determining the species composition of processed fisheries products, while, at a more advanced level, the geographical origin of any fish landed can potentially be identified. Thus, through the use of molecular genetics methods in fisheries research a duel benefit can be achieved: Firstly, the consumer can be protected from fraudulent substitutions of species in fisheries products and secondly, the relevant national or European authorities can be informed in cases of illegal, uncontrolled, and unreported (IUU) fisheries.

In Greece, recent relevant examples include the attempted marketing of slices of *Lepidocybium flavobrunneum* as *Xiphias gladius* and the identification of *Solea aegyptiaca* in the sole fisheries in the Thracian Sea. In both cases the species identifications were performed at the Fisheries Research Institute using molecular genetic methods. In the first case, a major super market chain requested that we test imported frozen fish slices marked as *Xiphias gladius*. In the second case, the *Solea aegyptiaca* was identified in a presumed *Solea solea* sample, that was analyzed in the frame of a European research project, proving that the range of expansion of this cryptic species is much wider in the Mediterranean than previously thought.

Estimation of maximum net length of trammel nets, gillnets and combined bottom set nets by using the volume or the mass of the net (ARCHIMEDES): The project objective is to create an algorithm based on the technical characteristics of the gill nets, trammel nets and bottom nets suitable to enable the Fisheries Inspectors to estimate the length of the net using its volume or weight.

Bio-Economic Modelling TOOLs (BEMTOOL): Development of an integrated bio-economic modeling tool to develop and support multi-objective approaches for fisheries management. Identification of the main species and fleet segments/métier covering an adequate proportion of total catches/landings and total revenues of the main métier involved in multispecies multiple gears demersal fisheries in different Mediterranean sub-regions.

The Directorate-General for Maritime Affairs and Fisheries (DG MARE) has requested the development of an integrated bio-economic modelling tool to develop and support multi-objective approaches for fisheries management. The modelling tool should evaluate the biological and economic effects of different harvesting strategies directed at extracting the long-term maximum sustainable production while avoiding the risk of recruitment overfishing and modification in the ecological structure and functions of the exploited fish community. This approach should allow identifying the optimal level of fishing effort and/or catches per each main segment/métier of the fishing fleet in line with previously defined conservation goals while allowing the possibility to extract the maximum long-term economic value.

Management & Monitoring of Deep-sea Fisheries and Stocks (DEEPFISHMAN): Target species in the Deep-water fisheries have posed particular difficulties for monitoring and management. There are few fisheries independent surveys carried out, their life history characteristics makes them difficult to assess and many of these fisheries are predominantly in international waters.

The primary objective of the project is to identify and develop new and more effective monitoring and assessment methods, reference points, control rules and a management framework to be used in the short term. The second objective is to develop a long-term monitoring and management framework to achieve reliable long-term management requirements. The project outputs will aim to provide robust guidelines for deepwater fisheries management suitable for adoption within the Common Fishery Policy.

Stock units in the Mediterranean: Identification of distinct biological units (stock units) for different fish and shellfish species and among different GFCM-GSA: The main objectives of the study are to undertake a multidisciplinary identification of distinct fishery/biological units (stock units) for the most relevant demersal and small pelagic species in the Mediterranean in order to contribute to the improvement of the quality and the reliability of their assessment. The investigation of the relationship between the stock unit, the characteristics of the main fisheries involved and the GFCM-GSAs system and solutions proposed for the different species and fisheries taking into account the need to ensure consistency with the main current stratifications for data gathering and statistics reporting. In addition to this project provides an inventory of gaps and suggestion for further investigation including the genetic characterisation of provisional stock units already identified.

Judgment And Knowledge in Fisheries Involving StakeHolders (JAKFISH): The primary objective of the project is to examine and develop the institutions, practices and tools that allow complexity and uncertainty in fisheries management to be effectively taken into consideration within participatory decision-making processes.

Mediterranean hAlieutic Resources Evaluation and Advice –HORIZONTAL SERVICES (MAREA): The project aims to organize a consortium of European research Institutes and Centre with expertise in fisheries research and which will be readily available to offer scientific advice on fisheries issues which are currently required or will be required by the commission. DG MARE has asked for scientific advice for 7 different issues from which 3 have received a top priority status. The scientific subject of the first 3 tasks is:

1. Collection and mapping (GIS) of information for essential fish habitats;
2. Development of a bio-economic modeling tool to develop and support multi-objective approaches for fisheries management. Identification of the main species and fleet segments/métier covering an adequate proportion of total catches/landings and total revenues of the main métier involved in multispecies multiple gears demersal fisheries in different Mediterranean sub-regions;
3. Estimation of maximum net length of trammel nets, gillnets and combined bottom set nets by using the volume of the mass of the net;
4. Technical specifications of Mediterranean trawl gears (MY GEAR).The goal of the contract is to have updated information on the characteristics of trawl nets used in different Mediterranean fisheries, with a view to possibly establish maximum dimensions and adequate rigging for trawl fishing gears. All these elements will contribute to improve the selectivity, to limit the fishing effort and to minimize the environmental impact of fishing gears. In addition, such information can be useful to evaluate the potential harvesting pattern of different gears in terms of explored area during fishing operations and thus contributing to underpin specific management measures of fishing capacity. Empirical relationships among different parts of the fishing trawl gears, including different type of likely attachments, as well as between some of these parts and the otterboard size and the engine power of the vessel shall be reported. The study must be carried out on the basis of the information collected and/or measured in relevant Mediterranean fishing fleets with the collaboration both of the fishing sectors and of the control/inspection bodies. Information must also be independently collected through the fishing-nets makers, door manufacturers and when possible fishermen. Literature information as well as results from research projects and studies, funded either with national or/and EU support, must be used in view of establishing synergies among different scientific domains while avoiding duplications.

The budget of each project will be agreed when each project will be approved by DG MARE and then, the proposal will be submitted for evaluation and approval from the Board of Directors of the Hellenic Centre for Marine Research separately and individually.

Monitoring and Evaluation of Spatially Managed Areas (MESMA): The MESMA project focuses on marine spatial planning and aims to produce integrated management tools (concepts, models and guidelines) for monitoring, evaluation and implementation of Spatially Managed Areas (SMAs). The project results will support integrated management plans for designated or proposed sites with assessment methods based on European collaboration. It comprises an easily accessible information

system, containing gathered facts on the distribution of marine habitats and species, economic values and benefits, and human uses and their effects, aiming to support activities needed for sustainable use and protection of vulnerable areas. It will develop a strategic tool that can be applied throughout Europe, and will combine an optimized area use with a sustained ecosystem of high quality, taking into account the different ecological and economic features prevailing in diverse regions of the European seas.

Updating the inventory of Marine Invasive Alien Species across European Seas (MIAS): Brief Description of the study: HCMR for the EEA will: a) update and verify MIAS (Marine Invasive Alien Species) related data, and b) proceed to their assessment-Assessment Report-be used as part of both the SEBI2010 Report and the Marine system assessment in Part B of the SoER2010 to be produced by the EEA.

HCMR will update its existing Marine Invasive Alien Species data base (HCMR database) based on new publications and updated national and regional websites (Cross-check MIAS databases and data archived in NOBANIS, and NEMO (Baltic Sea countries), DAISIE (Pan European excluding however the Black Sea) and the Black Sea MIAS list produced by the Black Sea Ecosystem Recovery Programme. This is to include resolution of initial significant disparities among data presented in the countries and regional websites on alien biota and those archived in the aforementioned databases.

The updated data will then be analyzed, validated (via expert workshops organized by HCMR) and assessed by HCMR. HCMR will prepare a short Assessment Report (AR) to be used as part of both the SEBI2010 Report and the Marine system assessment in Part B of the SoER2010 of the EEA. The AR should be both about state of the environment and trends/Outlooks and also state of action. The report will link the state/impacts to the relevant EU policies, evaluate policy effectiveness and progress towards the 2010 CBD objective of halting biodiversity loss and will include the socio-economic dimension of the alien species issue. Finally the Assessment Report will have a 2020 Outlook on Future marine invasions in the main 4 European seas and why, taking also into account climate change impacts.

Assessing the causes and developing measures to prevent the escape of fish from sea-cage aquaculture (PREVENT ESCAPE): The primary objective of the project is to develop methods and technologies to prevent the escape of fish from aquaculture cages after the detailed assessment of such incidents in European waters and the study of their causes, as well as the species specific behavioural and biological characteristics of escapees and their interactions with the wild populations.

Catch rate determination pelagic long-lines fisheries (MAREA): The project aims on catch rate determination of Albacore, Swordfish and Bluefin tuna and the characterization and quantification of associated bycatch and discards in Mediteranean pelagic long-lines fisheries

Cooperation in Fisheries Aquaculture and Sea Food Processing (COFASP): The project is an ERANET and is the follow-up of the eranet MARIFISH. The project builds on the experience of the eranets MARIFISH and SEAS-ERA and covers capture fisheries and fish processing. The eranet participants are the EU funders of research on fisheries and processing of fisheries products

Surfacing System for Ship Recovery (SuSY) The proposed research is for engineering development for a salvage system to refloat sinking or sunken ships. HCMR is involved in the engineering review, feasibility studies, concept definition and sea trials of a prototype system.

Propagation of spillages is one of the largest environmental problems following a ship disaster. Instead of cleaning dirty areas, the SUSY system will avoid spillages by stabilizing vessels immediately after an accident. The main goal of the project is the development of well known submarine rescue technology into system usable for merchant ships in emergency situations. The systems for submarines are based on satellite booster technology with liquid or solid fuel to blow water out of the ballast tanks in a very short time to provide additional buoyancy to stop, for example, an uncontrolled diving process. Combining this technology with air pressure systems and balloon technology to create a multi-purpose modular system for ship rescue purposes is the SUSY project target. Therefore booster technology combined with pressure air technologies has to be adapted to salvage procedure requirements. In combination with new balloon textiles a secure vessel stabilisation process, as well as the salvage process, will be supported.

Different application scenarios/concepts can be envisaged: 1) preventative installation of rescue systems on ships with hazardous cargo, 2) equipment for coast guard and rescue squads to quickly stabilise capsized ships and 3) equipment for teams to lift sunken ships.

The technical challenges for SUSY where research is needed to develop the envisaged system are (1) developing a hydro-dynamical and a thermo-dynamical model as basis for a controlled process for the different possible scenarios, (2) developing a safety and secure buoyancy generating system based on liquid and solid fuel and air pressure, (3) find the right material to cope with the pressure, temperature and dynamic loads of the rescue scenario, (4) define a life-cycle cost model to assure the design of a low cost modular system, (5) simulate the different scenarios to provide input for the design optimisation, (6) Finally SUSY will build a prototype to proof the concept in real sea tests.

Catches of pelagic (drifting) longline fisheries in the Mediterranean (MEDPEL): The project objectives are to identify, in as much fine scale as possible, the spatiotemporal catch-rate variations of the main commercial and non-commercial (discarded) species in the Mediterranean pelagic long-line fisheries.

Status of the social sciences studies in progress

Mediterranean Network of sustainable small-scale fishing communities (FISHINMED)

Creating a Mediterranean Network linking public and private institutions to support the social-economic local development of small-scale fishing communities thus favouring the diversification of fishing activities and the socio-economic relations for an integrated valorisation of the coastal area.

Socio economic effects of management measures of the future CFP (SOCIOEC)

SOCIOEC is an interdisciplinary, European wide project bringing together scientists from several fisheries sciences with industry partners and other key stakeholders to work in an integrated manner on solutions for future fisheries management that can be implemented at a regional level. The central concept is to provide a mechanism for developing measures that are consistent with the overarching sustainability objectives of the EU, and that can provide consensus across all stakeholders. The first step will be to develop a coherent and consistent set of management objectives, which will address ecological; economic and social sustainability targets. The objectives should be consistent with the aims of the CFP, MSFD and other EU directives, but they should also be understandable by the wider stakeholder community and engage their support. This will then lead to the proposal of a number of potential management measures, based on existing or new approaches. The second step will be to analyze the incentives for compliance provided by these measures. In particular, we will examine fisher's responses and perceptions of these measures, based on historical analysis as well as direct consultation and interviews. This project part will also examine how the governance can be changed to facilitate self- and co-management to ensure fisher buy-in to promising management measures. In particular, the project will focus on the interpretation of overarching (i.e. EU) objectives in local and regional contexts. Finally, the project will examine the impacts of the management measures that emerge from this process, particularly in terms of their economic and social impacts. The IA analysis will be integrated by evaluating the proposed measures against the criteria of effectiveness, efficiency and coherence. Special attention will be paid in evaluating the proposed management measures' performance in terms of their ability to achieve the general and specific ecological objectives.

Identification of distinct biological units (STOCKMED)

The project researches on the identification of distinct biological units (stock units) for different fish and shellfish species and aiming different GFCM-GSAs'

Marine environmental studies in progress

Architecture and roadmap to manage multiple pressures on lagoons (ARCHITECTURE)

The project aims to the study and management of coastal marine aquatic ecosystems such as coastal wetlands. The contribution of the Institute for Marine Biological Resources is to study the coastal

fisheries and the coastal resources along the front of such wetlands and the dynamics of the migration of these resources through the wetlands for reproduction and feeding purposes.

Development of Innovative tools for understanding marine biodiversity and assessing good environmental status (DEVOTES)

The Marine Strategy Framework Directive (MSFD) identifies marine biodiversity as a key descriptor for the assessment of the environmental status of marine waters. However the understanding of the relationships between pressures from human activities and climatic influences and their effects on marine biological diversity are still only partially understood. There are a number of aspects of these relationships which need to be better understood in order to fully achieve a good environmental status (GES) of marine waters, a target of the MSDF.

The project will contribute, in a harmonized way for the four regions identified in the MSFD, to: (1) improve our understanding of the impact of human activities and variations associated to climate on marine biodiversity, (2) test indicators (referred in the Commission Decision on GES) and develop new indicotrs for assessment at several ecological levels (species, habitat, ecosystems) and for the characterization and status classification of the marine waters, (3) develop, test and validate, on the basis of observations, innovative integrative modelling tools in order to further strengthen our understanding of ecosystem and biodiversity changes in space and time.

Furthermore the project will (1) enable the development of adaptive management (ecosystem-based management approach) strategies and management measures taking into account the role of industry and relevant stakeholders; (2) provide economic and social assessment of the consequences of management practices; (3) identify the barriers (socio-economic and legislative) that prevent progress towards GES; (4) provide a set of policy options for the relevant authorities to prioritize actions to reduce pressure from human activities and climatic influences.

Monitoring of three protected coastal marine areas

The scientific monitoring of three protected marine areas, created around artificial reefs in the Aegean and Ionian Sea, continued during 2013. The results showed an increasing trend of fish species biodiversity and species abundance. Species living on hard substrate and species related to natural reefs showed the higher increasing in number and biomass. Specific fishing measures were applied in the protected areas such as the establishment of a non take zone. At the end of the project a specific management plan will be formulated and applied after consultation with local authorities and interested fishing organizations.

Benthic ecosystem fisheries impact study (BENTHIS)

Benthic ecosystems provide important goods and services, such as fisheries products and supporting, regulation and cultural services. There is serious concern about the adverse impact of fisheries on benthic ecosystem which may negatively affect the fisheries yield and integrity of the sea bed. To develop an integrated approach to the management of human activities in the marine environment, in particular fishing, there is a need to develop quantitative tools to assess the impact of fisheries on the benthic ecosystem and at the same time collaborate with the fishing industry to develop innovative technologies and new management approaches to reduce the impact on benthic ecosystems. BENTHIS will provide the knowledge to further develop the ecosystem approach to fisheries management as required in the Common Fisheries Policy and the Marine Strategy Framework Directive. It will study the diversity of benthic ecosystem in European waters and the role of benthic species in the ecosystem functioning. Fisheries impacts will be studied on benthic organisms and on the geo-chemistry. The newly acquired knowledge will be synthesized in a number of generic tools that will be combined into a fishing/seabed habitat risk assessment method that will be applied to fisheries in the Baltic, North Sea, Western waters, Mediterranean and Black Sea. Fisheries will be selected with the fishing industry based on the impact on the benthic ecosystem. BENTHIS will integrate fishing industry partners to collaborate in testing the performance of innovative technologies to reduce fishing impact. Finally, in collaboration with the fishing industry and other stakeholders, new management approaches will be developed and tested on their effects on the ecosystem and the socio-economic consequences. As such BENTHIS will provide the urgently needed scientific basis to integrate the role of marine benthic ecosystems in fisheries management.

Options for Delivering Ecosystem- based Marine Management (ODEMM)

The overall aim of the ODEMM project is to develop a set of fully-costed ecosystem management options that would deliver the objectives of the Marine Strategy Framework Directive, the Habitats Directive, the European Commission Blue Book and the Guidelines for the Integrated Approach to Maritime Policy. This will be achieved by: (i) providing a comprehensive knowledge base to support policy for the development of sustainable and integrated management of European marine ecosystems; (ii) developing Operational Objectives to achieve the High-Level Policy Objectives set by the MSFD and the HD, and with reference to the proposed Maritime Policy; (iii) identifying Management Options (individual management tools and combinations of tools) to meet the Operational Objectives; (iv) providing a risk assessment framework for the evaluation of Management Options and to assess the risk associated with the different options; (v) conducting a cost-benefit analysis of a range of Management Options using appropriate techniques; (vi) identifying stakeholder opinions on the creation of governance structures directed towards implementation of the ecosystem approach, and to elaborate different scenarios for changing governance structures and legislation to facilitate a gradual transition from the current fragmented management approach towards fully integrated ecosystem management; (vii) documenting the steps necessary for the transition from the current fragmented management scheme to a mature and integrated approach, and providing a toolkit that could be used to evaluate options for delivering ecosystem-based management; and (viii) communicating and consulting on the outcomes of the project effectively with policy makers and other relevant user groups

Concrete Conservation Actions for the Mediterranean Shag and Audouin's Gull in Greece, including the Inventory of Relevant Marine IBAs (ConShagAudMIBAGR)

Preparatoty actions for defining marine Important Bird Areas (mIBAs), and defining of mIBAs. (2) Preparatoty action for rat elimination and population control of sea gulls and realization of the respective actions in selected islets. (3) Actions for public awareness on sea bird conservation.

Assessment of the interactions between corals, fish and fisheries, in order to develop monitoring and predictive modelling tools for ecosystem based management in the deep waters of Europe and beyond (Coral FISH)

The CoralFISH project aims to support the implementation of an ecosystem-based management approach in the deep-sea by studying the interaction between cold-water coral habitat, fish and fisheries. Within the CoralFish project, multidisciplinary research cruises will be carried out in areas around Zakynthos and Cephalonia involving fisheries biologists, marine biologists, geologists and oceanographers. The seabed will be mapped and surveyed with high technology imaging tools including multibeam sonar, side scan sonar and remotely operated vehicles, to locate areas of corals and to identify the key organisms and the conditions that they live in. Further cruises will be carried out to investigate the fish communities and their behavior around the coral areas by ROV observation and long-line fishing studies. The project will last over 4 years and brings together 16 participating institutions from 11 European countries investigating study sites from Northern Europe to the Azores and from Italy to Greece in the Mediterranean.

The information collected in Greece, along with data from the other sites, will be used by the project participants to:

- develop essential methodologies and indicators for baseline monitoring of closed areas
- integrate fish into coral ecosystem models to understand coral fish-carrying capacity,
- evaluate the distribution of deepwater bottom fishing effort to identify areas of potential interaction and impact upon coral habitat,
- use genetic fingerprinting to assess the potential erosion of genetic fitness of corals due to long-term exposure to fishing impacts,
- construct bio-economic models to assess management effects on corals and fisheries to provide policy options,
- produce as a key output, habitat suitability maps to identify areas likely to contain vulnerable habitat.

Coordinating research in support to application of EAF (Ecosystem Approach to Fisheries) and management advice in the Mediterranean and Black Seas (CREAM)

The Coordinating Action (hereafter "the project") will establish an effective collaboration network among key role players in Mediterranean and Black Sea fisheries research and management. The participants in the project include national research institutes from Mediterranean and Black Sea countries with a long history and active participation in fisheries research and assessment, who provide advice to national, regional and international fisheries management organisms. The project will seek the active collaboration of regional and international fisheries management organisms as external participants in the project, in order to identify the gaps (in terms of data, knowledge, training, coordination) which hamper at present the full application of the Ecosystem Approach in the management of Mediterranean and Black Sea fisheries. The project will have a strong training and capacity building component in order to help harmonize data collection and methodologies used in fisheries assessment and management in the Mediterranean and Black Sea. The project will serve to establish the guidelines for the application of the Ecosystem Approach to Fisheries in the Mediterranean and Black Sea, both in EU member states and third countries.

Investigation and application study of the ecosystemic approach to fishery in the Ionian Sea (Greece) and Black Sea (Romania)

The project aims to study the application of the ecosystem approach to fisheries. As part of this project will attempt to apply a management approach to fisheries in both areas with particular environmental problems (Ionian Sea from Greece and Romanian Black Sea coast). In both study areas the overfishing in recent years and in conjunction with the aggravated state of the environment and the specific ecological conditions required a different fisheries management, taking into account all the ecological components. It will be a complete description and comparison of all the biotic and abiotic parameters will be analyzed fully the fisheries sector and the legal regime governing fisheries and the environment. It will also carry out a study on the socio - economic dimension of fisheries in both areas of research. These data will be used to investigate the application of the ecosystem approach to fisheries in both countries and will provide an essential research tool for fisheries managers. This program will be used as a trigger for further development of scientific cooperation between the two countries.

Collection of environmental, ecological, oceanographic and fisheries data for the Argolikos gulf. (KOUPONIA)

The General Secretariat of Research and Technology of Ministry of Development financed the action of national scope “(Kouponia) of Innovation for Small to medium-sized enterprises”. The financing amounts are coming from the Operational Program of “Competitiveness and entrepreneurship” (EPAN-II). The total amount of funding is 8,400.000 € and is covering all the Greek regions.

A key objective of the Strategic Plan for Research, Technology and Innovation is to support the needed technology needs of the various small median enterprises (SME). The aim is to support and strengthen small enterprises through the purchase of innovative consulting and support services knowledge/experience of innovators and also the support of the public laboratories and research institutions (Universities, Technological Educational Institutions and Research Centers) which provide services of high value and intensity.

Mediterranean Sensitive Habitats (MEDISEH)

The present study aims at the ccompilation and mapping of environmental and fisheries related information in the Mediterranean Sea by means of Geographical Information Systems (GIS): Integration and mapping of the spatial information on sensitive habitats: a) habitats protected under the Mediterranean regulation, b) nursery areas and spawning aggregations of demersal and small pelagic fish and c) areas under any form of protection within national and international legislation.

Maximising yield of fisheries while balancing ecosystem, economic and social concerns (MYFISH)

The MSY concept was included as a principle in the 2009 Green Paper on the reform of the Common Fisheries Policy (CFP) in accordance with the global imperative to manage fish stocks according to

the maximum sustainable yield (MSY). This implies a commitment to direct management of fish stocks towards achieving MSY by 2015. Attaining this goal is complicated by the lack of common agreement on the interpretation of "sustainability" and "yield" and by the effects that achieving MSY for one stock may have on other stocks and broader ecosystem, economic, or social aspects. MYFISH will provide definitions of MSY variants which maximize other measures of "yield" than biomass and which account for the fact that single species rarely exist in isolation. Further, MYFISH will redefine the term "sustainable" to signify that Good Environmental Status (MSFD) is achieved and economically and socially unacceptable situations are avoided, all with acceptable levels of risk. In short, MYFISH aims at integrating the MSY concept with the overarching principals of the CFP: the precautionary and the ecosystem approach. MYFISH will achieve this objective through addressing fisheries in all RAC areas and integrating stakeholders (the fishing industry, NGOs and managers) throughout the project. Existing ecosystem and fisheries models will be modified to perform maximization of stakeholder approved yield measures while ensuring acceptable impact levels on ecosystem, economic and social aspects. Implementation plans are proposed and social aspects addressed through active involvement of stakeholders. Finally, effects of changes in environment, economy and society on MSY variants are considered, aiming at procedures rendering the MSY approach robust to such changes. The expertise of 26 partners from relevant disciplines including fisheries, ecosystem, economic and social science are involved in all aspects of the project. Global experience is engaged from North America and the South Pacific.

Planning a network of marine protected areas for the Mediterranean Sea - NETMED

The present proposal suggests the design of an ecologically coherent network of marine protected areas for the entire Mediterranean Basin, based on the principles of systematic conservation planning; an efficient, transparent and holistic approach for marine reserves design, which informs their location, configuration and management. The aim is to protect marine biodiversity, in coastal and off-shore habitats, and preserve ecosystem services cost effectively. To accomplish this, spatial prioritization software will be used to accommodate ecological, social and economic considerations in identifying priority areas for conservation. The Mediterranean Sea offers a unique opportunity and urgent need to address this issue since: 1. especially in the western Mediterranean a large number of MPAs have already been implemented and can be used as initial framework for further implementation, 2. the knowledge about habitats and species distribution is far to be completed but some extensive mapping in several areas has been carried out and 3. the scientific community is highly sensible to the issue of Mediterranean habitats inventories as demonstrated by the effort of RAC/SPA. Given that and considering the particularities (geographical, social and political) of the study region, new conservation planning methodologies will be devised. In order to improve the proposed network and increase public support, an intense consultation process with experts on Mediterranean marine biodiversity and stakeholders will follow the initial network design. The final product of this approach will be compared with other non-systematic and national-driven approaches. Results will be of immediate use to managers of MPAs and ongoing conservation planning throughout the Mediterranean; the proposed network of MPAs will be integrated within a broader ecosystem-based strategy.

Options for Delivering Ecosystem-based marine management (ODEMM)

The overall aim of the ODEMM project is to develop a set of fully-costed ecosystem management options that would deliver the objectives of the Marine Strategy Framework Directive, the Habitats Directive, the European Commission Blue Book and the Guidelines for the Integrated Approach to Maritime Policy. This will be achieved by: (i) providing a comprehensive knowledge base to support policy for the development of sustainable and integrated management of European marine ecosystems; (ii) developing Operational Objectives to achieve the High-Level Policy Objectives set by the MSFD and the HD, and with reference to the proposed Maritime Policy; (iii) identifying Management Options (individual management tools and combinations of tools) to meet the Operational Objectives; (iv) providing a risk assessment framework for the evaluation of Management Options and to assess the risk associated with the different options; (v) conducting a cost-benefit analysis of a range of Management Options using appropriate techniques; (vi) identifying stakeholder opinions on the creation of governance structures directed towards implementation of the ecosystem approach, and to elaborate different scenarios for changing governance structures and legislation to facilitate a gradual

transition from the current fragmented management approach towards fully integrated ecosystem management; (vii) documenting the steps necessary for the transition from the current fragmented management scheme to a mature and integrated approach, and providing a toolkit that could be used to evaluate options for delivering ecosystem-based management; and (viii) communicating and consulting on the outcomes of the project effectively with policy makers and other relevant user groups.

People for Ecosystem-based Governance in Assessing Sustainable Development of Ocean and coast (PEGASO)

The aim of PEGASO is to build on existing capacities and develop common novel approaches to support integrated policies for the coastal, marine and maritime realms of the Mediterranean and Black Sea Basins in ways that are consistent with and relevant to the implementation of the ICZM Protocol for the Mediterranean.

Many efforts have been deployed for developing Integrated Coastal Zone Management (ICZM) in the Mediterranean and the Black Sea which continue to suffer from severe environmental degradation.

PEGASO will use the model of the existing ICZM Protocol for the Mediterranean and adjust it to the needs of the Black Sea through four innovative actions:

- Construct an ICZM governance platform as a bridge between scientist and end-user communities, going far beyond a conventional bridging. The building of a shared scientific and end users platform is at the heart of our proposal linked with new models of governance.
- Refine and further develop efficient and easy to use tools for making sustainability assessments in the coastal zone (indicators, accounting methods and models, scenarios, socio-economic valuations, etc). They will be tested and validated in 9 sites (CASES) and by the ICZM Platform, using a multi-scale approach for integrated regional assessment.
- Implement a Spatial Data Infrastructure (SDI), following INSPIRE Directive, to organize local geonodes and standardize spatial data to make it available to the ICZM Platform, and to disseminate all results.
- Enhance regional networks of scientists and stakeholders in ICPC countries, supported by capacity building, to implement the PEGASO tools and lessons learned, to assess the state and trends for coast and sea in both basins, identifying present and future main threats, agree on responses to be done at different scales in an integrated approach, including Tran disciplinary and Tran boundary long-term collaborations.

Contribution in the elaboration of the Strategic Study of Environmental Impact of aquaculture within the frame of the National Cadastral Design and Sustainable Development plan for aquaculture (SMPE)

Based on the EU and national legislation, the development of a production sector is required to be based on a National Cadastral and Sustainable Development Plan, major part of which is the Strategic Environmental Impact Study which includes the expected impact from the further development of aquaculture in Greece as well as set the roadmap and guidelines for this development.

Water body in Europe: integrative system to assess ecological status and recovery (WISER)

WISER is an EU 7FP project, supports the implementation of Water Framework Directive (WFD) by developing tools for the integrated assessment of the ecological status of the European surface waters. Within this framework is the developing and testing methodological tools (e.g. EEI-c) most appropriate for the classification of ecological status of the Mediterranean transitional and coastal waters, using benthic macrophytes as bioindicators.

Involvment in activities of FAO Regional Projects

Participation in EastMed FAO Project activities (April 2013-February 2013)

During the period April 2013-February 2013, a number of Greek researchers from Public Institutes, along with other colleagues from the EastMed Project staff and from the other participating countries,

took part in the following activities concerning the objectives of the project and based on the work plan for the mentioned period:

a. A training course improving the analysis of fisheries data (Rome, Italy, November 2013), co-organised by EU, FAO, EastMEd and other FAO sub-regional projects
b. Annual meeting of the permanent working group of Eastmed Project on stock assessment (Kavala, Greece, September 2013)

Management measures

Large Pelagic fishery. All Recommendations on BFT and swordfish in the Mediterranean sea as adopted by ICCAT and GFCM were fully implemented during the intersessional period.

The swordfish fishery is managed by national legislation since 1987. Recently this legislation was harmonized with the Rec. GFCM/36/2012/3

Purse seine fishery. According to the provisions of article 6 of the Reg. (EC) 2371/2002 19 and the requirements of article 19 of the Reg. (EC) 1967/2006 a national management plan for the small pelagic fish stocks of Engraulis encrasicolus (anchovy) and Sardina pilchardus (sardine) exploited by purse seine fishery has been implemented in 2012.

The management plan provides for the procedure for the issuing of fishing authorisations valid for one year, the protection of the environment from the use of the gear, the definition of an annual monitoring plan according to reference points and targets for the sustainable exploitation of the fish stocks of anchovy and sardine.

Bottom trawling fishery. Similarly, a national management plan for the trawling fishery throughout the Greek territory has been approved by the European Commission in 2013.

The management plan provides for the issuing of fishing authorisations valid for one year as well as for an annual monitoring plan according to reference points and targets for the sustainable exploitation of the fish stocks of Mullus barbatus (red mullet), Mullus surmuletus (striped mullet), Merluccius merluccius (hake), Spicara smaris (pickerel) and Parapenaeus longirostris (pink shrimp).

Eel Management Plan

The introduction of an Eel Management Plan which includes measures targeting to the direct reduction of fishing and natural mortality, the establishment of an efficient recording system and the improvement of the efficiency of eel migrations

Recommendation GFCM/35/2011/2 on the exploitation of red coral in the GFCM Competence Area

Greece has not applied any derogation from the aforementioned Recommendation

The coral fishing is regulated by national legislation which is in force since 1994. According to this, fishing authorisations are issued annually and the fishery is managed by regulating the allowable fishing depth, harvesting areas and permitted fishing gear according to Recommendation GFCM/35/2011/2. In addition fishermen are obliged to report daily catches and fishing effort to the relevant authorities using an appropriate detailed leaflet.

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

Cetaceans are not targeted in any fishery in Greece. Regarding to incidents of stranding, the care of injured and dead cetaceans special care is provided for data collection since 2000. The use of monofilament nets is forbidden in the Greek waters since 1997. Procedure is in progress to include data collection regarding incidental catches of cetaceans a) by National Fisheries Data Collection Programme and b) as reported by fishermen.

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

Sharks and rays are not targeted species for any fishery in Greece, however their catch is monitored by the National Fisheries Data Collection Programme.

ITALY/ITALIE

Description of the fisheries

In 2012, the Italian fishing fleet operating in Mediterranean waters consisted of 12 897 registered vessels, with a combined gross tonnage of 163 thousand GT, a total power of 1 026 thousand kW and an average age of 28 years.

The size of the Italian fishing fleet has followed a decreasing trend between 2004 and 2012. The number of vessels declined by 13% while the total GT and kW of the fleet declined by 18% and 14%, respectively during the same period. The Italian fishing fleet has been decreasing in size for several years under the FIFG and EFF programme periods. Under the EFF programme, the number of vessels withdrawed has been 573 with a total GT of 23,854.

The larger segment within the fleet is the small scale fleet, representing 67% of the total. This segment covers vessels using passive gears, mainly fixed nets, and are less than 12 metres in length. The small scale fishery accounts for more than a quarter of the national value of landings. Fishermen represent 49 percent of national total with an average crew of 2 men. Average incomes are low, but these vessels represent an important economic resource in some geographical areas with a high level of dependence on fishery.

The trawler fleet is the largest fishery by volume. In 2012, this segment accounted for 34% of total national catches and 49% of total value of landings, employing around 7,800 fishermen (28% of full time fishers). It is also the main segment in terms of capacity, amounting respectively the 63% and 50 - 48% of the total GT and kW.

The pelagic fleet represents the third most profitable fishery. It consists of around 380. It is composed by purse seiners concentrated in Sicily and Tyrrhenian Sea and by midwater pair trawler fleet that operates exclusively in the Adriatic coast. This fleet lands a high volume of small pelagic species, anchovies and pilchards especially, and accounts for 35% of total national landings. This segment shows the highest level of landings per unit of effort (LPUE), as results of a new management approach implemented in this sector since 2001 and mainly based on self-management and on control on landings.

The segment of dredges is almost exclusively located in central-north Adriatic coast and consists of 706 vessels. This fishery is highly specialised, targeting mainly clams (Venus gallina), whose consistency is subject to strong variations from a year to another. Since 2000, after a positive trend, the landings of clams have reduced by 40 percent in terms of volume. However this segment, thanks to a positive experience of self-management, highlights high landings per unit of effort (LPUE).

The segment of multi-purpose vessels is composed of polyvalent vessels using passive gears (mainly nets) according to season, demand and fishing grounds. In 2012, they account for 4% of national total number of vessels and GT and represented the 2% of national landings in volume.

The segment of longlines comprises many types of set and drift longlines used to catch different species, such as swordfishes, bluefin tuna, albacore tuna and hakes. The production is concentrated in the Tyrrhenian littoral and particularly in Sicily, where there is the largest fleet. This segment represents 2% of national landings.

In 2012, 27,851 fishers were employed, approximately 7,200 fewer than in 2004. The reduction of fishing capacity has had a negative impact in terms of employment and income of those communities strictly dependent on fishery. This shrinking concerned all fishing systems even though coastal trawling and small-scale fishery were strongly affected.

The national fleet activity amounted to 1,556 thousand days at sea in 2012, and decrease of 9% compared to 2011. The decrease in activity was essentially due to small -scale fishing v
registered a decrease of 11% in days at sea per vessel. The steady decline in fishing activity that characterizes the Italian fleet in the last years is partly due to an increase in fuel price which rose from 0.59 €/lt in 2010 to 0,80 €/lt in 2012. Overall, in 2011 the costs of fuel amounted to 301 million euro, opposed to 237M€ in 2010 and 201M€ in 2009. In unit terms, the average fuel expenses per vessel increased by 30% and its weight on the overall costs rose from 46% in 2009 to 58% in 2011. The

reduction in days at sea in 2012 should also be attributed to the cessation of activity by those fishermen, especially those employed on board trawlers, for whom a social compensation was paid by the Government.

The total volume of seafood landed by the Italian fleet in 2012 was 196 thousand tonnes, with a landed value of €925 million. The total volume and value of landings decreased over the period analyzed (- 7% and -15% respectively in volume and value in 2012 compared to 2011). Nevertheless, the market did not follow the classical rules of lower production volumes and higher prices. Indeed, in 2012 a 9% decrease in average first sales prices caused a larger decrease in the level of income from landings, being one of the main causes of the decrease of most of the economic indicators. The decrease in production has strongly affected the pelagic fleet, for which there were decreases of 15% in volume and value of landings in 2012.

Table 1. Capacity and economic indicators by fleet segments, 2012

	2012						
	Total fleet	**Trawlers**	**Pelagic fleet**	**Dredges**	**Small scale fishery**	**Multipurpose vessels**	**Longlines**
Capacity Indicators							
Volume of landings ('000ton)	196	66	69	22	31	5	4
Value of landings (EUR million)	925	449	113	52	241	38	31
Economic indicators							
Fleet - number of vessels	12 897	2 495	380	706	8 638	498	180
Fleet - total GT ('000)	163	102	23	9	16	7	5
Fleet - total kW ('000)	1026	489	106	76	246	73	36
Average days at sea	121	140	123	78	119	108	113
Employment	27 851	7 852	2 129	1 493	13 758	1 611	681

Source: MIPAAF - IREPA

In 2012, European anchovy generated the highest landed value (€77 million), followed by European hake (€74 million), deep water rose shrimp (€56 million) and Swordfish (€46 million). In terms of landings weight, in 2012 the volume of European anchovy landed was 43 thousand tonnes, European hake was 9 thousand tonnes, Deep water rose shrimp was also 8 thousand tonnes and Swordfish was 4 thousand tonnes Several factors resulted in a decrease in total captures and unitary productivity.

Table 2 Main species harvested by quantity and value

	2012			
	Tonnes ('000)	%	EUR million	%o
European Anchovy	42,8	21,9	75,6	8,2
Striped venus	20,0	10,2	42,3	4,6
European pilchards	19,9	10,2	16,4	1,8
European Hake	9,4	4,8	74,4	8,0
Deep-water rose shrimp	8,3	4,2	55,7	6,0
Striped mullet	5,9	3,0	30,6	3,3
Mullets	4,9	2,5	5,4	0,6
Spottail mantis squillid	4,8	2,4	29,4	3,2
Common cuttlefish	4,2	2,1	35,9	3,9
Swordfish	4,0	2,1	45,7	4,9
Mediterranean horse mackere	3,0	1,5	5,2	0,6
Common octopus	3,0	1,5	22,5	2,4
Squids	2,6	1,3	13,3	1,4
Giant red shrimp	2,4	1,2	42,3	4,6
Musky octopus	2,2	1,1	11,4	1,2
Other fish	58,5	29,9	418,9	45,3
Total	195,8	100	925,0	100

Source: Mipaf-IREPA

Status of stocks of priority species (2012)

The information used to assess resources status in the seas around Italy derives by both fishery independent data (GRUND and MEDITS trawl-survey) and monitoring of commercial landings and discards, collected within the framework of the European Regulations on Fishery Data Collection (Reg EC 1543/2000 and subsequent amendments and additions, Data Collection Regulation - DCR and Data Collection Framework-DCF).

The GSA (7 geographical sub areas surround Italy), represent the reference spatial scales for evaluation and assessment are mainly based on SURBA, XSA, VPA, VIT, ALADYM; and different versions of surplus production models.

The evaluated species are those with highest commercial value in Italian fisheries. The assessments dealing with stocks shared with other Mediterranean countries were performed within the GFCM framework and was supported by FAO Regional Project AdriaMed, MedSudMed. The evaluation concerning stock fished almost exclusively by Italian fisheries were done in the WGs supported by European Union.

As regards demersal fish, a heavy overfishing status of hake *Merluccius merluccius*, was detected in all the GSAs. Fishing mortality rates higher than the target ones (F0.1) were found in the Strait of Sicily (GSA 16 and adjacent GSAs), and in the Southern Adriatic Sea (GSA 18). A state of heavy overfishing was also found in the Central and Southern Tyrrhenian Sea (GSA GSA 9 and 10) and in the seas around Sardinia (GSA 11).

Concerning the red mullet *Mullus barbatus* the species resulted in overfishing in the Strait of Sicily (GSA 16 and 15) and in GSA 9, 10, and 11, being the intensity of overfishing lower than the hake one. In some of the GSA, increasing trends of the biomass of the standing stock from the late nineties were reported.

A situation of overfishing was detected for sole, *Solea vulgaris*, in the Adriatic Sea (GSA 17), common pandora, *Pagellus erythrinus*, in the Strait of Sicily (GSA 16 and 15) and in the Northern Tyrrhenian (GSA 9), stripped red mullet, *Mullus surmuletus*, in the northern Tyrrhenian (GSA 9) and Black bellied anglerfish, *Lophius budegassa*, in the Strait of Sicily (GSA 16 and 15).

As concerns the crustaceans Norway lobster *Nephrops norvegicus*, resulted in overfishing in northern Tyrrhenian (GSA 9). A status of overfishing was also detected for mantis shrimp, *Squilla mantis*, in Adriatic (GSA 17) and Northern Tyrrhenian (GSA 9).

The stocks of deep water rose shrimp *Parapenaeus longirostris* were found in overexploitation in southern Tyrrhenian (GSA 10) Strait of Sicily (GSA 16 and adjacent GSAs), and southern Adriatic (GSA 18), although the positive trend of the standing stock could be a sign of environmental changes that support the productivity of these stocks. Conversely sustainable exploitation was assessed in the GSA 9.

The giant red shrimp, *Aristaeomorpha foliacea*, in the Strait of Sicily (GSA 16 and adjacent GSAs), in the seas around Sardinia (GSA 11) and in northern Tyrrhenian (GSA 9) was assessed in overfishing. The same status of overfishing was detected for violet shrimp A. antennatus in the GSA 9.

Regarding the small pelagics, signs of overfishing for the stock of anchovies *Engraulis encrasicholus* are highlighted in the Strait of Sicily (GSA 16), while in the Adriatic Sea (GSA 17) the exploitation rate resulted sustainable.

A fully exploited status, with no room for further expansion status was found for the stock of sardines *Sardina pilchardus* in the Adriatic (GSA 17), while, although the catch level was moderate, low level of sardine standing stock were found in the Strait of Sicily (GSA 16).

Status of the statistics and information system

Fishery statistics are collected within the European Regulation on Data Collection (EU reg. n. 199/2008). 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 (EU reg. n. 199/2008) 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 (through the Task 1 tool), 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.

Status of research in progress

Fisheries data have been collected, in the framework of the Italian National Data Collection Program 2013, according to the legal Community framework put in place in 2008 with the adoption of a Council Regulations, a Commission Regulation and a Commission Decision laying down the detailed rules of application (Reg. CE 199/2008; Commission Decision 93/2010/EC).

In accordance with chapter II of the annex of the Commission Decision, this national program comprised the following modules:

1) Module of evaluation of the fishing sector:
   a) Section for the collection of economic variables
   b) Section for the collection of biological variables

c) Section for the collection of transversal variables
d) Section for research surveys at sea

2) Module of evaluation of the economic situation of the aquaculture and processing industry sectors:
   a) Section for the collection of economic data for the aquaculture sector
   b) Section for the collection of economic data for the processing industry
3) Module of evaluation of the effects of the fishing sector on the marine ecosystem
4) Module for management and use of the data covered by the data collection framework

The General Directorate for Fisheries and Aquaculture (MIPAAF) is in charge of the overall coordination of the implementation of the National Data Collection Programme. MIPAAF is the national counterpart for the exchange of information between the European Commission and Italy regarding the DCF. Italian fisheries take place in 7 Geographical sub areas (GSA) and different institutes, members of the consortium that assists the MIPAAF, are in charge of collecting data (such as economic data, transversal data, biological data for demersal small and large pelagic species, recreational fishery on tuna and eel, aquaculture data, VMS data, ecosystem data, surveys data) on each one of these GSAs.

In implementing the Data Collection Framework, continuity with data and time series collected under the previous years has been assured. A particular attention has been given to the regional approach and compliance with Regional Coordination Meeting for the Mediterranean and Black Sea (RCMMed&BS) has been assured. Regarding the two surveys, MEDITs and MEDIAS, these have been carried out in line with previous years.

Other main research activities

Research activities on marine living resources have been carried out in Italy by several bodies, both private and public, among which are mainly involved University Departments and Research Institutes.

Development of a net for the exchange of information between national researchers

Development of the System GIS-PESCA on the entire coastline also including aquaculture sites

Assessment of Bycatch of protected species in the pelagic trawl

Nutritional and safety aspects of fish species from fishery and aquaculture

Bio-economic models

Assessment of Anguilla anguilla in the framework of UE Reg. 1100/2007

Preliminar assessment of the main species of Elasmobranchs

Assessment of the red coral in the Italian seas

Diffusion of Anisakis sp and potential risks

Species identification of fishery products

Further projects have been just activated regarding:

- application of Allocation zones for Aquaculture (AZA),in the framework of EU directive 2013 (COM 113)
- dissemination of scientific data, stock assessment data among fishers,
- optimization of methodologies of sampling for stock assessment
- capacity of restitution of coastal lagoons environments supporting local coastal stocks, qualitative and quantitative aspects;

Status of the social sciences studies in progress

Productive structures analyses and socio-economic characteristics of Italian Fisheries

Sustainability and management tools for Italian fishery: an impact assessment of TURF

Involvement in activities of FAO Regional Projects

The Ministry of Agriculture, Food and Forestry Policies is the Donor of three FAO regional projects in the Mediterranean, namely AdriaMed “Scientific Cooperation to Support responsible Fisheries in the Adriatic Sea”, MedSudMed “Assessment and Monitoring of the Fishery Resources and the Ecosystems in the Straits of Sicily" and EastMed “Scientific and Institutional Cooperation to Support Responsible Fisheries in the Eastern Mediterranean”. An ad hoc contribution to the activities of the Project MedsudMed has been provided also by the Regione Siciliana (Italy).

Italy's contribution to the achievement of FAO Regional Projects objectives is not exclusively financial, as it includes also partnership based on technical support and provision of human resources. National research Institutions contribute and participate to the development of Projects activities including: surveys at sea, capacity development programmes, data collection, technical discussion, meetings, data sharing and joint analysis, joint stock assessment, staff training and development. In addition National Focal Points, fisheries administration and research institutions actively participated in multilevel consultations toward the identification of ways and means to elaborate possible management options to be adopted in the Mediterranean within the framework of AdriaMed (Adriatic Sea), MedSudMed (South Central Mediterranean).

Overall:

- 5 joint scientific surveys have been jointly carried out in the Adriatic Sea;
- 2 joint stock assessment (Parapnaeus longirostris, Merluccius merluccius) have been produced in the south-central Mediterranean (Straits of Sicily);
- 6 joint stock assessment (Parapnaeus longirostris, Merluccius merluccius, Mullus barbatus, , Solea solea, Engraulis encrasicolus, Sardina pilchardus) have been produced in the Adriatic Sea;
- 4 stock assessment (Mullus barbatus, Saurida undosquamis, Metapenaeus stebbingi, Spicara smaris) have been produced with the support of the EastMed Project.
- Involvement either trainer and/or trainees in 12 theoretical or on-the-job training activities on the collection, storing and processing of fishery related data;
- Involvement in 17 technical meetings in the Adriatic Sea, the Straits of Sicily and the Eastern Mediterranean including working groups on demersal and small pelagic fisheries resources, study groups, seminars and technical meetings.

Technical supported has been provided to Turkey, Egypt, Lebanon, Albania and WBGS for the establishment of a monitoring system for fisheries (socio-economic and catch and effort).

Within the EastMed Project a fisheries independent survey was in conduct in Egypt to explore the possibility of exploiting the venus clam Chamelea gallina.

National Management measures

The management of fisheries in Italy in 2012/2013 has been based on the EU Regulations 2371/2002, (CFP, Common Fishery Policy), and n. 1967/2006 specific for the fisheries in the Mediterranean sea. EU Regulation n° 1380/2013 on the Common Fisheries Policy of dec. 11th 2013 is new new legal framework of the CFP (Common Fisheries Policy). Within this reference framework, specific technical measures have been adopted to ensure exploitation and conservation of living aquatic resources or the protection of marine ecosystems. Among other management measures, temporary closure of trawling activities (i.e. otter bottom trawling) have been implemented in different GSAs. The calendar and duration of fishing closures defined in agreement between national and local administrations. The period of the trawling closure generally varies among regions in order to ensure that the intervention is tailored to the biological characteristics of the main fisheries target species. Adjustment plans of Fishing Effort have been implemented in order to achieve a sustainable balance between fishing activities and state of natural resources, within the framework of the Fisheries Operational Programme and have been defined by fleet segment and geographical sub-area (GSA).

With regard to: ***Recommendation GFCM/35/2011/2 on the exploitation of red coral in the GFCM Competence Area***

According to our best updated knowledge, validated scientific studies providing new information on Italian coral populations at depth less than 50 m are not available. Therefore, derogation of paragraph 4 is not currently applicable at the Italian level.

A national management framework does not exist; the harvesting of red coral is regulated only in Sardegna and Toscana Regions. The management measures enacted in these regions provide for the prohibition of harvesting:

- in Sardegna at depth less than 80 m (decreto n.761 GAB/DecA/42 del 21.05.2012)
- in Toscana, at depth less than 60 m from the 2014 harvesting season (Decreto del presidente della giunta regionale 23 luglio 2012, n. 42/R)

"*Recommendation GFCM/36/2012/2 on mitigation of incidental catches of cetaceans in the GFCM area*" and "*Recommendation GFCM/36/2012/3 on fisheries management measures for conservation of sharks and rays in the GFCM area*"

Within the framework of implementation activities of Regulation (EC) 812/2004, MiPAAF is funding a research and monitoring programme on bycatch of cetaceans and other protected species and species of conservation concern.

Bycatch rates can be summarized as follow:

- bottlenose dolphins (*Tursiops truncatus*): very low bycatch rate;
- loggerhead turtles (*Caretta caretta*): low bycatch rate (higher seasonally);
- elasmobranch species: low to high bycatch rates, depending of species (e.g., "*Low": Alopias vulpinus, Prionace glauca, Pteromylaeus bovinus; "Medium": Mustelus spp., Pteroplatytrygon violacea, Raja spp.; "High-very high seasonally": Squalus acanthias, Myliobatis aquila*).

It is important to notice, that in 95% of bycatch events sea turtles are released at sea alive and in good conditions. Regarding elasmobranch species, the vast majority of animals are released at sea alive. Specimens of Alopias vulpinus, Squalus sp and Mustelus sp are retained by fisherman and marketed.

Since July 2006, nine dead bottlenose dolphins were observed in this fishery. These events produce a 7-year annual average estimate of 31 bottlenose dolphins (CV=0.41; 95% CIs=22-39) for the GSA 17. When considering only the northern Adriatic Sea (where all bycatch events occurred) the 7-year annual average estimate was 30 bottlenose dolphins (CV=0.35; 95% CIs=23-36). These two estimates are not statistically different, although the one for the northern Adriatic has a better CV.

If considered alone, the observed level of bycatch of cetaceans in Italian mid-water pair trawlers does not seem to pose a threat to the Adriatic bottlenose dolphin population.

Research suggestions for consideration by SAC

From a general point of view, the following lines of research are proposed:

- evaluating optimal exploitation strategies and adequate indicators and reference points for multispecies fisheries;
- studying stock-recruitment relationships;
- improving knowledge on population biology and to identify the population units (stock boundaries);
- revising borders of some GSAs on the basis of available information
- mapping spawning grounds and other essential fish habitats
- assessing impact of fishing on communities and ecosystems
- investigating effect of climate change on stock dynamics
- evaluating spatial management measures (no take zones, fishery restricted areas, marine protecte4d areas)

- improving knowledge on the effect of fishery at ecosystem level, performing specific studies on discards and impact on the sea bottoms.
- developing the assessments by bio-economic models

In special areas such as the Strait of Sicily and the Adriatic sea, where straddling and transboundary stocks are shared by fisheries of several countries, it is considered relevant:

- improving knowledge on population biology and the identification of population units, including genetic approaches, to clarify relationships and connectivity among populations;
- supporting a common collection of data on stocks and fisheries, based on both fishery independent and dependent approaches, within the framework of an international program;
- assisting the development of a common geo referred data base reporting both bathymetric, substratum features, biocenoses, and fishing grounds at regional level.

LEBANON/LIBAN

Description of the fisheries

Description of the fishing grounds and GSA

GSA 27. The Lebanese coastline is 220 km long. The continental shelf is narrow, especially in the South. Bottom grounds are mainly rough with intensive rocky patches, good for stationary demersal gear. The fisheries of Lebanon are classified as small-scale, artisanal, and are traditionally based on bottom stationary gear (trammel nets and longlines), purse seine nets, and beach seines. Fishing operations, with the exception of longlines, are mostly carried out at depths of up to 50 meters. Most of the fishing nets (purse seines, gillnets and beach seines) have small mesh sizes (less than 2x2 cm).

Total landings by main targeted species: N/A

Total Landing: Only partial data for North Lebanon (40% of coastline) are available from a private University (University of Balamand). The landings in North Lebanon, from main species, were 4,540 tonnes in 2012 (figures not available for 2013).

Main Targeted Species (2012): Clupeidae, Scomber japonicus, Siganus rivulatus, Diplodus sargus sargus, Crabs, Sphyrnea sphyrnea, Euthynnus alletteratus, Boops boops, Pagrus pagrus, and Liza sp.

Fleet: (according to 2004 Census)

- Number of vessels: 2,662
- LOA (range and average):
  - Range: 2.5-24.8 m
  - Average: 6.92m
- Total KW + GT:
  - KW: 48,341 (for 2,378 vessels)
  - GT: 18,426 ton (data available for only 608 vessels)

Status of stocks of priority species

CIHEAM-PESCA LIBANO Project carried out surveys to determine the status of stocks of priority species in 2013. Abundance, distribution and biological parameters (length distribution, sex ratio of five species were analyzed:

- The European hake, *Merluccius merluccius*
- The Redcoat, *Sargocentron rubrum*
- The Red mullets (*Mullus surmuletus* and *M. barbatus*)
- The giant red shrimp (*Aristaeomorpha foliacea*)

Status of the statistics and information system

- **Catch Assessment:**

North Lebanon: Lebanese Ministry of Agriculture does not carry out country-wide data collection. However, the private Institute of the Environment, University of Balamand (IOE-UOB) has been collecting commercial fisheries data in the Mohafaza (district) of North Lebanon and Akkar on a regular basis since August 2005. This represents approximately 42% of the Lebanese coast. The main goal is to establish long-term monitoring of commercial fish species landings and effort in order to develop appropriate management plans based on scientific data to sustainably benefit from the resource. The data collection is an indirect method where data is collected twice per week, 12 months a year. The data is gathered from the four main fishing harbors in addition to the main fish markets in

the target area while fishing effort is obtained from the records of the Lebanese Army that records boat activity on a daily basis. The variables currently being evaluated are:

- Fishing gear type (Nets, Lines, Pots)
- Fish species landed per gear type: Quantity (Kg)
- Average fish size (# Fish/Kg)
- Prices (LBP/Kg)
- Fishing effort: Total number of fishing boat outings during 24 hours; and number of fishing boats per gear type

Data is then entered into a software application dubbed FLOUCA (Lebanese term for fishing boat and stands for Fish Landing Operational Utility for Catch Assessment) based on the generic software and standard statistical methodology available on the web by the FAO (ARTFIAH). The FLOUCA utility has been patented according to Lebanese Law on 21.01.2013 and is the property of the University of Balamand (Patent number: 5229).

Country-wide survey. Ministry of Agriculture (MOA) through the assistance of FAO EastMed Project (in collaboration with University of Balamand) started a pilot project to collect catch data for the whole Lebanese coast as of the second half of 2013. MOA staff is receiving training and collecting data that should cater for Task 1 requirements. Major difficulties were encountered by data collectors. Data entry is supposed to follow FLOUCA model, but expected to be web-based. The system is expected to be fully operational in 2015.

- **Web-based Fishing Licensing System**: the system could not be operational in 2013 due to technical difficulties (no internet at the outposts).

- **Marine Coastal Information System (MCIS):** CIHEAM Pesca Libano Project developed MCIS which is a multipurpose, interoperable and extensible platform based on a spatial relational database in a modular server/client structure, remotely accessible by multiple users and with different software tools, and with a set of dedicated web-based tools to explore and manage the wide range of fisheries related data collected and organized by the Pesca Libano project. http://pescalibano.cnrs.edu.lb/. Some of the data collected were VMS Trial data, fishing faciliteies data and fish restaurants along the Lebanese coast.

Status of research in progress

- **IOE-UOB. 2013-2014.** ***Pilot survey on fisheries dependent data collection in Lebanon including training (PO 299074) (www.balamand.edu.lb)***.This project provides support to the Lebanese MOA for the implementation of the "National Artisanal Fisheries Dependent Data Collection Program" in Lebanon, including training of the related personnel within the framework of the FAO-EastMed Project "Scientific and Institutional Cooperation to Support Responsible Fisheries in the Eastern Mediterranean". Activities will contribute into the development of regionally consistent fisheries management plans among the Eastern Mediterranean countries through the monitoring of commercial fisheries and the initialization of fishery management capacity in Lebanon.

  The main objective of this initiative is to contribute to the improvement and implementation of a "National Artisanal Fisheries Dependent Data Collection Program" in Lebanon. The Program is based on the initiative launched in 2005 by the IOE-UOB to monitor commercial fish landings on the coast of North Lebanon using the "Fish Landings Operational Utility for Catch Assessment" – FLOUCA. The current work includes several activities where the related personnel will be trained on:

  - Catch/Effort forms for data collectors followed by pilot testing of the "National Artisanal Fisheries Dependent Data Collection Program".

- Evaluating and endorsing the "National Artisanal Fisheries Dependent Data Collection Program" including the reconfiguration of FLOUCA to operate through the web, FLOUCA Web.
- Collection of local fish names in order to include them in the "Fish Identification Guide".
- Collection of local gear names in order to include them in the "Gear Identification Guide".
- Updating the boat/gear census on a regular basis for the ports being monitored by the Program.

- **IOE-UOB. 2012-2013.** ***Historical Catch Reconstruction for fisheries in Lebanon at the*****; (*www.balamand.edu.lb*).**
- **M Bariche, G Kazanjian, E Azzurro (2013)** *A lag of 25 years: evidence from an old capture of Fistularia commersonii Ruppell, 1838 from Lebanon (Mediterranean Sea)* Journal of Applied Ichthyology.
- **E Azzurro, L Pena-Rivas, D Lloris, M Bariche (2013)** *First documented occurrence of Kyphosus incisor in the Mediterranean Sea* Marine Biodiversity Records 6: e98.
- **E Neubert, M Bariche (2013***) On the Monacha species of Lebanon (Gastropoda, Hygromiidae)* ZooKeys 311: 1-18.
- **M Bariche, M Torres, E Azzurro (2013)** *The presence of the invasive Lionfish Pterois miles in the Mediterranean Sea* Mediterranean Marine Science 14: 2. 292-294.
- **E Azzurro, E Broglio, F Maynou, M Bariche (2013)** *Citizen science detects the undetected: the case of Abudefduf saxatilis from the Mediterranean Sea* Management of Biological Invasions 4: 2. 167-170.
- **M Coll, P Cury, E Azzurro, M Bariche, G Bayadas, J Maria Bellido, C Chaboud, J Claudet, A El-Sayed, D Gascuel, L Knittweis, C Pipitone, Y Samuel-Rhoads, S Taleb, S Tudela, A Valls (2013)** *The scientific strategy needed to promote a regional ecosystem-based approach to fisheries in the Mediterranean and Black Seas* Reviews in Fish Biology and Fisheries
- **M Bariche, M Bilecenoglu, E Azzurro (2013)** *Confirmed presence of the Red Sea goatfish Parupeneus forsskali (Fourmanoir & Gueze, 1976) in the Mediterranean Sea* BioInvasions Records 2: 1. 173-175.
- **M Bariche, A Kajajian, A Azzurro (2013***) Reproduction of the invasive bluespotted cornetfish Fistularia commersonii (Teleostei, Fistulariidae) in the Mediterranean Sea* Marine Biology Research 9: 2. 169-180.
- **Gaby Khalaf, Milad Fakhri, Christine Ohanian, Carine Abi-Ghanem and Lea David. 2013.** *Distribution and Relative Abundance of the Tursiops truncatus in Lebanese Marine Waters (Eastern Mediterranean).* David Publishing. 8pp.
- **CIHEAM-PESCA LIBANO Project. 2013**. *Status of stocks of priority species*. Report under preparation.

Status of the social sciences studies in progress or achieved during the intersessional period (economy, relevant legislation, sociology, etc.)

A sample based country wide socio-economic survey was conducted in 2013 in collaboration with FAO EastMed Project. Data are still being analyzed.

Marine environmental studies in progress

- **IOE-UOB. 2010-2014**. People for Ecosystem-based Governance in Assessing Sustainable Development of Ocean and Coast (PEGASO). (www.balamand.edu.lb).
- **IOE-UOB. 2012-2013**. Evaluating coastal risk on the Chekka El Heri beach through the assessment of the physical oceanographic parameters at the MRCZM- (www.balamand.edu.lb); 2011 – 2013:

- **CNRS. 2013**. Marine Surveys to enhance the effective conservation of regionally important coastal and marine biodiversity features, through the creation of an ecologically coherent MPA network in the Mediterranean region.

Involvement in activities of FAO regional projects

- **FAO EastMed Project**: the project is involved in developing:
  - Fishing Licensing System:
  - Catch assessment pilot study: in collaboration with University of Balamand (in progress)
  - Feasibility study for a new fishing vessels design and/or new vessel building materials (in progress).
  - Pilot country-wide socio-economic survey (Year 1 & 2 implemented)

Management measures

- Minister Decision 1154 on 9/12/2013-"General conditions for the protection of cetaceans".
- Minister Decision 1160 on 10/12/2013-"General conditions for the fishing of sharks".
- Minister Decision 1163 on 12/12/2013-"General conditions for the protection of seabirds".

Environment protection measures

Not applicable

With regard to: *Recommendation GFCM/35/2011/2 on the exploitation of red coral in the GFCM* Competence Area

Not applicable

With regard to: *Recommendation GFCM/36/2012/2 on mitigation of incidental catches of cetaceans in the* GFCM area

Not available

With regard to: *Recommendation GFCM/36/2012/3 on fisheries management measures for conservation of sharks and rays in the GFCM area*

Not available

Proposals for future research programmes

- Promote and integrate fisheries research as part of Ecosystem Based Management
- Develop a sustainable national "information system" for artisanal fisheries in collaboration with the different research centers in the Lebanon and the region (East-Mediterranean Basin)
- Assess stocks of commercial fish species in Lebanon
- Identify and assess common stocks in the East-Mediterranean Basin
- Monitor invasive species in Lebanese waters and their population dynamics

MALTA/MALTE

Description of the fisheries

Fisheries in Malta are a relatively small industry where its social significance far outweighs its economic importance. The industry is mainly artisanal and fairly typical of the fisheries found in many Mediterranean countries. There are no inland fisheries in Malta. The average value of catches is around 0.10% of Malta's Gross Domestic Product (GDP), with the industry's direct contribution to GDP estimated at around two-thirds of this figure when the cost of imported inputs, particularly fuel, is considered. According to the Fishing Vessels Register, the commercial fleet capacity of registered vessels in 2013 was 1040 of which 411 (39.5%) vessels and 629 (60.5%) vessels were commercial full-time and part-time vessels respectively.

The total gross tonnage and power of main engine for the full-time and part-time commercial vessels totalled 7785.92 t and 76064.3 kW respectively. The length of full-time and part-time registered vessels ranged between 3.45 to 37.70 m and 3.05 to 18.50 m respectively.

Table 1. Number and type of Maltese fishing vessels by length class, status December 2013

Registration type	Number of vessels by length class				
	VL0006	VL0612	VL1224	VL2440	N° of vessels
Full-time commercial	132	205	63	11	411
Part-time commercial	389	239	1	-	629
Grand Total	521	444	64	11	1 040

Table 2. Gross tonnage by vessel registration type and length class, status December 2013

Registration type	Gross tonnage (GT) by vessel length class				
	VL0006	VL0612	VL1224	VL2440	Total GT
Full-time commercial	139.5	955.0	3 507.7	1939.8	6 542.02
Part-time commercial	400.3	791.5	52.1	-	1 243.9
Grand Total	539.8	1 746.5	3 559.8	1 939.8	7 785.92

Table 3. Power of main engine by vessel registration type and length class status December 2013.

Registration type	Power of main engine (kW) by vessel length class				
	VL0006	VL0612	VL1224	VL2440	Total kW
Full-time commercial	4 037.2	19 615.7	16 411.0	5 531.4	45 595.3
Part-time commercial	10 142.2	20 088.0	238.7	-	30 469.0
Grand Total	14 179.4	39 703.7	16 649.7	5 531.4	76 064.3

Catches recorded in 2013 from logbooks and Catch Assessment Survey (Table 3), were dominated by swordfish (*Xiphias gladius*), dolphin fish (*Coryphaena hippurus*), chub mackerel (*Scomber japonicas*), round sardinella (*Sardinella aurita*), and blue fin tuna (*Thunnus thynnus*) in decreasing order of importance as shown in table below. Catches of dolphinfish occur mainly between the 15 August and 31 December mostly by the Fish Aggregating Device (FAD) fishery. Between the months of April and July the market is dominated by the landings of bluefin tuna and swordfish. Both these species are targeted by the same method that is pelagic drifting long-lines. The major fishing area is GSA15, however the long-line and trawling fleet also operates in the neighbouring GSAs.

Table 4. The ten most important marine capture fisheries in terms of catches (from logbooks and CAS data) for the Maltese fleet in 2013

Scientific name	FAO 3A Code	Weight (t)	% dist.
Xiphias gladius	SWO	459.92	19.5
Coryphaena hippurus	DOL	384.78	16.3
Scomber japonicus	MAS	308.09	13.1
Sardinella aurita	SAA	219.27	9.3
Thunnus thynnus	BFT	155.38	6.6
Lepidopus caudatus	SFS	123.10	5.2
Auxis rochei	BLT	84.79	3.6
Trachurus trachurus	HOM	42.49	1.8
Mullus barbatus	MUT	42.36	1.8
Aristaeomorpha foliacea	ARS	40.09	1.7
Grand Total		2357.36	100

Landings of other species originate from trawling, bottom long-lines and fixed net operations (trammel and gill nets).

Status of stocks of priority species

In 2013 the joint stock assessments for pink shrimp (*Parapenaeus longirostris*) and hake (*Merluccius merluccius*) in GSAs 12-16, was updated by Maltese, Tunisian and Italian scientists, combining data collected throughout the Central Mediterranean. This stock assessment was conducted under the auspices of the MedSudMed project, and finalised at the 2013 GFCM demersal working group workshop. Stock assessments were also carried out by Maltese scientists in collaboration with Italian scientists based at CNR-IAMC in Sicily combining GSAs 15 and 16 for the following species: Striped red mullet (*Mullus surmuletus*) and Norway lobster (*Nephrops norvegicus*). These assessments were done at stock assessment working groups organised by the Subcommittee on Stock Assessment (SCSA). The biological reference points used were $F_{current}/F_{0.1}$.

Table 5. Results of stock assessment conducted in 2012 (reference year = 2010)

GSA	English Name	Scientific Name	Reference year	$F_{current}/F_{0.1}$	Stock Status
12-16	Hake	*M. merluccius*	2010-2012	5.8	Overexploited
12-16	Deep-water pink shrimp	*Parapenaeus longirostris*	2007-2012	1.8	Overexploited
15-16	Striped red mullet	*M.surmuletus*	2002-2012	4.1	Overexploited
15-16	Norway lobster	*Nephrops norvegicus*	2002-2012	0.75	Sustainable

Status of the statistics and information system

Malta collects data on catch and effort for each segment by species, by quarter and by geographical origin. Catch and effort figures are based on data reported in logbooks (for vessels over 10 m LOA) and by sampling the small-scale fishery (for vessels less than 10 m LOA) through an exhaustive sampling survey questionnaire, on sales notes from the official fish market and from direct sales data.

The data collected is in line with the EU Data Collection Framework (DCF) EC 199/2008, EC 949/2008, EC 93/2010.

Data for the eventual analysis of stocks is derived from the Maltese sampling activities in line the EC Data Collection Framework (EC 199/08, EC 949/08, EC 93/2010). In 2013, Malta was obliged to collect biological data by the DCF for the following fishing gears;

- Bottom otter trawlers targeting mixed demersal and deep water species
- Drifting longlines targeting large pelagic fish
- Set longlines for demersal fish
- Trammel nets targeting demersal species
- Pots and traps for demersal species
- Bottom otter trawlers targeting demersal species
- Bottom otter trawlers targeting deep water species
- Purse seines targeting bluefin tuna (sampling at harvest)

Length data is collected for all Group 1, 2 and 3 species as outlined in the EU DCF. Biological parameters were also collected for blue fin tuna, swordfish and dolphin fish since catches generally constitute more than 200 tonnes annually and for some other Group 1, 2 and 3 species when possible. Such data is gathered to be utilised for analyses, such as for stock assessments.

Fisheries-independent data for demersal resources in GSA 15 is collected through the MEDITS (Mediterranean International Bottom Trawl Survey) while MEDIAS (Mediterranean International Acoustic Survey) targets small pelagic fish. These surveys are performed with the aim to study the demographic and spatial distribution of resources in the Mediterranean, with a standardised protocol between different countries.

The fisheries statistics being collected have been submitted to international organisations for stock assessment purposes and scientific analysis. In 2013 Malta submitted data collected within the framework of the DCF to several international bodies / for use by several projects:

- Joint Research Centre (JRC) of the European Commission
- International Commission for the Conservation of Atlantic Tunas (ICCAT) through Task I and Task II forms.
- General Fisheries Commission for the Mediterranean (GFCM) including dolphin fish annual reporting form and Task I statistical matrix.
- FAO regional projects MedSudMed, CopeMed
- EU horizontal framework project MAREA

Malta is at present developing a Fisheries Information System (FIS). The FIS under development will be an integrated system whereby the databases related to the fleet register, catch assessment survey, logbooks, biological sampling, biological surveys and economic surveys will be consolidated. All data submission obligations in connection with GFCM, EC and ICCAT will in the future be handled through the new FIS.

Status of research in progress

Using data collected under the DCF of the EU, the FAO sub-regional project MedSudMed and EU projects, Malta has been focusing on analysing data with particular reference to determining the stock status of commercially important species (see section 2 above).

In addition, research was conducted on the following themes:

- Monitoring and evaluating of spatially managed marine areas (EU FP7 project MESMA) – the framework was finalised and test of the case studies together with all the deliverables were finalised.

- Ecosystem Approach to Fisheries (EAF) management (EU FP7 project CREAM) – information on the management system adopted in Malta together with existing measures and existing / planned EAF measures was collected
- Bridging the GAP between fisheries scientists and fishers - nursery and spawning ground of commercially important demersal species within the Malta FMZ were identified(EU FP7 project GAP)
- STOCKMED – literature review was conducted on Octopus vulgaris, Eledone cirrhosa, Eledone moscata and Galeus melastomus. Furthermore, maps on fishing grounds of the Maltese trawling fleet were compiled.
- LIFE + BAĦAR – Benthic Habitat Research for marine Natura 2000 site designation – project started in October 2013 and its aim is to collect data about the location of 4 habitats (Posidonia beds, sandbanks, reefs and submerged or partially submerged caves) within the 25 nm Malta Fisheries Management Zone under the Habitats Directive in order to protect them by creating NATURA 2000 sites.

Status of the social sciences in progress or achieved during the intersessional period

Socio-economic data is collected on an annual basis to fulfil the requirements of the Data Collection Framework (DCF) in line with Council Regulation EC 199/2008, Commission Decisions 2008/949/EC and 2010/93/EU, and the GFCM Task 1.3.

Fleet socio-economic data is segmented by gear and vessel length according to Appendix III of Commission Decision 2010/93/EU and in the case of the GFCM requirements, as proposed by the 5th session of the Scientific Advisory Committee (SAC). The sampling population is based on the fishing vessel register, as well as on logbook information where data on catch and landings is recorded. The sampling frame for the fleet economic data is based on the Maltese fishing vessel register information as at 30th January of the reference years and the sampling strategy used is that of stratified random sampling. The data is collected by means of questionnaires which are completed during direct interviews with the fishers.

Fish processing activities are limited in Malta however data collection by means of a survey amongst local operators is carried out annually. The frame for the collection of economic data is based on the Maltese business directory and processed fisheries products. The technique of census is planned to be carried out annually due to the small size of the market. Data is collected by means of postal questionnaires or questionnaires completed during direct interviews.

Socio-economic data with regards to aquaculture farms is collected from all the aquaculture farms in Malta. The frame for the collection of economic data is based on the registered aquaculture operations as at 1 January of the particular reference years. Data is collected by means of postal questionnaires or questionnaires completed during direct interviews.

The results of this data collection are sets of variables or indicators as requested by Appendices VI, X and XII of Commission Decision 93/2010 and by task 1.3 in the case of the GFCM fleet economic data requirements. The aim of this data collection is to satisfy the European Commission's and GFCM requests as well as to monitor at a National level the socio-economic performance of the fisheries sector, fish processing industry and the aquaculture sector.

Malta annually submits the report on efforts to achieve a sustainable balance between fishing capacity and fishing opportunities in accordance with Commission Regulation (EC) 1013/2010. Amongst other sections, the report presents a set of technical, biological, economic and social indicators. Malta presented socio-economic indicators related to the years 2008 to 2011.

Marine environmental studies in progress

Recent as well as ongoing studies with relevance to the marine environment surrounding the Maltese Islands include the identification and mapping of the spatial distribution of sediment types and biocenoses in GSA 15, including the spatial distribution of sensitive **habitats such as maerl beds**

Involvement in activites of FAO regional projects

In 2013, Malta participated in two meetings held within the MedSudMed project. These include the 11th Coordination Committee Meeting (23-24 April 2013, Sliema, Malta) and the FAO-MedSudMed and CopeMed II Working Group on Demersal Fishery Resources (Gammarth, Tunisia, 23-27 September 2013).

The aim of the 11th Coordination Committee meeting was to discuss activities planned for the coming period.

Malta also participated in the FAO-MedSudMed and CopeMed II working group on demersal fishery resources. During this working group, the standardisation and joint processing of bottom trawl survey data for mapping the spatial distribution and stock assessment of fisheries resources initiated in 2012 continued. Preliminary distribution maps for *Merluccius merluccius* in the south-central Mediterranean Sea was produced using standardised survey data. An exercise for the appraisal of *M.merluccius* stock using direct methods (i.e. Composite Surplus Production Model) was initiated. The strategy to improve the appraisal of the state of demersal fish stocks and fisheries in the MedSudMed Project area by integrating all existing biological and economic data was discussed and agreed on. Consideration was also given to the issues raised by the GFCM-SAC for 2013-14, specifically referring to the development of fisheries management plan. During the session for the western Mediterranean Sea, the stock assessment of *Parapenaeus longirostris*, *Merluccius merluccius* *Mullus barbatus* and *Mullus surmuletus* was carried out.

Management measures

Malta implemented the management measures in line with EU regulations, and according to the recommendations by ICCAT and GFCM. In 2013 Malta submitted its updated Fisheries Management Plan in line with EC 1967/2006 for bottom otter trawlers, the dolphin fish FAD fishery and 'lampara' to the European Commission. These were adopted and started to be implemented in October 2013.

Environment protection measures

With regard to: *Recommendation GFCM/35/2011/2 on the exploitation of red coral in the GFCM Competence Area*. In Malta red coral is a strictly protected species listed in Schedule VI – Animals and Plant Species of National Interest in need of Strict Protection – of the Legal Notice 311 of 2006 (as amended) – Flora, Fauna and Natural Habitats Protection Regulations, 2006. Thus recommendation *GFCM/35/2011/2* does not apply for Malta.

With regards to: *Recommendation GFCM/36/2012/2 on mitigation of incidental catches of cetaceans in the GFCM area*, the Department of Fisheries and Aquaculture (DFA) conducts onboard observations on drifting long lines and FADs. Catches of cetaceans are being monitored through this source. Efforts are being made to include the collection of this data through electronic logbooks.

With regards to: *Recommendation GFCM/36/2012/3 on fisheries management measures for conservation of sharks and rays in the GFCM area*, data on shark catches are recorded at the fish market and during onboard observations. Efforts are being made to include the collection of this data through electronic logbooks.

Other environment protections measures that can be found present in Malta are described in Annex 1.

Proposals for future research programmes

Currently Malta is focusing on its Data Collection Framework, in view of the changes being proposed at EU level with regards to the Common Fisheries Policy.

Annex 1:

Other environment protections measures that can be found present in Malta

Conservation area around wrecks: (Notice to Mariners no 5 of 2008). This measure consists of a permanent protection plan in areas around wrecks. These areas are considered as 'NO STOPPING AREAS'. Anchoring is allowed to divers' vessels ONLY after pre-notification to the Valletta VTS. Masters of diving support vessels are to ensure that the appropriate signals in accordance with the International Convention for the Prevention of Collisions at Sea and the International Code of Signals, are shown at all times. Furthermore, spear fishing and the use of fishing gear such as set bottom lines, trammel nets, gillnets and entangling nets, encircling nets, demersal pots and traps are prohibited in these areas. Only surface fishing is allowed including trolling lines and angling for pelagic fish

Restricted area between 'Ponta ta' l-Ahrax' and 'Dahlet ix-Xilep: (Notice to Mariners No 2 of 2010) The purpose of this environment protection measure is to protect the Yelkouan Shearwaters (Garnija) seabirds that breed on cliffs. Implementation of this measure is held between 1st February and 30th July every year, applicable 2 hours before sunset till 2 hours after sunrise. During the above mentioned period:

- Lights, other than lights prescribed in the Convention on the International Regulations for Preventing Collisions at Sea, 1972 (COLREGs) have to be switched off and no loud noise, other than sound signals prescribed in the Convention on the International Regulations for preventing Collisions at Sea, 1972 (COLREGs), from vessels is allowed whilst moving along the stretch of coast
- Pleasure cruises operating as "Floating Discos" are obliged to follow the above guideline and switch off all lights and music while passing in the indicated area or otherwise keep clear from the buffer zone to the SPA
- The letting off all lights and music while passing in the indicating area or otherwise keep clear from the buffer zone to the SPA
- The buffer zone to the SPA is a 'no stopping zone' for all vessels other than carrying out fishing activities
- Fishing activities in the area using strong lights (lampara etc) are prohibited in line with Art. 4 of the Fishery Regulations (SL425.01) and Council Regulation (EC) No 1967/2006 concerning management.

Conservation Area off il-Merkanti Shoals: (Notice to Mariners no 67 of 2004). The aim of this environment protection measure is to carry out studies so as to determine fish density and species richness over a long period of time. It is implemented on a permanent basis. Spear fishing and the use of fishing gear such as set bottom lines, trammel nets, encircling gill nets and entangling nets, demersal pots and traps are prohibited in the area. Only surface fishing is allowed

Conservation around the area of Filfla: (Government Notice 173 of 1990 - Berthing Regulation 1975) The prohibited zone is within a circle radius 1.1 nautical miles around Filfla with the aim to conserve the area within the enclosed area. Unless specifically authorised by him, no vessel or boat or any other craft may be berthed, moored or anchored and no person may swim or carry out any kind of acitivty connected with underwater diving or sea sport within one nautical mile radius off the island of Filfla.

North East of Malta, South East of Malta: The main scope of this measure is to protect seagrass beds in particular *Posidonia oceanic* or other marine phanerogams, coralligenous habitats and maerl beds (as per Article 4 of EC 1967/2006). Fishing with trawl nets, dredges, purse seines, boat seines or similar nets is prohibited. The use of towed dredges and trawl nets at depths beyond 1 000 m shall be prohibited. Trawling zones were removed from the area concerned by the Department of Fisheries and Aquaculture. Moreover, trawlers are constantly being monitored by the VMS section to check if they are trawling in the legal sites.

Other Fishing Restricted Area – The use of boat seines in all bays and creeks is prohibited. The limit of the area within which the use of the seine net shall be lawful will be outwards of a line drawn between two stone pillars placed on opposite sides of such bays and creeks. Trammel and gill nets are not allowed to be used from the 15th February to the 15th July in those localities where the use of the seine net is prohibited. In the Grand harbour and Marsamxett harbour, the use of these implements is prohibited at all times within the prohibited areas above mentioned.

MONTENEGRO/MONTÉNÉGRO

Description of the fisheries

Montenegro is part of GSA 18 that shares with Albania on the east coast and with Italy on the west coast. In front of Montenegro is south Adriatic basin with the greatest depth of 1 228m. The area of territorial water is 2 460 km² and continental shelf 3 885 km². The greatest part of Adriatic shelf is covered with muddy and sandy sediments. Sandy sediments are formed on the coastal area and in the shallow parts of Adriatic shelf, where on greater depths can be found muddy sediment, i.e. mud that derives from the land.

Activities of data collection on landings of main species have begun in recent years.

According to MONSTAT – Statistical Office of Montenegro, in 2012 total landing of pelagic fish was 245 tonnes, demersal fish 298 tonnes, cephalopods 55 tonnes and crustaceans 25 tonnes (Statistical Yearbook 2013).

Table 1. Fleet

LOA	Number	KW	GT
Minor gear without engine < 6 m	5		5.14
Minor gear with engine < 6	50	324,3	62,17
Minor gear with engine 6-12 m	26	1 659,1	89,22
Trawl 6-12 m	4	607	43,86
Trawl 12-24 m	13	2 707,2	342,81
Trawl > 24 m	3	1 510	462,4
Purse seiners 6-12 m	13	472,31	34,95
Purse seiners 12-24 m	3	750,24	98

Note:

Montenegro is in the middle of fulfilment of census. According to scientific research in Montenegro can be issued following permissions to complete the census:

- 4 fishing vessels up to 24m LOA, using fishing gear bottom trawl;
- 15 fishing vessels longer than 12m LOA, using purse seine nets, and
- 87 fishing vessels up to 10m LOA, using a variety of fishing gears in the small coastal fishing.

Status of stocks of priority species

The continuation of the international bottom trawl survey in the Adriatic in the framework of the MEDITS (MEDIterranean Trawl Survey) programme was carried out in July 2013, with 10 hauls at positions on the continental shelf and slope, covering a range of depths from 10 to 800 m, with a random stratified sampling design covering five bathymetric strata (10-50 m, 50-100 m, 100-200 m, 200-500 m and 500-800 m) and a total area of about 5 000 km2. According to the current MEDITS protocol, the sampling period is defined from half an hour after sunrise to half an hour before sunset. After each haul, the trawl contents were sorted according to the major groups (fish, crustaceans, cephalopods), the species identified, weighted and counted. Length frequency distribution and gonad maturity stages for target species were determined on a subsample of the catch.

The computer software ATrIs (Adriamed Trawl Survey Information System), provided by the FAO AdriaMed project, was used for data input and processing.

Monitoring of small-scale fisheries was carried out in 2013 within the framework of the "Monitoring of small-scale coastal fisheries and composition of fish fry with the aim of conservation and management of marine fishery resources" (MORMONT), supported by the Ministry of Science of Montenegro. Monthly samples of target species from commercial landings were collected alternatively in three fishing ports (Herceg Novi, Budva, Bar). For each target species in the sample individual total length (TL), body weight (BW), gonad weight (WG), and gonad maturity stage (according to the MEDITS protocol) were collected. The results of the first year of the project were presented to the Ministry of Science in the form of a report, which was evaluated by two independent international experts who recommended the continuation of the project.

Representative of the Institute of marine biology of the University of Montenegro participated in the "First Regional Symposium on Sustainable Small-Scale Fisheries in the Mediterranean and the Black Sea", held in St. Julian's (Malta), 27-30 November 2013, where the situation regarding the small-scale fisheries in Montenegro was presented through a joint presentation, a result of a collaboration between scientific institutions in Adriatic countries (Albania, Croatia, Italy, Montenegro, Slovenia) and FAO AdriaMed regional project.

Joint assessment was continued for European hake (*Merluccius merluccius*) and deep-water pink shrimp (*Parapenaeus longirostris*) stocks in the geographic sub-region (GSA) 18, which encompasses southern Adriatic, and is exploited by Italian, Albanian and Montenegrin fleets. Obtained results were very similar to those of previous reports, with Montenegrin trawl fleet contribution to the fishing mortality of European hake being estimated to approximately 1% (74% Italian trawlers, 17% Italian longliners, 8% Albanian trawlers) and 2% for deep-water pink shrimp (60% Italian trawlers, 38% Albanian trawlers). Both stocks were estimated to be in high overfishing status. Results of stock assessment were presented at GFCM WGD and GFCM SAC SCSA, Bar, Montenegro, 28.01.–04.02.2014.

Biomass estimation of small pelagic species by DEPM and acoustic method

An estimate of sardine and anchovy biomass in Montenegrin waters was performed for the first time in 2002 by acoustic method, and it was continued in 2004. From August 2005, anchovy biomass was estimated by two methods simultaneously: DEPM and the acoustic method. The second cruse that involves application of both methods was performed in July 2008 when survey covered entire Montenegrin and Albanian continental shelf, while in 2010, 2011, 2012 and 2013 survey was expanded to entire GSA 18. Those surveys have been done in collaboration with researchers from Italy and Albania in the frame of FAO AdriaMed and EU-MEDIAS projects. During the meetings that were held in the frame of AdriaMed project (AdriaMed DEPM Study Group) throughout 2012 and 2013 with the involvement of several international experts from this area, several changes in traditional DEP methodology were made in order to standardize sampling procedure and methodology that will be used in Adriatic Sea and following the indication of the GFCM SCSA Working Group of Small Pelagic Species. Preliminary result of 2012 anchovy SSB in SE Adriatic Sea were presented during the GFCM Working Group on Small Pelagic (GFCM WGSP) Bar, Montenegro, 28.01.-01.02.2014. Revision of all data from previous surveys is planned, based on the improved DEP methodology.

Status of the statistics and information system

The legislative framework covering fisheries information system includes:

- a law on Marine Fishery and Aquaculture;
- a secondary legislation.

The fisheries Information System in Montenegro (FIS), at this moment FIS is not fully operated, because the programming of some sub-systems is ongoing.

FIS have several sub-systems:

- Vessel register;
- Logbook & landings declaration;
- Monthly report for vessels under 10m LOA;
- Licenses management sub-system;
- Common alarm system;
- VMS – Vessel Monitoring System – Vessels over 10m LOA;
- In the programming faze are:
- Fisherman register;
- Electronic logbook;
- Sales notes
- Bilogical and sampling data
- GFCM Task 1 report – on click make report from FIS.

Status of research in progress

Activities within the AdriaMed project framework continued. The pilot study on biological sampling data on Montenegrin coast has been continued through 2013. Samples of eighteen economically important species were taken from vessels in three fishing ports Bar, Budva, Herceg Novi by monthly dynamics. The results of the pilot study have been processed and are ready to be presented and published. In the frame of Project MEDIAS (supported by FAO AdriaMed Project) biomass estimation of small pelagic species in GSA 18 using DEPM and Acoustic method will be continued in 2014. In the frame of Project MEDITS (supported by FAO AdriaMed Project) biomass estimation of demersal resorces will be continued in 2014.

In December 2013 Montenegro joined MAREA SEDAF Project - Improved knowledge of the main socio-economic aspects related to the most important fisheries in the Adriatic Sea. First kick of meeting was held in Bar, Montenegro, 6 and 7 February 2014, where further activities and general methodology on data collection were agreed among project participants.

In 2012 Montenegro joined HERD SEAMED Strengthening education, applied research and marine development in West-Balkan project that will last until the end of 2014. Montenegro is involved in WP related to fish processing.

Since 2012, a project called “Monitoring of coastal fisheries and fish fry composition along the Montenegrin coast, with the aim of conservation and sustainable management of marine fisheries (MORM-MONT)“ begun, under the support of the Ministry of Science. The project will continue in nex two years.

Status of the social sciences studies in progress or achieved during the intersessional period (economy, relevant legislation, sociology, etc.)

Description of the achievement and/or progress in activities related to the national research on the socio-economic aspects of the fishing communities and fishing sector.

Through the project IPA 2009 “Sustainable management of marine fisheries” was made socio - economic study. The aim of this study was to present a socio-economic analysis of the Montenegrin fishery sector covering all sub-sectors (capture fisheries, mariculture, aquaculture, sports fisheries, processing, marketing and distribution, and ancillary sectors).

Since then, there has been no further activity in this area.

Marine environmental studies in progress

The management plans for marine ecosystems is conducted as a pilot project in two main phases during 18 months program (July 2009 – December 2010). The first phase of the management plan was referred to characterization of the study area (environmental and socio-economic assessment) and identification of the main strategies for biodiversity conservation. The second phase was preparation of the management plan and implementation of the strategies identified in Phase 1.

The pilot area comprises the city of Petrovac which belongs to the Budva Municipality.

Proposed "KATIĆ"MPA zones in the Montenegro

Zone regulations have been proposed, according to four levels of control by MPA management, and as a result three proposed protection zones were delineated:

- Zone A – red zones (strict biodiversity protection) - 80 ha (3.46%)
- Zone B – green zone (active biodiversity protection) - 900 ha (38.88%)
- Zone C – blue zone (general environmental protection) - 1335 ha (57.66%)
- Buffer – 140 ha

Establishment of the MPA zones, along with protected land areas are of great importance for the diversity of plants, animals, and natural habitats represent an effective tool for providing permanent protection and wise use of natural resources.

By 2015, "Katić" MPA will be set up and it will be considered as an operational model for the development of a national system of MPAs in Montenegro

Also, scientists from the Institute are involved in process of development of new documents related to coastal area of Montenegro:

- Coastal Area Management Programme (CAMP) – ongoing
- Special Plan for the Coastal Area of Montenegro (PPPOP) – ongoing

Management measures

In 2013, 15-16 March was held first explanatory screening, and on 05-06 June first bilateral screening between Montenegro and EC for Chapter 13- Fisheries. In November 2013 Montenegro received Screening Report from EC, with general comments on Montenegrin Fisheries sector and overview of compliance of national fishery legislation with EU CFP.

Description of the management measures (legislation, regulations, etc) implemented during the inter seasonal period and their (expected) effects on the fishery.

Law on Marine Fisheries and Mariculture which was adopted by Parlament in August 2009 regulates the management and protection of renewable biological resources, methods and conditions of fisheries and aquaculture, monitoring of fishing and farming through the data collection and vessel monitoring system, the system of supervision and inspection, as well as other issues relevant to marine fisheries.

The law sets the framework for the adoption of management plans for biological resources of the sea, and the plans for data collection and annual reports on the state of fisheries, which are important mechanisms that Montenegro has to adopt and implement in the framework of the Common Fisheries Policy.

Based on authority laid down by the existing Law on Marine Fishery and Mariculture the following bylaws have been adopted in 2013:

- Rulebook on determining the line where the water ceases to be steady salty in rivers flowing into the sea and defining the boundaries of fishing protected areas ('Official Gazette MNE' no 39/13)

- Rulebook on form of the permit, method of payment of fees, form, content and method of keeping the register of permits for mariculture ('Official Gazette MNE' no 39/13)
- Rulebook on the type of satellite monitoring system of fishing vessels and type of fishing vessels for which the system is established ('Official Gazette MNE' no 39/13)
- The document "National program of Fisheries Development (NFP) from 2009 to 2013" was adopted by the Government of Montenegro in February 2009. This document contains middle term and short term aims of fishery development, type of measures and programs, expected results and sum and sources for financial fund necessary for implementation of identified measures of fishery policy.
- Montenegro has implemented Vessel monitoring system on vessels over 10 m LOA. Our plan is to implement electronic log books also on vessels over 10 m LOA in the next period.

Regarding the GFCM Recommendations GFCM/35/2011/2, the red coral is not exploited in Montenegro in any form; it is protected by the "Resolution on protection on certain plant and animal species" (Official Gazette of Montenegro 76/06).

The representative of Montenegro, which participated in the Workshop on the Regional Management Plan on Red Coral in the Mediterranean, Brussels 21-23 January 2014, expressed concerns about the source of data used to report catches of red coral in Montenegro in the same document and suggested to use information provided by official sources.

On the GFCM Recommendation GFCM/36/2012/2 (incidental catches of cetaceans), no incidental catches of cetaceans have been reported in Montenegrin waters. However, the current "Resolution on protection on certain plant and animal species" (Official Gazette of Montenegro 76/06) of the Environmental Protection Act (O.G, 51/2008) explicitly states that "it is forbidden to remove from their habitat, damage or destroy, hunt, disturb, catch or kill any of the plant and animal species listed under Article 1 of this Decision, as well as their developmental stages, lairs and nests; their habitats are not to be damaged or destroyed". The cetacean species listed under the mentioned Article 1 of the Decision are: *Delphinus delphis*, *Stenella coeruleoalba*, S*tenella frontalis, Tursiops truncates, Grampus griseus* and *Balaena physalis*.

The GFCM Recommendation GFCM/36/2012/3, regarding the fisheries management measures for conservation of sharks and rays is currently being considered for integration of the legal acts in Montenegro.

Also, a representative of the Ministry of Agriculture and Rural Development participated in the CoC meeting, Roma, 28-29 January 2014, at which was agreed that Montenegro in further period will endeavor to incorporate recommendations of GFCM in domestic legislation.

Research suggestions for consideration by SAC

None

MOROCCO/MAROC

Introduction

La pêche en Méditerranée revêt une grande importance économique et sociale au Maroc. La production halieutique en Méditerranée s'élève à une moyenne d'environ 3% de la production totale nationale en poids, avec une valeur économique moyenne de 9% de la valeur totale des débarquements au titre de l'année 2012.

Les ressources halieutiques font l'objet d'un suivi scientifique régulier par l'Institut National de Recherche Halieutique (INRH), à travers des campagnes de prospection en mer et un système de suivi des débarquements à terre et d'échantillonnage biologique. Ces activités de suivi scientifique en Méditerranée sont majoritairement assurées par les centres régionaux de l'INRH basés à Tanger et à Nador, visant notamment à étudier la biologie et l'écologie des espèces marines, à comprendre et modéliser les interactions des espèces exploitées avec leur environnement, à étudier la dynamique des stocks, à évaluer leur niveau d'exploitation, à étudier l'impact de la pêche sur l'environnement et l'écosystème marin et à effectuer des études socio-économiques relatives au secteur halieutique.

Description des pêcheries

La pêche en Méditerranée marocaine a réalisé en 2012 une production d'environ 35 937 tonnes d'une valeur de 459 millions de dirhams. Elle peut être classée en trois types de pêcheries:

- Pêcherie des petits pélagiques: Les principales espèces des petits pélagiques ciblées par cette pêcherie sont: la sardine commune, le chinchard d'Europe, le maquereau et l'anchois.
- Pêcherie des grands pélagiques: Cette pêcherie cible principalement le thon rouge, l'espadon et les thonidés mineurs (Listao, bonite, melva, etc.).
- Pêcherie démersale: Les principales espèces ciblées par cette pêcherie sont le merlu commun, le grondin, la sole, le pageot acarne, le poulpe, la dorade, le rouget de vase, la crevette rose, la bogue, la seiche, le pageot commun et le merlan bleu

La production par groupe d'espèces (y compris le port de Tanger) est présentée ci-dessous sur la base des statistiques des pêches de 2012 établies par l'Office National des Pêches (ONP, 2012) :

Tableau 1 : Production par groupe d'espèces en 2012

Espèces	Poids (Tonnes)	Valeur (KDhs)
Céphalopodes	3 586	109 261
Coquillage	364	1 367
Crustacés	883	44 654
Poissons Pélagiques	24 539	170 025
Poissons Démersaux	6 564	133 618
Total	**35 936**	**458 925**

La flotte marocaine active en Méditerranée se distribue entre 7 ports de pêche et environ 86 sites de débarquement de la pêche artisanale. Cette flotte est composite. En 2012, elle est constituée de :

Tableau 2: Flotte marocaine opérationnelle en Méditerranée au titre de l'année 2012

Flotte	Nombre	TGB total	PM total	LHT moy.	Engins utilisés	Pêcheries cibles
Senneurs	135	6 719	43 615	19	Senne tournante coulissante	Pêcherie des petits pélagiques
Palangriers	168	3 386	27 745	13	palangre, filet fixe, ligne, nasses, etc.	Pêcheries grands pélagiques et démersale
Chalutiers	126	7 084	47 472	20	Chalut de fond	Pêcherie démersale
Barques	3 008	6 016	45 120	6	Ligne, nasses, filet fixe, etc	Pêcheries démersale et grands pélagiques

État des stocks des espèces prioritaires

Les espèces évaluées pendant la période d'intersession sont le merlu commun (*Merluccius merluccius*), la crevette rose du large (*Parapenaeus longirostris*) et la sardine commune (*Sardina pilchardus).* La zone géographique couverte est la GSA 03. Les résultats de ces évaluations ont été présentés aux groupes de travail de la CGPM. Quatre modèles ont été utilisés pour l'évaluation de ces stocks: la VPA et le Rendement par Recrue en utilisant le logiciel VIT, la LCA et le Rendement par recrue via le modèle de Pedro De Baros (sur feuilles Excel), le Rendement par Recrue utilisant la feuille Excel de Hajo et le Modèle de Production de Schaefer sur feuille Excel amélioré par Pedro De Baros. Les séries de données utilisées pour les évaluations sont les compositions annuelles en tailles de la pêche commerciale ou des campagnes scientifiques en mer, les paramètres de croissance, les paramètres de la relation taille-poids, les valeurs de l'ogive de la maturité sexuelle, la mortalité naturelle fixe ou en vecteurs par classe d'âge, les captures totales annuelles, les CPUE de la pêche commerciale et les indices d'abondance des campagnes scientifiques en mer.

Pour le merlu commun, les résultats de tous les modèles analytiques utilisés ont donné une situation de surexploitation et de surpêche avec des valeurs différentes pour les points de référence. Pour des mesures de précaution, il a été suggéré de ne pas augmenter la mortalité par pêche exercée sur cette espèce.

Pour la crevette rose du large, l'évaluation a montré que la mortalité par pêche F est faible et que l'abondance actuelle est importante indiquant une tendance à l'amélioration du stock. La tendance croissante des indices d'abondance des campagnes scientifiques, des captures et des CPUE de la pêche commerciale durant les 3 dernières années confirment ces résultats. Cependant, pour des mesures de précaution, il a été recommandé de ne pas augmenter la mortalité par pêche exercée sur cette espèce et d'utiliser le software SURBA pour réaliser des évaluations se basant sur les données des campagnes scientifiques en mer.

Pour la sardine commune, le rendement par recrue pour 2012 montre que le stock est pleinement exploité. Le taux d'exploitation moyen "E" est de 0,56 qui est supérieur à 0,4 (valeur prise comme un point de référence biologique pour les petits pélagiques (Patterson, 1992).

Statistiques et système d'information

Le système statistique marocain est un système qui gère la collecte de données sur les pêcheries à travers trois établissements : l'Office national des pêches (ONP), le Département des Pêches Maritimes (DPM) et l'Institut National de Recherche Halieutique (INRH).

Ce système permet de préparer les informations nécessaires pour le système d'information de la CGPM. Les données transmises à la CGPM sont gérées de la manière suivante :

Base de données Registre de Flottille : elle regroupe les informations sur les caractéristiques de la flottille opérationnelle au Maroc et ayant payé la licence de pêche. Ces données sont fournies par le système d'information du DPM.

Base de données des bateaux autorisés pour la pêche et ayant une taille supérieure à 15 m : les informations demandées par la CGPM sont préparées et fournies par le DPM.

Base de données « Task 1 » : cette base de données synthétise les informations liées aux débarquements de la flottille opérationnelle, les débarquements par espèce, les données socioéconomiques par métier de pêche, les données de l'effort de pêche et les données biologiques. Ces données sont fournies par l'INRH à l'aide d'un logiciel informatique qui permet de regrouper et exploiter les données des débarquements fournies par l'ONP, les données de registre des flottilles et les données biologiques des principales espèces ciblées relevant du système statistique de l'INRH.

L'ensemble de ces données est envoyé par le point focal marocain au Secrétariat de la CGPM dans les délais fixés par la CGPM.

État des programmes de recherche en cours

Les études de recherche en cours relatives à la Méditerranée marocaine (GSA 03) sont réalisées par les deux centres régionaux de l'INRH basés à Nador (Est) et à Tanger (Ouest) et concernent :

- Les évaluations des stocks des principales espèces.
- Les études des cycles de vie des espèces à haute valeur commerciale (*Octopus vulgaris, Parapenaeus longirostris, Merluccius merluccius, Mullus Spp, Sardina pilchardus* et autres).
- Les études de l'interaction entre l'activité de pêche et son environnement.
- Les études socio-économiques des principales activités de pêche.
- Des recherches sont entamées sur la révision des tailles marchandes des principales espèces exploitées.
- Études sur l'inventaire des espèces des Elasmobranches peuplant la méditerranée marocaine.
- Étude des interactions entre les Cétacés et la pêche au niveau de la GSA03.
- 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.
- Ces études ont comme objectif principal de préparer des éléments scientifiques d'appui à la mise en place de plans d'aménagement pour les principales espèces.

Études sociales et économiques

Les principaux travaux scientifiques sur les aspects socioéconomiques réalisés pendant la phase d'intersession et qui sont en cours de réalisation, sont :

- Modélisation bioéconomique sur la pêcherie sardinière.
- Analyse socioéconomique du secteur de la pêcherie artisanale.
- Étude sur la rentabilité économique de la pêche côtière.

Études en cours sur l'environnement marin

Dans le domaine de l'environnement marin, les études réalisées par l'INRH concernent le suivi de l'état de la salubrité du milieu marin (études chimiques, accumulation des biotoxines dans les bivalves, études microbiologiques).

D'autres études ont concerné l'effet des facteurs environnementaux (principalement la salinité et la température) sur la biologie et le cycle de vie des espèces pélagiques et des espèces demersales à durée de vie courte (crevette rose du large).

Mesures d'aménagement des pêcheries

Dans le cadre de la stratégie (HALIEUTIS) du Département de la Pêche Maritime, qui s'articule autour de trois axes: durabilité, performance et compétitivité, plusieurs mesures de gestion et d'aménagement des pêcheries en Méditerranée sont adoptées, entre autres :

- Limitation de la taille des espèces pêchées dans les eaux marocaines;
- Limitation de l'effort de pêche : les investissements en matière de nouvelle construction navale ont été suspendus depuis 1992 (gel d'investissement) ;
- Contrôle strict des activités de pêche de long de la chaîne de valeur et l'application d'une procédure de certification et traçabilité des captures depuis janvier 2010 ;
- Mise en place depuis octobre 2011 de système de suivi et de transmission de données par satellite (VMS) à bord des navires ayant un tonnage supérieur à 2 unités de jauge brute. (Décret n°2-09-674 du 17 mars 2010) ;
- Plan d'aménagement de la pêcherie crevettière (depuis 2012);
- Plan de gestion du thon rouge selon les recommandations ICCAT;
- Plan d'aménagement de l'espadon (Arrêté n°1666-12 du 17 avril 2012, et l'Arrêté n°1176-13 du 08 avril 2013) ;
- Plan d'aménagement des espèces littorales (algues (Arrêté n°955-10 du 15 mai 2006), corail rouge, coquillages, etc)
- Plan d'aménagement du poulpe depuis juillet 2011;
- Projet de plan d'aménagement de la pêcherie des petits pélagiques prévus en 2014;
- Publication de la loi 19-07 interdisant les filets maillants dérivants et son texte d'application;
- Plan de conservation des requins.

D'autres instruments qui s'inscrivent dans cette stratégie ont été crés/ en cours de création à savoir:

- L'Agence nationale pour le développement de l'aquaculture (ANDA);
- Le Fonds pour l'ajustement et la modernisation de la pêche qui sera consacré à la restructuration de la flotte de pêche au Maroc;
- un Centre de valorisation des produits de la mer;
- le Comité national de la pêche; et
- un Observatoire de l'emploi du secteur halieutique.

Recommandation CGPM/35/2011/2 sur l'exploitation du corail rouge dans la zone de compétence de la CGPM

Actuellement, la pêche du corail rouge en Méditerranée est interdite jusqu'au 2016. Cependant, elle est ouverte en zone atlantique Méditerranéenne (entre cap Spartel et Larache) au niveau des isobathes situés entre 40 et 80 mètres et réglementée par l'Arrêté du 6 juillet 2011qui fixe les quotas à pêcher, le nombre des navires et plongeurs autorisés. Ce texte est encours d'amendement en y intégrant les nouvelles mesures de gestion prévues par la CGPM.

Recommendation CGPM/36/2012/2 sur la réduction des captures accidentelles de cétacés dans la zone de compétence de la CGPM

Cinq à huit familles de dauphins et de baleines ont été recensées à travers les échouages de cétacés enregistrés par l'Institut National de Recherche Halieutique en Méditerranée marocaine. Les espèces de cétacés fréquemment échouées entre 2004 et 2012 sont : le cachalot (*Physeter catodon*), le rorqual commun (*Balaenoptera physalus*), le petit rorqual (*Balaenoptera acutorostrata*), le globicéphale noir (*Globicephala melaena*), le dauphin bleu et blanc (*Stenella coeruleoalba*), le dauphin commun (*Delphinus delphis*), le grand Dauphin (*Tursiops truncatus*), l'orque ou épaulard (*Orcinus orca*), le faux orque (*Pseudorca crassidens*), la baleine de cuvier (*Ziphius cavirostris*), la baleine à bosses (*Megaptera novaeangliae*). Les cétacés constituent 72% des espèces échouées alors que les tortues marines et les poissons représentent respectivement 15 et 13 % des échouages. Le dauphin bleu et blanc (*Stenella coeruleoalba*) est l'espèce la plus fréquemment échouée avec un pourcentage de 20% de l'ensemble des espèces échouées.

Les causes des échouages sont multiples : Présence de traces d'engins de pêche non identifiés sur le corps des cétacés ; collision avec des navires en transit par la Méditerranée ; mort naturelle ; infection par le morbillivirus. La cause de la mort de certains individus échoués reste inconnue vu leur état de dégradation très avancée.

Recommandation CGPM/36/2012/3 concernant des mesures de gestion des pêches pour la conservation des requins et des raies dans la zone de compétence de la CGPM

Le Maroc assure un suivi régulier des captures et des prises accessoires des stocks d'élasmobranches par espèce depuis 2010. Le tableau ci-dessous montre l'évolution des prises en tonnes de ces espèces :

Tableau 3 : Débarquements en tonnes des requins entre 2010 et 2012

Espèce de requins	2010	2011	2012
Grand Requin Blanc	-	-	-
Grand Requin Marteau	-	-	-
Requin Griset	-	-	-
Requin Hâ	-	6	2
Requin Marteau Commun	-	-	-
Requin Marteau Halicorne	-	-	-
Requin Perlon	-	-	-
Requin Sombre	-	-	-
Squalide Et Requin	87	61	177
Taupe Bleue	-	-	-
Taupe Commune	-	-	-
Total	**87**	**67**	**179**

D'autres mesures de gestion sont appliquées à savoir l'interdiction de pêche de trois espèces de requins (requin marteau (famille des *spyrnidae* exception faite pour l'espèce dite *sphyrna tiburo*), requin océanique (*carcharhinus longimanus*) et requin renard à gros yeux (*alopias superciliosus*)) par l'adoption de l'arrêté du 9 avril 2012. De même, un projet de plan de gestion des espèces de requins de fond et de surface est en cours d'adoption visant la conservation et la préservation de ces espèces très vulnérables.

Propositions de programmes de recherche futurs

Les programmes de recherche proposés pour l'avenir sont :

- L'identification et la cartographie des zones de ponte et de nourriceries des principales espèces exploitées.

- L'identification de toutes les espèces des Elasmobranches peuplant la GSA 03.
- L'étude de l'effet des changements climatiques sur l'écosystème marin et sur la biodiversité dans le GSA 03.
- L'étude de l'effet des facteurs environnementaux sur les cycles biologiques de toutes les espèces au niveau de la GSA 03.

L'adoption de modèles intégrant l'effet des changements globaux et des facteurs environnementaux pour l'évaluation de l'état des stocks exploitées.

ROMANIA/ROUMANIE

Description of the fisheries

Description of the fishing grounds and GSA

The Romanian fishing fleet is operating in the area of competence of the Regional Fisheries Management Organisations – GFCM, Area 37 – Mediterranean and Black Sea, Sub-area 37.4., Division 37.4.2, GSA 29.

Taken into account the evolution of the marine fisheries in the last 23 years, the structure of the vessels in the fleet in the last 4-5 years (with small size - more than 90% and low technological investment per fishers), generally using traditional fishing techniques, for subsistence or local, small markets, limited infrastructure for landing and keeping of catches, research, management, and monitoring, we can considered as being small-scale/artisanal fisheries.

The Romanian fishing area is comprised between Sulina and Vama-Veche; coastline extends for over 240km, which can be divided into two main geographical and geomorphologic sectors:

- 1/ the northern sector (about 158km in length) lies between the secondary delta of the Chilia branch and Constantza, constituted of alluvial sediments;
- 2/ the southern sector (about 85km in length) lies between Constantza and Vama- Veche characterised by promontories with active, high cliffs, separated by large zones with accumulative beaches often protecting littoral lakes.

The distance from the sea shore to the shelf limits (200m depth) varies from 100 to 200km in the northern sector and to 50 km in the southern one. The submarine slope of the shelf is very gentle in the north, while in the southern sector the slope increase very quickly (Fig 1;2).

The shallow waters up to 20m depth of the northern part are included in the Biosphere Reserve of Danube Delta (declared through the Low no. 82/1993).

The marine zone buffer zone of the "Danube Delta" - Biosphere Reserve constitutes a traditional zone for spawning and feeding for transboundary species as well as a passage route for anadromous species (sturgeons, Danube shad).

In the South part of littoral is located also the Vama Veche - 2 Mai reserve with the surface of 5,000 hectares (Fig.3).

The marine Reserve “2 Mai - Vama Veche” is an area with a high diversity of the biotopes and biocoenosis, being settled on the migration routes of the main pelagic and benthic fish and marine mammals.

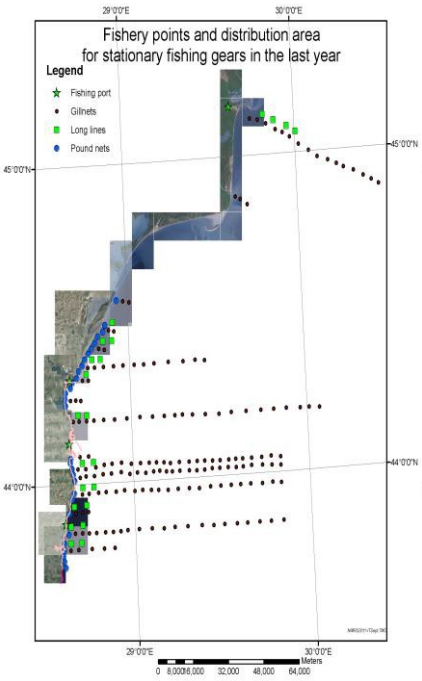

Fig.1

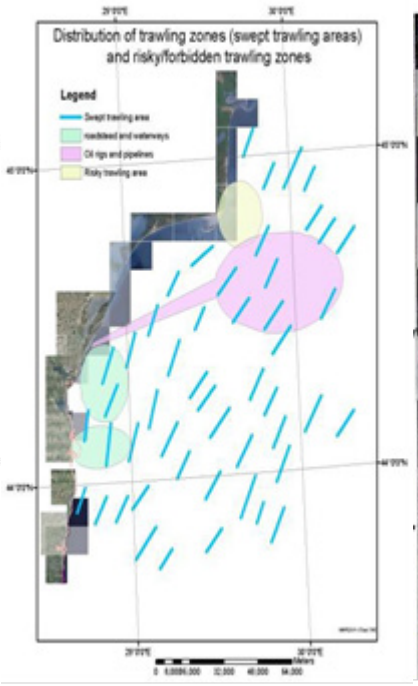

Fig.2

Fig.3

Total landings by main targeted species

In the coastal zone of the Romanian marine sector with small depth, fishing with fixed gear is characterized by the concentration of activity mainly in the first three- four months of the season (April-July), when usually the turbot migrates to the coastal area for reproduction and other species migrate for feeding. In generally, total fishing season being of about eight months. The capture level and the level of fishing productivity differs from one year to another, depending on the fishing effort (number of pound nets, number of turbot nets and effective fishing days), and also depends on the evolution of hydro climatic conditions and at last but not least, the state of fish stocks.

The structure on species in the catches mirrored only partly the composition of Black Sea ichtyofauna from the Romanian sector, because the type of gear conditions the ratio between the different fish species. As a general rule, the pelagic species, small-sized and short life cycle keep continue to be dominant in catches.

Qualitative and quantitative structure of catches

During 2000-2012 periods, the level of total catch declining from 2476 tonnes to 443.9 tonnes (2008), 330 tonnes (2009), 258 tonnes (2010), 568 tonnes (2011) and 835 (2012), official registered. In 2011 and 2012 the total catches increased compared to the previous period due to the rapana catches. The main species in the 2012 catches have been: rapana (588 tonnes); sprat (90 tonnes); turbot (43 tonnes); anchovy (19 tonnes); horse mackerel and gobies about 20 tonnes (Fig. 4).

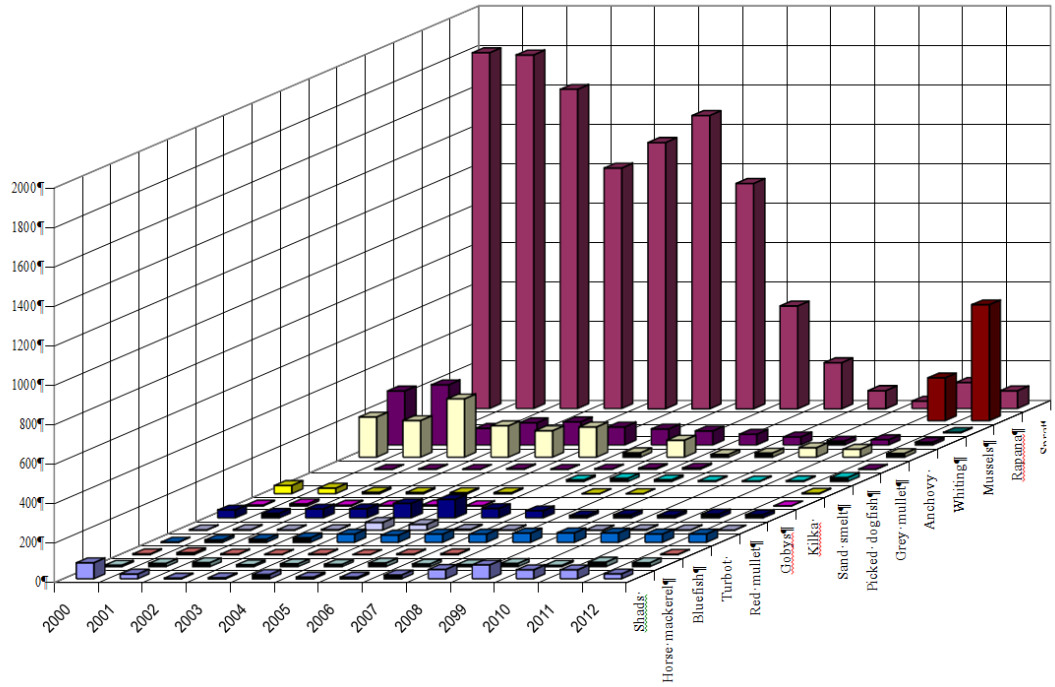

Fig. 4 Total catches and structure on species at the Romanian littoral in the period 2000-2012

The main catches are obtained with trawls, pound nets and gill (Fig. 5)

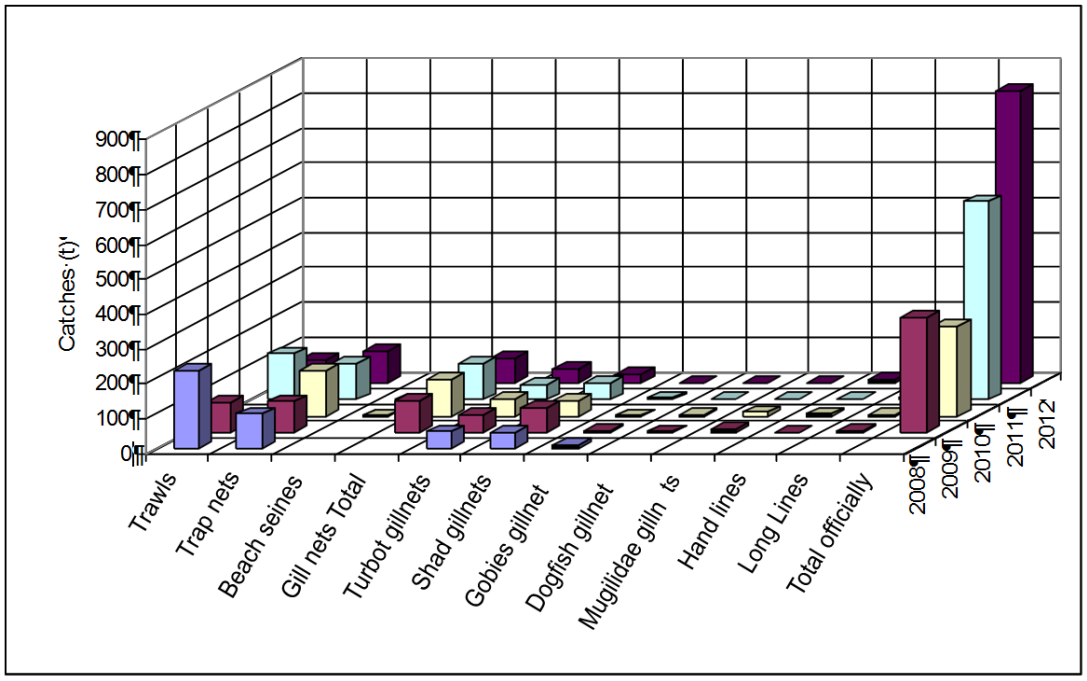

Fig. 5 Catches per fishing gear in tonnes per year

Fleets, fishing gears and fishing effort

Year after year the activity of fishing vessels decreased gradually to the point where from 20 vessels with LOA between 24-40m registered, in the last years in the Fishing Fleet Register was registered as active only one vessel for a very short period of time (Fig 6, 7, 8, 9).

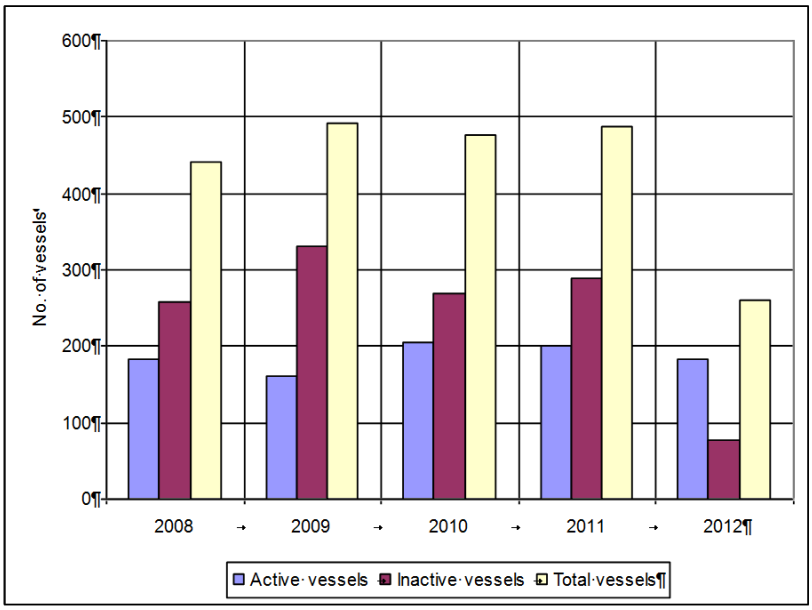

Fig.6 Evolution of the number of vessels in the period 2008-2012

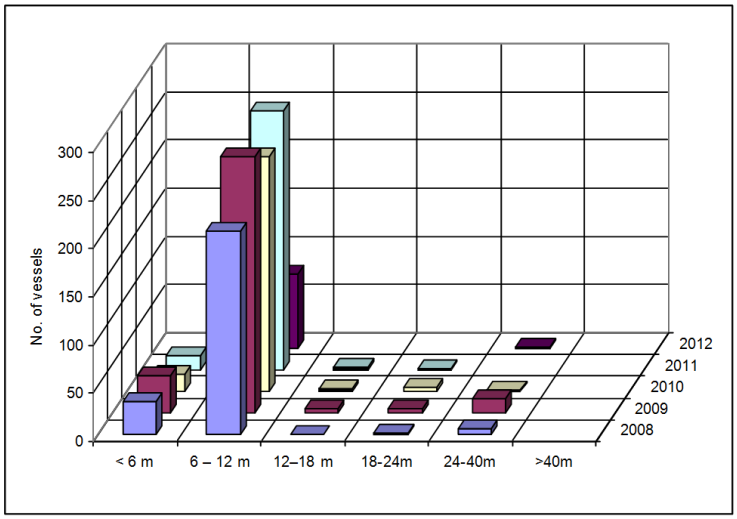

Fig.7 Structure of inactive vessels on length classes in the period 2008-2012

In 2012, the total number of boats/vessels registered was 261, from which only 183 have been active, most of them having LOA of 6-12m. Were used mainly gillnets and long lines.

The fisheries of this small fleet are typically artisanal type as multi-species and multi- gear fisheries, fishermen switching from one gear to another several times throughout the year.

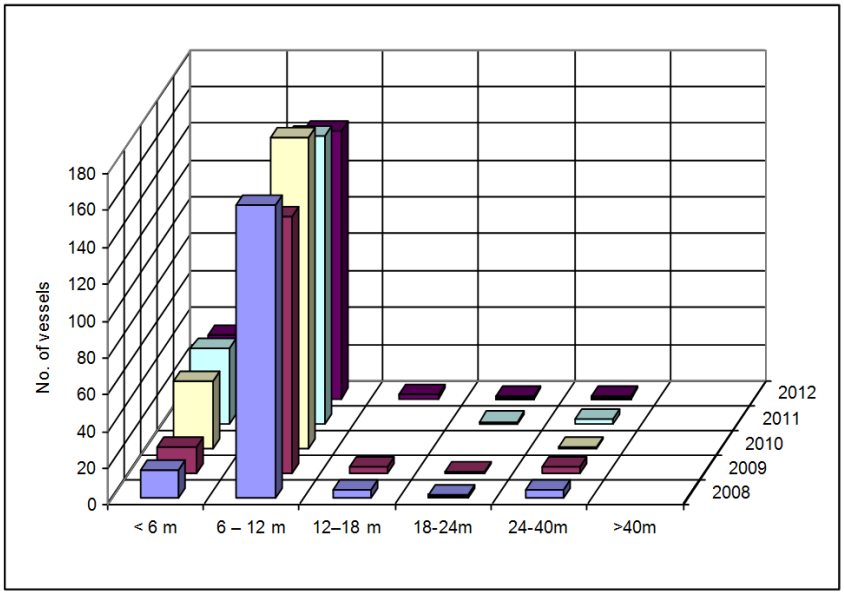

Fig.8 Structure of active vessels on length classes in the period 2008-2012

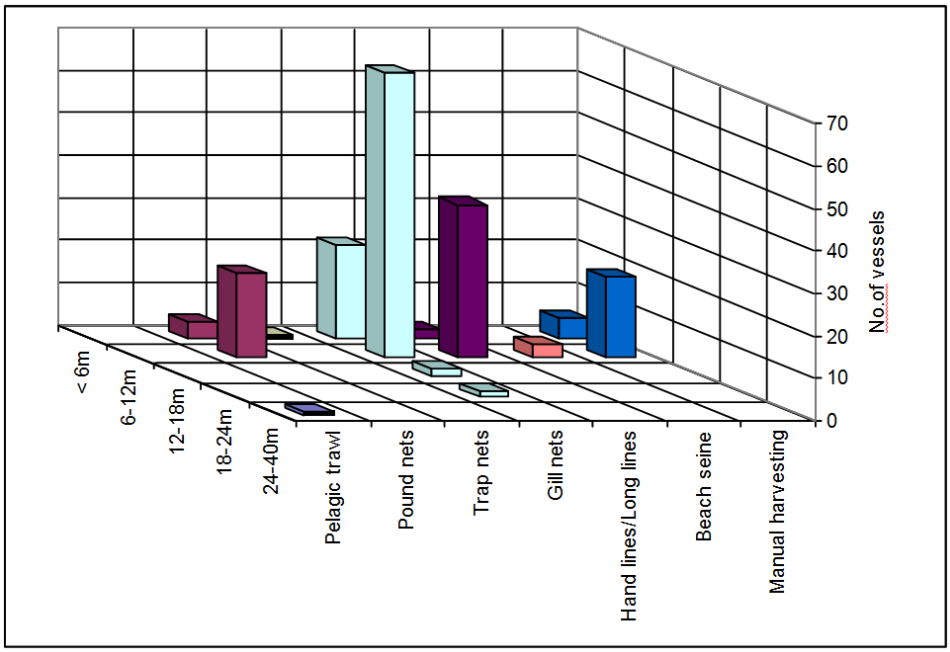

Fig.9 Structure of active vessels on length classes and fishing techniques in 2012

Fishing gears used at the Romanian littoral

There are different types of fishing gears for the active and passive fishery practised in the inshore and offshore coastal fishery.

The passive fishing gears include the equipments for catching in general the fish migrating for spawning and feeding in shallow waters, namely:

- long lines and bottom lines;
- gillnets for the Danube shad and turbot;
- sea pound nets.

Another category of fishing equipments used in the Romanian coastal zone includes the active fishing gear, beach seine and pelagic trawl.

The number of fishing gears decreased thus: number of trawls from 3 to 2; trap nets from 21 to 15; beach sine from 18 to 3; gill nets from 10,037 to 5,202; hand lines from 1,172 to 256 and long lines from 620 to 252 (Fig.10). In 2012 increased the number of pound nets (26), and number of the hand lines used mainly in the subsistence fishing.

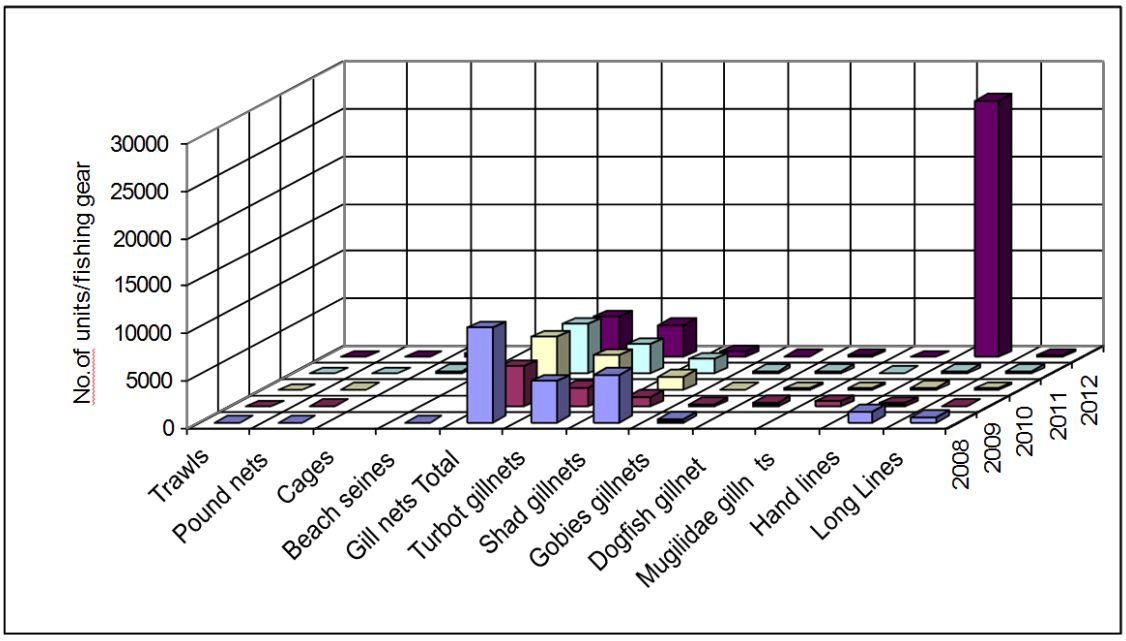

Fig. 10 Number of units per fishing gear (National Reports 2008-2012/BSC)

In 2009 and 2010 the Romanian fishing fleet spent a total of around 6.5 thousand days at sea (Fig.10), 57% of which were actual fishing days. The total number of days at sea dincreased between 2011 and 2012, while total fishing days remained almost stable during the same period (Fig. 11 and 12).

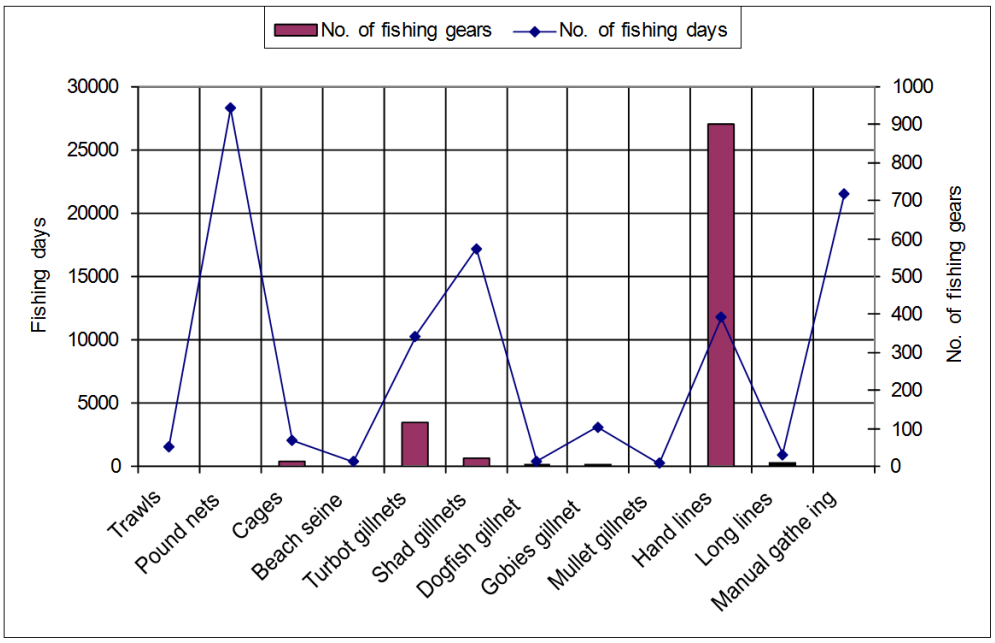

Fig.11 Fishing effort on fishing techniques in 2012 at Romanian littoral

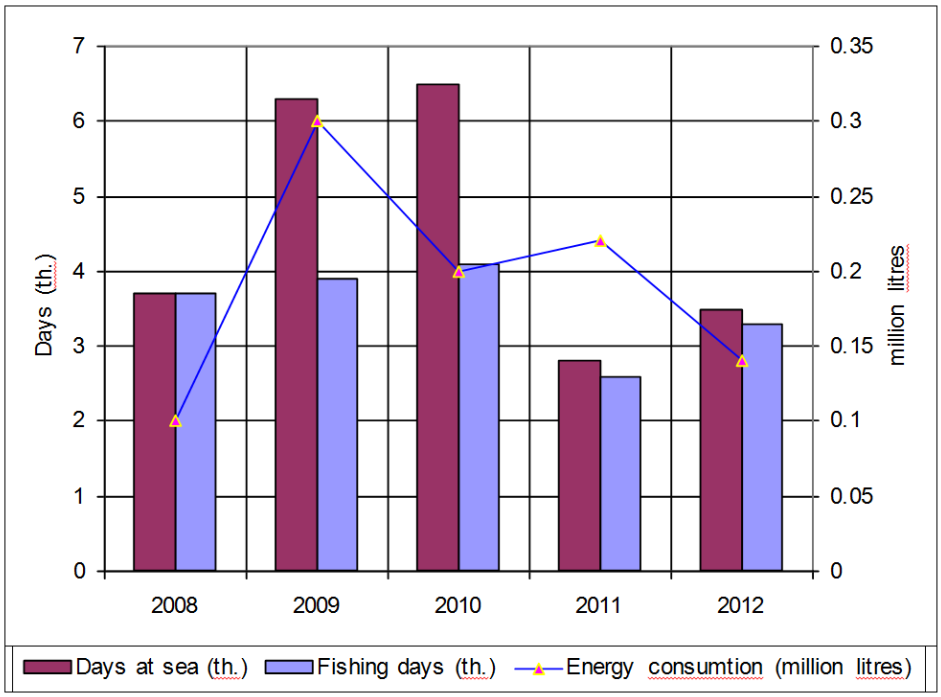

Fig.12 Fishing effort and energy consummation in 2012

The total number of fisherman in 2011 was 447, in 2012 have been 471. The number of fishermen for vessels with length bigger than 24m decreased from 180-200 till to number of two vessel crew (13 persons). Similarly to the situation in the coastal fishing fleet, the stationary fishing at the Romanian littoral has also declined. In 2012 a number of 371 fishermen acted for the small scale fisheries (boats 6-12m), who served several types of gears 74 persons acted for boats smaller than 6 m

Status of stocks of priority species

Assessment methods

The swept area method is used for assessment of the biomass of fishing agglomerations of sprat, whiting, turbot, dogfish based on the statistic processing of productivity data obtained in sampling trawling and industrial trawling;

The calculated biomasses by swept area for main species at the Romanian littoral ranged between: sprat (30,917 tonnes and 68887 tonnes); turbot (627 t and 1712 t); whiting (6565 t and 26171t) and dogfish (967 t and 5635 t) (Fig. 13).

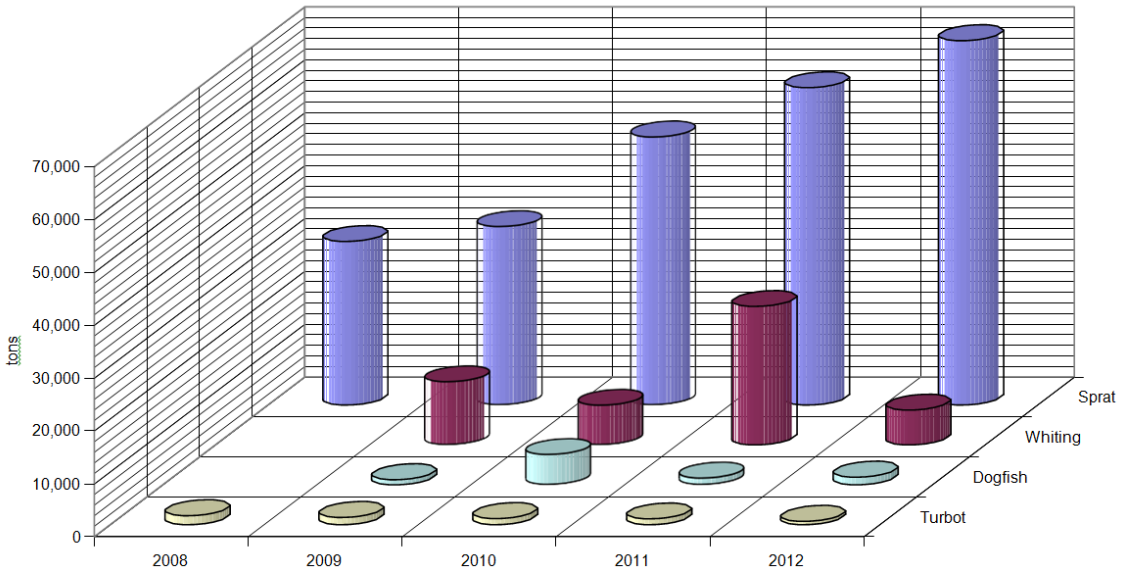

Fig. 13 The agglomeration biomass of the main species from Romanian littoral (t)

Status of the statistics and information system

Fisheries data obtained in the different projects by NIMRD are incorporated in database of institute. Reports and data are transmitted to Romanian NAFA in the frame of National Data Collection Program. In the same Program, fisheries data are uploaded in JRC data base.

In parallel way, National Fisheries Report prepared in agreed format is prepared and transmitted annually to the Black Sea Commission. Full information on capacity indicators is available through the FFR. Therefore only this information source has been used. So, the data have been collected in an exhaustive way by NAFA inspectors from the logbooks, for vessels and coastal logbooks, for small boats. This method ensures 100 % coverage of the population and maximum level of quality.

With the help of the NAFA statistics/collecting data system are performed crosscheck verifications between the logbooks, declarations of origin and (first) sales notes of fish and other aquatic organisms and reports. As described above mentioned, the exhaustive method used ensure the maximum quality level of collected data.

Status of research in progress

Ministry of education

Status of research in progress

- PN 09320206 Reducing the impact of marine bioresources exploitation by developing eco-efficient solutions

- National Data Collection Program. NAFA/EC-DG Mare

- PN II - Capacity, Module III: Investigation and applied studies of the ecosystem approach to fishery in the Ionian Sea (Greece) and Black Sea (Romania) Romania-Greece bilateral cooperation Contract no. 575/20.06.2012

- PN II - Capacity, Module III: Quality Intelligent Sensing and Information Processing technology for fish product during cold chain management, contract no. / (Bilateral Romania - China)

- CE/CBC Strengthening the regional capacity to support the sustainable management of the Black Sea Fisheries – (SRCSSMBSF)

- FP7/KBBE Coordinating research in support to application of EAF (Ecosystem Approach to Fisheries) and management advice in the Mediterranean and Black Seas (CREAM) / contract no. 265648/22.01.2011.

Status of the social sciences studies in progress

- PN 09320207 Obtaining the updated information to expand the European ecological network Natura 2000 (Special Areas of Conservation) in the Romanian marine

- CE / CCC Industrial Symbiosis Network for Environment Protection and Sustainable Development in the Black Sea Basin – SymNET

Marine environmental studies in progress

- PN 09320103 The influence of river contribution on the chemical composition and trophic status of Romanian transitional and coastal waters to joint implement the Water Framework Directives and Marine Strategy

- PN 09320202 Characterization of the benthic and planktonic communities on the Romanian continental shelf

- PN II- ERA NET Molecular approaches for rapid and quantitative detection of cyanobacteria and their toxins from coastal Black Sea (MARCY)/ Contract no. BS/7- 050/26.09.2011

- PNII-ERA.NET: Radiation background of Black Sea coastal environment – RACE, Contract nr. BS7-049/P2/2011, 3992/30.09.2011

- PN II - Partnerships CACM Type 2- Implementation of a complex GIS for Ecosystem-based Management, through integrated monitoring and assessment of the biocoenosis status and its evolution trends in the fast changing environment (ECOMAGIS)

- NATO: Bio-optical characteristics of the Black Sea / Contract no. SFP 982678/12.12.2008

- CE/PC7: Options for Delivering Ecosystem-based of marine management (ODEMM) / Contract no. 244273

- Application for the Western Black Sea (Ocean Colour) / Contract no. 4000102243/10/NL/HE

- CE/PC7: Pan – European infrastructure for Ocean&Marine Data Management (SEADATANET II)/

- CE / PC7: Development and pre-operational validation of upgraded GMES Marine Care Services and capabilities (MyOcean II)/ grant agreement no. 283367/12.12.2011

- CE / PC7- OCEAN-2011: Policy – oriented Marine Environmental Research for the Southern European Seas (PERSEUS)/ grant agreement no. 287600/21.12.2011

- CE / PC7 -OCEAN-2011: A Coast to Coast NETwork of protected areas:from the shore to the deep sea (COCONET), Grant Agreement no. 287844/02.2012

- CE/DG Environment: MSF (Marine Strategy Framework Directive) Guiding Improvements in the Black Sea Integrated Monitoring System (MISIS), contract nr. 07.020400/2012/616044/SUB/D2

Involvement in activities of FAO Regional Projects

So far, FAO has not developed any Black Sea Regional Project.

Management measures

Actual national fisheries regulatory framework

For the fishing resources management the following laws were adopted:

- Law on the Constitution of the Biosphere Reserve "Danube Delta" No. 82/20.11.1993;
- Law on Environmental Protection No. 137/1995;
- Law on Fishing Fund, Fishery and Aquaculture No. 23 /2008;
- Order No. 179/1 June 2001 regarding the Registering and transmission of the data related with the marine fishing activity;
- Order No. 262/16 July 2001 regarding the Preparation of the Directory of Vessels and Fishing boats;
- Order no. 422/30 October 2001 for approval of the Regulation on the conditions for development of the commercial fishing activities in the Black Sea waters;
- Annual Order on the Fishing Prohibition (753/2008);
- Order no. 344/2008 for approval of the operational and functional manner of fishing vessel and boats file;
- Order no. 342/2008 on minimal size of the aquatic living resources;
- Order nr. 449/2008 on technical characteristics and practice conditions for fishing gears used in the commercial fihing.

Institutional framework

The overall responsibility for fisheries policy in Romania falls under authority of the National Agency for Fisheries and Aquaculture (NAFA), public institution subordinated to the Ministry of Agriculture and Rural Development.

This Agency shall draw up the strategy and legal framework for fisheries in Romania, and it shall carry out the implementation of technical measures and the control of regulations in fisheries and aquaculture.

Fishing and aquaculture entitlements are managed similar for inland and marine fisheries activities by NAFA.

The National Sanitary-Veterinary and Food Safety Authority provide the legal framework and development of the specific regulations for the activities in the veterinary and food safety field. This authority supervises and controls the implementation and observance of the sanitary-veterinary and food safety norms.

Ministry of Environment and Waters Management draws up specific legal acts regarding environment protection, waters management as well as authorization procedures for all activities, including fisheries enterprises.

Management system

- Vessel licensing
- Fishing authorisation
- Fishing Vessel Register
- Quota System

With regard to: Recommendation GFCM/36/2012/2 on mitigation of incidental catches of cetaceans in the GFCM area

DG MARE launched the Call for Tenders No. Mare/2011/16 - Studies for carrying out the Common Fisheries Policy - "Adverse Fisheries Impacts on Cetacean Populations in the Black Sea"

The project was won by a consortium of organizations from Bulgaria, Romania, Turkey and Ukraine in coordination Mac Alistar Elliot &Partners company. Now the project is ongoing.

The objective of the contract is to provide an analysis of the historical and current status of cetacean populations in the Black Sea and qualitative and quantitative assessments of their by-catch in Black Sea fisheries by fishery and fishing gear. In addition, the contractor shall provide recommendations on mitigation measures for the fisheries identified to have the highest adverse impacts/by-catch rates.

The scientific information and advice are sought to promote possible management actions at international level, based on sound scientific knowledge shared among the Black Sea riparian countries. This information and advice will further support implementation of the Common Fisheries Policy while integrating environmental concerns and ensuring coherence with the Marine Strategy.

Also, at national level through PN 09320206 "Reducing the impact of marine bioresources exploitation by developing eco-efficient solutions" Ministry of Education funded some activities related to assessment of the actual state of cetaceans populations at Romanian littoral and establish the methods for determining conservation status of the dolphins.

Table 1 The cetaceans accidental catches situation registered at the Romanian littoral, in the last 12 years

Year	SPECIES			TOTAL
	Phocoena phocoena	*Delphinus delphis*	*Tursiops truncatus*	
2001	40	2	1	43
2002	20			20
2003	7			7
2004				-
2005				-
2006	20		2	22
2007	70		1	71
2008				-
2009				-
2010	15		2	17
2011	54	-	-	54
2012	-	-	-	-

With regard to: Recommendation GFCM/36/2012/3 on fisheries management measures for conservation of sharks and rays in the GFCM area

Romania signed the MoU (Memorandum of Understanding) on migratory sharks, with the occasion of the tenth meeting of the Parties to the Convention on the Conservation of Migratory Species of Wild Animals, held in 2011 in Bergen, Norway.

The objective of this Memorandum of Understanding is to maintain a level of favourable conservation of migratory sharks, based on the latest scientific information available, given the socio-economic value of these species.

First Meeting of Signatories to the Migratory Sharks Mou has been in Bonn, Germany, 24-27 September 2012. The main realization of this meeting was the Conservation Plan.

At national level dogfish catches have played an important role until 1995, with a peak in 1984 (135 tonnes). During 2006-2012 catches have reached up to 20 tonnes in 2012 (Fig.14)

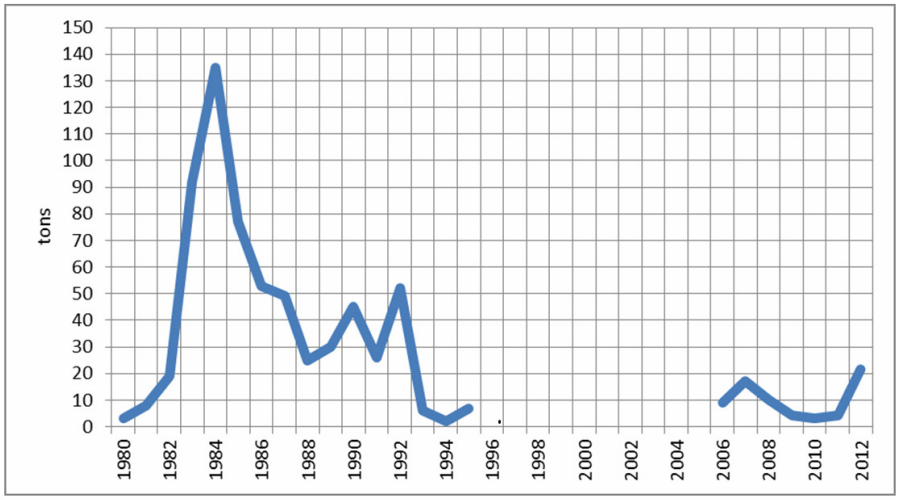

Fig.14 Spiny dogfish catches at Romanian littoral

Research suggestions for consideration by SAC

Research regarding distribution and abundance of the two main species in the Black Sea: turbot and dogfish

SLOVENIA/SLOVÉNIE

Description of the fisheries

Description of the fishing grounds and GSA

The Slovenian fishing vessels are carrying out fishing activities in the area GSA 17.

Total landings by main targeted species (year 2013)

Species	Landing [kg]
Whiting (*Merlangius merlangus*)	56 822,84
European pilchard (*Sardina pilchardus*)	27 701,98
European anchovy (*Engraulis encrasicolus*)	21 476,1
Musky octopus (*Eledone moschata*)	18 968,47
Golden grey mullet (*Liza aurata*)	15 192,77
Common sole (*Solea solea*)	14 846,62
Mullets nei (*Mugilidae xxxx*)	13 357,5
Gilthead seabream (*Sparus aurata*)	10 429,86
European squid (*Loligo vulgaris*)	9 958,32
Other	49 296,79
TOTAL	**238 051,25**

Fleet

Fishing vessels	Number	LOA [m] (average)	kW	GT
Minor gear without engine < 6 m	7	4,59	0,00	5,33
Minor gear with engine < 6	74	4,80	885	70,99
Minor gear with engine 6-12 m	62	7,57	3051	196,40
Trawlers 6-12 m	9	10,69	1600	67,14
Trawlers 12-24 m	7	14,89	1180	140,94
Trawlers > 24 m	0	0	0	0
Purse seiners 6-12 m	2	11,54	384	15,60
Purse seiners 12-24 m	3	14,11	311	32,60
Other	6	11,71	1015	69,01
TOTAL	**170**	**7,02**	**8426**	**598,01**

The data of the Slovenian fishing fleet is referring to the date of 1 January 2014.

Status of stocks of priority species

In the case of Slovenia five species can be considered as priority species: whiting (*Merlangius merlangus*), sardine (*Sardina pilchadus*), anchovy (*Engraulis encrasicolus*), musky octopus (*Eledone moschata*) and golden grey mullet (*Liza aurata*). The stock assessment for sardine and anchovy has been performed recently in the framework of AdriaMed project for GSA 17. Taking in consideration relatively small part of Adriatic Sea where Slovenian fisherman are active and relatively small part of

shared stocks affected by our fishery all fish stock assessments should be done jointly on the level of GSA 17.

The available information for GSA 17 (Northern Adriatic Sea) is part of the GFCM Report of the Working Group on Stock Assessment of Small Pelagic Species, Bar Montenegro 28 Jan–01 Feb 2014.

Stock	Stock status	WG management advice	SC comments
Sardine *(Sardina pilchardus)*	Increased risk of overexploitation. Exploitation rate is higher than the Patterson's reference point (E=0.42). Bcurrent is above both limit and precautionary reference point. Positive trend. Harvest rate is equal to 26%.	Do not increase fishing mortality and revise stock advice next year.	On the basis of the mandate of the GFCM to the SAC, the SC has revised the current status of the small pelagic stocks in GSA 17 in relation to the management plan included in Recommendation GFCM/37/2013/1. Based on current SC advice, small pelagic fishery in GSA17 would be classified in option 16d – ii, and therefore the management plan recommends adapting F by a ratio of 0.935. The SC informs that following the mandate of the Commission, the reference points for sardine and anchovy in GSA 17 have been revised. New reference points for sardine are similar to the ones included in Recommendation GFCM/37/2013/1, however the SC conclude that due to uncertainties in the historical perspective of two different models, no biomass reference points could be defined for this stock.
Anchovy *(Engraulis encrasicolus)*	<u>Overexploited and in overexploitation</u> Exploitation rate is higher than the Patterson's reference point (E=0.48-0.57). Biomass level is at a low level (between 12-19 percentile of the biomass estimates)	Fishing mortality should be reduced and the existing management plan should be applied	On the basis of the mandate of the GFCM to the SAC, the SC has revised the current status of the small pelagic stocks in GSA 17 in relation to the management plan included in Recommendation GFCM/37/2013/1. Based on current SC advice, small pelagic fishery in GSA17 would be classified in option 16d – ii, and therefore the management plan recommends adapting F by a ratio of 0.935. The SC informs that following the mandate of the Commission, the reference points for sardine and anchovy in GSA 17 have been revised. New reference points for sardine are similar to the ones included in Recommendation GFCM/37/2013/1, however the SC conclude that due to uncertainties in the historical perspective of two different models, no biomass reference points could be defined for this stock.

Status of the statistics and information system

In Slovenia there are four information systems in place which will be combined together in line with the EU Control Regulation (Council Regulation (EC) No 1224 /2009 establishing a Community control system for ensuring compliance with the rules of the common fisheries policy). 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 and the forth is ERS. Some elements of the systems are already interconnected and In the future the interconnection between the systems will also improve pursuant to the requirements of EU and other legislation and to 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 permanently stored in the Fisheries Research Institute database.

It is interconnected with VMS data base and soon it will be interconnected also with ESR data. It is enabling 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 should be established.

Also the yearly maintenance of the system is taking place. This covers all the preparation work for different reports, for national and international end users.

Status of research in progress

In the framework of National Program of the Republic of Slovenia for the collection and management of data, Slovenia is performing two research surveys at sea: MEDITS and MEDIAS.

MEDITS surveys have been performed from 1996 on two stations in Slovenian Sea. Samples have been taken with three rented Italian fishing vessels and from 1999 with Italian research vessel Andrea. All biological material has been elaborated on Fishery Research Institute of Slovenia. We are also performing data aggregations according to the MEDITS protocol.

MEDIAS surveys have been performed since 2007. The survey in Slovenian waters is a part of joint North Adriatic Echo-survey performed by Italian scientists from CNR ISMAR of Ancona with the research vessel G. Dallaporta each year, usually in September or October. The survey is performed during one day through echo-sounding and two samplings with pelagic trawl net.

In the framework of FAO-AdriaMed project the SOLEMON survey is performed in Slovenian waters by Italian scientists from CNR ISMAR of Ancona with the research vessel G. Dallaporta.

Status of the social sciences studies in progress or achieved during the intersessional period (economy, relevant legislation, sociology, etc.)

In the economic field Slovenia is implementing three studies on the basis of Council Regulation (EC) No 199/2008 and of Appendix VI to the Commission Decision. The studies are:

1. Module of evaluation of the fishing sector;
2. Module of the evaluation of the economic situation of the aquaculture sector;
3. Module of the evaluation of the economic situation of the processing industry.

Slovenia has complete data for 2012 on fishing sector, processing industry and aquaculture sector. The 2013 data for all three sectors will be available in the first half of 2015.

Marine environmental studies in progress

In 2013 we successfully concluded the research project Determining biological and ecological characteristics and seasonal dynamics of certain commercially important fish species in the Portorož Fisheries Reserve. The results of the project are available in the Final Report as well as in a Doctoral thesis, a Graduate thesis and a scientific paper published in Acta Adriatica.

Involvement in activities of FAO Regional Projects

FAO AdriaMed

- stock assessment for some species, eg. Sardina pilchardus, Engraulis encrasicholus, Solea solea.
- Cooperation in the framework of SOLEMON project.

Management measures

Management measures in the Slovenian sea follow the Council Regulation (EC) No 1967/2006 which contains principles and rules relating to the conservation and management of fishery resources in the Mediterranean Sea.

Principal document for the management of the fisheries in the territorial waters of Slovenian is ‘’Management plan of the Republic of Slovenia for certain fisheries within its territorial waters” (hereinafter FMP – Fisheries Management Plan) which relates exclusively to commercial marine fishing in Slovenia’s territorial seas. In accordance with the first paragraph of Article 19 of Council Regulation (EC) No 1967/2006, the FMP addresses the following types of fishing gear: trawl nets, boat seines, shore seines, surrounding nets and dredges. Moreover, the FMP contains an analysis of the entirety of the commercial marine fishing in Slovenian territorial waters as it includes also an analysis of fishing in Slovenian territorial waters using passive fishing gear. The FMP deals also with the following types of fishing gear: pots and traps, fyke nets, driftnets, set gillnets, trammel nets, hand lines and pole lines for targeting cephalopods, hand lines and pole lines for targeting finfish, and set longlines.

Slovenia sent the first draft of the FMP to the Commission in September 2007. Taking into account the opinions of the Commission and the Scientific, Technical and Economic Committee for Fisheries (STECF), Slovenia was obliged to prepare few additional updated drafts of the FMP. The last draft was sent to the Commission in February 2013. Towards the end of 2013 Commission adopted the management plan for purse seines and for bottom otter trawlers that were contained in the FMP.

The objective of the Fisheries Management Plan is to adjust the fishing capacities and fishing opportunities for those fishing vessels the stocks of whose target species necessitate their protection and conservation. Management measures are also required for those groups of fishing vessels which target species whose stock levels are not known at the regional level and where the spatial opportunities for fishing and the number of fishing vessels involved in targeting these species necessitate a restriction on the fishing effort of these vessels.

As the pelagic fish species were predominant in the landings of Slovenian fishermen for many years, with the bulk of pelagic landings being made up of sardine and anchovy. As the majority of the landings of sardine and anchovy were made by purse seines (PS) and midwater pair trawls (PTM), management plans were prepared for the segments using these fishing gears.

In addition, owing to Slovenia’s limited sea fishing area, the additional limits placed on it (as a result of navigation lanes, reserves, conflict with other types of fishing gear, etc.) and the absence of a stock assessment for demersal fish in the Northern Adriatic, measures to adjust the fishing effort have also been drawn up, in the form of a plan, for those vessels using the set gillnets (GNS), trammel nets (GTR) and bottom otter trawls (OTB).

To achieve the objective of adjusting fishing capacities and fishing opportunities, Slovenia proposed the use of various management measures to reduce the fishing effort: as follows:

- *Temporary suspension of the granting of commercial fishing licences*
- *Review of commercial fishing licences*

Under the national marine fisheries legislation in force, commercial fishing licences are granted for an indefinite period; a licence remains valid regardless of whether a vessel is active. Such vessels

represent a 'latent' fishing capacity that can be activated at any time and has an important impact on fishing opportunities.

- *Reduction in the fishing effort by implementation of a permanent and temporary cessation of fishing activities*

The expected results of the scrapping measure (permanent cessation of fishing activities) which was implemented in 2012–2013 and was financed by the European Fisheries Fund, had a huge impact on the Slovenian fishing fleet as it decreased by 397,75 GT (37,63% of the national fleet) and 2,106 kW (19,20 % of the national fleet). Eight vessels were removed from the fleet, but among the scrapped vessels were also two vessels that had been for decades the most important vessels in the Slovenian fishing fleet in terms of their size (each had LOA of 29 m, 156 GT and 600 kW) and in terms of total landings which were in recent years on average more than half of total Slovenian landings. These two vessels were at the same time the only pair of vessels using pelagic pair trawl (PTM) for targeting small pelagic fish, and thus the fishing effort of the Slovenian fishing fleet on small pelagic fish decreased considerably.

The achieved results of the scrapping measure had a huge impact also on the Slovenian landings, since the total landings in 2012 decreased by 54 % in comparison to the previous year: from 719,4 tonnes in 2011, down to 328,9 tonnes in 2012 and to 238 tonnes in 2013. Most remarkable was decrease of the sardine and anchovy landings: the landings of these two species decreased for 87 %.

At the GFCM's plenary session that was held in Split in May 2013, the Recommendation GFCM/37/2013/1 on a multiannual management plan for fisheries on small pelagic stocks in the GFCM-GSA 17 (Northern Adriatic Sea) and on transitional conservation measures for fisheries on small pelagic stocks in GSA 18 (Southern Adriatic Sea) (hereinafter: "Multiannual plan") was adopted and entered into the force in October 2013. In line with the provisions of the "Multiannual plan", Slovenia prepared and sent to the GFCM secretariat, before the end of October 2013, its national Monitoring and control plan for its fisheries targeting small pelagic stocks. In addition, Slovenia submitted to the GFCM secretariat also a list of the vessels authorized to fish for small pelagic stocks that are registered in harbors located in GSA 17.

Environment protection measures

In Slovenia we have 2 fisheries protected areas Portorož and Strunjan. On the basis of Slovenian Maritime Fisheries Act it is prohibited to perform any kind of fishing activities in fisheries protected areas. Only possible exception is fishing of winter shoals of mullets on the basis of temporary limited special fishing permission issued by the ministry competent for fisheries.

With regards to:

- Rec. GFCM/35/2011/2 on the exploitation of red coral in the GFCM Competence Area, it is not applicable in Slovenia, due to fact that red coral is not present in our fishing area.
- Rec. GFCM/36/2012/2 on mitigation of incidental catches of cetaceans in the GFCM area. Covered by European and Slovenian national legislation (Decree on protected wild animal species)
- Rec. GFCM/36/2012/3 on fisheries management measures for conservation of sharks and rays in the GFCM area. Covered by European and Slovenian national legislation (Regulation on the traceability of catches and Decree on protected wild animal species)

Proposals for future research programmes

In accordance with the DCF regulation the Adriatic countries, brought together by the AdriaMed project, work in conjunction towards joint regional management of the shared fish stocks. So far the VPA and ICA stock assessment methods have been used to determine the SSB of anchovy and sardine in the GSA 17 and 18. The acquisition of the data for this type of stock assessment is costly and demanding in terms of resources which present a big problem for small coastal countries such as

Slovenia. The sampling requirements of the Daily Egg Production Method are in better accordance with the available resources of the smaller coastal countries.

Therefore, Slovenia supports the implementation of DEPM as one of the tools used to determine the status of the shared small pelagic stocks. To help attain this goal Slovenia needs to provide the data from its seas. Hence, Slovenia wishes to conduct a preliminary survey to determine the spatial and seasonal distribution of planktonic stages of European anchovy and sardine in the Slovenian seas. This would enable us to determine the appropriate number and position of sampling stations and the period in which to collect the samples for the DEPM. Addition of this data to the joint stock assessment would further improve the precision of the results.

SPAIN/ESPAGNE

Description of the fisheries

Spanish fleet operates mainly within four GSAs (excluding GSA2, which only supports a deep trawl fishery around Alboran Island). In each of them, different types of fishing grounds are exploited from shallow to deep waters by trawl, purse seine, long line and artisanal fleets. The total number of fishing vessels included in the Fleet Register for the Mediterranean at date 31/12/2012 was 2.843, with a mean length of 13.5 m, a total GT of 59 433,05 and a total power of 242 089,41 Kw. Most of the fisheries are multiespecific, especially the trawl fishery which catches a great diversity of species of fish, crustaceans and molluscs (Table 2).

Table 1: Number and technical characteristics of the Spanish Mediterranean fleet by type of gear (Year 2012)

GEAR		Total
Trawl	nº	680
	Total Kw	126.488,19
	Total GT	40.358,73
	Average LOA	20,47
	LOA Range (8,00 – 32,53)	
Purse seine	nº	243
	Total Kw	40.476,87
	Total GT	8.313,42
	Average LOA	17,87
	LOA Range (6,15 – 27,0)	
Tuna Purse seine	nº	6
	Total Kw	5.843,38
	Total GT	1.608,00
	Average LOA	38,68
	LOA Range (34,60 – 43,45)	
Long line in census MED *(a total of 93 LLD vessels were authorised to fish in the Mediterranean in 2012, comprising 58 vessels from LLD census "Mediterranean" plus 35 vessels within LLD in census "national waters")	nº *	58*
	Total Kw	5.104,96
	Total GT	1.768,20
	Average LOA	15,48
	LOA Range (7,15 – 25,68)	
Set longlines	nº	78
	Total Kw	5.731,33
	Total GT	764,67
	Average LOA	10,99
	LOA Range (5,57 – 22,65)	
Artisanal	nº	1.778
	Total Kw	58.444,58
	Total GT	6.620,03
	Average LOA	8,71
	LOA Range (2,8 – 27,0)	

Table 2. Total landings in 2012 by main target species (in tonnes)

SPECIES	Tm
Engraulis encrasicolus	12 525
Aristeus antennatus	1 184
Sepia officinalis	924
Merluccius merluccius	3 425
Trachurus spp	6 803
Scomber spp	5 773
Lophius spp	1 546
Squilla mantis	765
Mullus spp	1 996
Nephrops norvegicus	654
Octopus vulgaris	3 276
Sardina pilchardus	15 982
Loligo vulgaris	372
Micromesistius poutassou	1 436
Thunnus thynnus	1 062.4
Thunnus alalunga	389.4
Xiphias gladius	1 590

Data source: sale notes

Status of stocks of priority species

Demersal fisheries

GSA01 – Northern Alboran Sea

European hake, *Merluccius merluccius* (Linnaeus, 1758), is one of the target demersal species of the Mediterranean fishing fleets, largely exploited in GSA01. The results show a decreasing trend in the last two years both in recruits number and spawning stock biomass of the stock. Fishing mortality (F_{bar1-3}) decreases in the last year but still remain high. The Y/R analysis shows that the Fc (1.64) exceeds the Y/R F0.1 (0.22). The status stock in the GSA 01 is in high overfishing status with relative intermediate biomass. A reduction of the current fishing mortality is recommended by reducing the effort activity and improving the selection pattern of the fishery.

GSA05 – Balearic Islands

Red shrimp (*Aristeus antennatus*) exploited by the Spanish trawl fishery in the geographical sub-area GSA05 (Balearic Islands) is considered in high overfishing status since $F_{current}$(0.58) was higher than

$F_{0.1}$(0.10). Both recruitment and spawning stock biomass showed a clear decreasing trend between 1992 and 1997. Since then, the stock parameters showed certain stability, with oscillations along the rest of the years, but without any clear trend. It was recommended to reduce the fishing mortality.

Hake (*Merluccius merluccius*) exploited by the trawl fishery off Mallorca (Balearic Islands, GSA05) was considered in high overfishing status since $F_{current}$(1.52) was higher than $F_{0.1}$(0.18), with relative high biomass. The main XSA outputs showed important oscillations along the data series without a clear trend, especially for recruitment and SSB. However, for some parameters, such as stock abundance and biomass, there is an increasing trend from 1995 on. It was recommended to reduce the fishing mortality.

Striped red mullet (*Mullus surmuletus*) from the Balearic Islands (GSA05) is a main target species in the shallow shelf, although it is also caught in the deep shelf. It is also a target species of part of the artisanal fleet, being caught during the second semester of the year mainly by trammel nets.The stock exploited by the trawl and artisanal fisheries from GSA05 is in high overfishing status ($F_{current}$=0.54, $F_{0.1}$=0.18), with relatively low biomass. Population results showed a clear decreasing trend since 2006. As in the previous species, it was recommended to reduce fishing mortality.

Red mullet (*Mullus barbatus*) from the Balearic Islands (GSA05) is a by-catch species from the bottom trawl fleet, mainly caught in the shallow and deep shelf. The stock is in high overfishing status ($F_{current}$=0.93, $F_{0.1}$=0.14), with relatively low biomass. Population results did not show any clear trend, with small oscillations. It was recommended to reduce fishing mortality.

Deep-water rose shrimp (*Parapenaeus longirostris*) from the Balearic Islands (GSa05) is a by-catch species from the bottom trawl fleet, mainly caught in the upper slope. The stock is in low overfishing status with relative intermediate biomass. The population results showed a clear decreasing trend since 2002, with minimum values in 2005 and an increasing trend since then. It was recommended to reduce fishing mortality.

GSA06 – Northern Spain

The stock of *Mullus barbatus* in the GFCM-GSA06 has been assessed using the trawl fishery data from 1995 until 2012. The assessment has been carried out applying tuned VPA (Extended Survivor Analysis, XSA) and Y/R analysis.

After the enforcement of 40mm square mesh (2010) catch in number of individuals are based on ages 1 and 2 reflecting an improvement in the fishing patter as regards previous years. Results from VPA indicate that average fishing mortality for ages 0-2 shows a general decreasing trend over the studied period reflecting the continuous reduction observed in the fleet. Total biomass and recruitment do not show any trend whereas SSB has increased in the last years, probably due to the aforementioned improvement in the fishing pattern.

Y/R has increased 20% with the square mesh although $F_{current}$ is still over F0.1, thus the stock status is overexploited.

Deep-water pink shrimp (*Parapenaeus longirostris*) is one of the main crustacean species for trawl fisheries in the GFCM geographical sub-area Northern Spain (GSA-06). It is an important component of landings in some ports and occasionally a target species of the trawl fleet composed of approximately 260 vessels that operates on the upper slope. The assessment results showed that both total biomass and spawning biomass followed a decreasing trend from 2001 to 2004 with a drastic decline during the first year. After this decrease, B and SSB have stabilized with slight fluctuations over the last 8 years. Recruitment (R) shows strong fluctuations over the time series. $F_{current}$ (1.48) exceeds the $F_{0.1}$ reference point (0.27). The stock is in high overfishing status, with relative intermediate biomass. A reduction of the current fishing mortality is recommended by reducing the fishing effort.

GSA07 – Gulf of Lion

Hake, *M. merluccius*, is one of the most important demersal target species of the commercial fisheries in the Gulf of Lions (GSA07). In this area, hake is exploited by French trawlers, French gillnetters, Spanish trawlers and Spanish long-liners. The stock was considered in a high overfishing status ($F_{current}$=1.83, $F_{0.1}$=0.15), with a relative low abundance with periodically higher recruitments (1998, 2001-2002 and 2007) which ensured the sustainability of the stock at the lower level of abundance of the series. Since 2007, the recruitment has reached the lowest level of the historical series 1998-2012.

Red mullet (M. *barbatus*) in the Gulf of Lions (GSA07) is exploited by both the French and Spanish trawl fleets. The stock is in a high overfishing status ($F_{current}$=0.5, $F_{0.1}$=0.14) with a relative high biomass and punctually higher recruitments (2005, 2006, 2007 and 2011). However, the fishing mortality is the lowest of the series and the spawning stock biomass currently follows an upward trend. The current biomass (2010-2012) is above the 66th percentile.

Small pelagic fisheries

GSA01 – Northern Alboran Sea

Anchovy (*Engraulis encrasicolus*) is the target species of the purse seine fleet working off N Alborán. The BioDyn (Surplus production Model) was applied to assess the state of the resource but the assessment was not accepted as there are contradictory signals between the survey, catches, trial test with the ASPIC surplus production model, and independent estimates of exploitation rate. The diagnosis of the resource's status was considered uncertain, with high fluctuations and population concentrated on first age classes

There is uncertainty in the assessment and methodological problems in incorporating acoustic time series in the production model, so the model only relies on CPUE, which is very similar to the landings. The fishery mainly depends on recruitment: the possibility to have an index of recruitment to manage the stock should be considered.

It was recommended to evaluate the trend in effort data and that CPUE be independently evaluated to its performance in the production model. The WG recomends the use of available time series both for CPUE and acoustic abundance indices. In the case of fitting problems, alternative production model should be tested.

Sardine (*Sardina pilchardus*) is the other small pelagic being targeted by the purse seine fishery working off N Alboran. The BioDyn (Surplus production Model) was applied to assess the status of the resource. The diagnosis of the assessment was considered sustainably exploited and the trend of landing stable. The explitation rate is lower than the Patterson's reference point (E=0.36). Bcur/Bmsy=1.31 $F_{current}$ (0.33) is below F0.1 (0.5). Management advice considers not to increase fishing mortality.

GSA06 – Northern Spain

Anchovy (*Engraulis encrasicolus*) is the target species of the purse seine fleet working in GSA06 (Northern Spain). The BioDyn (Surplus production Model) was applied to assess the status of the resource. The diagnosis of the assessment was considered sustainably exploited with increasing trend in landings and biomass from the acoustic estimates. F current (0.18) is lower than F_{msy} reference point (0.25). The exploitation rate is lower than the Patterson's reference point (E=0.24). The current biomass is above BMSY. Management advice is to refrain from increasing fishing mortality.

Sardine (*Sardina pilchardus*) is the other small pelagic being targeted by the purse seine fishery working in GSA06 (Northern Spain). The BioDyn (Surplus production Model) was applied to assess the status of the resource. The status of the resource is considered overexploited and in overexploitation. Both the landings and the CPUE are decreasing. The exploitation rate is higher than

the Patterson's reference point (E = 0.46). $F_{current}$ (0.42) is higher than the $_{F0.1}$ reference point (0.25). $B_{current}$ is below BMSY (B_{curr}/BMSY=0.37).

The management advice recommends to reduce fishing mortality and the implementation of a multiannual management plan.

Tuna fisheries assessments

1062.4 tonnes (RW) of Bluefin tuna (*Thunnus thynnus*) were caught in the Mediterranean Sea during 2012, most of which (97.5%) were caught by Purse seine. The rest (2.5%) correspond to long-liners (63.13 t) and sport fisheries (3.84 t). The main fishing grounds were Balearic Islands and Alboran Sea.

Albacore (*Thunnus alalunga*) was caught in the Mediterranean during 2012 using mainly surface long-lines (98.5%), but also with other surface gears (1.5%). In 2012, 389.4 tonnes (RW) were landed in the Mediterranean (which represents about a 13.4% increase from the catches taken in 2011).

Swordfish (*Xiphias gladius*) landings in 2012 were 1590t in the Spanish Mediterranean. The main catches (87.64%) correspond to long-line fisheries targeting swordfish. Other minor catches were obtained by other long line fisheries (186.2 t) and traps (2.4 t) and other surface fisheries (8.1 t).

The small tuna in Spain were caught mainly in the Mediterranean Sea. These species are caught using surface gears and Traps, but *Euthynnus alleteratus* is also caught as by-catch in longline fisheries. The total catches along 2012 were 2 502.56 t (RW); these landings were lower than those taken in 2011. The specific composition of these catches was: 442.03 t (17.7%) of Atlantic Bonito (*Sarda sarda*), 1619.7 t (64.7%) of bullet tuna (*Auxis rochei*), and 440.84 t (17.6%) of Atlantic little tunny (*Euthynnus alletteratus*).

Regarding *Coryphaena hippurus*, the main landings during 2012 corresponds to surface fisheries (81 t), but was also landed as bycatch of longline fisheries (3.8 t).

Status of the statistics and information system

The Spanish fisheries statistics and information system is based on the data from three different sources: sales notes, logbooks and landing declarations (under RD 1822/2009 and in compliance with Regulation CE 1224/09 and Regulation CE 2371/2002). Data are collected in port and in all places in which a first sale of the fishery products is carried out. Data of landings by species, commercial categories, prices, fishery vessel identification, fishing grounds, landing ports and dates are recorded on a daily basis. Data from logbooks and landing declarations are collected by General Secretariat for Fisheries of the Spanish Ministry. Data from sale notes are primarily collected and processed by the fisheries offices of the autonomous governments, and recorded in the centralized database of General Secretariat for Fisheries, in charge of collecting all the information related to fisheries and transmitting to the Commission, Fisheries Organizations and any other National or International Institutions.

IEO collects length and biological data of main commercial species under the guidelines of the National Program supported by the EU for the collection and management of fisheries data in accordance with Community programmes (Reg. (EC) 199/2008). Data information is managed in the framework of the SIRENO database developed by the IEO. SIRENO moreover stores fish market information, observers on board information and research surveys data. Moreover, the General Subdirectorate for Statistics collects and processes the economic information on fisheries.

Status of research in progress

During the interssesional period, the IEO continued to monitor the fisheries of the main commercial species at the principal landing sites. The target demersal species sampled are Hake, Red mullet, Stripped red mullet, Anglerfish (*Lophius piscatorius*), Blue whiting (*Micromesistius poutassou*), red

shrimp (*Aristeus antennatus*), Norway lobster (*Nephrops norvegicus*) *Parapenaeus longirostris* and *Octopus vulgaris*, while the target of small pelagic species are Anchovy, Sardine, Atlantic horse mackerel (*Trachurus trachurus*) and Chub macherel (*Scomber japonicus*), and the target of large pelagic species are Albacore, Bluefin tuna and Swordfish.

Demersal and small pelagic species

A new project, REMALA was launched in the Oceanographic Center of Málaga. The aim of the project is to analyze the adequateness of the Bay of Málaga (GSA01) for the creation of a fishing protected area, due to its importance as areas of reproduction, spawning, nursery and growth of several commercial species. The project aims at establishing the adequate conditions for the development of fisheries' resources.

Within the same context as the previous project, the REMARAN project was also launced in GSA01 focusing on the mechanized dredge fishery targeting on *Donax trunculus*, *Chamelea gallina*, *Callista chione* and *Acanthocardia tuberculata*. The main objective is to improve the knowledge of the status of the different stocks including aspects of the impact of the fishery in the benthic community in order to set up a management plan.

Concurrent sampling of lengths is made of the main fisheries of each GSA: otter bottom trawl, purse seine, trammel net and set long line. Bottom trawlers are sampled in all GSAs, purse seines are sampled in the GSA 1, 6 and 7, trammel nets are sampled in the GSA 1, 6 and 5, set long lines are sampled in the GSA 6 and 7 and traps are sampled in the GSA 1. On the other hand, biological studies of reproduction and growth are carried out of the demersal and small pelagic objective species.

The principal objective of length and biological sampling of demersal and small pelagic species is to obtain the data and parameters necessary to assess the main stocks in our coasts.

The annual international bottom trawl survey MEDITS was carried out with the aim of estimating relative abundance index of the main demersal species in the continental shelf and slope of the Spanish Mediterranean, including Balearic Islands. The yearly survey MEDIAS, which undertakes the international acoustic survey in the Mediterranean, was carried out in summer since 2009. Both surveys are activities carried out on a yearly basis under the framework of the National Program supported by the EU.

Bluefin tuna, swordfish, albacore and small tuna (Atlantic bonito, bullet tuna, Atlantic little tuna, and skipjack tuna) are the main target of tuna and tuna-like species by the Mediterranean tuna research program of the IEO. The main objective of biological sampling of tuna species is to support research on stock structure by means of genetic analyses (tissue) and microconstituents analyses (otoliths); as well as on reproduction (gonads) and growth (spines, vertebrae and otoliths) research.

During 2012, bluefin tuna were sampled in the Mediterranean from Spanish BFT fisheries (mainly long-line).

There were tagging programs in course during 2012 using conventional and electronic tags under the project and finance of GBYP-ICCAT. Conventional tagging activities were also developed in collaboration with commercial and recreational fisheries.

The study initiated in 2010 on bluefin tuna traps using these as scientific observatories has finished in 2012. The project includes the monitoring of fishing activities, sampling of size of catches, collection of biological samples for various studies and the monitoring of releases of bluefin tuna alive when the TACs were reached.

The status of the Eastern and Mediterranean stock of Bluefin tuna is going to be done along 2014.

Research activities on Albacore (*Thunnus alalunga*, ALB) on board recreational and long-line fishery vessels targeting ALB are being continued. The research on maturity and growth developed in 2012 are on-going and results from this study are reported to ICCAT and other specialized groups. In July,

2011 took place the ICCAT assessment session of Mediterranean albacore. The result of this assessment shows a relatively stable pattern of the population size during the recent past. The next assessment probably will take place along 2015.

Research activities regarding small tunas, mainly of Atlantic bonito (*Sarda sarda*), Atlantic little tuna (*Euthynnus alletteratus*), and bullet tuna (*Auxis rochei*) are being continued to study maturity and fecundity rates, age and growth. Within the activities related to studies in captivity, the reproduction and breeding activities of Atlantic bonito, together with bluefin tuna are being continued.

Swordfish are being routinely sampled (Rw and/or lenth) in the Mediterranean. Biological samples were collected along 2012 in the Spanish swordfish fisheries (mainly long-line). Swordfish were tagged using Conventional tags along 2012. These activities were developed in collaboration with commercial fisheries. In 2014 an assessment on Mediterranean stock of swordfish is going to be developed in the ICCAT.

Status of the social sciences studies in progress or achieved during the intersessional period

Information on statistics of the Spanish fishery sector can be found in the following link of the Ministry´s web page. It is based on requirements from National Plan for Statistics and EUROSTAT (official statistical organism of the European Union). Sectors are economically classified into primary sector (marine fishery and aquaculture), secondary sector (processed fish industries) and tertiary sector (exterior trade). Statistics since year 2008 are available.

http://www.magrama.es/es/estadistica/temas/estadisticas-pesqueras/default.aspx

Marine environmental studies in progress

During this intersessional period, the IEO continues carrying out the series of quarterly surveys monitoring oceanographic conditions off Málaga (GSA1), Murcia (GSA6) and Mallorca (GSA5) under the framework of the activities developed to study climatic changes in the Mediterranean.

The project TROFOALBORAN focusing on the pelagic ecosystem trophic web dynamics influencing the early life stages of sardine and anchovy off their main nursery grounds in the Bays of Málaga and Almería was finalized and its results are expected in future publications.

During 2011-2013 research activities related with the effects of Marine Protected Areas (MPAs) on exploited communities, species and artisanal fisheries have been continued, quantifying benefits of spillover to adjacent fisheries and increased reproductive potential at regional level as a result the MPA protection. In 2012 in the Columbretes Islands Marine Reserve (Valencia) and the Menorca Channel (Balearic Islands) (Western Mediterranean) experimental fishing and underwater visual census surveys to estimate population status and recruitment in protected and exploited populations of the lobster *Palinurus elephas* have been continued, achieving a series of data of 12 years, covering years 10 to 22 of without fishing in the Columbretes MPA in the framework of the project ERICOL.

Studies of the artisanal fisheries in the Menorca Channel have been conducted around the MPA of Levant / Cala Ratjada and in the wider channel as controls of the effects of protection in the Columbretes MPA. The species selectivity of artisanal fisheries, with attention to diversity of species and in particular benthic structural has been studied comparing the performance of different type of nets in the framework of the project LANBAL.

Research on the biology, ecology and fisheries of the lobster Palinurus elephas has been continued with advances in juvenile growth, patters of recruitment from natural and artificial (collectors) habitats and in relation to depth, video surveys with submarine and ROV to characterize juvenile habitats, estimation of external tag loss rates and v-notch tagging effects on lobster.

The Pinna project aims to quantify the population of an endangered species (*Pinna nobilis*) at MPAs and control areas. Several surveys have been conducted indicating high densities associated to protected areas. Data on genetics, gonad cycle, size structure, age determination, recruitment, invasive species effects, trophism, anchoring impacts of *Pinna nobilis* have been obtained.

The Azimut CENIT project is being developed at COB in order to study the offshore wind farms OWF impacts on marine biota. Several subtasks have been carried out: OWF as fish aggregating devices (FADs); OWF as artificial reefs (AA); OWF as marine protected areas (MPAs).

The COCONET projects focus on network of MPAs coupled with sea-based energy potential. Several subtasks are under progress, especially on anthropic impacts, MPAs, impacts of OWF on marine biota.

Other remarked projects developed in cooperation with many research institutions in the framework of the UE or founded by National Agencies are: **SARAS** Project (Eurofleets/UE) focusing the very recent processes in the sea floor along Alboran Basin and margins, as well as **MONTERA** Project (CICYT) searching geohabitats on seamounts and related benthic communities, and the **CONTOURIBER** Project (CICYT) looking at the sedimentary dynamic of the drift deposits driven by contour currents around continental margins. Regional actions in cooperation with Malaga University have been also developed in the frame of **MOSAICO** and **TESELA** Projects along the south east Iberian coastal zone searching the effects of the river discharges on the sea floor deposits and modelling. Particular attention is paid to geological hazards and risk is done in order to prevent catastrophic disasters along the sea side.

Oceanographic multidisciplinary surveys have been undertaken during 2010/2011 and 2012 on board of a few vesels (Ramón Margalef, Sarmiento de Gamboa, Miguel Oliver, Vizconde de Eza, Emma Bardán and Cornide de Saavedra). Sampling methods (piston cores) and non intrusive prospection methods (multibeam and ultrahight seismic sections) have been carried out, including photo and video surveys. Scientific results are published through SCI few papers and international meetings.

These are related to the project **INDEMARES** (www.indemares.es), that is still ongoing and foreseen to finish in 2014. It was launched in 2009 aiming to promote research, conservation and assessment of the sea and its habitats in order to comply with commitments regarding the Marine European Natura 2000 network and reinforce the application of international conventions on the sea (as OSPAR and Barcelona). The project is being convened by the Biodiversity Foundation (Ministry for Agriculture, Food and Environment) and nine institutions, Gubernamental Deparments and NGOs are involved in the project -among which IEO, CSIC, General Secretariat for Fisheries, WWF/Adena and Oceana- in the study of 10 marine areas, 5 of them within the Mediterranean (Creus Canyon, Menorca Channel, Columbretes, Seco de los Olivos Bank and Volcanic Cones around Alborán Island). Oceanographic multidisciplinary surveys have been undertaken during 2012 on board of the vessels above mentioned, focusing to the end of the sampling and the writing of the reports. It is expected to have final results for the end of 2013 in order to provide solid scientific information on the importance of conservation and sustainable use of those marine areas for full implementation of the Natura 2000 network at sea and to end up with stakeholders participation in order to agree the management guidelines.

In 2013, information has been gathered under contract from the General Secretariat for Fisheries, focusing the interaction of fishing fleets on the forthcoming areas within the Natura 2000, as a result from INDEMARES, that is to say, protected habitats and species in order to get the future management guidelines.

Updated information of the process towards the declaration of new AMPs in the Spanish waters can be found in the following link: http://www.magrama.gob.es/es/costas/temas/biodiversidad-marina/espacios-marinos-protegidos/red-natura/red-natura-2000-declaracion-lugares.aspx

Furthermore, in each of the 7 Spanish Mediterranean Marine Reserves, managed by the General Secretariat for Fisheries, studies realised within the Spanish Marine Reserves Network teams, some in collaboration with the IEO and others with Universities, have been reduced due to the financial constraints. Nevertheless work continue in order to tackle fisheries enhancement and biodiversity focusing emblematic groups such as marine phanerogams, cetaceans by opportunistic sightings as well as on invertebrates such as *Pinna nobilis*, *Dendropoma petraeum*, *Cladocora caespitosa* or gorgonians. Marine Reserves have turn out to be emblematic sites to investigate biodiversity and global change effects as within them, managers can witness effects of superficial marine waters heating on gorgonians or brain coral as well as the evolution of invasive species as the alga *Caulerpa racemosa*, among others. Works done in the marine reserve of Columbretes Islands on *C. caespitosa* by Dr. Kersting witness that marine reserve, and this one in particular with historic data of superficial temperature at sea 10 years old, are sentinels on the global change. In other Mediterranean marine

reserves such as Tabarca Island and Cabo de Palos- Islas Hormigas, research is being done too to tackle global change and its consequence on invasive foreign algae. The Spanish marine reserves, confirmed as GES sites within the Spanish Strategies, are giving interesting reference values.

Marine reserves are participating in projects within the 7th Frame Program such as the MMMPA project: "Monitoring management on Mediterranean Marine Protected Areas and CoCoNet, and in the Steering Committee focusing surveillance issues within MEDPAN.

The participation of the Mediterranean marine reserves for fisheries within the Spanish marine reserve network in IMPAC3 held in Marseille has enabled both things: to know what is being done in the world but, too, to confirm that Spanish marine reserve standards can be compared to any efficient marine network and that they are getting sound results from the struggle to protect these areas for both, fisheries and marine biodiversity.

More information can be found in the following link: www.reservasmarinas.net

Management measures

Spanish fisheries legislation sets out different management measures, without prejudice of EU or international regulations, applied to purse seine, bottom trawl, long line fisheries as well as artisanal gears. The expected effect is to contribute to the conservation and regeneration of fishery resources, as well as protecting nursery areas, protected habitats, and reducing fishing mortality. The main regulations currently in force or recently approved are:

- Fishery Law 3/2001, applicable to all the fishing activities practised by Spanish vessels, as well as Community or international fishing vessels in Spanish waters. It includes measures on conservation of fisheries resources, protection and regeneration of fisheries resources, management measures of fishing activity, regulation of recreational fisheries and inspection and control measures.

- Regarding the process of updating the national law to EU legislation (mainly Council Reg. 1967/2006), some rules have been recently approved, regardless of the basic national regulation for each fishing gear established by Royal Decree.

In this regard, Order AAA/2808/2012 establishes a Management Plan for Fisheries Resources Conservation within the Mediterranean for purse seiners, trawl and artisanal fleet, for the period 2013-2017. It continues the first plan dated 2006, that has been adapted every two years since then. The current multiannual management plan 2013-2017 has been made up according to art. 19 of Council Regulation 1967/2006, and further approved by EU Commission. It establishes for the first time biological reference points for specific target species, according to scientific reports from IEO. Management measures focuses on reducing fishing effort through technical measures and fleet capacity adjustment to the state of the resources. Once the objective of reducing the fishing effort by a 10% stated in the previous MP was reached, the current one establishes an additional reduction of a 20% of global fishing effort for the year 2017. It also makes reference to the main regulations in force as for management and technical measures for purse seine (art. 4), bottom trawling (art. 5) and artisanal gears (art. 6).

A comprehensive set of national regulations in the Mediterranean can be consulted in the following link: http://www.magrama.gob.es/es/pesca/legislacion/Caladeronacional.aspx

As for tuna fisheries, the main national regulations are the following:

- Ministerial Order AAA/642/2013, which regulates Bluefin tuna fisheries in Eastern Atlantic and Mediterranean Sea. Both EU and national rules emerge from ICCAT regulations, which for BFT it is stated by Recommendation 10/04, that establishes a Multi-annual Recovery Plan for Bluefin tuna within the East Atlantic and Mediterranean, amended by Recommendation 12/03. TACs, seasonal closures, fishing gears and authorised vessels are established, among other measures.

- Ministerial Order APA/2521/2006, regulating surface longline fisheries for hihgly migratory species and creating a unified census for surface longliners

- Royal Decree 71/1998 that regulates tuna fisheries and related species in the Mediterranean

Regarding Red Coral, national regulation has been modified and adapted to the last GFCM Recommendations through Royal Decree 629/2013.

As for recreational fisheries, Royal Decree 347/2011 is the current legal framework for recreational fisheries within exterior waters. It establishes a National Register of authorised vessels, a list of authorised species, fishing modalities, limits of catches, general conditions for recreational fisheries and competitions, prohibited practices, specific authorizations for some species, catches declarations, etc. Marketing of catches is strictly prohibited.

With regard to Marine Reserves, the General Secretariat for Fisheries keeps on managing the seven Spanish Mediterranean Marine Reserves currently existing, with enforcement through guards on the spot, follow up, awareness programs, etc.

Research suggestions for consideration by SAC

For the assessment of marine resources much greater attention is needed in taking into ecological considerations for the implementation of ecosystem based approach in fisheries. Studies focusing on the impact of environmental changes (climatic variability, increase of gelatinous plankton, etc.) and on the variability of marine resources, as well as, on their effect on fishing catchability and fleet efficiency are recommended.

TUNISIA/TUNISIE

Description des pêcheries

Les côtes tunisiennes s'étendent sur environ 1 300 km abritant 8 ports hauturiers, une quarantaine de ports côtiers et de nombreux sites de débarquement éparpillés tout au long des côtes. Selon les dernières statistiques de la Direction Générale de la Pêche et de l'Aquaculture (DGPA), la production annuelle en 2012 a atteint environ 117 637 tonnes dont plus de 51 835 tonnes constitués d'espèces de petits pélagiques (sardine, sardinelle, saurel, maquereaux, anchois, etc.). Les différents types de pêches pratiqués sont essentiellement la pêche côtière, la pêche au chalut benthique, la pêche au feu et à la petite senne, la pêche au thon, la pêche au coquillage et la pêche aux éponges et au corail. Selon l'activité de pêche pratiquée, les fonds fréquentés pourraient s'étendre du rivage (pêche à pied des coquillages) jusqu'à plus de 600 m de profondeur (pêche au chalut). Par ailleurs, il est à noter que les eaux tunisiennes sont subdivisées en trois zones principales : la zone Nord (GSA 12) ; la zone Est (GSA 13) et la zone Sud (GSA 14). La flottille de pêche est constituée de plus de 12 000 unités de pêche dont 6 819 barques côtières non motorisées, 4 838 barques côtières motorisées, 427 chalutiers, 369 sardiniers et 48 thoniers (Annuaire Statistique de la DGPA, 2012). Selon leur activité et leur zone de pêche, la longueur totale des unités de cette flottille peut varier d'environ 3 m (barque non motorisées) à environ une trentaine de mètres (chalutiers puissants et thoniers). De même pour la puissance des moteurs qui peut osciller entre 0 et 150 Cv (Chevaux vapeur) pour les barques côtières et de 250 à 700Cv pour les unités les plus puissantes

Statut du système d'information et statistique

Tout d'abord, il est important de noter que la collecte, l'archivage et l'élaboration des bases de données des statistiques de la pêche (production, effort, flottille) sont assurés par les services du Ministère de l'Agriculture, plus particulièrement la Direction Générale de la Pêche et de l'Aquaculture (DGPA). Le Ministère dispose actuellement d'une base de données informatisée et l'information selon l'espèce, l'engin, les unités de pêche, remonte à l'année 1995.

Ce système serait amélioré au courant des années à venir pour renforcer la qualité des données collectées. En effet, actuellement, au niveau de collecte de données, la méthode appliquée repose sur les journaux de pêche, particulièrement pour les chalutiers, les thoniers et les senneurs. Pour la pêche côtière, la collecte se base sur un recensement et une présence physique lors des débarquements, un travail délicat qui demande beaucoup d'efforts et de moyens. Depuis l'année dernière, la DGPA appuyée par la FAO (Projet FAO/CopPeMedII) a lancé une opération pilote de collecte et d'amélioration des données statistiques de la pêche artisanale. Le site choisi est le port de Monastir à l'Est du pays.

Activités de recherche en cours

Dans le domaine de l'évaluation des stocks, les différentes activités de recherche sont effectuées par l'Institut National des Sciences et Technologies de la Mer (INSTM), plus particulièrement le Laboratoire des Sciences Halieutiques (LSH), en collaboration très étroite avec l'université tunisienne, les services du Ministère de l'agriculture des ressources hydrauliques et de la pêche et la profession (Union tunisienne de l'agriculture et de la pêche – UTAP). En effet, depuis l'année 1996, la Tunisie a lancé, d'une façon continue, un grand programme d'évaluation des ressources halieutiques vivantes tunisiennes. Ce programme a été structuré selon des étapes consécutives.

Au courant de l'année 2012, le laboratoire en question a réalisé trois autres actions de recherche, parallèlement avec celles précédentes. Ces actions sont les suivantes:

- **Projet de recherche** : Ressources benthiques exploitables des eaux tunisiennes : Évaluation des stocks et aménagement des pêcheries.
- **Projet de recherche** : Ressources pélagiques exploitables : Évaluation des stocks et aménagement des pêcheries

Projet de recherche : Amélioration de la sélectivité des engins de pêche.

Concernant les différents thèmes abordés par ces actions de recherche, les opérations de collecte de l'information sont dans leur deuxième année. Un rapport des activités mi-parcours a été récemment rédigé et soumis au Ministères concernés.

Cependant, il est important de noter que dans le cadre des activités de la CGPM, les équipes de recherche tunisiennes et italiennes, dans le cadre du projet FAO/MedSudMed ont présenté 2 travaux d'évaluation. En effet, ces évaluations qui ont concerné les stocks de la chevrette et du merlu, ont été présentées, discutées et approuvées lors de la réunion du groupe de travail des démersaux (Bar Monténégro, 27 au 31 janvier 2014).

Études en sciences socioéconomiques

Il faut tout d'abord rappeler que la Tunisie a réalisé un travail très intéressant sur les indicateurs socioéconomiques des pêcheries du golfe de Gabès. Très récemment ce travail a été étendu pour les pêcheries de la région Nord et Est du pays. De plus, en 2006, nous avons pu achever un travail sur l'application des modèles bio-économiques de la pêcherie de la crevette royale dans la région du golfe de Gabès. Les plus importants résultats de ce travail ont été présentés par notre expert lors de la dernière réunion du Sous-Comité des sciences sociales et économique (SCESS) du SAC (Malaga, 30 novembre-3 décembre 2009). Dans le cadre de la réalisation de l'action de recherche LAMPAROS, notre regard s'est retourné vers l'étude de la rentabilité économique des unités de pêche ciblant les petits pélagiques, particulièrement les unités de la pêche au feu et des petits sardiniers. Les opérations de collecte et d'analyse des données ont été déjà finalisées et les résultats sont actuellement disponibles. Par ailleurs, notre expert en la matière a également présenté 2 communications lors de la dernière réunion du SCESS, tenue à Rome du 18 au 20 février 2013. Ces deux communications sont respectivement intitulées:

- Analyse bioéconomique des pêcheries des petits pélagiques dans la région de Zarzis
- Analyse socioéconomique de la pêche côtière/artisanale et évaluation des actions du plan de gestion relatif à la lagune de Boughrara

Remarque : Notre expert Mr. Scander BEN SALEM coordonne actuellement les activités du Sous-Comité Sciences Sociales et Economiques du SAC.

Étude dans le domaine de l'environnement marin

Dans le cadre des programmes de recherche exécutés au sein du laboratoire biodiversité et biotechnologie marines de l'INSTM, nous avons étudié le statut de plusieurs groupes d'espèces de vertébrés marins pour la plupart menacés: tortues marines, cétacés et élasmobranches ainsi que plusieurs habitats sensibles. Ces études mentionnées dans ce rapport répondent en grande partie au programme de travail intersessions du SCMEE. Les principaux actions et résultats des activités de recherche sont résumés ci-après:

Tortues marines

- Monitoring du site de nidification des îles Kuriat qui a permis d'enrichir davantage la base des données relative aux paramètres de nidification. Un nouveau site de ponte de la tortue marine Caretta caretta a été découvert à la Chebba (côtes sud-est de la Tunisie) l'été 2013. Des rencontres de sensibilisation des pêcheurs ont été organisées dans les ports pour une bonne conservation des tortues marines. Des dépliants et livrets ont été édités dans le même cadre de conservation.
- Étude de l'importance et de la répartition spatiotemporelle des échouages sur les côtes tunisiennes dans le cadre du réseau national d'échouage. Dans le cadre de ce réseau, des échantillons sont conservés pour les scientifiques. Ceux-ci ont servi en premier temps pour mener des études de génétique (caractérisation génétique des populations) et de parasitologie. Une étude sur les épibiontes a été publiée.

Les poissons

- Une étude systématique (morphologique, anatomique, parasitologique et génétique) a mis en évidence la validité d'une pastenague Dasyatis tortonesi qui posait un problème de confusion avec une autre espèce du même genre Dasyatis pastinaca. L'étude biologique de ces deux espèces d'élasmobranches a été entamée.
- délimitation des zones de nurseries pour quelques espèces de poissons cartilagineux.
- Une étude de la biodiversité de la faune ichthyologique a été entamée dans un contexte de changement climatique.

Les cétacés

- Recensement des échouages de cétacés.

Étude de la biocénose coralligène

- Les campagnes de prospections effectuées ont permis d'établir une première liste d'espèces du coralligène au nord de la Tunisie, elle comprend :

  - 32 algues,
  - 10 spongiaires,
  - 7 échinodermes,
  - 10 bryozoaires,
  - 02 ascidies,
  - 07 mollusques,
  - 04 vers,
  - 04 cnidaires.

Parmi cette liste, plusieurs espèces ont été signalées pour la première fois en Tunisie et en Méditerranée.

Les herbiers de posidonie

L'étude des herbiers de posidonie dans le gouvernorat de Mahdia a permis de décrire plusieurs types d'herbiers dont les plus répandus sont les herbiers de plaine, mais aussi les herbiers à statut particulier, les récifs frangeants et les micro-atolls dans la région de La Chebba. En plus, nous avons apprécié la bonne vitalité de la plupart des herbiers prospectés. Il faut mentionner aussi que nous avons détecté quelques signes de régression qui sont limités à certaines zones et dont les causes probables peuvent être d'origine anthropique ou naturelle.

Nous avons pu aussi étudier les paramètres phénologiques de la posidonie et leurs variations spatio-temporelles. La variation saisonnière de ces paramètres se traduit par un accroissement de la longueur des feuilles, de la surface foliaire et de l'indice foliaire en été et de l'augmentation du nombre de feuilles en hiver. Cette variation est surtout dictée par le cycle saisonnier de la plante mais aussi par le cycle de la lumière et de l'hydrodynamisme.

Nous n'avons pas détecté une variation bathymétrique de ces paramètres, ce qui peut être dû à la bonne clarté des eaux dans la zone d'étude. L'étude de l'épiphytisme des feuilles a permis d'apprécier la grande diversité de cette communauté dont plusieurs espèces sont inféodées aux feuilles de posidonie. De même, nous avons pu décrire la zonation de plusieurs espèces sur les feuilles mais aussi leurs successions dans le temps. La variation temporelle de cette communauté se traduit par un accroissement de la biomasse et du nombre d'espèces épiphytes pendant la saison estivale par rapport à la saison hivernale.

Cette étude a permis aussi de mentionner la présence, dans la communauté épiphytique et, à un degré moindre, dans la colonne d'eau, de plusieurs espèces de microalgues potentiellement toxiques dont Ostreopsis siamensis, Prorocentrum lima et P. rathymum, mais leur abondance est assez faible. De même, les épiphytes des rhizomes sont très diversifiés et très variables dans l'espace et dans le temps

avec une couverture importante pendant la saison hivernale probablement à cause de la baisse de la longueur des feuilles réduisant ainsi l'ombrage.

Nouvelles mesures d'aménagement

Instauration d'une nouvelle réglementation de l'activité de pêche durant la période d'intersessions qui se résume à la fermeture totale de la région sud de la Tunisie (GSA 14, golfe de Gabès) à la pêche au chalut durant une période de trois mois (du 1er juillet 2009 au 30 septembre 2009). Cette mesure de gestion est appliquée pendant 5 années : 2009, 2010, 2011, 2012 et 2013.

Proposition de recherche pour le CSC

L'INSTM continue régulièrement ses activités de recherche et entretient une collaboration assez étroite avec les deux projets régionaux FAO/MEDSUDMED et FAO/COPEMEDII. En effet, dans le cadre des activités de ces deux projets, la Tunisie continue ses activités concernant les évaluations des stocks partagés, particulièrement la chevrette et le merlu dans la région du Canal de Sicile. Par ailleurs, dans une perspective de l'application de l'approche écosystémique en tant qu'outil d'aménagement des pêcheries méditerranéennes, la Tunisie est intégrée dans un projet européen sur cet aspect. Ce projet de recherche qui groupe des instituts de recherche espagnole, italienne et tunisienne (ECOSAFIM), a été accepté, pour financement, par l'Union européenne.

TURKEY/TURQUIE

Description of the fisheries

Total fish production of Turkey in 2012 (latest official) including inland fishery and aquaculture was 644 852 tonnes (inland catch 36 120 tones, aquaculture production 212 410 tonnes and marine catch 396 322 tonnes). Turkish fishery can be described as multi type fishery, from artisanal to small scale and to industrial fishery. Fishing is conducted in international waters, EEZ and Turkish territorial waters of Mediterranean sea, Aegean sea, Marmara sea and Black sea. Major landing comes from small pelagic fishery mostly anchovy, sprat, sardine, horse mackerel and Atlantic bonito of industrial fishery. Shell fish fishery is also important export product of Turkish fishery.

Table 1. Fisheries type by regions and main commercial species.

Fishing type	Sea regions	GSAs	Species
Pelagic fisheries	Eastern Black Sea	29	Anchovy, horse mackerel, bonito, sprat
	Western Black Sea	29	Anchovy, sprat, bonito, bluefish, scad, chub mackerel, sardines, dogfish
	Marmara	28	Anchovy,bonito,sprat, scad,bluefish,sardines
	Mediterranean and Aegean	22,24	Sardines, chub mackerel
Trawl fisheries	Western Black Sea	29	Whiting, red mullet, turbot
	Aegean	22	Mixed
	Mediterranean	24	Mixed
Highly Migratory Species	Mediterranean and Aegean	24 22	Tuna Swordfish
Artisanal fisheries (gillnet, trammelnet, longline, traps)	Black Sea, Marmara, Mediterranean and Aegean	29,28,24,22	Mixd (whiting, turbot, red mullet, grey mullet, shrimp, sparids, sole and dab, squids, octopus and cuttlefish, swordfish)
Sea snail fisheries (dredging)	Eastern Black Sea	29	Sea snail
Clam fisheris (dredging)	Western Black Sea	29	Baby clams
Shrimp/Prawn fisheries	Marmara, Aegean and Mediterranean	28,22,24	Shrimp
Lagoon fisheries	Mediterranean , Aegean and Marmara	24,22,28	Mixed (seabass, seabream, eel, mullets)

Table 2. Total fish production (2007-2012)

Year	Capture				Aquaculture		Total
	Marine	%	Inland	%	Amount	%	
2007	589 129	76.3	43 321	6	139 873	18.1	**772 323**
2008	453 113	70.1	41 011	6.4	152 186	23.5	**646 310**
2009	425 275	68.2	39 187	6.3	158 729	25.5	**623 191**
2010	445 680	68.2	40 259	6,2	167 141	25,6	**653 080**
2011	477 658	67.9	37 096	5,3	188 790	26,8	**703 545**
2012	396 322	61.5	36 120	5.6	212 410	32.9	**644 852**

Table 3. Marine fish landings(tonnes)

Species/Year	2007	2008	2009	2010	2011	2102
Anchovy	385 000	251 675	204 699	229 023	228 491	163 982
Sprat	11 921	39 303	53 385	57 023	87 141	12 091
Horse mackerel	32 021	32 177	28 268	20 447	25 010	30 945
Sardine	20 941	17 531	30 091	27 639	34 709	28 248
Whiting	12 940	12 231	11 146	13 558	9 455	7 367
Atlantic bonito	5 965	6 448	7 036	9 401	10 019	35 764
Grey mullet	8 291	3 345	2 987	3 119	2 514	4 010
Blue fish	6 858	4 048	5 999	4 744	3 122	7 389
Turbot	769	528	383	295	166	202

Fleet structure

There are 20 100 vessels registered in the Fisheries Information System (FIS). The size range of fishing vessels is given in the Table 4. The majority of fishing fleet is comprised of small vessels less than 18 meters in length. Nearly half of the total fishing fleet is based in the Black Sea ports. The majority of large vessels operate in the Sea of Marmara and the Black Sea. Under the current fishing fleet management system, fishing license is not granted to a new vessel. Turkey has implemented a new support scheme for 2013. 364 fishing vessels 12 meters and above in length were bought back in 2013. It is planned to buy back 534 fishing vessels 10 meters and above in length for 2014.

Table 4. Size range of fishing vessels

Size(m)	0-4.9	5-7.9	8-9.9	10-11.9	12-14.9	15-19.9	20-29.9	30-49.9	50+	Total
Marine	845	10 638	3 017	826	672	429	521	210	7	**17 165**
Inland	290	2 536	207	29	52	15	0	0	0	**3 124**
Total	**1 132**	**12 891**	**3 294**	**842**	**754**	**440**	**522**	**218**	**7**	**20 100**

Status of stocks for priority species

The Scientific and Technological Research Council of Turkey and the Ministry of Food, Agriculture and Livestock jointly carry out the Project on “Acoustic Method for the Determination of the Black Sea Anchovy Stocks and Continuous Monitoring “within the National Fisheries Data Collection Programme.

Status of the statistics and information system

Over the last years, markedly progress has been made in development of fisheries data collection system in Turkey. Fisheries Informatiom System (FIS), an integrated Web-based database, has been developed. The FIS, which is being subject to routine updates, comprises a combination of resources organised to collect, process, transmit, and disseminate the fisheries relevant data. The system is composed of modules interacting to introduce and extract data to/from a centralized database. The integrated FIS includes registry of commercial fishing vessels, fishing licence registry, registry of recreational fishers, issue of special fishing permits to fishers, data on landings, quota (bluefin tuna), catch quota (striped venus clam and eel), collection of biologic data, monitoring of anchovy catches transshipped to cold storages or processing plants, issue of catch certificate under the scope of EU Regulation 1005/2008, inspection forms, sales notes and collection of fisheries and aquaculture statistics.

Vessels over 15 meters are under an obligation to record and keep logbook. The Ministry of Food, Agriculture and Livestock is planning to shift paper-based logbook into the electronic one due to excess work burden associated with the paper logbook. A study on development of an integrated system for electronic logbook is underway. The application of VMS has been started in 2008 with the vessels involved into bluefin tuna fishing under the rules of ICCAT. About 200 vessels have been equipped with VMS-device. Fishing vessels over 15 meters (about 1.187 vessels) are under an obligation to have Automated Identification System (AIS).

Status of marine environmental studies in progress

An ongoing project titled “Strengthening Protected Area Network of Turkey: Catalyzing Sustainability of Marine and Coastal Protected Areas” aims to facilitate expansion of the national system of marine and coastal protected areas, including fisheries protected areas, and improve their management effectiveness. The project is partly funded by GEF and will be completed in October 2013.

Status of the social sciences studies status

In 2010, two studies on socio economical status of Aegean fishery and northern Mediterranean fishery were completed by fisheries faculties of Aegean university and Mersin University. And also another study “socio economical analyses of Mediterranean fishermen” by Economical Research Institute of the Ministry of Food, Agriculture and Livestock has been completed.

Management measures

Notification regulating commercial fisheries has been revised for 2012-2016 fishing season. Minimum size restrictions have been enhanced for some species. Prohibitions for use of some fishing gear and for some fishing zones have been introduced.

No fishing activity for turbot shall be permitted from 15 April to 15 June. The minimum landing size for turbot shall be 45 cm total length. The minimum legal mesh size for bottom-set nets used to catch turbot shall be 400 mm.

With regard to: *Recommendation GFCM/35/2011/2 on the exploitation of red coral in the GFCM Competence Area*

It is prohibited to harvest red coral in accordance with Article 16 of the Notification 3/1 Regulating Commercial Fishing.

With regard to: *Recommendation GFCM/36/2012/2 on mitigation of incidental catches of cetaceans in the GFCM area*

It is prohibited to catch cetaceans such as dolphin, whale and seal in accordance with Article 16 of the Notification 3/1 Regulating Commercial Fishing. It is prohibited to use driftnet in fishing activities according to the Article 45(22) of the Notification 3/1 Regulating Commercial Fishing.

With regard to: *Recommendation GFCM/36/2012/3 on fisheries management measures for conservation of sharks and rays in the GFCM area*

For all season, shark and rays catching are prohibited in all coastal lines of Turkey in accordance with Article 16 of the Notification 3/1 Regulating Commercial Fishing.

Research suggestions for consideration by SAC

None

The Scientific Advisory Committee (SAC) of the General Fisheries Commission for the Mediterranean (GFCM) held its sixteenth session in St. Julian's, Malta, from 17 to 20 March 2014. The session was attended by 18 Contracting Parties, 7 observers, representatives of the FAO regional projects and the GFCM Secretariat. The Committee reviewed the issues addressed at 15 meetings held during the 2013–2014 intersession, including those of the four subcommittees and the Framework Programme (FWP). The main issues tackled included: i) scientific advice on the status of stocks, including proposals to improve the advice provided to the Commission; ii) analysis of research activities by Member Countries; iii) updates on the development of the GFCM Data Collection Reference Framework (DCRF); iv) updates on the development of management plans for Mediterranean and Black Sea fisheries and v) follow-up activities addressing SAC priorities, such as indicators on the state of marine populations, small-scale fisheries and the fight against IUU. The Committee highlighted the importance of establishing a GFCM DCRF and submitted its proposal for the consideration of the Commission. Also, it launched the preparation of a concept note for a regional programme on small-scale fisheries, and provided elements for the management of red coral and a number of selected fisheries for the consideration of the Commission. The achievements of the Working Group on the Black Sea, including through its Subregional Group on Stock Assessment for the Black Sea, were appraised. The SAC also agreed upon a framework for providing advice and formulated a set of recommendations regarding its functioning. Finally, it agreed upon its work plan for 2014–2015 and elected a new Bureau, paying tribute to the work done by the immediate past members of the Bureau.

Le Comité scientifique consultatif (CSC) de la Commission générale des pêches pour la Méditerranée (CGPM) a tenu sa seizième session à Saint Julien, Malte, du 17 au 20 mars 2014. Ont participé à cette session 18 parties contractantes, 7 observateurs, ainsi que des représentants des projets régionaux de la FAO et le Secrétariat de la CGPM. Le Comité a passé en revue les questions abordées lors des quinze réunions tenues pendant la période intersessions 2013-2014, notamment les sessions des quatre sous-comités et les réunions au titre du programme-cadre de la CGPM (FWP). Les principaux aspects abordés concernaient notamment: i) les avis scientifiques sur l'état des stocks, notamment des propositions visant à améliorer les avis donnés à la Commission; ii) l'analyse des activités de recherche menées par les États membres; iii) les mises à jour concernant l'élaboration du cadre de référence pour la collecte de données de la CGPM; iv) les mises à jour concernant l'élaboration de plans de gestion des pêches en Méditerranée et en mer Noire et v) les activités de suivi répondant aux priorités du CSC, telles que celles portnt sur les indicateurs de l'état des populations marines, la pêche artisanale et la lutte contre la pêche INDNR. Le Comité a souligné l'importance de la mise en place d'un cadre de référence pour la collecte de données de la CGPM et a soumis sa proposition à la Commission pour examen. Par ailleurs, il a lancé la préparation d'une note conceptuelle relative à la mise en place d'un programme régional sur la pêche artisanale, et a fourni des indications sur la gestion du corail rouge et de certaines pêches à soumettre à la Commission pour examen. Le Comité a fait le point sur les résultats du Groupe de travail sur la mer Noire, y compris ceux du Groupe sous-régional sur les évaluations de stocks en mer Noire. Il a également convenu d'un cadre pour fournir les avis et a formulé une série de recommandations concernant son fonctionnement. Enfin, le Comité a établi son plan de travail pour 2014-2015 et élu son nouveau Bureau, après avoir rendu hommage au travail de ses membres sortants.

ISBN 978-92-5-008712-2 ISSN 2070-6987

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I4381Bi/1/02.15