FIPI/R1110(Bi)

FAO
Fisheries and
Aquaculture Report

Rapport sur les
pêches et l'aquaculture

ISSN 2070-6987

Food and Agriculture Organization
of the United Nations

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

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

**Report of the seventeenth session of the**

## SCIENTIFIC ADVISORY COMMITTEE

**FAO headquarters, Rome, 24–27 March 2015**

**Rapport de la dix-septième session du**

## COMITÉ SCIENTIFIQUE CONSULTATIF

**Siège de la FAO, Rome, 24-27 mars 2015**

FAO Fisheries and Aquaculture Report No. 1110
FAO, Rapport sur les pêches et l'aquaculture nº1110 FIPI/R1110 (Bi)

GENERAL FISHERIES COMMISSION FOR THE MEDITERRANEAN

COMMISSION GÉNÉRALE DES PÊCHES POUR LA MÉDITERRANÉE

# Report of the seventeenth session of the SCIENTIFIC ADVISORY COMMITTEE

FAO headquarters, Rome, 24–27 March 2015

# Rapport de la dix-septième session du Comité scientifique consultatif

Siège de la FAO, Rome, 24-27 mars 2015

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

ISBN 978-92-5-008769-6

## PREPARATION OF THIS DOCUMENT

This is the final report approved by the participants in the seventeenth session of the Scientific Advisory Committee of the General Fisheries Commission for the Mediterranean held at the FAO headquarters, Rome, from 24 to 27 March 2015.
The material in the appendixes is reproduced as submitted.

## PRÉPARATION DE CE DOCUMENT

Le présent document est le rapport final adopté par les participants de la dix-septième session du Comité scientifique consultatif de la Commission générale des pêches pour la Méditerranée tenue au siège de la FAO, Rome, du 24 au 27 mars 2015.
Les documents des annexes sont reproduits tels qu'ils ont été fournis.

**FAO General Fisheries Commission for the Mediterranean/Commission générale des pêches pour la Méditerranée.** 2015. *Report of the seventeenth session of the Scientific Advisory Committee. FAO headquarters, Rome, 24–27 March 2015/Rapport de la dix-septième session du Comité scientifique consultatif. Siège de la FAO, Rome, Italie, 24-27 mars 2015.* FAO Fisheries and Aquaculture Report / FAO Rapport sur les pêches et l'aquaculture No. 1110. Rome, FAO. 300 pp.

**ABSTRACT**

The Scientific Advisory Committee (SAC) of the General Fisheries Commission for the Mediterranean (GFCM) held its seventeenth session at FAO headquarters, Rome, from 24 to 27 March 2015. The session was attended by delegates and representatives of 19 Contracting Parties, 10 observers, FAO (including its regional projects) and the GFCM Secretariat. The Committee reviewed the work carried out during the 2014–15 intersession, including within its subsidiary bodies, and formulated advice in relation to the following aspects: (i) status of the main commercial stocks and proposed management measures for selected fisheries; (ii) measures to mitigate bycatch of elasmobranchs; and (iii) methods to integrate socio-economic information into scientific advice. In addition, the Committee approved its Data Collection Reference Framework (DCRF), due to be submitted to the Commission at its thirty-ninth session for endorsement. Delegates were also informed about the progress made in the elaboration of the first draft of the biennial report on the status of Mediterranean and Black Sea fisheries, prepared upon the request made by the Commission at its thirty-eighth session. In addition, the Committee reviewed and validated the technical contents of a proposal for the establishment of a new fisheries restricted area (FRA) in the northern sector of the Strait of Sicily, to be submitted for the consideration of the Commission at its thirty-ninth session. Against the backdrop of the recent amendment of the GFCM's legal framework, the Committee proposed a new reference framework and formulated suggestions regarding its future functioning and structure; these should be further discussed by the Commission on the occasion of its next session. Finally, the Committee agreed upon its work plan for 2015–16, including a list of proposed activities and meetings.

**RÉSUMÉ**

Le Comité scientifique consultatif (CSC) de la Commission générale des pêches pour la Méditerranée (CGPM) a tenu sa dix-septième session au siège de la FAO, Rome, du 24 au 27 mars 2015. Ont participé à cette session les délégués et représentants de 19 Parties contractantes et 10 observateurs, ainsi que de la FAO (y compris ses projets régionaux) et du Secrétariat de la CGPM. Le Comité a fait le point sur les travaux réalisés pendant la période intersessions 2014-15, y compris au sein de ses organes subsidiaires, et a formulé des avis relatifs aux aspects suivants: (i) état des principaux stocks commerciaux et mesures de gestion proposées pour certaines pêcheries: (ii) mesures visant à réduire les prises accidentelles d'élasmobranches: et (iii) méthodes pour intégrer les informations socioéconomiques aux avis scientifiques. De plus, le Comité a approuvé son cadre de référence pour la collecte de données, qui devra être présenté pour approbation à la Commission lors de sa trente-neuvième session. Les délégués ont également été informés des progrès relatifs à l'élaboration du projet de premier rapport biennal sur l'état des pêches en Méditerranée et en mer Noire, préparé suite à la demande faite par la Commission à sa trente-huitième session. Par ailleurs, le Comité a examiné et validé le contenu technique d'une proposition de création d'une nouvelle zone de pêche à accès reglementé dans le secteur nord du détroit de Sicile, à soumettre à la considération de la Commission lors de sa trente-neuvième session. Dans le cadre de la récente modification du cadre juridique de la CGPM, le Comité a proposé un nouveau cadre de référence et formulé un certain nombre de suggestions concernant sa structure et son fonctionnement futurs; ces éléments devraient être examinés plus en détail par la Commission au cours de sa prochaine session. Enfin, le Comité est convenu de son plan de travail pour 2015-16, y compris la liste des activités et réunions proposées.

**CONTENTS**

## TABLE DES MATIÈRES

## APPENDIXES/ANNEXES

## OPENING AND ARRANGEMENTS FOR THE SESSION

1. The seventeenth session of the Scientific Advisory Committee (SAC) of the General Fisheries Commission for the Mediterranean (GFCM) was held at FAO headquarters, Rome, from 24 to 27 March 2015. The session was attended by delegates from 19 Contracting Parties, 10 observers, representatives of FAO regional projects, the GFCM Secretariat and several invited experts. The list of participants is provided in Appendix 2.

2. The session was called to order by Mr Othman Jarboui, SAC Chairperson, who welcomed participants. In his address, he commended the remarkable involvement of Member countries and partners in the activities carried out by the Committee. He made particular reference to the development of the GFCM Data Collection Reference Framework (DCRF) and to important achievements during the intersession, including in relation to the formulation of scientific advice to support the management of key fisheries. In this respect, he mentioned the important challenges ahead that the session would be called to discuss in view of the future role and functioning of the Committee within the amended legal and institutional framework of the GFCM.

## ADOPTION OF THE AGENDA

3. After having introduced delegates and observers, the SAC Chairperson gave the floor to the GFCM Secretariat who informed the meeting about organizational arrangements.

4. The agenda was adopted by the Committee with minor amendments as attached under Appendix 1. The list of documents is under Appendix 3.

## INTERSESSIONAL ACTIVITIES

### Review of the recommendations of the thirty-eighth session of the Commission concerning the management of fisheries and progress of the GFCM amendment process

5. Mr Abdellah Srour, GFCM Executive Secretary, reviewed progress made in the process of amendment of the legal and institutional framework of the GFCM. He explained that the amended GFCM Agreement had entered into force and was currently being certified and deposited by the United Nations (UN) Secretariat, while the draft amended Rules of Procedure and Financial Regulations had been negotiated during an intersessional meeting of the Commission (FAO headquarters, January 2015) and were expected to be considered for review and adoption at the next session of the GFCM (May 2015). In this respect, he recalled the mandate given to the SAC to launch a reflection on the revision of its reference framework as a GFCM subsidiary body so that its views could be duly taken into account in the amendment of the Rules of Procedure.

6. The Executive Secretary then recalled the main decisions adopted at the thirty-eighth session of the Commission, namely: (i) Resolution GFCM/38/2014/1 on Guidelines on VMS and related control systems in the GFCM area of competence; (ii) Recommendation GFCM/38/2014/1 amending Recommendation GFCM/37/2013/1 and on precautionary and emergency measures for 2015 on small pelagic stocks in the GFCM GSA 17; and (iii) Recommendation GFCM/38/2014/2 amending and repealing Recommendation GFCM/34/2010/3 concerning the identification of non-compliance. He also recalled that three draft recommendations, two on the management of demersal fisheries in the Strait of Sicily and one on the management of turbot in the Black Sea, had been tabled at that session and had remained pending.

### Overview of the achievements of the SAC

7. On the basis of document GFCM:SAC17/2015/2, the Chairperson presented the activities undertaken during the intersession, highlighting that a total of 13 meetings had been convened.

8. The main results of activities related to marine environment and ecosystems were outlined, in particular a workshop on elasmobranch conservation and a special session on the assessment of red coral (*Corallium rubrum*) populations. The Chairperson then presented the conclusions of the MedSuit Workshop on indicators and targets to assess the good environmental status (GES) of marine populations, inviting the SAC to analyse the selected indicators and provide its feedback.

9. In the field of statistics and information, the Chairperson presented the results of the workshop on the implementation of the DCRF in the Mediterranean and Black Sea, highlighting the technical suggestions that had been made, including in particular on the socio-economic components of the DCRF and the proposed roadmap to collect and submit data through this new framework.

10. Finally, the Chairperson listed the activities implemented in connection with the stock assessment of demersal and small pelagic species and European eel (*Anguilla anguilla*) and with the management of selected fisheries.

11. The Committee welcomed the important outcomes achieved during the intersession, especially in light of recent developments related to data collection.

**Overview of the achievements of the Working Group on the Black Sea (WGBS)**

12. On the basis of documents GFCM:SAC17/2015/2 and GFCM:SAC17/2015/Inf.8, Mr Simion Nicolaev, coordinator of the Working Group on the Black Sea (WGBS), presented the activities carried out during the intersession, including the fourth meeting of the WGBS (Georgia, March 2015). In this regard, he made particular reference to Black Sea stock assessment, DCRF implementation and specific work related to turbot fisheries management.

13. The coordinator then presented the advice formulated by the Subregional Group on Stock Assessment in the Black Sea (SGSABS), which called for the implementation of a recovery plan for turbot and piked dogfish as well as a reduction in fishing mortality for anchovy and horse mackerel. He mentioned that several activities – such as those related to the identification of anchovy subspecies and to the harmonization of age-reading methodologies, both implying the exchange of otoliths – had already been launched as a result of the fruitful cooperation among WGBS experts. He also informed the Committee about the progress made regarding the elaboration of a concept note for a joint survey on stock assessment to be presented to the Commission at its next session, as well as the development of a standard format for the submission of national reports by all six Black Sea riparian States to the GFCM Secretariat.

14. The Committee acknowledged the extensive and high-quality work carried out by the WGBS, which was regarded as a successful example of implementation of the subregional approach.

**Research activities by Member countries**

15. The GFCM Secretariat presented a synthesis of the information contained in 17 national reports sent by GFCM Members (synthesis and country reports are provided in Appendixes 11(1) and 11(2), respectively). The synthesis outlined a number of aspects, namely: (i) relevant changes in the fisheries, including in the number of active vessels and in capture fisheries production; (ii) the increasing number of stock assessments performed by GFCM Members, including for shared stocks, although some of them had not been presented for discussion to the relevant GFCM working groups; (iii) the increasing number of studies addressing bycatch and discards, resulting in improved reporting of shark, cetacean and turtle bycatch; and (iv) the growing interest for studies addressing the identification of stock units, indicators and reference points as well as the socio-economic analysis of potential fisheries management scenarios.

16. The Secretariat highlighted a number of issues related to a lack of harmonization between national reports, which had resulted in difficulties in performing a comparative analysis of submitted

information. In this regard, a new tool for the online submission of national reports was presented. In order to test this system, the Committee agreed to run a testing phase that would be implemented on a voluntary basis by a group of countries that should provide feedback to the Secretariat before the thirty-ninth session of the Commission. The Committee was reminded that the use of this new tool was optional and that the current template would still be valid.

17. In response to a request for clarification on fleet reductions in a number of countries, the Committee was informed that, in the case of Lebanon, such reduction was due to variations in the number of active licences between 2004 and 2014, whereas for the case of Morocco, the reduction was mainly due to fishing vessels changing their main operational port from the Mediterranean to the Atlantic.

**Major activities and initiatives of the FAO regional projects**

18. The activities carried out by the FAO regional projects (AdriaMed, CopeMed II, EastMed and MedSudMed) during the intersession were presented, including research activities, training programmes, workshops and working groups as well as technical assistance to the countries and to SAC activities. The MedLME programme was also introduced. Delegates were reminded that detailed information on the activities and outputs of the regional projects could be found in the annual report of their respective coordination committees as well as in document GFCM:SAC17/2015/Inf.19.

19. The Committee acknowledged the extensive work carried out by the FAO regional projects. Delegates welcomed efforts towards increased cooperation, expressing hopes for continuing and boosting subregional cooperation and support to SAC activities.

20. All delegations of countries benefiting from the support from a regional project took the floor to stress the significant contribution and assistance provided by the regional projects in tackling major national issues in the fields of statistics, fisheries and natural resources monitoring, socio-economics, data collection and processing, stock assessment and capacity building.

21. The Executive Secretary praised the synergistic cooperation between the GFCM and the FAO regional projects, which, among others, had led to increased expert participation in meetings. He mentioned that the GFCM Framework Programme (FWP) had provided an effective opportunity for the GFCM to identify and execute activities in collaboration with the regional projects and thanked the FWP and regional projects' donors, including the European Union (Member Organization), France, Greece, Italy and Spain.

22. Mr Stefano Cataudella, GFCM Chairperson, highlighted the role of the regional projects in support to the GFCM and emphasized the need to jointly identify further courses of action towards a more efficient management of Mediterranean and Black Sea fisheries through enhanced cooperation.

**FORMULATION OF ADVICE IN THE FIELD OF FISHERIES MANAGEMENT AND RESEARCH**

**Conclusions and recommendations related to marine environment and ecosystems, including indicators of the status of exploited populations**

23. Mr Federico Alvarez, coordinator of the Subcommittee on Marine Environment and Ecosystems (SCMEE), gave an overview of the outcomes of intersessional activities of the Subcommittee based on documents GFCM:SAC17/2015/2, GFCM:SAC17/2015/Inf.11, Inf.13 and Inf.17.

24. He recalled the main management measures to mitigate bycatch of elasmobranchs proposed by the workshop on elasmobranch conservation, as follows:

- Minimum and/or maximum landing sizes for those elasmobranch species that can be commercialized.
- Gear restrictions, including: (i) the prohibition of wire leaders, chemical light sticks and the obligation to use corrodible hooks in longline fisheries; and (ii) the reduction of soak time of set nets.
- Requirements to use hook removers and appropriate tools to release sharks alive.
- Extension of the protection level already given to species listed in Annex II of the Barcelona Convention under Recommendation GFCM/36/2012/3 on the conservation of sharks and rays to the nine species included in Annex III of the same Convention.
- Temporary closure of a specific nursery area located in the Gulf of Gabès, taking into account the reproductive cycles of the main elasmobranch species affected by fisheries in the area.

25. Delegates remarked that the establishment of a minimum landing size should be proposed on a specific basis, taking into account, for example, the different growth and maturity rates of the species in the area. Moreover, they highlighted the fact that elasmobranchs were usually not the main target of fisheries in the GFCM area, which could make the implementation of some proposed measures more complicated.

26. The Committee noted the proposed measures and agreed that these should be incorporated into management plans for fisheries that produce elasmobranch bycatch. For the specific case of the temporal closure of an area in the Gulf of Gabès, the SAC proposed to study more in depth the bioecology of elasmobranch species in the Strait of Sicily, and more particularly in the Gulf of Gabès.

27. The delegate of Morocco informed the Committee about the establishment, since January 2015, of a protected area for fisheries purposes off the central part of the Moroccan Mediterranean coast. He mentioned that the area would have different levels of protection, including: (i) a maritime area where fishing is banned over a period of five years and another area where fishing is banned for six months a year; (ii) a permanent/temporary ban of certain fishing gear types; (iii) access to the whole area exclusively reserved to small-scale fishing vessels; and (iv) the obligation for fishers operating in the restricted area to keep a fishing logbook and fill in a catch reporting sheet.

28. The SCMEE coordinator then listed the common GES indicators of marine exploited populations proposed by the MedSUIT Workshop: (i) spawning stock biomass; (ii) total landings; (iii) fishing mortality; (iv) effort; and (v) bycatch of vulnerable and non-target species.

29. In this regard, delegates stressed that it was important to link effort and catch, and to use catch per unit effort (CPUE) as a more direct indicator of the status of stocks. As both effort and landings were already included in the list of proposed indicators, it was agreed that landing per unit effort (LPUE) could always be derived from the proposed indicators and used as a proxy for CPUE. Consequently, the Committee endorsed the proposed indicators to be used for assessing GES of exploited populations.

**Draft proposal by Oceana for the establishment of a new fisheries restricted area (FRA) in the northern sector of the Strait of Sicily**

30. The representative of Oceana introduced a proposal for the establishment of three fisheries restricted areas (FRAs) related to existing essential habitats for hake and shrimps in the northern part of the Strait of Sicily. The proposal suggested the prohibition of any kind of demersal fisheries in the selected areas and the establishment of adequate monitoring and control measures to apply this restriction.

31. On another note, the representative of Oceana also informed the Committee that part of the area originally identified in 2010 for the establishment of an FRA in the vicinity of the Balearic Islands had finally been declared a national protected area in July 2014 under Spanish legislation. Oceana had subsequently urged the Spanish authorities to promote this area as a GFCM FRA. The Committee took note of this suggestion.

32. After clarifications were provided to some specific requests, the Committee finally validated the technical contents of the FRA proposal in the Strait of Sicily as included in Appendix 7 and decided to submit it to the Commission for review and possible adoption.

**Conclusions and recommendations related to statistics and information, including the Data Collection Reference Framework (DCRF)**

33. Mr Alaa El-Haweet, coordinator of the Subcommittee on Statistics and Information (SCSI), presented the conclusions and recommendations of activities carried out by the Subcommittee, on the basis of documents GFCM:SAC17/2015/2, GFCM:SAC17/2015/Inf.10 and Inf.20.

34. The Committee recognized the importance of the DCRF as the SAC framework for the collection of required information in support of fisheries management decisions, and thanked all the experts who had contributed to its development. It favoured the idea of planning regular updates to the DCRF at a frequency to be defined.

35. Concerns were raised on the time frame for the proposed submission of data in the roadmap elaborated by the workshop on the implementation of the DCRF, given the technical, economic and human constraints that may prevent compliance with established deadlines. Several delegations mentioned the need for technical assistance at the national level to properly address data collection and submission requirements.

36. In response to the issues raised, the Secretariat clarified that most of the data required within the DCRF were already requested from Members through decisions in force and, therefore, should not entail additional work. In addition, it was highlighted that technical assistance to GFCM Members on data collection and submission through the DCRF had already been foreseen within the GFCM FWP.

37. Furthermore, Members with capacity-building needs at the national level were invited to lodge with the Secretariat a detailed request for assistance, encompassing needs for the collection and analysis of data as well as any other aspect related to fisheries management, so that tailored support could be considered, including in coordination with the FAO regional projects.

38. The Committee validated the improved sections of the DCRF document (structure of data collection and common practices for data collection) and agreed to submit it to the Commission for final endorsement. It highlighted the importance of having national focal points for data collection as key players in the operationalization of the DCRF, with the task to coordinate at the national level and with the Secretariat on the collection and submission of requested information. Finally, the Committee endorsed the roadmap for data collection and submission through the DCRF, available in Appendix 6.

**Conclusions and recommendations related to economic and social sciences**

39. In the absence of Mr Scander Ben Salem, coordinator of the Subcommittee on Economic and Social Sciences (SCESS), owing to last-minute constraints, the GFCM Secretariat introduced the recommendations made by the Subcommittee on the basis of documents GFCM:SAC17/2015/2 and GFCM:SAC17/2015/Inf.5. It was recalled that the SCESS had focused its activities on: (i) aspects related to the assessment of socio-economic variables in selected case studies; (ii) the estimation and submission of selected variables for DCRF Task VI (socioeconomics); (iii) progress in the field of small-scale fisheries; and (iv) progress towards a common methodology for socio-economic analysis.

40. The Committee praised the advances in socio-economic analysis made by the SCESS during the intersessional period as well as the contribution brought by the Subcommittee to improve the definition of socio-economic variables used in the DCRF. The delegate of Morocco highlighted the need for a better integration of socio-economic data into fisheries analysis, as well as the importance of developing guidelines on a common methodology for socio-economic analysis.

41. The Chairperson suggested that the bioeconomic model used for the analysis of Adriatic fisheries, as presented at the previous SCESS session, might provide insights on how best to integrate socio-economic data into SAC advice.

42. The Executive Secretary recalled the importance of building capacity for socio-economic analysis in the region and the need to establish a network of socio-economic experts that should advance on socio-economic issues of relevance to the GFCM during the intersessional period.

43. The Committee endorsed the following three-step process for incorporating data from the results of bioeconomic models in final SAC advice: (i) define potential management measures to be tested; (ii) validate adequate models for the different components of the fishery and simulate effects of different management scenarios; and (iii) report the results of this exercise to the SAC for technical discussion and to the Commission for decision.

**Conclusions and recommendations related to stock assessment**

44. Mr Francesco Colloca, coordinator of the Subcommittee on Stock Assessment (SCSA), presented the conclusions of the Subcommittee on the basis of documents GFCM:SAC17/2015/2 and GFCM:SAC17/2015/Inf.13.

45. He informed those present that advice had been provided for a total of 34 stocks: 24 demersal stocks and 10 small pelagics stocks. One demersal and two small pelagic stocks were considered in sustainable exploitation status, while the 31 other stocks were considered under overexploitation, being overexploited or ecologically unbalanced. The coordinator underlined the fact that the number of new species and stocks assessed, the geographical coverage and the percentage of total catch assessed had been increasing in the last five years as a result of enhanced data collection systems and thanks to the commitment of scientists.

46. Based on an analysis of the species and areas for which information for stock assessment was available, the SCSA coordinator presented a proposal to focus, during the next intersession, the assessment and management advice for Mediterranean stocks on a number of selected species, namely: (i) hake, red mullet and deep-water rose shrimp; and (ii) sardine and anchovy.

47. The Committee praised the work undertaken by the SCSA and the improved coverage of assessments. Delegates also highlighted the importance of collecting quality data in support of stock assessments in order to keep providing comprehensive advice on the status of the main commercial species in the GFCM area.

48. Some concerns were raised regarding a possible duplication of work between the GFCM and the EU Scientific, Technical and Economic Committee for Fisheries (STECF) expert groups on stock assessment in the Mediterranean and the Black Sea. In this respect, it was recalled that the SCSA had proposed strengthening coordination between both groups, and the GFCM Secretariat expressed readiness to further investigate on possible synergies. In this regard, the delegates of the European Union (Member Organization) took note of the issue, upon which they would reflect internally.

49. The delegate of Italy stressed the fact that knowledge on stock boundaries was essential for a correct stock assessment. In this respect, he made reference to the recent outcomes of the EU project STOCKMED, which provided information on the stock boundaries of 19 species of commercial

interest in the Mediterranean. He suggested that the results of this project could be used as a basis to improve the definition of stock boundaries and the assessment of stocks status within the GFCM.

50. A discussion then engaged on the stock status of sardine in the Gulf of Lion (GSA 07), assessed as unbalanced, with very low abundance of old individuals, which also show poor body condition (relative body weight for a given length) and a low level of recruitment observed in 2014. It was suggested that a comparative analysis of small pelagics' body condition across the Mediterranean could help identify those stocks that are healthy in comparison with others being under some ecological stress. In this respect, the Committee was informed about an initiative carried out by Ifremer aimed at analysing information related to weight and length distribution of sardines and anchovies in different areas of the Mediterranean. The SCSA had already expressed its support for this initiative, and experts from the GFCM area were encouraged to participate.

51. The delegate of Morocco stressed that it was important that data and information used to formulate advice be previously validated. To this end, this information should be presented and discussed within the competent subsidiary bodies or else submitted to the SAC well in advance so it could be analysed.

52. Delegates were also reminded about the invitation by the SAC Bureau to participate in a pilot action for the assessment and management of European eel, with the objective of contributing to the regional assessment of this stock, to be carried out jointly by the European Inland Fisheries and Aquaculture Advisory Commission (EIFAAC), International Council for the Exploration of the Sea (ICES) and the GFCM in 2015.

53. Finally, the Committee endorsed SCSA's advice on stocks status as reported in Appendix 4 and agreed upon the list of stocks to be assessed in the next intersession, as mentioned above.

**Management of selected fisheries**

54. The GFCM Secretariat provided detailed information regarding the formulation of advice on the management of selected fisheries, for which dedicated workshops had been held during the intersessional period. Within this framework, management measures in place in some countries had been examined and additional measures proposed in order to manage more effectively the resources.

55. In this respect, the Committee stressed the need to provide concrete advice on those stocks for which urgent management measures were required. This would facilitate the Commission's decision-making so as to ensure the sustainability of related fisheries.

56. The Committee reviewed the conclusions and recommendations emanating from the different activities and endorsed the management advice provided by the SCSA as included in Appendix 4. Moreover, the Committee agreed to focus on those stocks requiring immediate action as follows:

*Small pelagic fisheries in the Adriatic Sea*

**<u>Anchovy in GSA 17</u>**

**Diagnosis:** in overfishing, with an exploitation rate $E_c$=0.50 higher than the reference point ($E_{ref}$=0.4), and with a low biomass (SSB=146 127.50; about 30th percentile of the time series)

**Advice**: immediate reduction in fishing mortality

**Comments:**

- Full revision of input data and a benchmark assessment to be done in 2015;

- A comprehensive evaluation of the effectiveness and consequences of the harvest control rules (HCRs) included in the existing management plan under Recommendation GFCM/36/2013/1 as well as potential alternatives should be carried out, ideally using a quantitative approach and taking into account the following issues: (i) clear indications on how to reduce fishing mortality when required; (ii) a formulation that allows for a more gradual reduction of fishing mortality to facilitate implementation; (iii) a time frame for the implementation of reduction measures to be established both for the initial implementation of the management plan and the regular revision of the measures; (iv) the effect of fleet segmentation; and (v) interactions between sardine and anchovy.

**Sardine in GSA 17**

**Diagnosis:** in overfishing, with an exploitation rate of $E_c$=0.53 higher than the reference point ($E_{ref}$=0.4).

**Advice**: reduction in fishing mortality

**Comments:** as for anchovy in GSA 17

*Demersal fisheries in the Strait of Sicily*

**Hake in GSAs 12-16**

**Diagnosis**: in overfishing, with current fishing mortality $F_c$=0.55 higher than the reference point ($F_{0.1}$=0.14)

**Advice**: reduce fishing mortality.

**Deep-water rose shrimp in GSAs 12-16**

**Diagnosis**: in overfishing, with current fishing mortality Fc=0.88 higher than the reference point ($F_{0.1}$=0.70).

**Advice**: reduce fishing mortality.

**Sardine in GSA 07**

**Diagnosis**: unbalanced, with almost no recruitment detected from the acoustic survey

**Advice**: Fishing mortality should not be allowed to increase, and monitoring of changes in the fishing effort/gear is required

57. The Committee also stressed that most of the hake and shrimps stocks in the Mediterranean were subject to high fishing mortality, therefore, calling for immediate action on these stocks too.

58. Finally, the Committee recalled that, when measures to limit or restrict fishing capacity are to be applied, those should be defined taking into account the different pressures exerted by the different fleets targeting the same stock. In addition, temporal, spatial and gear restrictions on the one hand, and restrictions on fleet capacity on the other, should be considered when a reduction of the overall fishing mortality is needed. To ensure that such measures are implemented, adequate monitoring control and surveillance (MCS) should also be enforced.

**PROGRESS IN THE ELABORATION OF THE FIRST BIENNIAL REPORT ON THE STATUS OF MEDITERRANEAN AND BLACK SEA FISHERIES**

59. The GFCM Secretariat presented the table of contents and chapters' outline of the first draft of the GFCM biennial report on the status of Mediterranean and Black Sea fisheries, available as document GFCM:SAC17/2015/Dma.1. The biennial report, prepared following the mandate given to the SAC by the Commission at its thirty-eighth session, was designed as a tool to support GFCM strategic decision-making on issues of relevance to its Members. Moreover, this report could serve as a contribution to the FAO State of World Fisheries and Aquaculture (SOFIA) publication, as it would present an in-depth analysis of the status and trends of Mediterranean and Black Sea fisheries.

60. As for its structure, the biennial report would be subdivided in two sections: (i) a description of the main features of Mediterranean and Black Sea fisheries, largely based on official data submitted to the GFCM by its Members; and (ii) information on regulatory measures in force relating to fisheries management in the GFCM area.

61. Delegates praised the outstanding efforts made in producing such an exhaustive report, stressing that it represented a major tool for the SAC and the Commission in taking informed decisions. In general, there were suggestions to add, among other things and as appropriate, information on the legal framework of fisheries management in the GFCM area, ecosystem and environmental interactions with fisheries, socioeconomic aspects related to recreational fisheries as well as detailed data on trade and a new chapter on illegal unregulated and unreported (IUU) fishing in the GFCM area.

62. The Committee agreed to update the biennial report in light of the above considerations and taking into account other relevant information to be sent by the countries, so that it could be presented to the Commission for final endorsement.

**FUNCTIONING OF THE SAC AND ITS SUBSIDIARY BODIES IN LIGHT OF THE RECENT AMENDMENT OF THE GFCM LEGAL FRAMEWORK**

63. The GFCM Secretariat recalled that, as a result of the process launched to modernize the GFCM legal framework, the need to revise the functioning of the GFCM subsidiary bodies, including the SAC, had emerged. Based on the findings of the recent intersessional meeting of the Commission on the amendment of the GFCM Rules of Procedures and Financial Regulations, a draft reference framework for the SAC was prepared taking into account both the tasks currently performed by the Committee and new challenges emanating from the new GFCM Agreement as approved by the Commission at its thirty-eighth session.

64. In this respect, the Secretariat clarified that, while the successful achievements of the Committee since its creation were undeniable, a few shortcomings had been identified in its current structure, in particular: (i) the thematic organization of activities with a lack of specific subregional focus – especially in light of the increasing request to work towards the adoption of multiannual subregional management plans; (ii) the low attendance at some subcommittee meetings; (iii) the difficulty for coordinators working on a voluntary basis to ensure the required level of involvement; (iv) the multiple steps undertaken for the validation of scientific advice; and (v) the related budgetary implications. The Committee was therefore called upon to discuss a possible modification of its structure, including, among others, the creation of subregional working groups (SRWGs) while still maintaining the possibility to organize ad hoc technical meetings at both the regional and subregional scale, on a case-by-case basis.

65. Regarding this subregional approach, while concurring on the need to adopt a subregional perspective and to allow for enhanced flexibility on the geographical scale of technical meetings, delegates stressed that certain activities such as those of the working groups on stock assessment had

to remain at the regional level. In this respect, the nature of ad hoc technical meetings could be discussed on a case-by-case basis when adopting the yearly work plan of the Committee.

66. In the ensuing discussions, several matters were addressed by the Committee, namely: (i) the role, terms of reference, nomination and possible remuneration of the SRWG coordinators/moderators; (ii) the need to maintain some coordination between activities in the different subregions; (iii) the possibility to enhance synergies with the FAO regional projects thanks to the new subregional components; and (iv) the need to provide the required support to strike a balance between the different levels of achievement of overall goals between all subregions.

67. In response to a question from the delegate of Morocco on the possible allocation of specific premises to facilitate the work of the SRWGs and of their coordinators/moderators, the Committee agreed on the importance of the matter, which would be brought to the attention of the Commission for further discussion. In this respect, the Secretariat informed those present that Malta and Lebanon had already expressed their interest in hosting subregional premises.

68. In concluding, the Committee endorsed its new draft reference framework (as reproduced in Appendix 5(1)) and agreed to submit it to the Commission at its thirty-ninth session so that it could be considered when finalizing the amended GFCM Rules of Procedures. Regarding in particular the proposed structure and functioning of this Committee, delegations wondered whether the alternative option discussed ensured better efficiency and cost-effectiveness as opposed to the current situation. In light of this, the Committee, while it did not object to it, stressed that further and concerted reflection on its structure and functioning (as provided in Appendix 5(2)) was needed in order to facilitate consideration by the Commission at its thirty-ninth session.

**REVIEW OF THE SAC PRELIMINARY WORK PLAN FOR 2015–16**

69. The GFCM Secretariat introduced the SAC preliminary work plan for 2015–16 as emanating from its intersessional activities on the basis of documents GFCM:SAC17/2015/2 and GFCM:SAC17/2015/Inf.5 to Inf.8.

70. After discussing the different priorities for the next intersessional period, the Committee endorsed its work plan for 2015–16 as follows:

**Activities related to statistics and information issues**

- Further develop the DCRF IT online platform, in parallel with the phased implementation of the DCRF, in order to effectively support data collection and submission by Members.

- Carry out a pilot study in the next intersession (as included in the roadmap available in Appendix 6) to finalize the development of the online data submission tools, in order to evaluate the performance of the submission tools used, and assess the information flow with the identified national focal points for data collection.

- Provide assistance to Members for data collection and submission in line with the DCRF provision, upon request by the countries and in coordination with the FAO regional projects.

- Implement the progressive submission of national data by countries following DCRF provisions, between July 2016 and November 2017 and following the calendar specified by the Committee (Appendix 6).

- Finalize and test the new online tool for the submission national reports to the SAC, including a trial phase that would be implemented on a voluntary basis by a group of Members.

**Activities related to socio-economics issues**

- Identify a strategy for the implementation and use of socio-economic indicators in selected fisheries at the regional and subregional level.

- Finalize guidelines on a common methodology for socio-economic analysis, in coordination with the FAO regional projects.

- Assess the characteristics of recreational fisheries in the GFCM area.

- Assess socio-economic impacts of potential management measures in selected fisheries, including small pelagic and demersal fisheries in the Adriatic Sea and demersal fisheries in the Strait of Sicily.

**Proposed activities related to marine ecosystems**

- Carry out a research programme on red coral based on the concept note presented in Appendix 10.

- Back up the development of the six pilot studies foreseen in the first phase of the ACCOBAMS-GFCM joint project (2015–17) on interactions between endangered species and fishing activities, namely:

- purse seine for small pelagic species in Morocco (Morocco);

- bluefin tuna artisanal fisheries in the Strait of Gibraltar (Morocco);

- swordfish and albacore pelagic longlines in southern Spain (Spain);

- bottom and surface longlines in the Gulf of Gabès (Tunisia);

- purse seine for small pelagic species in Kelibia (Tunisia);

- gillnet and longline fisheries in southern France and Balearic Islands (France and Spain).

**Activities related to stock assessment**

- Perform in 2015 a full revision of input data as well as a benchmark assessment for sardine and anchovy in GSA17 and 18.

- Carry out a comprehensive evaluation of the effectiveness and consequences of harvest control rules (HCRs) included in the existing management plan for Adriatic Sea small pelagic fisheries under Recommendation GFCM/36/2013/1 as well as potential alternatives, following indications provided by the Committee.

- Implement and test the R-Studio Server facilities and make them available to the working groups on stock assessment.

- Carry on investigations on methods for data-limited stocks (DLS), in particular for vulnerable species such as elasmobranchs and red coral and also for the assessment of stocks targeted by small-scale fisheries.

- Implement a pilot plan of action for the assessment of European eel.

71. The Committee then discussed in more detail the following topics:

*Regional Conference on Small-scale Fisheries*

72. The GFCM Secretariat presented the progress made in the preparation of the Regional Conference on Small-scale Fisheries (Algeria, 2016), including the coordination with partners (i.e. FAO Fisheries and Aquaculture Department, FAO regional projects, World Wide Fund for Nature [WWF], Network of Managers of Marine Protected Areas in the Mediterranean [MedPAN] and International Centre for Advanced Mediterranean Agronomic Studies [CIHEAM]) and with the hosting country. It was underlined that this event would consolidate the results of the Regional Symposium on Sustainable Small-scale Fisheries in the Mediterranean and the Black Sea (Malta, November 2013) and further support the implementation of the FAO Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication (SSF Guidelines) and the FAO Blue Growth Initiative at the regional level.

73. In the ensuing discussions, several delegations recognized the importance of the conference, in particular in light of the high socio-economic significance of the small-scale fisheries sector in the GFCM area, and concurred on the need to establish a common vision and strategy for its sustainable development. In this respect, the representatives of the partners in attendance renewed their commitment towards achieving sustainability of the sector, reiterating their readiness to work in this direction with the GFCM.

74. A number of issues worth addressing at the conference were singled out, including: (i) the need to account for small-scale fisheries in marine spatial planning; (ii) the competition between small-scale fisheries and other human activities at sea; (iii) the connection between small-scale fisheries and food security; (iv) the need to protect the development of small-scale fisheries *vis-à-vis* industrial practices such as trawling; (v) the importance of infrastructures and direct sale of small-scale products; and (vi) the empowerment of local communities and fishers associations.

75. There was agreement that the proposed conference structure, revolving around five thematic panels, was adequate to encompass the additional issues pinned down. Moreover, the conference could enhance synergies and benefit from the outcomes of relevant projects carried out (e.g. by the FAO Fisheries and Aquaculture Department, the GAP2 project, etc.). With specific regard to value chains, it was indicated that this could remain the topic of an ad hoc panel in so far as case studies were being submitted and undertaken, otherwise it would be opportune to tackle value-chain-related aspects in a transversal manner.

76. Following some clarifications on the objectives and expected results of the implementation of case studies, the delegates of Egypt, Morocco and Tunisia expressed their intention to propose additional case studies to be carried out in their countries. They were invited to submit requests to the GFCM Secretariat using the available standard format (available in Appendix 9) and to appoint national experts who could act as an interface between their country and the partners.

77. The Committee decided that the conference would be organized around a three-day technical part with discussions and a one-day high-level session with an adoption of the final outcomes. It also agreed that the GFCM Secretariat would oversee coordination among partners, including through ad hoc meetings, encouraging the involvement of all interested actors following the endorsed *modus operandi*, time frame and methodology for the conference organization.

*Research activities on red coral*

78. The GFCM Secretariat introduced a concept note on a medium-term research programme (2–3 years) aimed at assessing the status of red coral populations in the Mediterranean, developed following the mandate given by the Commission at its thirty-eighth session. In line with the research priorities provided in the guidelines for the management of Mediterranean red coral populations

adopted by the Commission, this research programme foresees the collection of relevant information through case studies related to existing fisheries and through dedicated surveys. The Secretariat informed the Committee that contacts were ongoing with the Khaled bin Sultan Living Oceans Foundation, a non-profit organization in Saudi Arabia, which could provide a vessel to carry out surveys aimed at mapping the distribution of red coral in the Mediterranean.

79. As a potential contribution to the first phase of this research programme, the Italian association of coral divers presented a case study to be implemented in 2015. This study will provide information on the status of red coral banks in Sardinia, Italy, and assess the impact of using remotely operated vehicles (ROVs) for the prospecting for and harvesting of red coral. It was made clear that the results of this pilot study should be provided to the SAC in order to assist in the formulation of advice on the status of red coral populations, in line with Recommendation GFCM/35/2011/2 on red coral.

80. In response to queries regarding existing GFCM regulations related to ROVs, the Secretariat clarified that Recommendation GFCM/35/2011/2 provided for a derogation from the ban on ROVs only in the case of experimental campaigns and not beyond 2015, on the basis of specific fisheries authorization issued by national authorities.

81. The Oceana representative recalled the endangered status of the species and requested that, in the pilot project, red coral pieces collected by the ROV be retained for scientific purposes only and catalogued. The presence of observers on board to oversee harvest operations should also be foreseen to ensure transparency.

82. The Committee stressed that ROV operations should be closely monitored and all information potentially useful for research (e.g. position, depth, and visual images of the colonies before and after harvesting) should be collected, stressing that harvested individuals should be used for research purposes only rather than commercialized.

*Joint strategy framework on area-based management measures*

83. Ms Lobna Ben Nakhla, the representative of the United Nations Environment Programme – Mediterranean Action Plan (UNEP-MAP) / Regional Activity Center for Specially Protected Areas (RAC-SPA), introduced a proposal for a joint strategy framework among RAC-SPA, GFCM, Agreement on the Conservation of Cetaceans in the Black Sea Mediterranean Sea and Contiguous Atlantic Area (ACCOBAMS), International Union for Conservation of Nature Centre for Mediterranean Cooperation (IUCN-Med) and in collaboration with MedPAN aimed at developing common actions towards the establishment of area-based management measures in the Alboran Sea, the Adriatic Sea and the Strait of Sicily. The proposed strategy includes promotion and fund-raising for oceanographic surveys in those areas as well as possible common project proposals based on the strong cooperation already existing between the organizations involved.

84. The ACCOBAMS Secretariat thanked RAC-SPA for the initiative as it would contribute to optimizing efforts and strengthening synergies between activities and work programmes of ACCOBAMS, GFCM and RAC-SPA in line with their respective mandates.

85. The Committee supported this collaboration and welcomed the development of the strategy framework in light of the operationalization of the Resolution GFCM/37/2013/1 on area-based management of fisheries.

86. Finally, the Committee agreed upon the list of meetings for 2015–16 as indicated below. The terms of reference for selected meetings are available in Appendix 8.

| Meeting | Place/Date |
|---|---|
| Working Group on Stock Assessment of Demersal Species<br>[5 days including sessions on data-limited stocks for red coral and for elasmobranchs] | Rome, TBC<br>October 2015 |
| Working Group on Stock Assessment of Small Pelagic Species<br>[5 days including sessions on benchmark assessment for small pelagics in Adriatic Sea] | Rome, TBC<br>October 2015 |
| EIFAAC/ICES/GFCM Working Group on Eels [8 days including one day back-to-back for the preparation of Mediterranean data] | Turkey, TBC<br>November 2015 |
| Sessions of the SAC Subcommittees / SRWGs [4 days] | Rome, TBC<br>January/February 2016 |
| Workshop on the use of simulation and forecast bioeconomic models for the assessment of management measures [3 days]. Possibly back-to-back with Subcommittees or SRWGs | Rome, TBC<br>January/February 2016 |
| Workshop of DCRF focal points on data collection and submission in the Mediterranean [3 days] | TBD<br>February 2016 |
| Regional Conference on Small-Scale Fisheries in the Mediterranean and the Black Sea [4 days] | Algeria<br>February/March 2016 |
| Eighteenth session of the Scientific Advisory Committee [4 days] | TBD<br>March 2016 |
| Workshop on age reading of small pelagic species [3 days] | TBD |
| Workshop for estimating growth and maturity parameters of *Mullus barbatus* [3 days] | TBD |

87. In addition, the Committee took note of the list of specific meetings on fisheries-related issues for the Black Sea as proposed by the WGBS, reported hereafter.

| Meeting | Place/Date |
|---|---|
| Subregional Group on Stock Assessment in the Black Sea (SGSABS)<br>[4 days including sessions on benchmark assessment of turbot, anchovy and red mullet, and harmonizing surveys-at-sea] | Burgas, Bulgaria<br>November 2015 |
| Workshop of DCRF focal points on data collection and submission in the Black Sea [3 days] | Trabzon, Turkey<br>December 2015 |
| Workshop on the management of anchovy in the Black Sea [2 days] | Trabzon, Turkey<br>December 2015 |
| Fifth meeting of the Working Group on the Black Sea [3 days] | Kiev/Constanta TBC<br>March 2016 |

88. It was recalled that the second meeting of the GFCM Working Group on Marine Protected Areas (MPAs) had already been approved and would be held on 8–10 June 2015 in Djerba (Tunisia). In this regard, the Committee was informed that the review of existing national areas subject to area-based fisheries management measures was being finalized. The representative of Oceana took the opportunity to stress the importance of organizing the meeting on a regular basis and to hold the next meeting in 2016 or 2017.

89. In relation to activities already scheduled within the framework of the MedSuit project, it was specified that the work on the development, estimation and monitoring of indicators for the good environmental status of marine populations was being carried out.

**OTHER MATTERS OF RELEVANCE TO THE SAC**

**Information on the GAP2 Project on fisheries management**

90. Mr Sasa Raicevich presented the outcomes and perspectives of the EU-funded GAP2 project, which aims to promote stakeholder-driven science and co-management in fisheries, including case studies from Italy, Malta and Spain. The project demonstrated how integrating fishers in research and co-management of fisheries resulted in an increase in knowledge to support fisheries management, the empowerment of fishers and other stakeholders and an increase in management efficiency. He proposed that the programmed session on co-management within the forthcoming regional conference on small-scale fisheries could be enlarged to incorporate issues on participatory research and that results of the GAP2 project could be presented in that instance.

91. The Committee acknowledged with thanks the presentation, welcoming the opportunity of continued cooperation in these relevant matters.

**Presentation of the ACCOBAMS Survey Initiative – a basin-wide monitoring project for enhancing cetacean conservation in the Mediterranean and the Black Sea**

92. The ACCOBAMS representative presented a project aimed at establishing an integrated and coordinated monitoring programme for cetaceans at the regional level, with a view to improving the conservation status of these species and their habitats. The operational component of this initiative would be carried out in a single operation, in the whole ACCOBAMS competence area, and it would associate visual survey methods (by boat and by air) and acoustic detection techniques used to collect data on abundance and distribution of cetaceans (also on seabirds and sea turtles).

93. The Committee welcomed the new project and invited ACCOBAMS to update on future achievements and developments.

**Information from UNEP-MAP on the Mediterranean Strategy for Sustainable Development (MSSD)**

94. Mr Atila Uras, UNEP-MAP Secretariat, introduced the revised Mediterranean Strategy for Sustainable Development (MSSD), including progress in sustainable development efforts in the Mediterranean, and presented the contents and structure of the revised MSSD as of March 2015. He presented the following list of proposed actions for GFCM, inviting the SAC to provide comments on: (i) SAC competency and sharing of experience on the remaining steps of the MSSD review process; (ii) provision of fisheries-related strategic directions and actions to be integrated in the MSSD prior to the sixteenth meeting of the Mediterranean Commission on Sustainable Development (MCSD); (iii) participation as observer at the sixteenth meeting of MCSD and contribution to the discussions on the endorsement of the revised MSSD; and (iv) membership in the MCSD starting from the 2016–17 biennium. In this latter regard, UNEP-MAP would provide the GFCM Secretariat with the MCSD mandate and terms of reference defining the role and responsibilities of MCSD members, in view of a possible GFCM membership.

95. The UNEP-MAP requests were noted to be submitted to the Commission, which eventually could give the mandate to the Secretariat to start the process, including for the establishment of a series of targets and goals related to sustainable fisheries.

**Information on Mediterranean sea turtles**

96. The Spanish delegate informed the Committee about the results of research projects carried out by the bilateral working group between the Spanish Herpetological Association (AHE) and the French Herpetological Society dealing with turtle bycatch. In particular, he presented a proposal to create a platform lead by the GFCM that could contribute to the implementation of Recommendation GFCM/35/2011/4 on the incidental bycatch of sea turtles in fisheries in the GFCM competence area suggesting that this information could complement the data gathered through official channels, including the DCRF and national reports. He also indicated that this initiative could enrich the current GFCM strategy to address the bycatch of vulnerable species.

97. The Committee acknowledged the importance of the subject within the framework of recent GFCM developments on bycatch and expressed its support to the establishment of the proposed platform.

**CLOSURE OF THE MEETING AND HOLDING OF THE NEXT SESSION**

98. The Chairperson was repeatedly thanked for his steering and essential role at the head of the Committee and for the impeccable conduct of the session. Delegates were also thanked for their involvement and contribution towards the success of SAC intersessional activities.

99. The Committee agreed on March 2016 as a provisional date for the holding of its eighteenth session. A decision on the exact dates and venue would be taken at the thirty-ninth session of the Commission.

**ADOPTION OF THE REPORT**

100. The report, including its appendixes, was adopted on Friday 27 March 2015.

## 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 dix-septième session au siège de la FAO, à Rome, du 24 au 27 mars 2015. Ont participé à la session les délégués de 19 Parties contractantes, 10 observateurs, des représentants des projets régionaux de la FAO, le Secrétariat de la CGPM ainsi que plusieurs experts invités. La liste des participants fait l'objet de l'Annexe 2.

2. La réunion a été ouverte par M. Othman Jarboui, Président du CSC, qui a souhaité la bienvenue aux participants. Dans son allocution, il s'est félicité de l'engagement considérable des pays membres et des partenaires dans les activités menées par le Comité. Il a fait état en particulier de l'élaboration du cadre de référence pour la collecte de données de la CGPM (DCRF) et des résultats importants obtenus entre les sessions, notamment pour ce qui est des travaux liés à la formulation d'avis scientifiques à l'appui de la gestion de pêches importantes. À cet égard, il a évoqué les nombreux défis qui devraient être abordés au cours de la session en vue du fonctionnement et du rôle futurs du Comité dans le cadre de l'amendement du cadre juridique et institutionnel de la CGPM.

## ADOPTION DE L'ORDRE DU JOUR

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

4. L'ordre du jour a été adopté par le Comité avec quelques modifications et figure à l'Annexe 1. On trouvera la liste des documents à l'Annexe 3.

## ACTIVITÉS INTERSESSIONS

### Examen des recommandations formulées par la Commission à sa trente-huitième session concernant la gestion des pêches et les avancées du processus d'amendement de la CGPM

5. M. Abdellah Srour, Secrétaire exécutif de la CGPM a fait le point sur les avancées réalisées dans le processus d'amendement du cadre juridique et institutionnel de la CGPM. Il a précisé que l'Accord portant création de la CGPM amendé était entré en vigueur et que le Secrétariat des Nations Unies était actuellement en train de procéder à sa certification et à sa déposition, tandis que les projets de modification du Règlement intérieur et du Règlement financier avaient été négociés au cours d'une réunion de la Commission entre les sessions (siège de la FAO, janvier 2015) et devaient être présentés à la Commission lors de sa prochaine session (mai 2015), en vue de leur examen et de leur adoption. À cet égard, il a rappelé le mandat confié au CSC afin qu'il entame une réflexion sur la révision de son cadre de référence en tant qu'organe subsidiaire de la CGPM et que ses idées soient dûment prises en compte dans le cadre de l'amendement du Règlement intérieur.

6. Le Secrétaire exécutif a ensuite passé en revue les principales décisions adoptées à la trente-huitième session de la Commission, à savoir: (i) la Résolution CGPM/38/2014/1 relative à des Directives sur le SSN et les systèmes de contrôle connexes dans la zone de compétence de la CGPM; (ii) la Recommandation CGPM/38/2014/1 modifiant la Recommandation CGPM/37/2013/1 et relative à des mesures de précaution et d'urgence en 2015 pour les stocks de petits pélagiques de la sous-région géographique 17 de la CGPM; et (iii) la Recommandation CGPM/38/2014/2 modifiant et abrogeant la Recommandation CGPM/34/2010/3 concernant l'identification de la non-conformité. Il a également rappelé que trois propositions de recommandations, dont deux concernaient la gestion des pêches de stocks démersaux dans le détroit de Sicile et une portait sur la gestion de la pêche au turbot en mer Noire, avaient été soumises à cette session et étaient restées en suspens.

**Vue d'ensemble des réalisations du CSC**

7. En s'appuyant sur le document GFCM:SAC17/2015/2, le Président a présenté les activités menées entre les sessions. Il a informé les délégués que 13 réunions avaient été organisées.

8. Les principaux résultats des activités liées à l'environnement et aux écosystèmes marins ont été illustrés, notamment la tenue d'un atelier sur la conservation des élasmobranches et d'une session spéciale sur l'évaluation du corail rouge (*Corallium rubrum*). Le Président a ensuite présenté les conclusions de l'Atelier MedSuit sur les indicateurs et les cibles pour l'évaluation du bon état écologique des populations marines, invitant le CSC à analyser les indicateurs choisis et à donner un retour d'information.

9. Dans le domaine des statistiques et de l'information, le Président a présenté les résultats de l'atelier sur la mise en œuvre du Cadre de référence pour la collecte de données en Méditerranée et en mer Noire. Il a mis en évidence les suggestions techniques qui avaient été formulées, notamment en ce qui concerne les composantes socioéconomiques du Cadre de référence pour la collecte de données et la proposition de feuille de route pour la collecte et la transmission des données à travers ce nouveau cadre.

10. Enfin, le Président a énuméré les activités mises en place concernant la gestion de certaines pêches et l'évaluation des stocks d'espèces démersales et de petits pélagiques ainsi que d'anguille européenne (*Anguilla anguilla*).

11. Le Comité s'est félicité des résultats importants obtenus durant la période intersessions, notamment au vu des récents changements concernant la collecte de données.

**Vue d'ensemble des réalisations du Groupe de travail sur la mer Noire (WGBS)**

12. En s'appuyant sur les documents GFCM:SAC17/2015/2 et GFCM:SAC17/2015/Inf.8, M. Simion Nicolaev, coordonnateur du Groupe de travail sur la mer Noire, a présenté les activités menées durant la période intersessions, notamment la quatrième réunion du Groupe de travail sur la mer Noire (Géorgie, mars 2015). À cet égard, il a évoqué plus particulièrement l'évaluation des stocks de la mer Noire, la mise en œuvre du Cadre de référence pour la collecte de données et les travaux spécifiques liés à la gestion de la pêche au turbot.

13. Le coordonnateur a ensuite présenté les avis formulés par le Groupe sous-régional sur l'évaluation des stocks en mer Noire, qui avait demandé la mise en place d'un plan de reconstitution des stocks de turbot et d'aiguillat commun ainsi que la réduction de la mortalité par pêche de l'anchois et du chinchard. Il a indiqué que plusieurs activités – telles que celles portant sur l'identification de sous-espèces d'anchois et l'harmonisation des méthodologies utilisées pour la lecture de l'âge, toutes deux impliquant l'échange d'otolithes – avaient déjà été lancées suite à la collaboration fructueuse entre les experts du Groupe de travail sur la mer Noire. Il a également informé le Comité des progrès réalisés dans la formulation d'une note conceptuelle relative à une enquête commune sur l'évaluation des stocks, à présenter à la Commission à sa prochaine session, ainsi que dans l'élaboration d'un format normalisé pour la présentation des rapports nationaux des six États riverains de la mer Noire au Secrétariat de la CGPM.

14. Le Comité a salué le travail considérable et de grande qualité fourni par le Groupe de travail sur la mer Noire, ce qui était considéré comme un excellent exemple d'application de l'approche sous-régionale.

**Activités de recherche menées par des États membres**

15. Le Secrétariat de la CGPM a présenté une synthèse des informations figurant dans les 17 rapports nationaux transmis par les Membres de la CGPM (les synthèses et les rapports nationaux

figurent aux annexes 11(1) et 11(2), respectivement). La synthèse a mis en évidence un certain nombre d'éléments, notamment: (i) des changements importants concernant les pêches, notamment pour ce qui est du nombre de navires en activité et de la production des pêches de capture; (ii) un nombre croissant d'évaluations de stocks réalisées par les Membres de la CGPM, y compris pour des stocks partagés, bien que certaines de ces évaluations n'aient pas été présentées pour discussion aux groupes de travail concernés de la CGPM; (iii) un nombre croissant d'études portant sur les prises accessoires et les rejets, favorisant des relevés plus complets sur les captures accidentelles de requins, de cétacés et de tortues; et (iv) un intérêt grandissant pour les études portant sur l'identification des unités de stocks, les indicateurs et les points de référence ainsi que sur l'analyse socioéconomique des scénarios potentiels de gestion des pêches.

16. Le Secrétariat a mis en évidence un certain nombre de questions liées au manque d'harmonisation entre les rapports nationaux, ce qui avait engendré des difficultés dans la réalisation d'une analyse comparative des informations communiquées. Dans ce contexte, un nouvel instrument visant à faciliter la transmission en ligne des rapports nationaux a été présenté. Pour tester ce système, le Comité a décidé d'initier une phase d'essai conduite par un groupe de pays se portant volontaires et qui fourniraient un retour d'information au Secrétariat avant la trente-neuvième session de la Commission. Il a été rappelé au Comité que l'utilisation de ce nouvel outil était facultatif et que le modèle actuel serait encore valable.

17. En réponse à une demande d'éclaircissements concernant la réduction de la flotte de certains pays, le Comité a été informé que, dans le cas du Liban, cette réduction était due à des variations du nombre de licences octroyées entre 2004 et 2014, alors que dans le cas du Maroc, cette réduction s'expliquait par un changement du port principal d'activité des navires de la Méditerranée vers l'Atlantique.

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

18. Les activités réalisées dans le cadre des projets régionaux de la FAO (AdriaMed, CopeMed II, EastMed et MedSudMed) 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. Le programme du projet MedLME a également été illustré. Il a été rappelé aux délégués qu'ils trouveraient des informations détaillées sur les activités et les produits des projets régionaux dans le rapport annuel des comités de coordination des différents projets ainsi que dans le document GFCM:SAC17/2015/Inf.19.

19. Le Comité a salué le travail considérable entrepris dans le cadre des projets régionaux de la FAO. Les délégués se sont félicités des efforts accomplis pour renforcer la coopération et ont formulé l'espoir que soient poursuivis et consolidés la coopération au niveau sous-régional ainsi que le soutien aux activités du CSC.

20. Toutes les délégations des pays bénéficiant de l'aide d'un projet régional se sont exprimées afin de souligner la contribution et le soutien essentiels apportés par les projets régionaux pour aborder les principales questions d'intérêt national dans le domaine des statistiques, du suivi des pêches et des ressources naturelles ainsi que celles portant sur les aspects socioéconomiques, la collecte et le traitement des données, l'évaluation des stocks et le renforcement des capacités.

21. Le Secrétaire exécutif a salué la coopération synergique mise en place entre la CGPM et les projets régionaux de la FAO, qui avait notamment favorisé la participation d'experts aux réunions. Il a indiqué que le Programme-cadre de la CGPM avait constitué une excellente opportunité pour définir et mettre en œuvre des activités en collaboration avec les projets régionaux. Enfin, il a remercié les donateurs qui avaient contribué au Programme-cadre et aux projets régionaux, dont l'Union européenne (organisation membre), la France, la Grèce, l'Italie et l'Espagne.

22. M. Stefano Cataudella, Président de la CGPM, a souligné le rôle majeur des projets régionaux à l'appui de la CGPM et a insisté sur la nécessité de déterminer conjointement la marche à suivre en vue d'une gestion plus efficace des pêches en Méditerranée et en mer Noire grâce à une coopération accrue.

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

**Conclusions et recommandations liées à l'environnement et aux écosystèmes marins, notamment les indicateurs de l'état des populations exploitées**

23. M. Federico Alvarez, coordonnateur du Sous-Comité de l'environnement et des écosystèmes marins (SCEEM), a fourni un aperçu des résultats des activités menées par le Sous-Comité entre les sessions, en s'appuyant sur les documents GFCM:SAC17/2015/2, GFCM:SAC17/2015/Inf.11, Inf.13 et Inf.17.

24. Il a rappelé les principales mesures de gestion visant à réduire les prises accidentelles d'élasmobranches, qui avaient été proposées lors de l'atelier sur la conservation des élasmobranches, à savoir:

- Taille minimale et/ou maximale de débarquement des espèces d'élasmobranches pouvant être commercialisées.
- Restrictions concernant les engins de pêche, notamment: (i) l'interdiction d'utiliser des bas de ligne et des bâtons lumineux chimiques et l'obligation d'utiliser des hameçons corrodables pour la pêche à la palangre: et (ii) la réduction du temps de mouillage des filets calés.
- Obligation d'utiliser le matériel nécessaire pour retirer les hameçons et des outils appropriés permettant de libérer les requins vivants.
- Extension du niveau de protection déjà applicable aux espèces figurant à l'Annexe II de la Convention de Barcelone, en vertu de la Recommandation CGPM/36/2012/3 sur la conservation des requins et des raies, aux neuf espèces faisant l'objet de l'Annexe III de cette même convention.
- Fermeture temporaire d'une zone de reproduction spécifique située dans le golfe de Gabès en tenant compte des cycles de reproduction des principales espèces d'élasmobranches touchées par les pêches dans cette zone.

25. Les délégués ont fait remarquer qu'il conviendrait de proposer la définition d'une taille minimale de débarquement en s'appuyant sur des informations spécifiques et en prenant en considération, par exemple, les différents taux de croissance et de maturité des espèces dans la zone. En outre, ils ont souligné le fait que les élasmobranches n'étaient généralement pas ciblés de manière principale par les pêches dans la zone de la CGPM, ce qui pourrait rendre la mise en œuvre des mesures proposées plus compliquée.

26. Le Comité a pris note des mesures proposées et est convenu d'inclure celles-ci dans les plans de gestion des pêches entraînant des prises accidentelles d'élasmobranches. Pour ce qui est du cas spécifique de la fermeture temporaire d'une zone dans le golfe de Gabès, le CSC a proposé d'approfondir les recherches sur la bio-écologie d'espèces d'élasmobranches dans le détroit de Sicile et plus particulièrement dans le golfe de Gabès.

27. Le délégué du Maroc a informé le Comité de la mise place, depuis janvier 2015, d'une zone protégée à des fins de pêche au-delà de la partie centrale de la côte méditerranéenne marocaine. Il a indiqué que cette zone prévoyait différents niveaux de protection, à savoir: (i) un espace maritime d'interdiction de la pêche sur une période de cinq ans ainsi qu'un autre espace maritime d'interdiction de la pêche sur une période de six mois par an; (ii) l'interdiction permanente/temporelle de certains

types d'engins de pêche; (iii) l'accès à toute la zone uniquement autorisé aux petits bateaux de pêche; et (iv) l'obligation pour les pêcheurs opérant dans la zone de pêche limitée de tenir un journal de pêche et de remplir une fiche de déclaration des captures.

28. Le coordonnateur du SCEEM a ensuite énuméré les indicateurs communs sur le bon état écologique des populations marines exploitées proposés lors de l'Atelier MedSuit comme suit: (i) biomasse des stocks reproducteurs; (ii) total des débarquements; (iii) mortalité par pêche; (iv) effort; et (v) prises accidentelles d'espèces vulnérables et non ciblées.

29. À cet égard, les délégués ont souligné l'importance d'établir des liens entre effort et captures et d'utiliser la capture par unité d'effort (CPUE) comme indicateur plus direct sur l'état des stocks. Étant donné que tant l'effort que les débarquements sont déjà inclus dans la proposition de liste d'indicateurs, il a été reconnu qu'il serait toujours possible d'obtenir les débarquements par unité d'effort (LPUE) à partir des indicateurs proposés et de les utiliser comme indicateurs supplétifs de la CPUE. Par conséquent, le Comité a approuvé la proposition de liste d'indicateurs à utiliser pour évaluer le bon état écologique des populations exploitées.

**Projet de proposition d'Oceana concernant la création de zones de pêche à accès réglementé dans le secteur nord du détroit de Sicile**

30. La représentante d'Oceana a présenté une proposition relative à la création de trois zones de pêche à accès réglementé concernant les habitats essentiels du merlu et de la crevette existants dans le secteur nord du détroit de Sicile. Cette proposition prévoit l'interdiction de toute pêche démersale dans les zones désignées ainsi que la mise en place de mesures de suivi et de contrôle appropriées afin que cette restriction soit appliquée.

31. D'autre part, la représentante d'Oceana a également informé le Comité qu'unepartie de la zone initialement retenue en 2010 pour créer une zone de pêche à accès réglementé à proximité des îles Baléares avait finalement été déclarée, en juillet 2014, zone protégée nationale en vertu de la loi espagnole. Oceana avait ensuite exhorté les autorités espagnoles à promouvoir la création d'une zone de pêche à accès réglementé de la CGPM sur ce site. Le Comité a pris note de cette proposition.

32. Après avoir fourni des éclaircissements sur certaines questions spécifiques, le Comité a définitivement validé le contenu technique de la proposition de zone de pêche à accès réglementé dans le détroit de Sicile, qui figure à l'Annexe 7 et a décidé de la présenter à la Commission pour examen et éventuelle adoption.

**Conclusions et recommandations liées aux statistiques et à l'information, notamment le cadre de référence pour la collecte des données (DCRF)**

33. M. Alaa El-Haweet, coordonnateur du Sous-Comité des statistiques et de l'information (SCSI), a présenté les conclusions et recommandations issues des activités menées par le Sous-Comité en s'appuyant sur les documents GFCM:SAC17/2015/2, GFCM:SAC17/2015/Inf.10 et Inf.20.

34. Le Comité a reconnu l'importance du Cadre de référence pour la collecte de données en tant que cadre du CSC permettant de recueillir des informations nécessaires à l'appui des décisions en matière de gestion des pêches, et a remercié tous les experts ayant contribué à son élaboration. Il s'est montré favorable à la programmation de mises à jour régulières du DCRF, selon une fréquence à déterminer.

35. Un certain nombre de questions ont été soulevées au sujet du calendrier de transmission des données proposé dans la feuille de route issue de l'atelier sur la mise en œuvre du Cadre de référence, compte tenu des contraintes techniques, économiques et humaines susceptibles d'entraver le respect des échéances fixées. Plusieurs délégations ont fait état d'un besoin d'assistance technique à l'échelon

national afin de pouvoir traiter de manière adéquate les exigences en matière de collecte de données et de transmission.

36. En réponse aux questions soulevées, le Secrétariat a précisé que la plupart des données requises par le Cadre de référence étaient déjà demandées aux Membres en vertu des décisions en vigueur et ne devraient exiger, par conséquent, aucun travail supplémentaire de leur part. De plus, il a été souligné qu'une assistance technique aux Membres de la CGPM en matière de collecte et transmission de données était déjà prévue au titre du Programme-cadre de la CGPM.

37. Par ailleurs, les Membres ayant besoin de renforcer leurs capacités au niveau national ont été invités à présenter au Secrétariat une demande détaillée englobant également les besoins en matière de collecte et d'analyse de données ainsi que tout autre aspect lié à la gestion des pêches, afin qu'un soutien sur mesure puisse être envisagé, y compris en coordination avec les projets régionaux de la FAO.

38. Le Comité a validé les améliorations apportées aux sections du document sur le Cadre de référence (structure de la collecte de données et pratiques communes en matière de collecte de données) et est convenu de présenter ce document à la Commission pour approbation finale. Il a ensuite reconnu le rôle important des points focaux nationaux pour la collecte de données, des acteurs clés pour la mise en œuvre opérationnelle du Cadre de référence chargés de coordonner à l'échelon national et avec le Secrétariat la collecte et la transmission des informations requises. Enfin, le Comité a fait sienne la feuille de route pour la collecte et la transmission de données par le biais du Cadre de référence, qui est fournie à l'Annexe 6.

**Conclusions et recommandations liées aux sciences économiques et sociales**

39. En l'absence de M. Scander Ben Salem, coordonnateur du Sous-Comité des sciences économiques et sociales (SCSES), due à des contraintes de dernière minute, le Secrétariat de la CGPM a présenté les recommandations du Sous-Comité en s'appuyant sur les documents GFCM:SAC17/2015/2 et GFCM:SAC17/2015/Inf.5. Il a été rappelé que le SCSES avait axé ses travaux sur: (i) les aspects liés à l'évaluation des variables socioéconomiques dans des études de cas choisis; (ii) l'estimation et la transmission de variables choisies au titre de la Tâche IV (aspects socioéconomiques) du Cadre de référence; (iii) les avancées réalisées dans le domaine de la pêche artisanale; et (iv) les progrès relatifs à une méthodologie commune pour l'analyse socioéconomique.

40. Le Comité a salué les progrès réalisés entre les sessions par le SCSES dans l'analyse socioéconomique ainsi que la contribution fournie par le Sous-Comité en vue d'améliorer la définition des variables socioéconomiques utilisées dans le Cadre de référence. Le délégué du Maroc a mis en évidence la nécessité de mieux intégrer les données socioéconomiques au sein de l'analyse des pêches ainsi que l'importance d'élaborer des directives sur une méthodologie commune pour l'analyse socioéconomique.

41. Le Président a émis l'idée que le modèle bioéconomique utilisé pour l'analyse des pêches en Adriatique, présenté lors de la session précédente du SCSES, pourrait fournir des éclairages sur la meilleure façon d'intégrer les données socioéconomiques dans les avis du CSC.

42. Le Secrétaire exécutif a rappelé qu'il était important de renforcer les capacités en matière d'analyse socioéconomique dans la région et qu'il était nécessaire d'établir un réseau d'experts dans le domaine socioéconomique afin de progresser, pendant la période intersessions, sur les questions socioéconomiques intéressant la CGPM.

43. Le Comité a approuvé le processus en trois phases visant à intégrer les données issues des modèles bioéconomiques dans les avis du CSC comme suit: (i) déterminer les mesures de gestion potentielles à tester; (ii) valider des modèles adéquats concernant les différentes composantes de la

pêche et simuler les effets des différents scénarios de gestion; et (iii) rendre compte des résultats de cet exercice au CSC pour examen technique et à la Commission pour décision.

**Conclusions et recommandations liées à l'évaluation des stocks**

44. M. Francesco Colloca, coordonnateur du Sous-Comité sur l'évaluation de stocks (SCES), a présenté les conclusions du Sous-Comité en s'appuyant sur les documents GFCM:SAC17/2015/2 et GFCM:SAC17/2015/Inf.13.

45. Il a indiqué aux participants que des avis ont été fournis pour 34 stocks au total, dont 24 stocks d'espèces démersales et 10 stocks de petits pélagiques. On considère qu'un seul stock d'espèces démersales et deux stocks de petits pélagiques font l'objet d'une exploitation durable, tandis que les 31 stocks restants sont soit surexploités, en état de surexploitation ou en déséquilibre écologique. Le coordonnateur a souligné que les améliorations concernant le nombre de nouvelles espèces et de stocks évalués, la couverture géographique et le pourcentage total de captures évaluées au cours des cinq dernières années étaient le fait de meilleurs systèmes de collecte de données ainsi que de l'engagement des scientifiques.

46. À partir d'une analyse des espèces et des zones pour lesquelles on disposait d'informations aux fins de l'évaluation des stocks, le coordonnateur du SCES a ensuite présenté une proposition visant à axer les travaux en matière d'évaluation de stocks et de formulation d'avis de gestion, pendant la prochaine période intersessions, sur un certain nombre d'espèces choisies en Méditerranée, à savoir: (i) le merlu, le rouget et la crevette rose du large; ainsi que (ii) la sardine et l'anchois.

47. Le Comité a salué le travail mené par le SCES ainsi que les améliorations en matière de couverture géographique et d'évaluation. Les délégués ont en outre souligné l'importance de collecter des données de qualité à l'appui des évaluations de stocks afin de pouvoir continuer à formuler des avis exhaustifs sur l'état des principales espèces commerciales dans la zone de la CGPM.

48. Un certain nombre de préoccupations ont été soulevées quant aux éventuels doubles emplois entre les travaux des groupes d'experts de la CGPM et ceux du Comité scientifique, technique et économique de la pêche (CSTEP) de l'UE en matière d'évaluation des stocks en Méditerranée et en mer Noire. À cet égard, il a été rappelé que le SCES avait proposé de renforcer la coordination entre les deux groupes, et le Secrétariat de la CGPM s'est dit disposé à rechercher des synergies potentielles. À cet égard, les délégués de l'Union européenne (organisation membre) ont pris note de cette question, sur laquelle ils se pencheraient en interne.

49. Le délégué de l'Italie a insisté sur le fait que la connaissance sur les limites des stocks était essentielle pour réaliser correctement l'évaluation des stocks. À ce titre, il a mentionné les réalisations récentes du projet STOCKMED de l'UE, qui a fourni des informations sur les limites des stocks de 19 espèces présentant un intérêt commercial en Méditerranée. Il a suggéré d'utiliser les résultats de ce projet comme base pour améliorer la définition des limites des stocks et l'évaluation de l'état des stocks au sein de la CGPM.

50. Un débat s'est ensuite tenu au sujet de l'état de la sardine dans le golfe du Lion (GSA 07), dont l'évaluation du stock indique qu'il est en déséquilibre et présente une faible abondance d'individus âgés et également en mauvais état corporel (poids corporel relatif pour une longueur donnée) ainsi qu'un faible niveau de recrutement observé en 2014. L'idée a été émise qu'une analyse comparative de la condition corporelle des petits pélagiques à l'échelle de la Méditerranée pourrait aider à identifier les stocks en bonne santé par rapport aux autres subissant une pression écologique. À cet égard, le Comité a été informé d'une initiative menée par Ifremer visant à analyser les informations relatives à la répartition du poids et de la longueur des sardines et des anchois dans différentes zones de la Méditerranée. Le SCES avait déjà fait part de son soutien à cette initiative, à laquelle les experts de la CGPM ont été encouragés à participer.

51. Le délégué du Maroc a souligné qu'il était important que les données et les informations utilisées pour formuler les avis soient validées au préalable. À cet effet, celles-ci devraient être présentées et examinées au sein des organes subsidiaires compétents ou bien soumises suffisamment à l'avance au CSC afin que celui-ci puisse les analyser.

52. On a également rappelé aux délégués l'invitation du Bureau du CSC à participer à une action pilote pour l'évaluation et la gestion de l'anguille européenne, menée conjointement par la Commission européenne consultative pour les pêches et l'aquaculture dans les eaux intérieures (CECPAI), le Conseil international pour l'exploration de la mer (CIEM) et la CGPM à partir de 2015, dans le but de contribuer à l'évaluation régionale de ce stock.

53. Enfin, le Comité a approuvé les avis formulés par le SCES sur l'état des stocks, qui figurent à l'Annexe 4, et a arrêté la liste des stocks à évaluer pendant la prochaine intersession mentionnée ci-dessus.

**Gestion de certaines pêches**

54. Le Secrétariat de la CGPM a apporté des informations détaillées concernant la formulation d'avis sur la gestion de certaines pêches, au sujet de laquelle plusieurs ateliers spécifiques ont été tenus entre les sessions. Dans ce cadre, les mesures de gestion en place dans certains pays ont été examinées et des mesures supplémentaires ont été proposées afin de gérer les ressources de manière plus efficace.

55. À cet égard, le Comité a insisté sur la nécessité de fournir des avis concrets sur les stocks pour lesquels des mesures de gestion urgentes étaient nécessaires, ce qui faciliterait le processus décisionnel de la Commission de manière à assurer la durabilité des pêches concernées.

56. Le Comité a examiné les conclusions et les recommandations découlant des différentes activités et a approuvé les avis de gestion formulés pas le SCES, qui figurent à l'Annexe 4. En outre, le Comité est convenu d'axer ses travaux sur les stocks pour lesquels une action immédiate est nécessaire, comme suit:

*Pêches de petits pélagiques en mer Adriatique*

**Anchois dans la GSA 17**

**Diagnostic:** en état de surpêche, avec un taux d'exploitation de $E_c$=0.50, supérieur au point de référence ($E_{ref}$=0.4), et une faible biomasse (SSB=146,127.50 correspondant au 30ème centile de la série temporelle).

**Avis**: réduire immédiatement la mortalité par pêche.

**Commentaires:**

- Révision complète des données d'entrée et évaluation de référence à effectuer en 2015

- Il convient de procéder à une évaluation exhaustive de l'efficacité et des conséquences des règles de contrôle de la récolte comprises dans le plan de gestion existants en vertu de la Recommandation CGPM/36/2013/1, ainsi que des autres solutions possibles, en adoptant de préférence une approche quantitative et en prenant en considération les aspects suivants: (i) indications claires sur les modalités visant à réduire la mortalité par pêche selon les besoins; (ii) formulation permettant une réduction plus progressive de la mortalité par pêche afin de faciliter la mise en œuvre; (iii) calendrier pour la mise en œuvre des mesures de réduction à établir tant pour la mise en œuvre initiale du plan de

gestion que pour la révision régulière des mesures; (iv) effets de la segmentation de la flotte; et (v) interactions entre la sardine et l'anchois.

**Sardine dans la GSA 17**

**Diagnostic:** en état de surpêche avec un taux d'exploitation $E_c$=0.53 supérieur au point de référence ($E_{ref}$=0.4).

**Avis**: réduire la mortalité par pêche.

**Commentaires:** voir commentaires sur l'anchois dans la GSA 17.

*Pêches démersales dans le détroit de Sicile*

**Merlu dans les GSA 12-16**

**Diagnostic**: en état de surpêche, avec une mortalité par pêche actuelle de $F_c$=0.55, supérieure au point de référence ($F_{0.1}$=0.14).

**Avis**: réduire la mortalité par pêche.

**Crevette rose du large dans les GSA 12-16**

**Diagnostic**: en surpêche, avec une mortalité par pêche actuelle Fc=0.88 supérieure au point de référence ($F_{0.1}$=0.70).

**Avis**: réduire la mortalité par pêche.

**Sardine dans la GSA 07**

**Diagnostic**: en déséquilibre, la prospection acoustique n'ayant détecté pratiquement aucun recrutement.

**Avis**: empêcher la mortalité par pêche d'augmenter et effectuer un suivi relatif à l'effort de pêche/aux engins.

57. Le Comité a également insisté sur le fait que la plupart des stocks de merlu et de crevettes en Méditerranée faisaient l'objet d'une forte mortalité par pêche, ce qui appelait par conséquent une action immédiate pour ces stocks.

58. Enfin, le Comité a rappelé que lorsque des mesures destinées à limiter ou réduire la capacité de pêche doivent être appliquées, celles-ci devraient être définies en prenant en considération les différents types de pression exercés par les différentes flottes ciblant un même stock. Par ailleurs, les restrictions temporelles, spatiales et sur les engins de pêche, d'une part, et sur la capacité de la flotte, d'autre part, devraient être prises en compte lorsqu'une réduction de la mortalité par pêche globale serait nécessaire. Un système adéquat de suivi, contrôle et surveillance devrait aussi être mis en place afin de veiller à ce que de telles mesures soient appliquées.

## PROGRÈS RELATIFS À L'ÉLABORATION DU PREMIER RAPPORT BIENNAL SUR L'ÉTAT DES PÊCHES EN MÉDITERRANÉE ET EN MER NOIRE

59. En s'appuyant sur le document GFCM:SAC17/2015/Dma.1, le Secrétariat de la CGPM a présenté la table des matières et la vue d'ensemble des chapitres du premier projet de rapport biennal sur l'état des pêches en Méditerranée et en mer Noire. Le rapport biennal, préparé suite au mandat donné au CSC par la Commission à sa trente-huitième session, a été conçu comme un outil à l'appui

du processus de prise de décisions stratégiques de la CGPM sur les questions présentant une importance pour ses Membres. Ce rapport pourrait en outre apporter une contribution à la publication de la FAO sur la *Situation mondiale des pêches et de l'aquaculture*, étant donné qu'il présenterait une analyse approfondie de l'état et des évolutions des pêches en Méditerranée et en mer Noire.

60. Pour ce qui est de sa structure, le rapport biennal sera divisé en deux sections: (i) une description des caractéristiques principales des pêches en Méditerranée et en mer Noire, reposant essentiellement sur les données officielles communiquées à la CGPM par ses Membres; et (ii) des informations sur les mesures réglementaires en vigueur relatives à la gestion des pêches dans la zone de compétence de la CGPM.

61. Les délégués ont salué les efforts remarquables qui avaient été fournis pour élaborer un tel rapport détaillé, en insistant sur le fait qu'il s'agissait d'un instrument de première importance pour le CSC et la Commission, qui favoriserait une prise de décisions éclairée. D'une manière générale, il a été suggéré d'inclure notamment, au besoin, des informations sur le cadre juridique de la gestion des pêches dans la zone de compétence de la CGPM, sur les interactions des écosystèmes et de l'environnement avec les pêches et sur les aspects socioéconomiques liés à la pêche récréative ainsi que des données détaillées sur le commerce et un nouveau chapitre sur la pêche illicite, non déclarée et non réglementée (INDNR) dans la zone de compétence de la CGPM.

62. Le Comité est convenu de mettre à jour le rapport biennal, à la lumière des considérations ci-dessus et compte tenu d'autres données pertinentes à recevoir des pays, afin que celui-ci puisse être présenté à la Commission pour adoption finale.

**FONCTIONNEMENT DU CSC ET DE SES ORGANES SUBSIDIAIRES COMPTE TENU DE LA RÉCENTE MODIFICATION DU CADRE JURIDIQUE DE LA CGPM**

63. Le Secrétariat de la CGPM a rappelé que, suite au lancement du processus visant à moderniser le cadre juridique de la CGPM, la nécessité de revoir le fonctionnement des organes subsidiaires de la CGPM, y compris le CSC, était apparue. À partir des résultats des dernières réunions intersessions de la Commission concernant l'amendement de son Règlement intérieur et de son Règlement financier, une proposition de cadre de référence pour le CSC a été élaborée, en tenant compte des tâches actuellement exécutées par le Comité et des nouveaux enjeux découlant du nouvel Accord portant création de la CGPM, tel qu'il a été approuvé par la Commission à sa trente-huitième session.

64. À cet égard, le Secrétariat a précisé que, si les réussites obtenues par le Comité depuis sa création était indéniables, un certain nombre de lacunes avaient été identifiées dans la structure actuelle, en particulier: (i) l'organisation thématique des activités ne prenant pas suffisamment en considération l'aspect sous-régional – en considération notamment de la demande croissante de tendre vers l'adoption de plans de gestion pluriannuels sous-régionaux; (ii) la faible présence de participants aux réunions de certains sous-comités; (iii) la difficulté, pour les coordonnateurs travaillant bénévolement d'assurer le niveau d'intervention requis; (iv) les multiples mesures prises pour la validation des avis scientifiques; et (v) les retombées budgétaires correspondantes. Le Comité a par conséquent été invité à réfléchir sur une éventuelle modification de sa structure comportant, entre autres choses, la création de groupes de travail sous-régionaux, tout en maintenant la possibilité d'organiser, au cas par cas, des réunions techniques ad hoc aussi bien à l'échelle régionale que sous-régionale.

65. Au sujet de cette approche sous-régionale, tout en reconnaissant la nécessité d'adopter une perspective sous-régionale et de permettre une plus grande flexibilité géographique des réunions techniques, les délégués ont souligné que certaines activités, telles que celles menées par les groupes de travail sur l'évaluation des stocks, devaient être maintenues à l'échelle régionale. À cet égard, la nature des réunions techniques ad hoc pourrait être examinée au cas par cas au moment de l'adoption du plan de travail annuel du Comité.

66. Lors des débats qui ont suivi, plusieurs questions ont été abordées par le Comité, à savoir: (i) le rôle, le mandat, la nomination et l'éventuelle rémunération des coordonnateurs/animateurs des groupes de travail sous-régionaux; (ii) la nécessité de maintenir une certaine coordination entre les activités dans les différentes sous-régions; (iii) la possibilité de renforcer les synergies avec les projets régionaux de la FAO grâce aux nouvelles composantes sous-régionales; et (iv) le besoin de fournir l'appui nécessaire afin de trouver un équilibre entre les différents niveaux d'avancement des sous-régions dans la réalisation des objectifs communs.

67. En réponse à une question posée par le délégué du Maroc concernant l'allocation éventuelle de locaux spécifiques afin de faciliter le travail des groupes de travail sous-régionaux et de leurs coordinateurs/modérateurs, le Comité a reconnu qu'il s'agissait d'une question importante, qui serait soumise à l'attention de la Commission pour discussion. À cet égard, le Secrétariat a communiqué aux participants que Malte et le Liban avaient déjà exprimé leur intérêt à accueillir des locaux sous-régionaux.

68. Pour conclure, le Comité a endossé son nouveau cadre de référence (tel qu'il figure à l'Annexe 5(1)) et est convenu de présenter celui-ci à la Commission à sa trente-neuvième session, afin qu'il puisse être examiné au moment d'établir le texte définitif du Règlement intérieur modifié de la CGPM. En ce qui concerne en particulier la proposition de structure et de fonctionnement du Comité, les délégations se sont posé la question de savoir si la nouvelle solution proposée garantirait une meilleure efficacité et rentabilité par rapport à la situation actuelle. À la lumière de cette réflexion, le Comité, bien qu'il n'ait formulé aucune objection à cet égard, a souligné qu'une réflexion plus approfondie et concertée concernant sa structure et son fonctionnement (faisant l'objet de l'Annexe 5(2)) était nécessaire afin de faciliter l'examen par la Commission à sa trente-neuvième session.

**EXAMEN DU PLAN DE TRAVAIL PRÉLIMINAIRE DU CSC POUR 2015–16**

69. Le Secrétariat de la CGPM a présenté le plan de travail préliminaire du CSC pour 2015-16 résultant de ses activités intersessions en s'appuyant sur les documents GFCM:SAC17/2015/2 et GFCM:SAC17/2015/Inf.5 à Inf.8.

70. Après avoir examiné les différentes priorités pour la prochaine période intersessions, le Comité a adopté son plan de travail pour 2015-16 comme suit:

**Activités liées aux statistiques et à l'information**

- Poursuivre le développement de la plateforme en ligne du Cadre de référence pour la collecte de données, parallèlement à la mise en œuvre progressive du cadre de référence, afin de soutenir efficacement la collecte et la transmission de données des Membres.

- Réaliser une étude pilote pendant la prochaine période intersessions (figurant dans la feuille de route fournie à l'Annexe 6) pour parachever l'élaboration des outils de transmission de données en ligne, afin d'évaluer la performance des outils de transmission utilisés et de mesurer le flux d'informations avec les points focaux nationaux désignés pour la collecte de données.

- Fournir aux Membres une assistance en matière de collecte et transmission de données en accord avec le cadre de référence pour la collecte de données, à la demande des pays et en coordination avec les projets régionaux de la FAO.

- Mettre en œuvre la transmission progressive par les pays des données nationales en accord avec le Cadre de référence pour la collecte de données, entre juillet 2016 et novembre 2017, conformément au calendrier élaboré par le Comité (Annexe 6).

- Parachever et tester le nouvel instrument visant à faciliter la transmission en ligne des rapports nationaux au CSC, y compris une phase d'essai menée par un groupe de Membres volontaires.

**Activités liées aux questions socioéconomiques**

- Définir une stratégie pour la mise en œuvre et l'utilisation d'indicateurs socioéconomiques dans certaines pêches aux niveaux régional et sous-régional.

- Parachever les directives relatives à une méthodologie commune d'analyse socioéconomique, en coordination avec les projets régionaux de la FAO.

- Évaluer les caractéristiques de la pêche récréative dans la zone de compétence de la CGPM.

- Évaluer les impacts socioéconomiques des mesures de gestion potentielles de certaines pêches, y compris les pêches démersales et de petits pélagiques en mer Adriatique et les pêches démersales dans le détroit de Sicile.

**Activités liées aux écosystèmes marins**

- Mettre en œuvre un programme de recherche sur le corail rouge à partir de la note conceptuelle qui figure à l'Annexe 10.

- Appuyer la mise au point des six études pilotes prévues dans la première phase du projet conjoint ACCOBAMS-CGPM (2015-17) sur les interactions entre les espèces menacées et les activités de pêche, à savoir:

- senne tournante pour les petits pélagiques au Maroc (Maroc);

- pêche artisanale au thon rouge dans le détroit de Gibraltar (Maroc);

- pêche pélagique à la palangre de l'espadon et du germon dans le sud de l'Espagne (Espagne);

- pêche à la palangre de fond et de surface dans le golfe de Gabès (Tunisie);

- senne tournante pour les petits pélagiques à Kélibia (Tunisie);

- pêche au filet maillant dans le sud de la France et dans les îles Baléares (France et Espagne).

**Activités liées à l'évaluation des stocks**

- Procéder en 2015 à une révision complète des données d'entrée et à une évaluation de référence pour la sardine et l'anchois dans les sous-régions géographiques 17 et 18.

- Réaliser une évaluation exhaustive de l'efficacité et des conséquences des règles de contrôle de la récolte, prévues par le plan de gestion existant pour les pêches de petits pélagiques en mer Adriatique en vertu de la Recomandation CGPM/36/2013/1, ainsi que d'autres solutions possibles, suivant les indications fournies par le Comité.

- Installer et tester les utilitaires du serveur R-Studio et les mettre à la disposition des groupes de travail sur l'évaluation des stocks.

- Mener des enquêtes sur les méthodes applicables aux stocks pour lesquels on dispose de données limitées, en particulier les espèces vulnérables telles que les élasmobranches et le corail rouge, ainsi qu'à l'évaluation des stocks ciblés par la pêche artisanale.

- Mettre en œuvre un plan d'action pilote pour l'évaluation de la situation de l'anguille d'Europe.

71. Le Comité a ensuite examiné plus en détail les sujets suivants:

*Conférence régionale sur la pêche artisanale*

72. Le Secrétariat de la CGPM a présenté les progrès réalisés dans la préparation de la Conférence régionale sur la pêche artisanale (Algérie, 2016), y compris en ce qui concerne la coordination avec les partenaires (Département des pêches et de l'aquaculture et projets régionaux de la FAO, Fonds mondial pour la nature [WWF], Réseau des gestionnaires d'aires marines protégées en Méditerranée [MedPAN] et Centre international de hautes études agronomiques en Méditerranée [CIHEAM]) et avec le pays hôte. Il a souligné que cette manifestation permettrait de consolider les résultats du Premier Symposium régional sur la pêche artisanale durable en Méditerranée et en mer Noire (Malte, novembre 2013) et d'apporter un appui supplémentaire à la mise en œuvre des Directives d'application volontaire de la FAO visant à assurer la durabilité de la pêche artisanale dans le contexte de la sécurité alimentaire et de l'éradication de la pauvreté (Directives sur la pêche artisanale) et à l'initiative de la FAO en faveur de la croissance bleue, à l'échelon régional.

73. Lors des débats qui ont suivi, plusieurs délégations ont reconnu l'importance de cette conférence, compte tenu notamment du poids socioéconomique considérable que représente le secteur de la pêche artisanale dans la zone de compétence de la CGPM. Elles se sont également entendues sur la nécessité de créer une vision et une stratégie communes en vue de son développement durable. À cet égard, les représentants des partenaires présents ont renouvelé leur engagement en faveur de la durabilité de ce secteur et réaffirmé leur volonté d'œuvrer avec la CGPM dans ce sens.

74. Plusieurs aspects dignes d'intérêt pour la conférence ont été retenus, notamment: (i) la nécessité de prendre en compte la pêche artisanale dans la planification spatiale marine; (ii) la concurrence entre la pêche artisanale et les autres activités humaines en mer; (iii) le lien entre la pêche artisanale et la sécurité alimentaire; (iv) la nécessité de protéger le développement de la pêche artisanale vis-à-vis des pratiques industrielles telles que le chalutage; (v) l'importance accordée aux infrastructures et à la vente directe des produits de la pêche artisanale; et (vi) le renforcement des moyens d'action des communautés locales et des associations de pêcheurs.

75. Il a été convenu que la structure proposée pour la conférence, articulée autour de cinq volets thématiques, était apte à intégrer les éléments supplémentaires identifiés. Par ailleurs, la conférence pourrait renforcer les synergies et les avantages découlant des réalisations de projets mis en œuvres dans ce domaine (par ex. par le Département des pêches et de l'aquaculture de la FAO, le projet GAP2, etc.). En ce qui concerne plus particulièrement les chaînes de valeur, il a été souligné que celles-ci pourraient faire l'objet d'une session thématique ad hoc, dans la mesure où des études de cas seraient présentées et mises en œuvre; dans le cas contraire, il serait opportun d'aborder les aspects liés aux chaînes de valeur de façon transversale.

76. Après un certain nombre d'éclaircissements concernant les objectifs et les résultats attendus de la mise en œuvre des études de cas, les délégués de l'Egypte, du Maroc et de la Tunisie ont fait part de leur intention de proposer des études de cas supplémentaires qui pourraient être mises en œuvre dans leurs pays. Ils ont été invités à présenter leurs demandes au Secrétariat de la CGPM à l'aide du format standard disponible (fourni à l'Annexe 9) et à nommer des experts nationaux qui pourraient faire l'interface entre leur pays et les partenaires.

77. Le Comité a décidé que la conférence comprendrait une partie technique de débats sur trois jours et une session de haut niveau d'une journée avec l'adoption des résultats finaux. Il est également convenu que le Secrétariat de la CGPM superviserait la coordination entre les partenaires, y compris en organisant des réunions ad hoc et en encourageant la participation de tous les acteurs concernés,

suivant le *modus operandi*, le calendrier et la méthodologie convenus pour l'organisation de la conférence.

*Activités de recherche sur le corail rouge*

78. Le Secrétariat de la CGPM a présenté une note conceptuelle relative à un programme de recherche à moyen terme (2-3 ans) visant à évaluer l'état des populations de corail rouge en Méditerranée, élaborée suivant le mandat donné par la Commission à sa trente-huitième session. Conformément aux priorités de recherche énoncées dans les directives relatives à la gestion des populations de corail rouge en Méditerranée adoptées par la Commission, ce programme de recherche prévoit la collecte d'informations nécessaires par le biais d'études portant sur des pêches existantes et d'enquêtes spécifiques. Le Secrétariat a informé le Comité qu'il était actuellement en contact avec la Khaleb bin Sultan Living Oceans Foundation, une organisation sans but lucratif d'Arabie Saoudite, qui pourrait fournir un navire pour mener des prospections visant à cartographier la répartition du corail rouge en Méditerranée.

79. À titre de contribution potentielle à la première phase de ce programme de recherche, l'Association italienne des plongeurs corailleurs a présenté un cas d'étude à réaliser en 2015. Cette étude fournira des informations sur l'état des bancs de corail rouge en Sardaigne, Italie, et évaluer l'impact de l'utilisation d'engins sous-marins télécommandés (ROV) pour la prospection et l'exploitation du corail rouge. Il a été clairement expliqué que les résultats de cette étude pilote devraient être soumis au Comité afin de contribuer à la formulation d'avis sur l'état des populations de corail rouge, conformément à la Recommandation CGPM/35/2011/2 sur le corail rouge.

80. En réponse aux questions relatives à la règlementation actuelle de la CGPM concernant les engins sous-marins télécommandés, le Secrétariat a précisé que la Recommandation CGPM/35/2011/2 prévoyait une dérogation à l'interdiction d'utiliser ces engins uniquement dans le cas de campagnes expérimentales et pas au-delà de 2015, sur la base d'une autorisation spécifique délivrée par les autorités nationales.

81. La représentante d'Oceana a rappelé qu'il s'agissait d'une espèce menacée et a demandé que les morceaux de corail rouge prélevés par les engins sous-marins télécommandés soient conservés à des fins scientifiques uniquement et catalogués. La présence d'observateurs à bord pour surveiller les opérations de récolte devrait également être prévue par souci de transparence.

82. Le Comité a souligné que les opérations des engins sous-marins télécommandés devraient être suivies de près et que toutes les informations potentiellement utiles à la recherche (par ex. position, profondeur et images visuelle des colonies avant et après récolte) devraient être collectées, tout en insistant sur le fait que les individus prélevés devraient être utilisés à des fins de recherche uniquement et ne devraient pas être commercialisés.

*Cadre stratégique conjoint sur les mesures de gestion par zone*

83. Mme Lobna Ben Nakhla, représentante du Centre d'activité régional pour les aires spécialement protégées (CAR-ASP) du Plan d'action pour la Méditerranée du Programme des Nations Unies pour l'environnement (PNUE-PAM), a présenté une proposition de cadre stratégique conjoint pour le CAR-ASP, la CGPM, l'Accord sur la conservation des cétacés de la mer Noire, de la Méditerranée et de la zone atlantique adjacente (ACCOBAMS) et le Centre de coopération pour la Méditerranée de l'Union internationale pour la conservation de la nature (UICN-Med), en collaboration avec MedPAN, visant à développer des actions communes pour la mise en place de mesures de gestion par zone en mer d'Alboran, en Adriatique et dans le détroit de Sicile. La stratégie proposée prévoit la promotion et la mobilisation de fonds pour la réalisation d'enquêtes océanographiques dans ces zones ainsi que des propositions de projets communs en s'appuyant sur l'étroite coopération déjà existante entre les organisations concernées.

84. Le Secrétariat de l'ACCOBAMS a remercié le CAR-ASP pour cette initiative, qui contribuerait à optimiser les efforts et à renforcer les synergies entre les activités et programmes de travail de l'ACCOBAMS, de la CGPM et du CAR-ASP, en accord avec leurs mandats respectifs.

85. Le Comité s'est montré favorable à cette collaboration et s'est félicité de l'élaboration du cadre stratégique à la lumière de la mise en œuvre de la Résolution CGPM/37/2013/1 sur la gestion des pêches par zone.

86. Enfin, le Comité est convenu de la liste des réunions 2015–16 comme indiqué ci-après. Le mandat de certaines réunions figure à l'Annexe 8.

| **Réunions** | **Lieu/Date** |
|---|---|
| Groupe de travail sur l'évaluation des stocks d'espèces démersales [5 jours y compris les sessions sur les stocks pauvres en données relatifs au corail rouge et aux élasmobranches] | Rome, à confirmer octobre 2015 |
| Groupe de travail sur l'évaluation des stocks de petits pélagiques [5 jours y compris les réunions sur l'évaluation de référence des petits pélagiques en mer Adriatique] | Rome, à confirmer octobre 2015 |
| Groupe de travail conjoint CEICPAI/CGPM/CIEM sur l'anguille [8 jours y compris un jour consécutif pour la préparation des données sur la Méditerranée] | Turquie, à confirmer novembre 2015 |
| Sessions des Sous-comités/groupes de travail sous-régionaux [4 jours] | Rome, à confirmer janvier/février 2016 |
| Atelier sur l'utilisation de modèles bioéconomiques de simulation et de prévision pour l'évaluation des mesures de gestion [3 jours]. Éventuellement consécutif aux sessions des Sous-comités ou des groupes de travail sous-régionaux | Rome, à confirmer janvier/février 2016 |
| Atelier des points focaux du Cadre de référence pour la collecte de données concernant la communication de données en Méditerranée [3 jours] | Lieu à fixer ultérieurement février 2016 |
| Conférence régionale sur la pêche artisanale en Méditerranée et en mer Noire [4 jours] | Algérie février/mars 2016 |
| Dix-huitième session du Comité scientifique consultatif [4 jours] | À fixer ultérieurement mars 2016 |
| Atelier sur la lecture de l'âge des petits pélagiques [3 jours] | À fixer ultérieurement |
| Atelier sur l'estimation des paramètres de croissance et de maturité du *Mullus barbatus* [3 jours] | À fixer ultérieurement |

87. En outre, le Comité a pris note de la liste de certaines réunions portant sur des questions liées aux pêches en mer Noire proposée par le Groupe de travail sur la mer Noire, fournie ci-après.

| Réunions | Lieu/Date |
|---|---|
| Groupe sous-régional sur l'évaluation des stocks en mer Noire<br>[4 jours y compris les sessions sur l'évaluation de référence du turbot, de l'anchois et du rouget, et l'harmonisation des études en mer] | Burgas, Bulgarie<br>Novembre 2015 |
| Atelier des points focaux du Cadre de référence pour la collecte et la communication de données en mer Noire [3 jours] | Trabzon, Turquie<br>décembre 2015 |
| Atelier sur la gestion de l'anchois en mer Noire [2 jours] | Trabzon, Turquie<br>décembre 2015 |
| Cinquième réunion du Groupe de travail sur la mer Noire [3 jours] | Kiev/Constanta, à confirmer<br>mars 2016 |

88. Il a été rappelé que la deuxième réunion du Groupe de travail sur les aires marines protégées (AMP) avait été approuvée et se tiendrait du 8 au 10 juin 2015 à Djerba (Tunisie). À cet égard, le Comité a été informé que l'examen des aires nationales existantes faisant l'objet de mesures de gestion des pêches par zones était sur le point d'être achevé. La représentante d'Oceana a profité de cette occasion pour souligner qu'il était important d'organiser cette réunion de façon régulière.

89. En ce qui concerne les activités déjà prévues dans le cadre du projet MedSuit, il a été précisé que le travail sur l'élaboration, l'estimation et le suivi des indicateurs sur le bon état écologique des populations marines était en cours.

**AUTRES QUESTIONS RELATIVES AU CSC**

**Informations relatives au projet GAP2 sur la gestion des pêches**

90. M. Sasa Raicevich a présenté les résultats et les perspectives du projet GAP2 financé par l'UE, qui vise à promouvoir les activités scientifiques axées sur les parties prenantes et la cogestion en matière de pêche, notamment des cas d'étude sur l'Italie, Malte et l'Espagne. Le projet a démontré que l'implication des pêcheurs dans la recherche et la cogestion des pêches se traduisait par une meilleure connaissance à l'appui de la gestion des pêches, par l'autonomisation des pêcheurs et des autres parties prenantes et par une meilleure efficacité de gestion. Il a proposé que la session sur la cogestion prévue dans le cadre de la prochaine conférence régionale sur la pêche artisanale soit élargie de façon à inclure les questions portant sur la recherche participative et à présenter les résultats du projet GAP2 à cette occasion.

91. Le Comité a salué cette présentation en exprimant ses remerciements et en se félicitant de la possibilité de poursuivre la collaboration concernant ces questions pertinentes.

**Présentation de l'initiative d'enquête de l'ACCOBAMS – un projet de surveillance visant à améliorer la conservation des cétacés dans les bassins de la Méditerranée et de la mer Noire**

92. La représentante de l'ACCOBAMS a présenté un projet visant à mettre en place un programme de surveillance intégré et coordonné des cétacés à l'échelle régionale, en vue d'améliorer l'état de conservation de ces espèces et de leurs habitats. La phase opérationnelle de cette initiative se déroulerait en une seule étape, dans toute la zone de compétence de l'ACCOBAMS, et elle associerait des méthodes de prospection visuelles (par voie maritime et aérienne) et des techniques de détection

acoustiques utilisées pour collecter les données sur l'abondance et la répartition des cétacés (ainsi que des oiseaux de mer et des tortues marines).

93. Le Comité s'est félicité de ce nouveau projet et a invité l'ACCOBAMS à le tenir informé sur les réalisations et les évolutions à venir.

**Informations du PAM/PNUE relatives à la Stratégie méditerranéenne pour le développement durable**

94. M. Atila Uras, Secrétariat du PAM/PNUE, a illustré le processus de révision de la Stratégie méditerranéenne pour le développement durable (SMDD), notamment les progrès concernant les initiatives entreprises dans le cadre du développement durable en Méditerranée ainsi que le contenu et la structure de la Stratégie méditerranéenne pour le développement durable révisée en mars 2015. Il a présenté une liste d'actions proposées à la CGPM, invitant le CSC à faire part de ses commentaires sur: (i) la compétence du CSC et le partage d'expérience au cours des étapes restantes du processus de révision de la SMDD; (ii) des orientations stratégiques et des actions en matière de pêche à intégrer à la SMDD avant la seizième réunion de la Commission méditerranéenne du développement durable (CMDD); (iii) la participation en qualité d'observateur à la seizième réunion de la CMDD et la contribution aux discussions sur l'approbation de la SMDD révisée; et (iv) l'adhésion à la CMDD pour 2016-17. À cet égard, le PAM/PNUE fournirait au Secrétariat de la CGPM le mandat et la définition des rôles et responsabilités des membres de la CMDD, en vue de l'adhésion éventuelle de la CGPM à la CMDD.

95. Les requêtes du PAM/PNUE ont été prises en compte pour être transmises à la Commission, qui pourrait éventuellement donner mandat au Secrétariat de lancer le processus, y compris en ce qui concerne la mise en place d'une série de cibles et d'objectifs liées à la pêche durable.

**Informations relatives aux tortues marines en Méditerranée**

96. Le délégué de l'Espagne a informé le Comité des résultats de projets de recherche menés par un groupe de travail bilatéral formé par la Société herpétologique espagnole (AHE) et la Société herpétologique de France (SHF) sur les captures accidentelles de tortues marines. Il a illustré en particulier une proposition concernant la création d'une plateforme dirigée par la CGPM qui favoriserait la mise en œuvre de la Recommandation CGPM/35/2011/4 sur les captures accidentelles de tortues marines dans les pêches de la zone de compétence de la CGPM, suggérant que les informations recueillies pourraient compléter les données collectées officiellement, notamment à travers le Cadre de référence pour la collecte des données et les rapports nationaux. Il a également indiqué que cette initiative pourrait enrichir la stratégie actuelle de la CGPM concernant les captures accidentelles d'espèces vulnérables.

97. Le Comité a reconnu l'importance de cette question dans le cadre des progrès récents réalisés par la CGPM concernant les captures accidentelles et s'est dit favorable à la création de la plateforme proposée.

**CLÔTURE DE LA RÉUNION ET TENUE DE LA PROCHAINE SESSION**

98. Le Président a été longuement remercié pour ses orientations éclairées et pour le rôle essentiel qu'il a joué à la tête du Comité ainsi que pour la conduite remarquable de la session. Les délégués ont aussi été remerciés pour leur participation et leur contribution à la réussite des activités intersessions du CSC.

99. Le Comité est convenu que la dix-huitième session aurait lieu si possible en mars 2016 et qu'une décision concernant les dates exactes et le lieu serait prise lors de la trente-neuvième session de la Commission.

**ADOPTION DU RAPPORT**

100. Le rapport, avec ses annexes, a été adopté vendredi 27 mars 2015.

**Appendix 1**

## Agenda

1. **Opening and arrangements for the session**
2. **Adoption of the agenda**
3. **Intersessional activities**
   - Review of the recommendations of the thirty-eighth session of the Commission concerning the management of fisheries and progress of the GFCM amendment process
   - Overview of SAC and Working Group on the Black Sea achievements during the intersession
   - Research activities by Member countries
   - Major activities and initiatives of the FAO regional projects
4. **Formulation of advice in the field of fishery management and research**
5. **Progress on the elaboration of the first biennial report on the status of Mediterranean and Black Sea fisheries**
6. **Functioning of the SAC and its subsidiary bodies in light of the recent amendment of the GFCM legal framework**
7. **Review of SAC preliminary work plan for 2015–2016, including in relation to the following activities:**
   - Regional Conference on Small-Scale Fisheries
   - Research activities on red coral, including a proposal for a pilot study
   - Proposal for a possible UNEP-MAP/RAC-SPA, ACCOBAMS, IUCN, MEDPAN and GFCM joint strategy for research on conservation of marine ecosystems and populations
8. **Any other matter**
   - Information on the GAP2 Project on fisheries management
   - Presentation of the ACCOBAMS Survey Initiative – a basin-wide monitoring project for enhancing cetaceans conservation in the Mediterranean and Black Seas
   - Information from UNEP-MAP on the Mediterranean Strategy for Sustainable Development
   - Information from Spain on Mediterranean sea turtles
9. **Date and place of the next session**
10. **Adoption of the report**

**Annexe 1**

**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 à sa trente-huitième session concernant la gestion des pêches et l'état d'avancement du processus d'amendement des textes de la Commission
   - Vue d'ensemble des réalisations du Comité scientifique consultatif et du Groupe de travail sur la mer Noire entre les sessions
   - Activités de recherche menées par des États membres
   - Principales activités et initiatives menées dans le cadre des projets régionaux de la FAO
4. **Formulation d'avis dans le domaine de la gestion et de la recherche halieutiques**
5. **Progrès concernant l'élaboration du premier rapport biennal sur la situation des pêches en Méditerranée et en mer Noire**
6. **Fonctionnement du Comité scientifique consultatif et de ses organes subsidiaires compte tenu de l'amendement récent du cadre juridique de la CGPM**
7. **Examen du plan de travail préliminaire du Comité scientifique consultatif pour 2015-2016, y compris:**
   - Conférence régionale sur la pêche artisanale
   - Activités de recherche sur le corail rouge, y compris une proposition d'étude pilote
   - Proposition de stratégie commune entre le PNUE-PAM/CAR-ASP, ACCOBAMS, l'UICN, MedPAN et la CGPM en matière de recherche sur la conservation des populations et des écosystèmes marins
8. **Autres questions**
   - Information sur le projet GAP2 relatif à la gestion des pêches
   - Présentation de « Survey Initiative » – projet de suivi mis en œuvre par ACCOBAMS pour améliorer la conservation des cétacés à l'échelle du bassin de la Méditerranée et de la mer Noire
   - Information du PNUE-PAM sur la stratégie méditerranéenne de développement durable
   - Informations fournies par l'Espagne sur les tortues marines en Méditerranée
9. **Date et lieu de la prochaine session**
10. **Adoption du rapport**

**Appendix 2**

**List of participants / Liste des participants**

**MEMBERS OF GFCM/**
**MEMBRES DE LA CGPM**

**ALBANIA/ALBANIE**

Mimoza COBANI*
Fishery & Aquaculture specialist
Fishery Directorate
Ministry of Agriculture, Rural Development and Water Administration
Rruga e Durresit, Nr.27
Tirana
Tel.: (+355) 672055778
E-mail: cobanimimi@yahoo.com

**ALGERIA/ALGÉRIE**

Nadia SAICHI*
Inspectrice
Ministère de la Pêche et des Ressources Halieutiques
Rue des Quatres Canons, Alger
Algeria
E-mail: nabouhafs@yahoo.fr

Larbi NEGHLI
Attaché de recherche
Centre National de Recherche et Développement de la Pêche et de l'Aquaculture (CNRDPA),
Tel.: (+213) 550175754
E-mail: nelasof@gmail.com

**BULGARIA/BULGARIE**

**CROATIA/CROATIE**

Josip MARKOVIĆ*
Head of Sector for Resources Management and Aquaculture
Directorate of Fisheries
Ministry of Agriculture
Planinska 2a, 10000 Zagreb
E-mail: josip.markovic@mps.hr

Lav BAVČEVIĆ
Senior Coordinator
Advisory Service
Directorate of Fisheries, Ministry of Agriculture
Ivana Mažuranića 30, 23000 Zadar
E-mail: lav.bavcevic@savjetodavna.hr

Vanja ČIKEŠ KEČ
Institute of Oceanography and Fisheries
Šet.I.Meštrovića 63,
21000 Split
E-mail: cikes@izor.hr

Barbara ZORICA
Institute of Oceanography and Fisheries
Šet.I.Meštrovića 63,
21000 Split
E-mail: zorica@izor.hr

**CYPRUS/CHYPRE**

Lavrentios VASILIADES*
Fisheries Officer
Fisheries Licenses and Statistics
Department of Fisheries and Marine Research
Ministry of Agriculture, Rural Development and Environment
Vithleem 101, Nicosia
Tel.: (+357) 22807858
E-mail: lvasiliades@dfmr.moa.gov.cy

Spyridon ELLINAS
Agricultural Attaché/Alternate Permanent Representative of the Republic of Cyprus to the UN Agencies
Permanent Representation of the Republic of Cyprus to the UN Agencies, Rome
Piazza Farnese, 44 - sc.A - int.1 00186 Rome, Italy
E-mail: saellinas@hotmail.com

* Head of delegation / Chef de délégation

**EGYPT/ÉGYPTE**

Nabila EL NAGDY*
G.M. of Agreements Department
General Authority for Fish Resources Development
GAFRD
4 Tayaran Street - Nasr City – Cairo
E-mail: nabilaelnagdy.gafrd@gmail.com

Atif Salah MEGAHED
General Manager of Fisheries
General Authority for Fish Resources Development
GAFRD
4 Tayaran Street - Nasr City – Cairo
E-mail: atif_gafrd@yahoo.com

Azza EL GANAINY
Head of Fisheries Biology Lab
National Institute of Oceanography and Fisheries
P.O. Box 182, Suez
E-mail: azzaelgan@yahoo.com

Hatem H. MAHMOUD
Head of Fisheries Department
College of Fisheries Technology Aquaculture
Arab Academy for Science, Technology & Maritime Transport
49 Rassafa st., Moharram Bik,
Alexandria
E-mail: hatemhanafy@hotmail.com

**EUROPEAN UNION (MEMBER ORGANIZATION) / UNION EUROPÉENNE - ORGANISATION MEMBRE**

Fabrizio DONATELLA*
Head of Unit D2
Fisheries Conservation and Control in the Mediterranean and Black Sea
Directorate-General for Maritime Affairs and Fisheries
European Commission
Rue de la Loi 200, 1049, Brussels
Belgium
E-mail: fabrizio.donatella@ec.europa.eu

Anna MANOUSSOPOULOU
Policy Adviser
Fisheries Conservation and Control in the Mediterranean and Black Sea
Directorate General for Maritime Affairs and Fisheries
European Commission of the European Union
200 rue de la Loi
1049 Brussels, Belgium
E-mail: Anna.Manoussopoulou@ec.europa.eu

Kenneth PATTERSON
Deputy Head of Unit A2
Common Fisheries Policy and Aquaculture
Directorate General for Maritime Affairs and Fisheries (DG MARE)
European Commission
Rue Joseph II 99 - 1049 Brussels, Belgium
Tel.: (+32) 22998227
E-mail: kenneth.patterson@ec.europa.eu

Amanda PEREZ PERERA
Policy Officer
Directorate General for Maritime Affairs and Fisheries (DG MARE)
European Commission
Rue Joseph II 99 - 1049 Brussels, Belgium
E-mail: Amanda.PEREZ-PERERA@ec.europa.eu

Ana FRAILE VASALLO
Delegation of the European Union to the UN in Rome
Via IV Novembre, 149 –
00187, Rome, Italy
E-mail: Ana.Fraile-Vasallo@eeas.europa.eu

**FRANCE**

Benoit ARCHAMBAULT*
Policy Officer
Direction des Pêches
Ministère de l'écologie, du développement durable et de l'énergie
Tour Séquoia – 92055 La Défense
E-mail: benoit.archambault@developpement-durable.gouv.fr

Capucine MELLON
Responsable du Laboratoire halieutique Méditerranée (HM)
Département Ressources Biologiques et Environnement (RBE)
IFREMER
Avenue Jean Monnet, CS 30171
34203 Sète Cedex
Tel.: (+33) 4 99573247
E-mail: cmellon@ifremer.fr

**GREECE/GRÈCE**

Dimitra SAVVOPOULOU*
Director
Directorate for Fisheries Policy & Fishery Resources,
Directorate General for Sustainable Fisheries,
Ministry of Reconstruction of Production Environment & Energy
150 Sygrou Avenue, 17671 Athens
E-mail: syg022@minagric.gr

**ISRAEL/ISRAËL**

**ITALY/ITALIE**

Mauro BERTELLETTI*
Direzione Generale della Pesca e dell'Acquacoltura
Ministero per le Politiche Agricole, Alimentari e Forestali
Viale dell'Arte 16
00144 Rome
E-mail: m.bertelletti@politicheagricole.it

Fabio FIORENTINO
Researcher
Italian National Research Council – Institute for Coastal Marine Environment
Via Luigi Vaccara 61 Mazara del Vallo (TP)
E-mail: fabio.fiorentino@iamc.cnr.it

Piera CARPI
Fisheries Scientist
CNR-ISMAR
Largo Fiera della Pesca 2,
Ancona
E-mail: piera.carpi@an.ismar.cnr.it

**JAPAN/JAPON**

**LEBANON/LIBAN**

Karim KHALIL*
Chargé d'affaires
Permanent Representation of the Republic of Lebanon to FAO
Ambassade de la République libanaise
Via Giacomo Carissimi, 38
00918, Rome, Italy
Tel.: (+39) 06 8537211
E-mail: ambalibano@hotmail.com

Samir MAJDALANI
Head
Department of Fisheries & Wildlife
Ministry of Agriculture
Embassies Street, Bir Hassan
Beirut
Tel.: (+961) 3384421
E-mail: sem@cyberia.net.lb

**LIBYA/LIBYE**

**MALTA/MALTE**

Reno MICALLEF*
Scientific Officer
Department for Fisheries and Aquaculture
Ministry for Sustainable Development, the Environment and Climate Change (MSDEC)
Ghammieri, Ingiered Road, Marsa
Tel.: (+356) 22921222
E-mail: reno.micallef@gov.mt

**MONACO**

**MONTENEGRO/MONTÉNÉGRO**

Srdjan MUGOSA*
Advisor for Fisheries
Ministry of Agriculture and Rural Development
Rimski trg. 46
81 000 Podgorica
Tel.: (+382) 20 482270
E-mail: srdjan.mugosa@mpr.gov.me

Aleksandar JOKSIMOVIĆ
Scientist – Fisheries Expert
Institute of Marine Biology
Dobrota bb, PO Box 69
85 330 Kotor
Tel.: (+382) 32334569
Fax: (+382) 32334570
E-mail: acojo@ac.me

**MOROCCO/MAROC**

Mohamed MALOULI IDRISSI*
Chef du Département des Ressources Halieutiques
INRH - Centre Régional de Tanger
BP 5268 Dradeb Tanger 90000
Tel./Fax: (+212) 39325139
E-mail: malouliinrh@yahoo.fr

Abdelhakim MESFIOUI
Chef
Centre Régional
INRH - Centre Régional de Nador
13 Boulevard Zektouni
62000 Nador
Tel.: (+212) 536331251
E-mail: mesfioui@inrh.ma

Hicham OUYAHYA
Cadre à la Division de la Protection des Ressources Halieutiques à la DPMA
Ministère de l'Agriculture et de la Pêche Maritime
BP Quartier Administratif, Haut-Agdal
Rabat
Tel.: (+212) 6 15607785
E-mail: hicham.ouyahya@mpm.gov.ma

**ROMANIA/ROUMANIE**

Simion NICOLAEV
Director
National Institute for Marine Research and Development "Grigore Antipa"
900581 Constanta, Blv. Mamaia 300
Tel.: (+40) 241 543288
Fax: (+40) 241 831274
E-mail: nicolaev@alpha.rmri.ro

**SLOVENIA/SLOVÉNIE**

Roman ČIČMIRKO*
Senior Advisor
Fisheries and Hunting Sector
Ministry of Agriculture, Forestry and Food of the Republic of Slovenia
Dunajska cesta 22
1000 Ljubljana
Tel.: (+386) 41356573
E-mail: roman.cicmirko@gov.si

Edvard AVDIC MRAVLJE
Economist
Fisheries Research Institute of Slovenia
Sp. Gameljne 61°
E-mail: edoavdic@gmail.com

**SPAIN/ESPAGNE**

Juan Antonio CAMIÑAS*
Researcher
Spanish Institute of Oceanography (IEO)
Puerto Pesquero de Fuegirola
E-mail: juanantonio.caminas@ma.ieo.es

**SYRIAN ARAB REPUBLIC / RÉPUBLIQUE ARABE SYRIENNE**

**TUNISIA/TUNISIE**

Hachemi MISSAOUI*
Directeur Général
Institut National des Sciences et Technologies de la Mer (INSTM)
28 rue 2 mars 1934
2025 Salammbô
Tel.: (+216) 71730548
Fax: (+216) 71732622
E-mail: Hechmi.Missaoui@instm.rnrt.tn

Mehrez BESTA
Direction Générale de la Pêche et de l'Aquaculture
39, Rue Alain Savary,
1002 Tunis
Tel.: (+216) 24820070
E-mail: mehrezbesta@gmail.com

**TURKEY/TURQUIE**

Ali Cemal GÜCÜ*
Associate Professor
Institute of Marine Science

Middle East Technical University
Tel.: (+90) 3245212150
E-mail: gucu@ims.metu.edu.tr

**OBSERVER FROM NON-GFCM MEMBER NATIONS**

**RUSSIAN FEDERATION**

Alexander OKHANOV
Counselor
Permanent Mission of the Russian Federation
to FAO and other UN Agencies
Via Gaeta, 5 - 00185 Rome
Italy
Tel.: (+39) 06 90235744
E-mail: rusfishfao@mail.ru

**OBSERVERS FROM INTERGOVERNMENTAL ORGANIZATIONS / OBSERVATEURS D'ORGANISATIONS GOUVERNEMENTALES**

**ACCOBAMS**

Célia LE RAVALLEC
Project Officer
ACCOBAMS
Jardin de l'UNESCO
Les Terrasses de Fontvieille
MC 98000 Monaco
E-mail: cleravallec@accobams.net

**CIHEAM**

Roberto UGOLINI
Centre International de Hautes Etudes
Agronomiques Méditerranéennes (CIHEAM)
CIHEAM Bari
Via Ceglie, 9
70010 Valenzaon (BA)
Italy
E-mail: ugolini.made@gmail.com

**MEDAC**

Rosa CAGGIANO
Executive Secretary
MEDAC
Via Nazionale 243 (Rome)
00184 Italy
E-mail: r.caggiano@med-ac.eu

**UNEP/MAP**

Atila URAS
Programme Officer
UNEP Mediterranean Action Plan
Barcelona Convention Secretariat
Vassileos Konstantinou 48, Athens
Greece
E-mail: atila.uras@unepmap.gr

**UNEP/MAP - RAC/SPA**

Lobna BEN NAKHLA
Programme Officer in charge of Species
UNEP/MAP-RAC/SPA
Bd. Du Leader Yasser Arafat – BP 337
1080 Tunis Cedex
Tunisia
E-mail: lobna.bennakhla@rac-spa.org

**OBSERVERS FROM NON-GOVERNMENTAL ORGANIZATIONS / OBSERVATEURS D'ORGANISATIONS NON-GOUVERNEMENTALES**

**IUCN**

Alain JEUDY DE GRISSAC
Marine Programme Manager
IUCN Centre for Mediterranean Cooperation
Calle Marie Curie 22
29590 Campanillas
Malaga, Spain
E-mail: alain.jeudy@iucn.org

**MSC - MARINE STEWARDSHIP COUNCIL**

Carlos MONTERO
Fisheries Officer
Marine Stewardship Council
Paseo de La Habana, 26, 7º, 4
28036 Madrid, Spain
E-mail: carlos.montero@msc.org

**MEDREACT**

Domitilla SENNI
Vice-Chair

MedReAct
Via Urbana, 143
00184, Rome, Italy
Tel.: (+39) 2498225483
E-mail: domitilla.senni@medreact.org

**OCEANA**

Pilar MARÍN
Marine Scientist & MedNet Project Coordinator
OCEANA
Leganitos, 47 6ª 28013
Madrid, Spain
Tel.: (+34) 911440880
E-mail: pmarin@oceana.org

Ilaria VIELMINI
Marine Scientist
OCEANA
Leganitos, 47 6ª 28013
Madrid, Spain
E-mail: ivielmini@oceana.org

**WWF**

Gemma QUÍLEZ-BADIA
Fisheries Officer
WWF Mediterranean Programme Office
Carrer Canuda, 37 3er
08002 Barcelona, Spain
Tel.: (+34) 933056252
E-mail: gquilez@atw-wwf.org

**INVITED EXPERTS / EXPERTS INVITÉS**

Massimo CILIBERTO
President
Associazione Italiana Sommozzatori Corallari
Via Porto Torres 17
07041, Alghero
Italy
E-mail: cilibertomassimo@gmail.com

Nicholas FLORES-MARTIN
GAP2 Project
Scientific Officer
Department for Fisheries and Aquaculture
Ministry for Sustainable Development, the Environment and Climate Change (MSDEC)
Ghammieri, Ingiered Road, Marsa
Malta
Tel.: (+356) 22921251
E-mail: nicholas.flores-martin@gov.mt

Jean Philippe GIORDANO
Pêcheur Corailleur
3 place Montepagano
20169
Bonifacio, France
Tel.: (+33) 6 07313955
E-mail: info@corailrouge.com

Sasa RAICEVICH
GAP2 Project
Researcher
Istituto Superiore per la Protezione e la Ricerca Ambientale (ISPRA)
Loc. Brondolo, 30015 Chioggia
Italy
E-mail: sasa.raicevich@isprambiente.it

Eraldo RAMBALDI
Socio
Associazione Italiana Sommozzatori Corallari
Via Giovanni Paolo
Fiano Romano
Italy
Tel.: (+39) 3332003988
E-mail: aiscoral@gmail.com

Simone SERRA
GAP2 Project
Biologist
UNIMAR
Via Nazionale 243
00184, Rome, Italy
Tel.: (+39) 3392080452
E-mail: s.serra@unimar.it

**GFCM BUREAU / BUREAU DE LA CGPM**

Stefano CATAUDELLA
GFCM Chairperson
Università di Tor Vergata
Via Orazio Raimondo, 8
00173 Rome
Tel.: (+39) 06 72595954
Fax: (+39) 06 2026189
E-mail: cataudel@uniroma2.it

**BUREAU OF THE SCIENTIFIC ADVISORY COMMITTEE / BUREAU DU COMITÉ SCIENTIFIQUE CONSULTATIF**

Othman JARBOUI
SAC Chairperson / Président du CSC
Directeur du Laboratoire Sciences Halieutiques

Institut National des Sciences et Technologies de la Mer (INSTM)
Centre de Sfax - BP 1035
3018 Sfax, Tunisie
Tel.: (+216) 54457086
E-mail: othman.jarboui@instm.rnrt.tn

Capucine MELLON
SAC vice-chairperson / vice-présidente du CSC
Responsable Unité Halieutique Méditerranée (HM)
Département Ressources Biologiques et Environnement (RBE)
IFREMER
Avenue Jean Monnet, CS 30171
34203 Sète Cedex
Tel.: (+33) 4 99573247
E-mail: cmellon@ifremer.fr

Ali Cemal GÜCÜ
Associate Professor
Institute of Marine Science
Middle East Technical University
Tel.: (+90) 3245212150
E-mail: gucu@ims.metu.edu.tr

**SUBCOMMITTEE COORDINATORS / COORDINATEURS DES SOUS-COMITÉS**

Federico ALVAREZ (SCMEE)
Researcher
Spanish Institute of Oceanography (IEO)
Muelle Poniente s/n, 07015
Palma de Mallorca, Spain
Tel.: (+34) 628233270
E-mail: Federico.alvarez@ba.ieo.es

Francesco COLLOCA (SCSA)
Consiglio Nazionale delle Ricerche,
Istituto per l'Ambiente Marino Costiero (CNR-IAMC)
Via L. Vaccara, 61
Mazara del Vallo, Italy
Tel.: (+39) 3288876125
E-mail: francesco.colloca@iamc.cnr.it

Alaa Eldin EL-HAWEET (SCSI)
Professor of Fishery Biology and Management
Dean of College of Fisheries Technology and Aquaculture
Arab Academy for Science and Technology
Alexandria, Egypt
Tel.: (+203) 5836704, (+201) 06633546
Fax: (+203) 4801174
E-mail: el_haweet@yahoo.com
aelhaweet@gmail.com

**COORDINATOR OF THE WORKING GROUP ON THE BLACK SEA (WGBS)**

Simion NICOLAEV
Director
National Institute for Marine Research and Development "Grigore Antipa"
900581 Constanta, Blv. Mamaia 300
Tel.: (+40) 241 543288
Fax: (+40) 241 831274
E-mail: nicolaev@alpha.rmri.ro

**FAO REGIONAL PROJECTS**

Enrico ARNERI
Project Coordinator
FAO AdriaMed/MedSudMed
Fisheries and Aquaculture Resources Use and Conservation Division (FIRF)
Fisheries and Aquaculture Department
Tel.: (+39) 06 57056092
Fax: (+39) 06 57053020
E-mail: enrico.arneri@fao.org

Luca CERIOLA
FAO MedSudMed
Fisheries and Aquaculture Resources Use and Conservation Division (FIRF)
Fisheries and Aquaculture Department
Tel.: (+39) 06 57054492
Fax: (+39) 06 57053020
E-mail: luca.ceriola@fao.org

Mark DIMECH
Technical Officer
FAO EastMed
Fisheries and Aquaculture Resources Use and Conservation Division (FIRF)
Fisheries and Aquaculture Department
Androu 1, 112 57 Athens
Greece
E-mail: Mark.Dimech@fao.org

Nicoletta MILONE
FAO AdriaMed
Fisheries and Aquaculture Resources Use and Conservation Division (FIRF)
Fisheries and Aquaculture Department
Tel.: (+39) 06 57055467
Fax: (+39) 06 57053020
E-mail: nicoletta.milone@fao.org

**GFCM SECRETARIAT/ SECRÉTARIAT DE LA CGPM**
**Palazzo Blumenstihl**
**Via Vittoria Colonna 1, Rome, Italy**

Abdellah SROUR
Executive Secretary
General Fisheries Commission for the Mediterranean
Fisheries and Aquaculture Department
Food and Agriculture Organization of the United Nations
Tel.: (+39) 06 57055730
Fax: (+39) 06 57055827
E-mail: abdellah.srour@fao.org

Miguel BERNAL
Fisheries Resources Officer
General Fisheries Commission for the Mediterranean
Fisheries and Aquaculture Department
Food and Agriculture Organization of the United Nations
Tel.: (+39) 06 57056537
E-mail: miguel.bernal@fao.org

Nicola FERRI
Legal and Institutional Officer
General Fisheries Commission for the Mediterranean
Fisheries and Aquaculture Department
Food and Agriculture Organization of the United Nations
Tel.: (+39) 06 57055766
E-mail: nicola.ferri@fao.org

Pilar HERNANDEZ
Information Management Officer
General Fisheries Commission for the Mediterranean
Fisheries and Aquaculture Department
Food and Agriculture Organization of the United Nations
Tel.: (+39) 06 57054617
E-mail: pilar.hernandez@fao.org

Federico DE ROSSI
Data Compliance Officer
General Fisheries Commission for the Mediterranean
Fisheries and Aquaculture Department
Food and Agriculture Organization of the United Nations
Tel.: (+39) 06 57053481
E-mail: federico.derossi@fao.org

Dominique BOURDENET
Scientific editor and translator
General Fisheries Commission for the Mediterranean
Fisheries and Aquaculture Department
Food and Agriculture Organization of the United Nations
Tel.: (+39) 06 57052054
Fax: (+39) 06 57055827
E-mail: dominique.bourdenet@fao.org

Paolo CARPENTIERI
Consultant for data collection
General Fisheries Commission for the Mediterranean
Fisheries and Aquaculture Department
Food and Agriculture Organization of the United Nations
E-mail: paolo.carpentieri@fao.org

Aurora NASTASI
Consultant for environmental issues
General Fisheries Commission for the Mediterranean
Fisheries and Aquaculture Department
Food and Agriculture Organization of the United Nations
Tel.: (+39) 06 57052054
Fax: (+39) 06 57055827
E-mail: aurora.nastasi@fao.org

Margherita SESSA
Liaison consultant
General Fisheries Commission for the Mediterranean
Fisheries and Aquaculture Department
Food and Agriculture Organization of the United Nations
Tel.: (+39) 06 57052827
Fax: (+39) 06 57055827
E-mail: margherita.sessa@fao.org

Anna CARLSON
Intern
General Fisheries Commission for the Mediterranean
Fisheries and Aquaculture Department
Food and Agriculture Organization of the United Nations
E-mail: anna.carlson@fao.org

Sofia DE BENEDICTIS
Intern
General Fisheries Commission for the Mediterranean
Fisheries and Aquaculture Department
Food and Agriculture Organization of the United Nations
E-mail: sofia.debenedictis@fao.org

Julia PIERRACCINI
Intern
General Fisheries Commission for the Mediterranean
Fisheries and Aquaculture Department
Food and Agriculture Organization of the United Nations
E-mail: ahmed.siliman@fao.org

Ahmed SILIMAN
Intern
General Fisheries Commission for the Mediterranean
Fisheries and Aquaculture Department
Food and Agriculture Organization of the United Nations
E-mail: ahmed.siliman@fao.org

**Appendix 3**

**List of documents**

| | |
|---|---|
| GFCM:SAC17/2015/1 | Provisional agenda and timetable |
| GFCM:SAC17/2015/2 | Executive report of the SAC: intersessional activities, recommendations and workplan |
| GFCM:SAC17/2015/3 | Functioning of the SAC and its subsidiary bodies in light of the subregional approach as included in the amended GFCM Agreement |
| GFCM:SAC17/2015/Inf.1 | List of documents |
| GFCM:SAC17/2015/Inf.2 | Provisional list of participants |
| GFCM:SAC17/2015/Inf.3 | Report of the thirty-eighth session of the General Fisheries Commission for the Mediterranean (FAO headquarters, 19-24 May 2014) |
| GFCM:SAC17/2015/Inf.4 | Report of the sixteenth session of the Scientific Advisory Committee (SAC) (Malta, 17-20 March 2014) (bilingual) |
| GFCM:SAC17/2015/Inf.5 | Report of the fifteenth session of the Subcommittee on Economic and Social Sciences (SCESS) (GFCM headquarters, 4-5 February 2015) (Available only in English) |
| GFCM:SAC17/2015/Inf.6 | Report of the sixteenth session of the Subcommittee on Stock Assessment (SCSA) (GFCM headquarters, 4-6 February 2015) (Available only in English) |
| GFCM:SAC17/2015/Inf.7 | Research activities in Member countries |
| GFCM:SAC17/2015/Inf.8 | Report of the fourth meeting of the Working Group on the Black Sea (Georgia, 9-11 March 2015) (Available only in English) |
| GFCM:SAC17/2015/Inf.9 | Report of the Follow-up workshop on the implementation of management measures in selected case studies in the Mediterranean (GFCM headquarters, 2-3 February 2015) (Available only in English) |
| GFCM:SAC17/2015/Inf.10 | Report of the Workshop on the implementation of the DCRF in the Mediterranean and Black Sea (Spain, 15-16 December 2014) (Available only in English) |
| GFCM:SAC17/2015/Inf.11 | Report of the Workshop on the conservation of Elasmobranchs (France, 10-12 December 2014) (Available only in English) |
| GFCM:SAC17/2015/Inf.12 | Report of the SAC intersessional meeting on management plans for the small pelagic fishery in the Adriatic Sea (GFCM headquarters, 28-29 November 2014) (Available only in English) |
| GFCM:SAC17/2015/Inf.13 | Report of the SCSA Working Group on Stock Assessment of Demersal Species (GFCM headquarters, 24-27 November 2014) (Available only in English) |
| GFCM:SAC17/2015/Inf.14 | Report of the SCSA Working Group on Stock Assessment of Small Pelagic Species (GFCM headquarters, 24-27 November 2014) (Available only in English) |
| GFCM:SAC17/2015/Inf.15 | Report of the ad-hoc meeting of the WGBS on turbot fisheries (Romania, 13-14 November 2014) (Available only in English) |
| GFCM:SAC17/2015/Inf.16 | Report of the Subregional group on stock assessment for the Black Sea (Romania, 10-12 November 2014) (Available only in English) |
| GFCM:SAC17/2015/Inf.17 | Report of the MedSuit Regional Workshop (FAO headquarters, 6-7 November 2014) (Available only in English) |
| GFCM:SAC17/2015/Inf.18 | Report of the EIFAAC/ICES/GFCM Working Group on Eels (FAO headquarters, 3-7 November 2014) (Available only in English) |

| | |
|---|---|
| GFCM:SAC17/2015/Inf.19 | FAO regional projects major activities (Available only in English) |
| GFCM:SAC17/2015/Inf.20 | Data Collection Reference Framework (DCRF) 2016-2017 (Available only in English) |
| GFCM:SAC17/2015/Dma.1 | Biennial report on the status of Mediterranean and Black Sea Fisheries (Preliminary version) |

**Annexe 3**

**Liste des documents**

| | |
|---|---|
| GFCM:SAC17/2015/1 | Ordre du jour et calendrier provisoires |
| GFCM:SAC17/2015/2 | Rapport exécutif du Comité scientifique consultatif (CSC): activités intersessions, recommandations et plan de travail |
| GFCM:SAC17/2015/3 | Fonctionnement du CSC et de ses organes subsidiaires à la lumière de l'approche sous-régionale prévue par l'Accord amendé de la CGPM. |
| GFCM:SAC17/2015/Inf.1 | Liste des documents |
| GFCM:SAC17/2015/Inf.2 | Liste provisoire des participants |
| GFCM:SAC17/2015/Inf.3 | Rapport de la trente-huitième session de la Commission générale des pêches pour la Méditerranée (CGPM) (siège FAO, 19-24 mai 2014) |
| GFCM:SAC17/2015/Inf.4 | Rapport de la seizième session du Comité scientifique consultatif (CSC) (Malte, 17-20 mars 2014) (bilingue) |
| GFCM:SAC17/2015/Inf.5 | Rapport de la quinzième session du Sous-Comité de l'économie et des sciences sociales (SCESS) (siège de la CGPM, 4-5 février 2015) (disponible en anglais seulement) |
| GFCM:SAC17/2015/Inf.6 | Rapport de la seizième session du Sous-Comité de l'évaluation des stocks (SCSA) (siège de la CGPM, 4-6 février 2015) (disponible en anglais seulement) |
| GFCM:SAC17/2015/Inf.7 | Activités de recherche dans les États membres |
| GFCM:SAC17/2015/Inf.8 | Rapport de la quatrième réunion du Groupe de travail sur la mer Noire (Géorgie, 9-11 mars 2015) (disponible en anglais seulement) |
| GFCM:SAC17/2015/Inf.9 | Rapport de l'atelier sur le suivi de la mise en œuvre de mesures de gestion pour certaines études de cas en Méditerranée (siège de la CGPM, 2-3 février 2015) (disponible en anglais seulement) |
| GFCM:SAC17/2015/Inf.10 | Rapport de l'atelier sur la mise en œuvre du Cadre de référence pour la collecte de données de la CGPM (DCRF) en Méditerranée et en mer Noire (Espagne, 15-16 décembre 2014) (disponible en anglais seulement) |
| GFCM:SAC17/2015/Inf.11 | Rapport de l'atelier sur la conservation des élasmobranches (France, 8-10 décembre 2014) (disponible en anglais seulement) |
| GFCM:SAC17/2015/Inf.12 | Rapport de la réunion intersessions du CSC sur les plans de gestion de la pêche de petits pélagiques en mer Adriatique (siège de la CGPM, 28-29 novembre 2014) (disponible en anglais seulement) |
| GFCM:SAC17/2015/Inf.13 | Rapport du Groupe de travail du SCES sur l'évaluation des stocks d'espèces démersales (siège de la CGPM, 24-27 novembre 2014) (disponible en anglais seulement) |
| GFCM:SAC17/2015/Inf.14 | Rapport du Groupe de travail du SCES sur l'évaluation des stocks de petits pélagiques (siège de la CGPM, 24-27 novembre 2014) (disponible en anglais seulement) |
| GFCM:SAC17/2015/Inf.15 | Rapport de la réunion ad-hoc du Groupe de travail sur la mer Noire sur la pêche au turbot (Roumanie, 13-14 novembre 2014) (disponible en anglais seulement) |
| GFCM:SAC17/2015/Inf.16 | Rapport du groupe sous-régional sur l'évaluation des stocks en mer Noire (Roumanie, 10-12 novembre 2014) (disponible en anglais seulement) |
| GFCM:SAC17/2015/Inf.17 | Rapport de l'atelier régional MedSuit (siège de la FAO, 6-7 novembre 2014) (disponible en anglais seulement) |

| | |
|---|---|
| GFCM:SAC17/2015/Inf.18 | Rapport du Groupe de travail CIEM/CECPAI/CGPM sur l'anguille (siège FAO, 3-7 novembre 2014) (disponible en anglais seulement) |
| GFCM:SAC17/2015/Inf.19 | Activités des projets régionaux FAO (disponible en anglais seulement) |
| GFCM:SAC17/2015/Inf.20 | Cadre de référence pour la collecte de données de la CGPM (DCRF) 2016-2017 (disponible en anglais seulement) |
| GFCM:SAC17/2015/Dma.1 | Rapport biennial sur l'état des pêches en Méditerranée et en mer Noire (Version préliminaire, en anglais seulement) |

**Appendix 4**

**Table 1 – Assessments for demersal species, as validated by SAC[2]**

| GSA | Species | Reference year | Methodology used | Stock status | $F/F_{unique}$ or $*E/E_{unique}$ | Management advice | WGSAD comments | SCSA comments |
|---|---|---|---|---|---|---|---|---|
| GSA 05 (Balearic Island) | European hake *Merluccius merluccius* | 2013 | XSA, Y/R, short-term forecast | In overexploitation with relative intermediate biomass | 7.7 | Reduce fishing mortality | No specific comments on this stock. | The SCSA endorsed stock status and advice. |
| GSA 06 (Northern Spain) | European hake *Merluccius merluccius* | 2013 | XSA, Y/R, short-term forecast | In overexploitation with relative intermediate biomass | 7.8 | Reduce fishing mortality | No specific comments on this stock. | The SCSA endorsed stock status and advice. |
| GSA 07 (Gulf of Lion) | European hake *Merluccius merluccius* | 2013 | a4a, Y/R, short-term forecast | In overexploitation with relative low biomass | 9.6 | Reduce fishing mortality | The WGSAD recommended incorporating a comparison of trends for fishing effort versus F. | The SCSA endorsed stock status and advice. |
| GSA 10 (South Tyrrhenian Sea) | European hake *Merluccius merluccius* | 2013 | XSA, Y/R | In overexploitation with relative intermediate biomass | 4.6 | Reduce fishing mortality | No specific comments on this stock. | The SCSA endorsed stock status and advice. |

[2] * $F / F_{unique}$ refers to the ratio between the current level of fishing mortality and the fishing mortality reference point used. $F_{unique}$ is defined in the Framework for describing stock status and providing management advice, adopted by the 16th Session of the SAC. $F_{unique}$ can refer to the fishing mortality at which MSY is achieved ($F_{MSY}$) or to a proxy of it, such as $F_{0.1}$. The ratio $E/E_{unique}$ refers to the the ratio between the current exploitation rate (E = F/(F+Z)) and the target exploitation rate, which according to the above mentioned framework is set to E = 0.4. Values with an asterisk refers to $E/E_{unique}$, while values without asteriscs refers to $F/F_{unique}$

| GSA | Species | Reference year | Methodology used | Stock status | $F/F_{unique}$ or $*E/E_{unique}$ | Management advice | WGSAD comments | SCSA comments |
|---|---|---|---|---|---|---|---|---|
| GSA 12, 13, 14, 15, 16 (Strait of Sicily) | European hake *Merluccius merluccius* | 2013 | XSA, global model | In overexploitation with relative high biomass | 4.5 | Reduce fishing mortality | No specific comments on this stock. | The SCSA endorsed stock status and advice. The SCSA recommended that the reduction of fishing mortality should take into account the impact of each fleet. This assessment should be updated next year. |
| GSA 17 (Northern Adriatic) | European hake *Merluccius merluccius* | 2013 | SCAA (SS3), Y/R | In overexploitation with intermediate biomass | 2.0 | Reduce fishing mortality | No specific comments on this stock. | The SCSA endorsed stock status and advice. |
| GSA 18 (Southern Adriatic) | European hake *Merluccius merluccius* | 2013 | XSA, a4a SCA, ALADYM, Y/R | In overexploitation with relative intermediate biomass | 4.0 | Reduce fishing mortality | WGSAD suggested using an average of the last three years for the recruitment in the projections. This suggestion has been applied in the last version of the SAF. | The SCSA endorsed stock status and advice. |
| GSA 17 (Northern Adriatic) | Common sole *Solea solea* | 2013 | SS3, Y/R, short-term forecast | In overexploitation with relative low biomass | 1.5 | Reduce fishing mortality | No specific comments on this stock. | The SCSA endorsed stock status and advice. |
| GSA 03 (Southern Alboran Sea) | Red mullet *Mullus barbatus* | 2013 | VIT (LCA,VPA, Y-R) Biodyn | In overexploitation | 2.3 | Reduce fishing mortality | WGSAD encouraged the continuation of sampling in order to achieve longer data time series and improve the robustness of the assessment. | The SCSA endorsed stock status and advice. |

| GSA | Species | Reference year | Methodology used | Stock status | $F/F_{unique}$ or $*E/E_{unique}$ | Management advice | WGSAD comments | SCSA comments |
|---|---|---|---|---|---|---|---|---|
| GSA 06 (Northern Spain) | Red mullet *Mullus barbatus* | 2012 | XSA, Y/R | In overexploitation with relative high biomass | 1.3 | Reduce fishing mortality | The retrospective analysis showed an overestimation of F in the last year and for that reason, it was not considered for $F_{current}$. | The SCSA endorsed stock status and advice. |
| GSA 07 (Gulf of Lion) | Red mullet *Mullus barbatus* | 2013 | XSA, Y/R, short-term forecast | In overexploitation with relative high biomass | 3.2 | Reduce fishing mortality | No specific comments on this stock. | The SCSA endorsed stock status and advice. The SCSA noted that the value of $F_{0.1}$ is the lowest in the Western Mediterranean. It recommended to revise data, methods and parameters used. |
| GSA 10 (South Tyrrhenian Sea) | Red mullet *Mullus barbatus* | 2013 | XSA, Y/R | Sustainably exploited with relative intermediate biomass | 1.0 | Do not increase fishing mortality | No specific comments on this stock. | The SCSA endorsed stock status and advice. |
| GSA 24 (North Levant) | Red mullet *Mullus barbatus* | 2013 | XSA | In overexploitation | 1.3 | Reduce fishing mortality considering possible side effects of management measures to be enforced on Lessepsian competitors and predators | No specific comments on this stock. | The SCSA endorsed stock status and advice. |

| GSA | Species | Reference year | Methodology used | Stock status | $F/F_{unique}$ or $*E/E_{unique}$ | Management advice | WGSAD comments | SCSA comments |
|---|---|---|---|---|---|---|---|---|
| GSA 25 (Cyprus Island) | Red mullet *Mullus barbatus* | 2010 | XSA | In overexploitation with relative high biomass | 1.5 | Reduce fishing mortality | No specific comments on this stock. | The SCSA endorsed stock status and advice. |
| GSA 05 (Balearic Island) | Striped red mullet *Mullus surmuletus* | 2013 | XSA, Y/R, short-term forecast | In overexploitation with relative low biomass | 3.0 | Reduce fishing mortality | This stock should be closely monitored as it has been consistently in overexploitation and with relative low biomass for a number of years. | The SCSA endorsed stock status and advice. The SCSA recommended to update the assessment next year. |
| GSA 26 (South Levant) | Striped red mullet *Mullus surmuletus* | 2013 | VIT (LCA,VPA, Y/R) | In overexploitation | 2.1 | Reduce fishing mortality | No specific comments on this stock. | The SCSA endorsed stock status and advice. |
| GSA 26 (South Levant) | Brushtooth lizardfish *Saurida undosquamis* | 2013 | VIT (LCA,VPA, Y/R) | In overexploitation | 2.2 | Reduce fishing mortality | No specific comments on this stock. | The SCSA endorsed stock status and advice. |
| GSA 01 (Northern Alborean Sea) | Red shrimp *Aristeus antennatus* | 2013 | XSA, Y/R, short-term forecast | In overexploitation with relative intermediate biomass | 1.9 | Reduce fishing mortality | No specific comments on this stock. | The SCSA endorsed stock status and advice. |
| GSA 05 (Balearic Island) | Red shrimp *Aristeus antennatus* | 2013 | XSA, Y/R, short-term forecast | In overexploitation with relative high biomass | 1.8 | Reduce fishing mortality | No specific comments on this stock. | The SCSA endorsed stock status and advice. |
| GSA 06 (Northern Spain) | Red shrimp *Aristeus antennatus* | 2013 | XSA, Y/R | In overexploitation with relative high biomass | 2.0 | Reduce fishing mortality | No specific comments on this stock. | The SCSA endorsed stock status and advice. |

| GSA | Species | Reference year | Methodology used | Stock status | $F/F_{unique}$ or $*E/E_{unique}$ | Management advice | WGSAD comments | SCSA comments |
|---|---|---|---|---|---|---|---|---|
| GSA 10 (South Tyrrhenian Sea) | Deep-water pink shrimp *Parapenaeus longirostris* | 2013 | XSA, Y/R | In overexploitation with relative high biomass | 1.7 | Reduce fishing mortality | No specific comments on this stock. | The SCSA endorsed stock status and advice. |
| GSA 12, 14, 15, 16 (Strait of Sicily) | Deep-water pink shrimp *Parapenaeus longirostris* | 2013 | XSA, global model | In overexploitation with relative high biomass | 1.3 | Reduce fishing mortality | No specific comments on this stock. | The SCSA endorsed stock status and advice. The SCSA recommended that the reduction of fishing mortality should take into account the impact of each fleet. This assessment should be updated next year. |
| GSA 18 (Southern Adriatic Sea) | Deep-water pink shrimp *Parapenaeus longirostris* | 2013 | XSA, ALADYM, Y/R | In overexploitation with relative low biomass | 2.2 | Reduce fishing mortality | No specific comments on this stock. | The SCSA endorsed stock status and advice. |
| GSA 19 (Western Ionian Sea) | Giant red shrimp *Aristaeomorpha foliacea* | 2013 | XSA & Y/R, tuning with MEDITS data | In overexploitation with relative high biomass | 2.2 | Reduce fishing mortality | WGSAD recommended updating the assessment in the next year in order to better address outliers in the model outputs. | The SCSA endorsed stock status and advice. The SCSA recommended to update the assessment next year. |

**Table 2 – Assessments for small pelagic species, as validated by SAC[3]**

| GSA | Species | Reference year | Methodology used | Stock status | $F/F_{unique}$ or $*E/E_{unique}$ | Management advice | WGSASP comments | SCSA comments |
|---|---|---|---|---|---|---|---|---|
| GSA 03 (Southern Alboran Sea) | Sardine *Sardina pilchardus* | 2013 | Indirect method: VIT | Sustainably exploited Increase in landings since 2011. Fcurrent is lower than FMSY. | 0.9 | Not to increase fishing mortality | WGSASP suggested the use of more complex size or age structured models since the amount of data is increasing. Fishing mortality is high for big sizes. WGSASP supported the suggestions from the national scientist of the closure of some areas to selectively reduce fishing pressure on large sizes. | The SCSA endorsed the stock status and advice. The SCSA agreed with the comments of the WG and strongly encouraged a revision of the survey data and the otolith reading to support an alternative production or age structured model. |

[3] * F / $F_{unique}$ refers to the ratio between the current level of fishing mortality and the fishing mortality reference point used. $F_{unique}$ is defined in the Framework for describing stock status and providing management advice, adopted by the 16th Session of the SAC. $F_{unique}$ can refer to the fishing mortality at which MSY is achieved ($F_{MSY}$) or to a proxy of it, such as $F_{0.1}$. The ratio $E/E_{unique}$ refers to the the ratio between the current exploitation rate (E = F/(F+Z)) and the target exploitation rate, which according to the above mentioned framework is set to E = 0.4. Values with an asterisk refers to $E/E_{unique}$, while values without asteriscs refers to $F/F_{unique}$

| GSA | Species | Reference year | Methodology used | Stock status | $F/F_{unique}$ or $*E/E_{unique}$ | Management advice | WGSASP comments | SCSA comments |
|---|---|---|---|---|---|---|---|---|
| GSA 06 (Northern Spain) | Anchovy *Engraulis encrasicolus* | 2013 | Indirect method: BioDyn (Surplus production Model) | Biomass above reference point and In Overexploitation Increasing trend in landings and biomass from acoustic. F current (0.7) is higher than Fmsy reference point (0.46). Current biomass is above BMSY. | 1.5 | Reduce fishing mortality | WGSASP highlighted that there are differences in the ALK between these stock and those for similar stock in the med Sea. Therefore the WG recommends a in depth analysis of the age reading. The acoustic survey in the nineties should be revised since the estimated biomass levels are around the same magnitude of the catches. The WG also recommended to try other models, such as two stage biomass model. | The SCSA endorsed stock status and advice, while reviewing the value of the F in relation to F0.1 (as a proxy for FMSY) the value is considered relatively low (equal to 0.88). |
| GSA 07 (Gulf of Lion) | Anchovy *Engraulis encrasicolus* | 2013 | Direct method by acoustics | Low biomass The body condition index is low, although the mean length in 2014 increased. Trend in biomass is fluctuating since 2004. Current biomass is below Bpa (45,778 t) and slightly above Blim (22,889 t) | -- | Reduce fishing mortality. | Biomass is more or less stable in this stock since 2004, In 2013 the stock is higher than 2012 estimates but lower than 2011 ones. Condition of anchovy remains low but the average size increased in 2014. The weather during the survey was rough, therefore about only half the hauls have been performed (about 20). | The SCSA endorsed stock status and advice. |

| GSA | Species | Reference year | Methodology used | Stock status | $F/F_{unique}$ or $*E/E_{unique}$ | Management advice | WGSASP comments | SCSA comments |
|---|---|---|---|---|---|---|---|---|
| GSA 07 (Gulf of Lion) | Sardine *Sardina pilchardus* | 2014 | Direct method by acoustics | Unbalanced Landings continue decreasing since 2007, the biomass is stable in the last 7 years, the fish are small and in poor conditions. The recruitment in 2014 was low. | -- | Fishing mortality should not be allowed to increase, monitoring of changes in the fishing effort/gears required. | Almost no recruitment was detected from the acoustic survey. Measures of effort should be improved (e.g. number of "fishing sets" for purse seiners). The weather during the survey was rough, therefore about only half the hauls have been performed and this may have affect the estimation of the recruitment. | The SCSA endorsed the stock status and advice. |
| GSA 16 (Southern Sicily) | Sardine *Sardina pilchardus* | 2013 | Direct method by acoustics | No signal of overexploitation Bcurrent is above Bpa | -- | Not to increase fishing mortality | Further information for this stock should be available as collected through DCF and more complex model should be used to assess this stock using all the information available. The BioDyn model applied was rejected since it does not seem appropriate to assess the state of this stock. Some inconsistencies between the length and age structure of the survey were detected, therefore the WG suggest to look in depth into the data. | The SCSA endorsed the stock status and advice. |

| GSA | Species | Reference year | Methodology used | Stock status | $F/F_{unique}$ or $*E/E_{unique}$ | Management advice | WGSASP comments | SCSA comments |
|---|---|---|---|---|---|---|---|---|
| GSA 17 (Northern Adriatic Sea) | Sardine *Sardina pilchardus* | 2013 | SAM tuned by acoustic | Biomass above reference point and in Overexploitation Exploitation rate is higher than the Patterson's reference point (E(1-4)=0.53). Bcurrent is above both limit and precautionary reference point. | *1.3 | Reduce fishing mortality | WGSASP agreed in the improvements of some parameters in the assessment respect to last year: in particular, the Fbar was set equal to 1-3, the plus group was set at age 4 and the two series of survey were used separately. These changes did not affect the assessment. The reference points remained the ones proposed on the last session of the WG. 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. | The SCSA endorsed the stock status and advice. |
| GSA 17 (Northern Adriatic Sea) | Anchovy *Engraulis encrasicolus* | 2013 | SAM tuned by acoustic | Overexploited and in overexploitation Exploitation rate is higher than the Patterson's reference point (E=0.50). Biomass level is low ($30^{th}$ percentile) | *1.3 | Reduce fishing mortality immediately | WGSASP agreed in the improvements of some parameters in the assessment respect to last year: in particular, the Fbar was set equal to 1-2, the plus group was set at age 4+. The results are consistent with last year estimations from SAM model. Due to unclear historical perspective, reference points cannot be updated. Advice is therefore provided on a precautionary basis (exploitation rate and biomass percentiles). 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. | The SCSA endorsed the stock status and advice. The SCSA encouraged to investigate the stock boundaries between GSAs. |

**Appendix 5(1)**

**Proposed new reference framework for the SAC**

The Committee will be responsible for providing scientific, social and economic advice relating to the work of the Commission, as well as for supporting the implementation of multi-annual management plans, taking into account a subregional approach.

The Committee will:

a) Collect and assess information provided by all parties, relevant organisations, institutions and programmes on catches, fishing effort, fleet capacity, and other data relevant to the conservation and management of fisheries;

b) Assess status and trends of the relevant populations of living marine resources, ecosystems and fisheries-related human components, using the appropriate indicators and in relation to agreed biological and/or management reference points;

c) Provide independent advice on a technical and scientific basis to facilitate the adoption of recommendations concerning the sustainable management of fisheries and ecosystems at the regional and subregional levels, including on relevant biological, environmental, social and economic aspects as well as on issues associated with the ecosystem approach to fisheries, the impact of IUU fishing on populations and ecosystems, and the assessment of biological and ecological implications under different management scenarios;

d) If required, submit advice and reports to the Review Panel established pursuant to the Rules of Procedure of the GFCM;

e) Keep abreast of cooperative scientific, technical and research projects and programmes of interest to the Committee;

f) Undertake such other functions or responsibilities as may be conferred on it by the Commission.

**Appendix 5(2)**

**Proposed new functioning and structure of the SAC**

1. The Committee shall be coordinated by a Bureau, as regulated in the GFCM Agreement. The Committee shall operate through four Subregional Working Groups (Western, Central, Adriatic and Eastern3) and shall ensure the required level of coordination with the existing Working Group on the Black Sea (WGBS) that covers matters related to both capture fisheries and aquaculture. The Committee shall provide advice and support to both the Review Panel foreseen in Article XVI of the GFCM Rules of Procedure and the Commission. In addition, it shall provide to the Commission, acting on the suggestions from each of the Subregional Working Groups, a proposal for its annual work plan, specifying whether the proposed actions should be carried out at the subregional or at the regional level and proposing ad hoc technical expert meetings as necessary. The Committee shall ensure the execution of the final work plan as approved by the Commission, in coordination with the GFCM Secretariat.

2. The Subregional Working Groups (SRWGs) shall be coordinated by a nominated chair/coordinator. The proposed terms of reference (ToRs) of the SRWG shall be as follows:

    a. Implement the work of the Committee at the subregional level;

    b. Provide the Committee with proposals on different topics, including advice, work plan, activities, etc.

3. The role of the chair/coordinator of the SRWG shall be as follows:

    a. Ensure the correct functioning of the SRWG in addressing its ToRs/work plan, including in liaison with the Committee Bureau, national experts and representatives, the GFCM Secretariat and the FAO regional projects;

    b. Ensure coordination at the subregional level during the intersessional period, in order to implement the subregional work plan.

4. The SRWGs shall nominate chairs/coordinators from amongst their participants. These shall be endorsed by the Committee and the Commission. Chairs/coordinators shall work [on a voluntary basis]/[covered by the autonomous budget]. The SRWGs shall rely on ad hoc expert groups as appropriate. These could be subregional or regional expert groups.

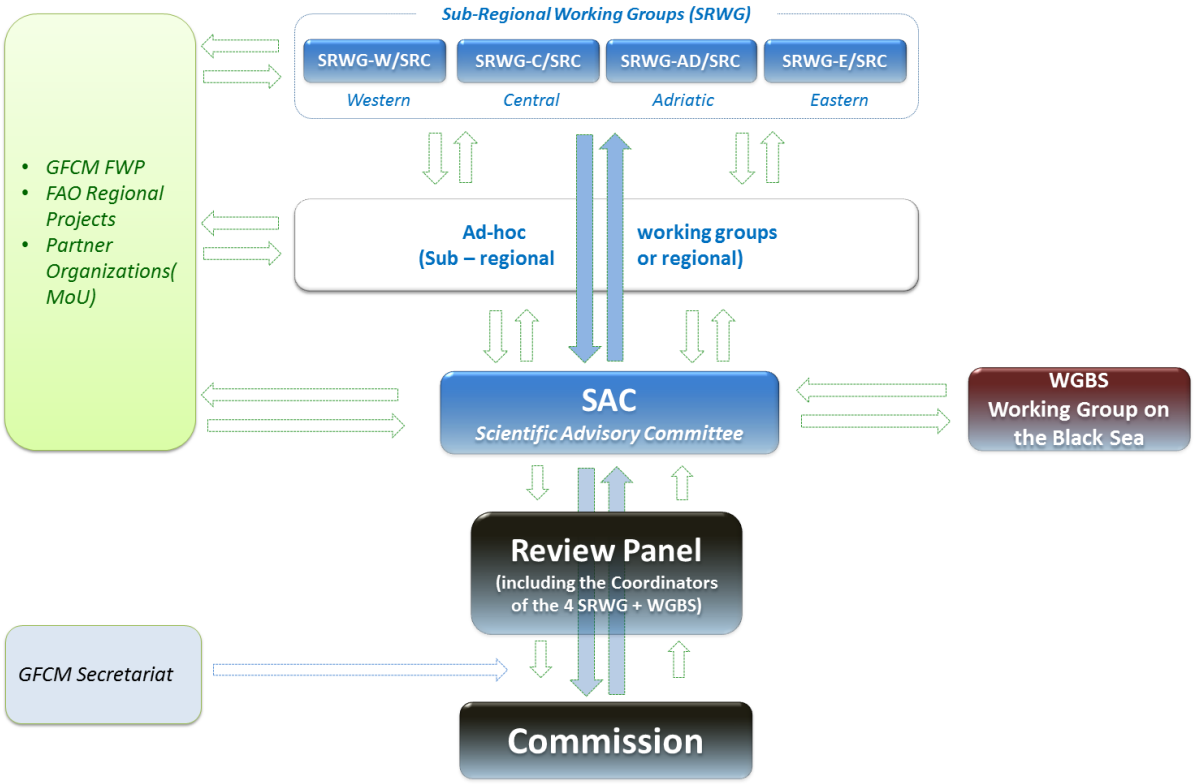



Diagram of the new structure and functioning of the SAC

**Appendix 6**

**Roadmap for data collection and submission through the DCRF**

The steps towards the collection and submission of data in accordance to the DCRF shall be the following ones (chronological order).

1. DATA CONFIDENTIALITY POLICY (April-May 2015)

In the light of the DCRF provisions, the Secretariat shall prepare a review of data confidentiality policies for existing GFCM recommendations and identify the GFCM decisions without a clear indication. This work shall be presented to the thirty-ninth session of the Commission in order to facilitate the discussion of possible amendments to – or the repealing of – relevant provisions in existing GFCM recommendations, and examine potential new decisions regarding other data considered as crucial within the DCRF. The proposal shall be in accordance with the criteria on access level as agreed by the Scientific Advisory Committee (SAC): public, semi-private and private.

2. PILOT STUDY (from June 2015 to February 2016)

A pilot study shall be carried out by the GFCM Secretariat in collaboration with selected countries on a voluntary basis. Participating countries shall identify a focal point to facilitate the implemetation of the study. The study will aim at:

a) Testing the data submission procedures through the dedicated DCRF IT platform established by the Secretariat focusing on the information which will be transmitted in 2016 according to the agreed calendar (point 5 of this roadmap);
b) Assessing the quality of received data according to the DCRF provisions;
c) Identifying difficulties faced by the countries to collect these data;
d) Detecting any problems incurred by countries in transmitting the requested data tables.

Within the context of this pilot study, the Secretariat will assist countries in the compilation of the data tables, the preparation of the requested list of fleet segments and species (steps 3 of this roadmap) and in the application of the weighting procedure for the proper selection of fleet segments to be sampled for biological purpose. Official communications between the Secretariat and NFP-DC, covering technical support and reference material shall be channeled through dedicated sections and tools integrated in the DCRF IT platform. This will allow the consolidation of a growing knowledge base at disposal of the DCRF focal points, facilitating their mandate and better supporting Members in complying with data submission obligations in accordance to the DCRF.

3. PROPOSAL ON FLEET SEGMENTS AND PRIORITY SPECIES (January 2016)

For the sake of national data collection and transmission to GFCM, and with the assistance of the Secretariat (steps 2 of this roadmap) Member shall submit their proposals on all fleet segments operating in each GSA and those selected for biological sampling, as well as priority list of species for consideration and possible endorsement by SAC at its eighteenth session.

4. WORKSHOPS ON DATA SUBMISSION (December 2015 and February 2016)

Two workshops (one for Mediterranean and one for Black Sea) on the data submission in line with the DCRF provisions shall be organized by the GFCM Secretariat in collaboration with the FAO Regional Projects. Participating countries shall identify their focal point for the sake of these workshops in order to discuss the result of the pilot study and progress on the field of data submission. In particular, the workshops shall:

a) Assess the difficulties faced by the countries in collecting and transmitting the requested data;
b) Evaluate the performance of the data submission tools tested during the pilot study;

c) Analyze the quality of collected and transmitted data;
d) Identify the steps forward including capacity building.

5. DATA SUBMISSION CALENDAR (from May 2016 to November 2017)

Members should gradually adapt and submit their data following the DCRF provisions and in line with the below calendar (chronological order):

- 2016

| MONTH | TABLES | DCRF TASKS |
|---|---|---|
| May | I - General overview | TASK I - Global figures of national fisheries |
| | IV.1 - Description of vessels | TASK IV - Fleet |
| | IV.2 - Additional information for vessels over 15 metres | |
| June | II.1 - Total landing data | TASK II - Catch |
| | V.1 - Effort data per fleet segment | TASK V - Effort |
| | VII.2 - Length data | TASK VII - Biological information |
| July | VII.4.1 - Dolphin fish (general information) | |
| September | VII.1 - Stock assessment* | |
| November | VI.1 - Economic and social data | TASK VI - Socioeconomics |

**the date of data submission will be linked to the scheduling of the GFCM stock assessment working groups and therefore may differ from year to year*

- 2017 (in addition to the 2016 data tables)

| MONTH | TABLES | DCRF TASKS |
|---|---|---|
| May | IV.3 - Vessels operating in Fisheries Restricted Areas | TASK IV - Fleet |
| | IV.4 - Additional vessel equipment information | |
| | VI.2 - Operating costs | TASK VI - Socioeconomics |
| | VI.3 - Species value | |
| | VI.4 - Other economic aspects | |
| June | II.2 - Catch data per species | TASK II – Catch |
| | V.2 - Effort data per fishing gear | TASK V – Effort |
| | V.2 – CPUE | |
| | VII.5 - Red coral | TASK VII - Biological information |
| July | III - Bycatch of vulnerable species | TASK III - Bycatch of vulnerable species |
| | VII.3.1 - Size at first maturity | TASK VII - Biological information |
| | VII.3.2 - Maturity data | |
| | VII.4.2 - Dolphin fish | |
| September | VII.6 - European eel | |

TIMETABLE OF THE ROADMAP

The below timetable summarizes the scheduling of the six steps of the roadmap for data collection and submission through the DCRF.

- **2015**

| | J | F | M | A | M | J | J | A | S | O | N | D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Data policy | | | | | | | | | | | | |
| 2. Workshop (Black Sea) | | | | | | | | | | | | |
| 3. Pilot Study | | | | | | | | | | | | |

- **2016**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3. Pilot Study | | | | | | | | | | | | |
| 4. Fleet segments and priority species | | | | | | | | | | | | |
| 5. Workshop (Mediterranean) | | | | | | | | | | | | |
| 6. Data submissions | | | | | | | | | | | | |

- **2017**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6. Data submissions | | | | | | | | | | | | |

**Appendix 7**

**Proposal of fisheries restricted areas (FRA) in the northern sector of the strait of Sicily (by OCEANA)**

**Date of endorsement by the SAC:**
27 March 2015

**Name of the FRA:**
Essential Fish Habitats in the northern sector of the Strait of Sicily

Submitted by (Institution, Scientists, GFCM Members…):

Plaza España - Leganitos, 47
28013 Madrid, Spain
Tel +34 911.440.880
Fax +34 911.440.890
europe@oceana.org
http://eu.oceana.org/

**Date of submission**:
24/02/2015

# 1. EXECUTIVE SUMMARY

One of the key functions of GFCM is to implement multiannual management plans, based on an ecosystem approach, to guarantee the maintenance of stocks above levels which can produce maximum sustainable yield. However, despite the fact that 92% of Mediterranean demersal stocks are overexploited, no management plan has yet been put in place to rebuild Mediterranean demersal stocks or to regulate these fisheries.

In the context of Mediterranean demersal trawl fisheries, spatial management is considered among the most effective measures for improving the long-term sustainability of commercial stocks. In particular, the protection of nurseries and spawning grounds has been advocated as urgent measures, particularly the closure of fisheries in areas identified as Essential Fish Habitats[1].

The three Fisheries Restricted Areas proposed herein are located in the northern sector of the Strait of Sicily (GSA 15 and GSA 16), and all the three have been clearly identified as important and stable nurseries for key commercial stocks in the region:

i) East of Adventure Bank - Essential Fish Habitat for European hake;
ii) West of Gela Basin - Essential Fish Habitat for deep-water rose shrimp;
iii) East of Malta Bank - Essential Fish Habitat for European hake.

The proposed areas have been selected on the basis of: i) extensive scientific knowledge about the importance and stability of the nurseries; ii) the ecological and biological particularity of the areas for critical life history stages of overfished commercial stocks; and iii) the long history of overfishing of demersal resources in the northern sector of the Strait of Sicily.

Therefore, Oceana is submitting a proposal to permanently close these areas to any demersal fisheries, in order to rebuild stocks, in particular European hake and deep-water rose shrimp stocks, and allow for the long-term sustainability of the fisheries. The establishment of these three FRAs would clearly be according to the Ecosystem Approach, in line with the management objectives of GFCM, and based on the best available scientific information.

[1] Essential Fish Habitat is defined as "*a habitat identified as essential to the ecological and biological requirements for critical life history stages of exploited fish species, and which may require special protection to improve stock status and long term sustainability*" according to STECF Report of the Scientific, Technical and Economic Committee for Fisheries Opinion on 'Sensitive and Essential Fish Habitats in the Mediterranean Sea'. Brussels 3–7 April 2006 http://stecf.jrc.cec.eu.int/

# 2. AREA IDENTIFICATION

## 2.1 GFCM GEOGRAPHICAL SUBAREA

http://www.gfcmonline.org/maps/gsas/

GSA 15 (Malta Island) and GSA 16 (South of Sicily)

## 2.2 NAME OF THE FRA

Essential Fish Habitats in the northern sector of the Strait of Sicily

## 2.3 GEOGRAPHIC LOCATION

### 2.3.1 General location

Strait of Sicily (Fig. 1)

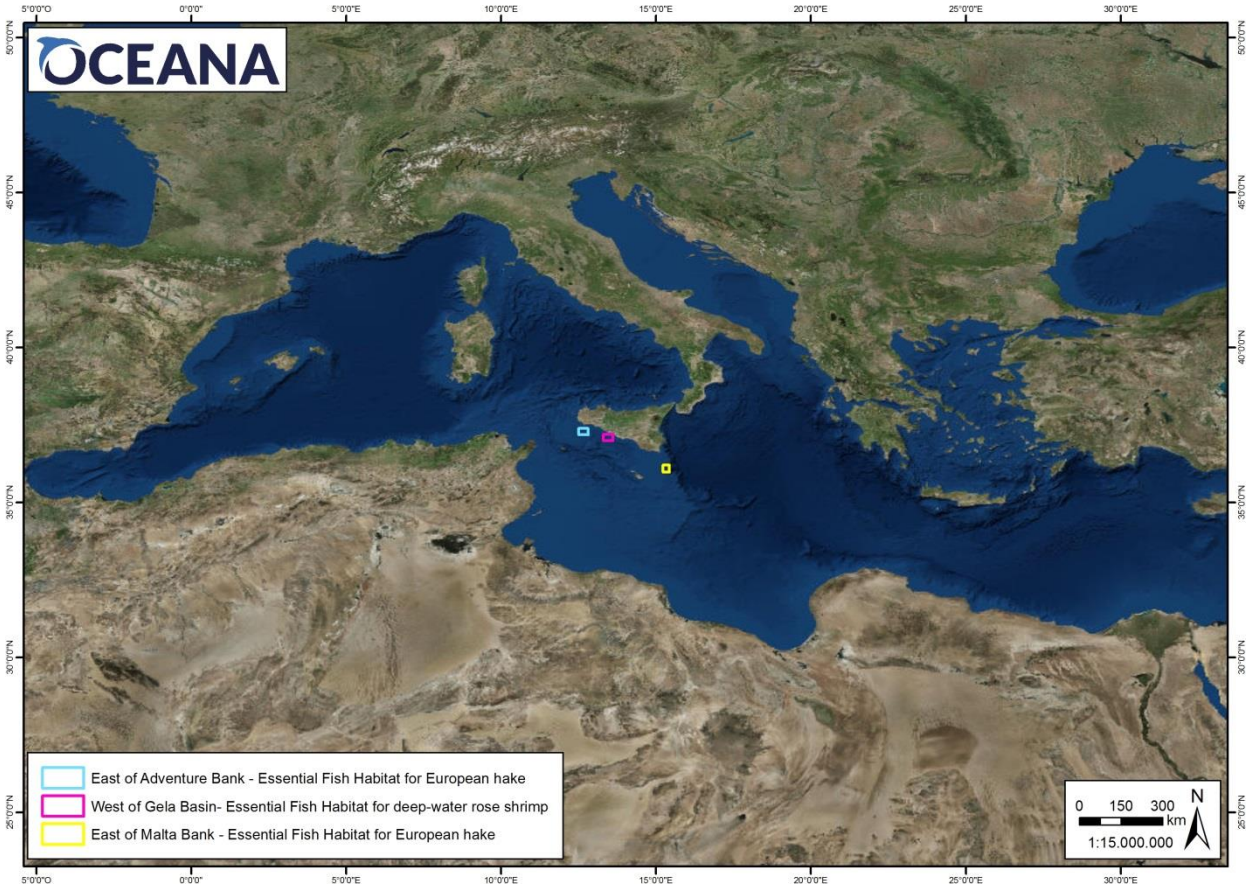



Fig. 1: Map of the Mediterranean Sea and locations of the proposed FRAs.

### 2.3.2. Precise location of the proposed core area

Coordinates (GCS WGS 1984)

East of Adventure Bank - Essential Fish Habitat for European hake:

| Latitude | Longitude |
|---|---|
| 37º 23,850' N | 12º 30,072' E |
| 37º 23,884' N | 12º 48,282' E |
| 37º 11,567' N | 12º 48,305' E |
| 37º 11,532' N | 12º 30,095' E |

West of Gela Basin - Essential Fish Habitat for deep-water rose shrimp:

| Latitude | Longitude |
|---|---|
| 37º 12,040' N | 13º 17,925' E |
| 37º 12,047' N | 13º 36,170' E |
| 36º 59,725' N | 13º 36,175' E |
| 36º 59,717' N | 13º 17,930' E |

East of Malta Bank - Essential Fish Habitat for European hake:

| Latitude | Longitude |
|---|---|
| 36º 12,621' N | 15º 13,338' E |
| 36º 12,621' N | 15º 26,062' E |
| 35º 59,344' N | 15º 26,062' E |
| 35º 59,344' N | 15º 13,338' E |

### 2.3.3. Buffer area

Buffer area: 1 nautical mile (nm) – [Coordinates GCS WGS 1984]

East of Adventure Bank - Essential Fish Habitat for European hake:

| Latitude | Longitude |
|---|---|
| 37º 24,849' N | 12º 28,814' E |
| 37º 24,888' N | 12º 49,536' E |
| 37º 10,567' N | 12º 49,559' E |
| 37º 10,528' N | 12º 28,845' E |

West of Gela Basin - Essential Fish Habitat for deep-water rose shrimp:

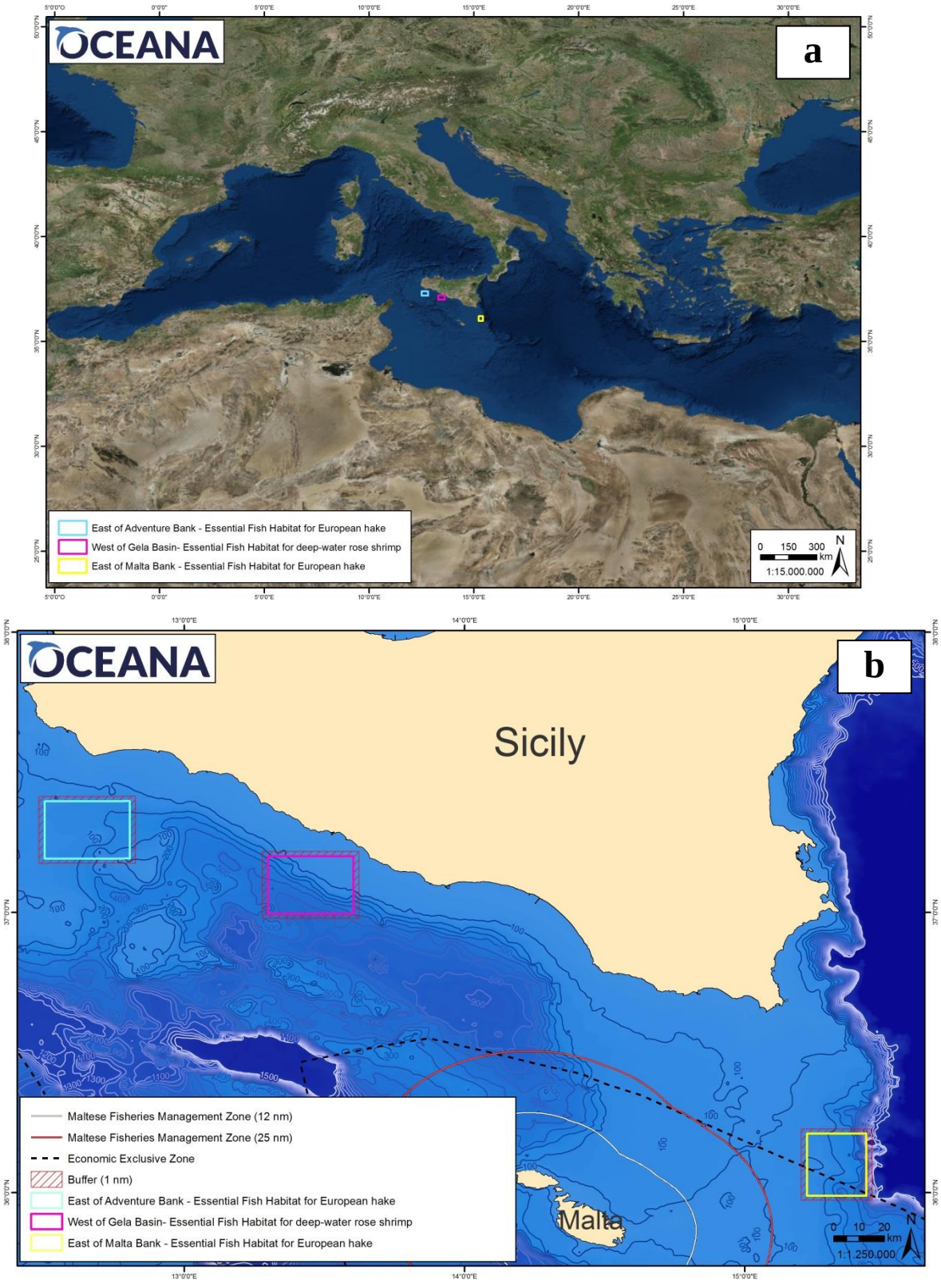
| Latitude | Longitude |
|---|---|
| 37º 13,041' N | 13º 16,672' E |
| 37º 13,049' N | 13º 37,422' E |
| 36º 58,723' N | 13º 37,424' E |
| 36º 58,715' N | 13º 16,682' E |

East of Malta Bank - Essential Fish Habitat for European hake:

| Latitude | Longitude |
|---|---|
| 36º 13,624' N | 15º 12,102' E |
| 36º 13,624' N | 15º 27,298' E |
| 35º 58,342' N | 15º 27,294' E |
| 35º 58,342' N | 15º 12,106' E |

### 2.3.4. Location map

*Reference map of the Mediterranean with the location of the site (a) and detail of the proposed FRAs with the buffer areas (b)*



### 2.3.5. Depth range (in m; specify core and buffer area, if applicable)

East of Adventure Bank - Essential Fish Habitat for European hake:

| Core area | | | Buffer area | | |
|---|---|---|---|---|---|
| Max | Min | Mean | Max | Min | Mean |
| 272 | 76 | 174,95 | 275 | 71 | 166,41 |

West of Gela Basin- Essential Fish Habitat for deep-water rose shrimp:

| Core area | | | Buffer area | | |
|---|---|---|---|---|---|
| Max | Min | Mean | Max | Min | Mean |
| 683 | 21 | 352,64 | 695 | 13 | 352,27 |

East of Malta Bank - Essential Fish Habitat for European hake:

| Core area | | | Buffer area | | |
|---|---|---|---|---|---|
| Max | Min | Mean | Max | Min | Mean |
| 1.730 | 60 | 334,70 | 2.113 | 80 | 675,95 |

Note: the minimum depth is due to the presence of underwater geological emergences in the areas proposed.

## 2.4 SURFACE AREA

East of Adventure Bank - Essential Fish Habitat for European hake:

| Core area | | Buffer area | |
|---|---|---|---|
| ha | $Km^2$ | ha | $Km^2$ |
| 61.310,12 | 613,10 | 19.790,43 | 197,90 |

West of Gela Basin - Essential Fish Habitat for deep-water rose shrimp:

| Core area | | Buffer area | |
|---|---|---|---|
| ha | $Km^2$ | ha | $Km^2$ |
| 61.613,025 | 616,13 | 19.839,26 | 198,39 |

East of Malta Bank - Essential Fish Habitat for European hake:

| Core area | | Buffer area | |
|---|---|---|---|
| ha | $Km^2$ | ha | $Km^2$ |
| 46.889,28 | 468,90 | 17.552,34 | 175,52 |

# 3. SITE DESCRIPTION

## 3.1 MAIN PHYSICAL FEATURES

### 3.1.1. Geology/Geomorphology

The Sicily Channel is characterized by thinned continental lithosphere (60-70 km), shallow Moho depth (20-25 km), high heat flow, positive Bouguer anomalies and significant volcanic activity associated with magnetic anomalies (Furlani *et al.*, 2013).

Along the southern coasts of Sicily, the shelf is widest in the westernmost (Adventure Bank) and easternmost (Malta Bank) sectors (about 50 nautical miles wide) (Abella *et al.*, 2008). Between the southeastern and northeastern plateaus there is a huge Neogene-present sedimentary basin, the Gela Basin (Calanchi *et al.*, 1989), along which the deep-water rose shrimp nurseries lay (Garofalo *et al.*, 2011).

The ~80,000 km2 Adventure Bank is the shallowest part of the entire region, and is punctuated by several isolated, eroded rocky banks. The Adventure Plateau is part of the northern margin of the African continental plate and is morphologically separated from Sicily by the relatively deep (about −120 m) Mazara del Vallo Channel, and from Tunisia by the Pantelleria Graben (about −1300 m). Several shallow banks, which in some cases rise to less than 10 m below sea level (Talbot, Ante-Talbot, Nereo, Panope, Tetide, Anfitrite, Galatea and Pantelleria Vecchia), punctuate the almost flat surface of the Adventure Bank. Some of them represent recent submarine volcanic manifestations while others are remnants of highly deformed and tectonized substratum, mainly composed of Late Cenozoic carbonate and siliciclastic deposits (Civile *et al.*, 2015). The Adventure Bank shows a widespread erosion surface covered by thin veneers of calcarenites and organigenic sands of recent deposition. Fragments of highly tectonized sedimentary substratum outcrop as erosional remnants to form shallow banks. The main tectonic lineation of the Adventure Bank are consistent with the general trend of the Strait of Sicily (i.e. NW-SE) but N-S directions are also well represented (Calanchi *et al.*, 1989).

The Gela Basin represents one of the most prominent basins of the eastern plateau of the Strait of Sicily. It is a huge Neogene-present sedimentary basin where the emplacement of the Gela nappe was active up to the Early Pleistocene This normal fault is inter-sected by a major NE-SW-oriented trans-current fault (Calanchi *et al.*, 1989).

The Malta Bank is the seaward extension of the Hyblean plateau of mainland Sicily. The Malta plateau is mainly composed of carbonate sequences with an intercalation of volcanic rocks that span from the upper Triassic to the Quaternary. The distribution of both domes and ridges mostly follows an NNW–SSE trend. Along the outer shelf, present-day sedimentation is reported to be dominated by bioclastic material mainly derived from a modern fauna of bryozoa (together with sparse bivalve and echinoid fragments), with clay and silty clay winnowed by currents. Calcareous nannofossil assemblage compositions identified in the Malta Bank show a significant mixing with the contemporaneous occurrence of species of different ages and very rare to absent recent (late Pleistocene–Holocene) species. These reworked nannofossil species can make a significant contribution to present-day sedimentation south of Sicily, with values up to50%. The Malta plateau is known to be an important hydrocarbon reservoir like the Vega oil field. This site represents one of the largest natural gas systems offshore Italy (Savini *et al.*, 2009).

### 3.1.2. Other interesting physical or chemical features such as hydrodynamics, frontal areas, upwelling, etc., than support the proposal.

The Strait of Sicily is characterized by a two-layers flow model: the upper layer (0-100m), comprising the so-called "Modified Atlantic Waters" (MAW), with a relatively low salinity flowing from the Western to the Eastern Mediterranean basins and the lower layer "Levantine Intermediate Waters" (LIW) (at depth >250 m), characterised by relatively higher salinity water, richer in nutrients which flows in the opposite direction (Fig. 2; Abella *et al.*, 2008).

Between Adventure Bank and the Malta plateau, Levantine Intermediate Water forms a pair of subsurface eddies (one cyclonic, one anti-cyclonic) along the western flank of the Malta plateau reaching velocities greater than 13 cm/s (Lermusiaux and Robinson, 2001). The MAW motion, called "Atlantic–Ionian Stream" (AIS), shows a rather steady mean path. It enters the Strait from the western boundary along the Adventure Bank, approaches the southern coast of Sicily, and then moves away from the coast, once it encounters the Malta Bank. Along this path, the AIS goes around two large cyclonic gyres. This surface circulation promotes the establishment of "permanent" upwellings towards the left side of the AIS in certain places, which are reinforced by westerly winds.

The main source of nutrients in the area is associated with coastal upwellings and the doming of intermediate waters inside the cyclonic gyres (Abella *et al.*, 2008). In particular, the area east of the Adventure Bank, where co-occurrence of different nurseries is documented, is characterized by the presence of a large cyclonic vortex, called Adventure Bank Vortex (ABV), a dominant feature linked to the meanders of AIS. Cyclonic vortices and fronts are considered responsible for the temporal persistence of the nursery grounds of European hake. Also, young-of-the-year and mature females of deep water rose-shrimp in the Strait of Sicily aggregate where retention and enrichment processes occur (Garofalo *et al.*, 2011). Several studies describe the semi-permanent flow patterns resulting from the meanders of the AIS, which include the cyclonic Adventure Bank Vortex (ABV) and the cyclonic Ionian Shelf-break Vortex (ISV) (Lermusiaux and Robinson, 2001). The persistence of the cyclonic vortices implies the existence of upwelling at their center to counterbalance the divergence of surface water (García Lafuente *et al.*, 2002). In addition, local upwelling events have been often observed along the southern coast of Sicily. They are induced by inertia of the isopycnal domes of the AIS meanders and cyclonic vortices (Lermusiaux and Robinson, 2001).

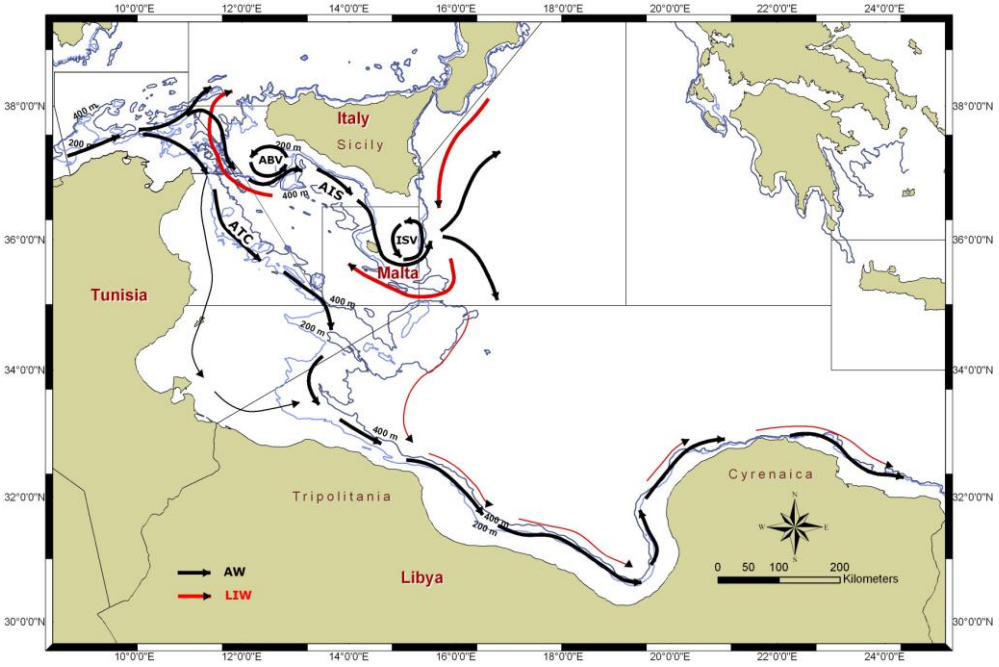



Fig 2: Features of the Strait of Sicily and Malta: AW=Atlantic Water; LIW=Levantine Intermediate Water; AIS=Atlantic Ionian Stream; ATC=Atlantic Tunisian Current; ABV=Adventure Bank Vortex; ISV=Ionian Shelf-break Vortex (Source: CIESM 2011)

## 3.2 BIOLOGICAL FEATURES

### 3.2.1. Habitats

Predominant habitat types (benthic biocenosis) (Barcelona Convention Benthic Marine Habitat Types – Source: Vega Fernández *et al.*, 2012)

IV. 1. 1. Biocenosis of coastal terrigenous muds
IV. 2. 2 Biocenosis the coastal detritic bottom
IV. 2. 2. 1. Association with rhodolithes
IV. 2. 2. 2. Maerl facies (*Lithothamnion corallioides* and *Phymatholithon calcareum*)
IV. 2. 3. Biocenosis of shelf-edge detritic bottom
V. 1. 1. 3. Facies soft muds with *Funiculina quadrangularis* and *Apporhais seressianus*
V. 1. 1. 4. Facies of compact muds with *Isidella elongata*
V. 2. 1. Biocenosis of bathyal detritic sands with *Grypheus vitreus*
V. 3. 1. Biocenosis of deep sea corals

### 3.2.2. List of regionally important species

Common (C); Uncommon (U); Occasional (O); rare (r); endemic (e); threatened (t); important resident population (R); important for its breeding (B), feeding (F), wintering (W) or migratory passage (M).

| SPECIES | Rel. Abundance (C) (U) (O) | Regional status (r) (e) (t) | Local status (R) (B) (F) (W) (M) | Note |
|---|---|---|---|---|
| *Madrepora oculata* | Unknown | t | R | • IUCN Critically endangered<br>• Annex II Barcelona Convention |
| *Lophelia pertusa* | Unknown | t | R | • IUCN Data deficient<br>• Annex II Barcelona Convention |
| *Corallium rubrum* | C | t | R | • IUCN Endangered<br>• Annex III Barcelona Convention |
| *Cladopsammia rolandi* | Unknown | t | R | IUCN (in process) |
| *Dendrophyllia cornigera* | Unknown | t | R | IUCN (in process) |
| *Isidella elongata* | Unknown | t | R | IUCN (in process) |
| *Funiculina quadrangularis* | Unknown | t | R | IUCN Vulnerable |
| *Aristaemorpha foliacea* | C | e | R | GFCM priority list |
| *Aristeus antennatus* | C | e | R | GFCM priority list |
| *Auxis rochei* | C | e | B/F/R | GFCM priority list |
| *Eledone cirrhosa* | C | e | R/B | GFCM priority list |
| *Eledone moscata* | C | e | R/B | GFCM priority list |
| *Engraulis engrausicolus* | C | e | R/B | GFCM priority list |
| *Euthynnus alletteratus* | C | e | B/F/R | GFCM priority list |
| *Isurus oxyrinchus* | C | e | R/B/F | • GFCM priority list<br>• IUCN Critically Endangered |
| *Lamna nasus* | C | e | R/B/F | • GFCM priority list<br>• IUCN Critically Endangered |
| *Loligo vulgaris* | C | e | R/B | GFCM priority list |
| *Lophius budegassa* | C | e | R/B | GFCM priority list |
| *Lophius piscatorius* | C | e | R/B | GFCM priority list |
| *Merluccius merluccius* | C | e | R/B | GFCM priority list |
| *Micromesistius poutassou* | C | e | R/B | GFCM priority list |
| *Mullus barbatus* | C | e | R/B | GFCM priority list |
| *Mullus surmuletus* | C | e | R/B | GFCM priority list |
| *Nephrops norvegicus* | C | e | R/B | GFCM priority list |
| *Octopus vulgaris* | C | e | R/B | GFCM priority list |
| *Orcynopsis unicolor* | C | e | R/B | GFCM priority list |
| *Pagellus bogaraveo* | C | e | R/B | GFCM priority list |
| *Pagellus erythrinus* | C | e | R/B | GFCM priority list |
| *Parapeneus longirostris* | C | e | R/B | GFCM priority list |
| *Prionace glauca* | C | e/t | B/R | GFCM priority list |
| *Raja alba* | C | e/t | R/B/F | • GFCM priority list<br>• IUCN Critically Endangered |
| *Sarda sarda* | C | e | R | GFCM priority list |
| *Sardina pilchardus* | C | e | R | GFCM priority list |
| *Sardinella aurita* | C | e | R | GFCM priority list |
| *Sepia officinalis* | C | e | R | GFCM priority list |
| *Squatina squatina* | C | e/t | R/B/F | • GFCM priority list<br>• IUCN Critically Endangered |
| *Thunnus alalunga* | C | e | B/F/R | GFCM priority list |

| SPECIES | Rel. Abundance (C) (U) (O) | Regional status (r) (e) (t) | Local status (R) (B) (F) (W) (M) | Note |
|---|---|---|---|---|
| *Thracurus mediterraneus* | C | e | R | GFCM priority list |
| *Xiphias gladius* | C | e | B/F/R | • GFCM priority list<br>• Annex III Barcelona Convention |
| *Leucoraja melitensis* | C | e/t | B/F/R | • Annex II Barcelona Convention<br>• IUCN Critically Endangered |
| *Stenella coeruleoalba* | C | e/t | B/F/R | Annex II Barcelona Convention |
| *Balaenoptera physalus* | O | e/t | F | • Annex II Barcelona Convention<br>• IUCN Endangered |
| *Carcharodon carcharias* | C | e/t | R | • Annex II Barcelona Convention<br>• CITES Appendix II<br>• IUCN Endangered |
| *Carcharhinus plumbeus* | C/O | e/t | R | • Annex III Barcelona Convention<br>• IUCN Endangered |
| *Mobula mobular* | C/O | e/t | R | • Annex II Barcelona Convention<br>• IUCN Endangered |
| *Cetorhinus maximus* | O | e/t | F | • Annex II Barcelona Convention<br>• IUCN Vulnerable |
| *Caretta caretta* | C | e/t | B/F/M | • Annex II Barcelona Convention<br>• IUCN Endangered |
| *Dermochelys coriacea* | C | e/t | B/F/M | • Annex II Barcelona Convention<br>• IUCN Vulnerable |
| *Chelonia mydas* | C | e/t | B/F/M | • Annex II Barcelona Convention<br>• IUCN Endangered |

### 3.2.3. Occurrence of biological and ecological processes relevant to fish resources (essential fish habitats)

The Fisheries Restricted Areas proposed by Oceana coincide with the nursery areas of European hake and deep-water rose shrimp in the northern sector of the Strait of Sicily, where "nursery" means the spatial persistence of hot spots of recruit densities over long periods (Garofalo et al. 2011).

The locations of the nursery grounds indeed match with zones of relatively high production, where upwelling and other enrichment processes regularly occur in time. Due to the stability over time of these nurseries, the three proposed FRAs have been identified as habitats essential for the juvenile life stage of European hake and deep-water rose shrimp (Fiorentino et al. 2008; Garofalo et al. 2011).

**Essential Fish Habitats (EFHs) in the northern sector of the Strait of Sicily:**

**- EFH for European hake (*Merluccius merluccius*)**

The occurrence of two main nursery areas for hake, one on the eastern side of the Adventure Bank and the other on the Malta Bank at depths ranging between 100 and 200 m has been extensively documented (Fiorentino *et al.*, 2003; Abella at al. 2008; Gristina *et al.*, 2013).

Modest seasonal changes in nursery location were observed with a shift towards shallower/inshore waters in spring, probably due to a reduction in water stratification (Abella *et al.*, 2008). The comparison of the nursery location with the main oceanographic features in the Strait of Sicily suggests that the eddies and the frontal systems produced by the AIS, play a major role, influencing and maintaining over the years the localization of spawning areas as well as the spatial structure of nurseries. These mesoscale structures are thought to retain larvae and juveniles, and sustain the feeding of the juveniles' aggregation, which are concentrated in areas of the continental shelf where the anomalies are repeated to a greater or lesser extent every year (Abella *et al.*, 2008).

The area east of the Adventure Bank, extending from the 100 m bathymetry up to 400 m, provides a recruitment ground not only for European hake but also for other species of commercial interest like horned octopus, greater forkbeard and Norway lobster (Garofalo *et al.*, 2011). This area is characterized by the large cyclonic vortex, Adventure Bank Vortex (ABV). The hake nursery grounds coincide with zones characterised by a relatively high production, in terms of food for larvae, thanks to the upwelling generated by the cyclonic vortex thus turning into favourable conditions for feeding and growth (Garofalo *et al.*, 2011). Therefore the frontal systems produced by the AIS in the Strait of Sicily play a major role, influencing and maintaining over the years the localization of spawning areas as well as the spatial structure of nurseries. The recruitment of European hake occurs all year round (Ragonese *et al.*, 2004).

The nursery of the Malta Bank is delimited by the Ionian Front on its eastern side (Abella *et al.*, 2008). As for the hake nursery described for the Adventure Bank, the oceanographic charachteristics of Malta Bank play a key role in influencing the distribution of the nursery. The thermal filament east of the Malta Bank, are thought to play an important role in retaining and concentrating hake recruits in the identified nursery areas (Fiorentino *et al.*, 2003; Russo *et al.*, 2014).

In addition to the EFH for hake, for this area it has also been reported a high abundance of young-of-the-year of *P. longirostris* that has been identified as nursery for this species (Fig. 3) (Fortibuoni *et al.*, 2010; Russo *et al.*, 2014). As for hake, favorable recruitment conditions for the deep-water rose shrimp in Malta Bank are generated by the oceanography of the area, as the Ionian Shelf-break cyclonic Vortex (ISV) acts as a retention area with low current velocities (García Lafuente *et al.*, 2002) and dispersal is contained by the Ionian Slope Front (ISF). The co-occurring of EFH for European hake and deep-water rose shrimp highlights the importance of protecting this ground as an Essential Fish Habitat in a multi-species fisheries management contest as foreseen by the ecosystem approach.

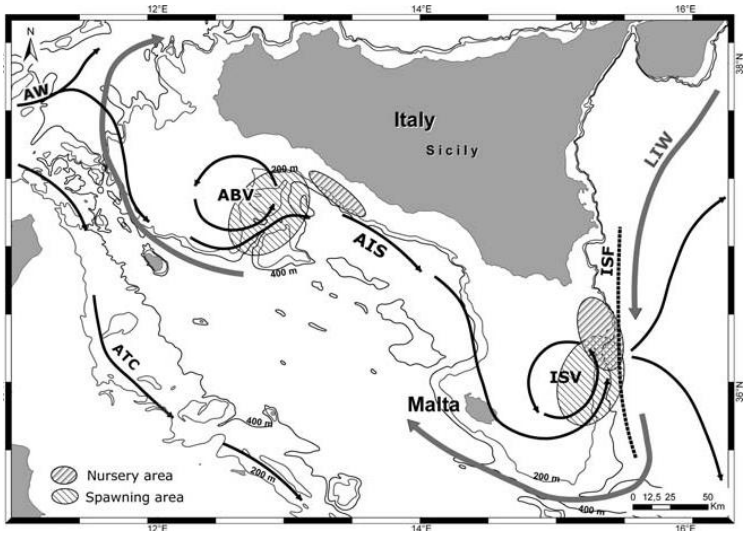



Fig. 3. Schematic model of the spawning strategy of *Parapenaeus longirostris* in the northern sector of the Strait of Sicily. Stable nursery and spawning areas location is shown, as well as the main hydrological characteristics of the area. ABV: Adventure Bank Vortex; ATC: Atlantic Tunisian Current; AIS: Atlantic Ionian Stream; ISV: Ionian Shelf-break Vortex; ISF: Ionian Slope Front; LIW: Levantine Intermediate Water; AW: Atlantic Water (Source: Fortibuoni *et al.*, 2010).

**- EFH for deep-water rose shrimp (*Parapenaeus longirostris*)**

Besides the deep-water rose shrimps nursery north-east of the Malta Bank, another stable nursery area for *Parapenaeus longirostris* is located western to the Gela Basin, along the south coast of Sicily, across the outer shelf-upper slope (i.e. between the shelf break and the upper slope). Generally, the outer shelf corresponds to the preferential depth range for the recruitment processes of this species and here maximum value of aggregation of the young-of-the-year (i.e. individuals in their first year of life) have been recorded during all seasons (Fig. 3).

The spatial stable patterns of *P. longirostris* EFH has been connected to the specific oceanography of the area. On one side the AIS has a meandering nature that benefits eggs and larvae from linked enrichment and concentration zones induced by alterations in the vorticity along the flow axis (García Lafuente *et al.*, 2002). Moreover, the presence of a 'stagnant point' (still water) - where the stream impinges the shore on the eastern side of the Adventure Bank, approximately where a nursery area of *P. longirostris* is found - provide suitable conditions for recruitment due to the stable conditions resulting from the low velocities associated with the bifurcation of the AIS. These oceanographic characteristics, including the role of the AIS in connecting the spawning and the nursery areas, lead to the high abundance of deep-water rose shrimp and the temporal persistence of nurseries (Fortibuoni *et al.*, 2010).

## 3.3 USE OF NATURAL RESOURCES

### 3.3.1. Current human use and development of fisheries

**The fleets operating in the northern sector of the Strait of Sicily**

The Italian fleet operating in the Sicily channel consists of about 403 bottom trawlers, 9 pelagic trawlers, 26 purse-seiners, 45 longliners and 669 small scale boats based in Sicilian harbours. The Sicilian trawlers are based in seven main ports along the southern Sicilian coast. Among them, Mazara del Vallo is the main Sicilian port for demersal fisheries (UNEP-MAP-RAC/SPA, 2014). The main fleet segment (around 28%) is represented by demersal trawlers with an overall length between 24 and 40 meters. This fleet is specialised in catching red shrimp, deepwater rose shrimp, norway lobster, hake and red mullets) in off-shore waters. Initially these vessels were used to fish in the GSAs from 12 to 16 (Sicily channel and adjacent areas), but since 2004 their activity has been extended to the Aegean and South-Levantin basins. They usually engage in long fishing trips (15–25 days) within the national and in the international waters of the Sicily channel, operating over the continental shelf and over deep bottoms (down to 700–800 m depth). The remainder of the Mazara fleet comprises small trawlers (<130 GRT) that make short fishing trips (4–5 days) operating in shallow waters and on the continental shelf (UNEP-MAP-RAC/SPA. 2014). While the southern sector of the Strait of Sicily is fishing ground both for the Italian and Tunisian fleets, the northern sector is mainly targeted by the Sicilian fleet being small the number of Maltese vessels operating in this area (Fig. 4) (Regione Sicilia, 2013). The authorised Maltese fleet is composed of 2 trawler vessels of 19 m although a total of 18 trawling vessels are registered ranging from 23 m to 37 m LOA (Source: GFCM Authorized Vessel List (>15m)). Among the fishing gears used in the Strait of Sicily, only trawling has produced relevant amounts of discards of undersized hakes. The discarded fraction of hake is very variable, according to the season and the type of fishery. In the late-1990s, Sicilian trawlers fishing offshore (trips of 15–25 days) have a higher discard of hake (86% by number and 31% by weight) than the inshore trawlers (trips of 1–2 days; 32% by number and 9% by weight). For the distant fisheries, the first modal group (10–12 cm) in the catches is totally discarded. This is due to the intensive use of the work time and the cold-storage space available for high-priced crustaceans (Fiorentino *et al.*, 2008). Most recent studies on the discarded fraction of trawler catches in GSA 16 during 2006 gave a length at the 50% discard level ranging between 12.9 cm TL (summer and autumn) and 15.0 cm TL (spring) (Fiorentino *et al.*, 2008).

**Hake fishery in the northern sector of the Strait of Sicily**

In the northern sector of the Strait of Sicily (GSAs 15 and 16), the majority of the hake catches (more than 95%) is obtained by bottom trawling, although the species is fished also by longlines and gillnets (Gancitano *et al.*, 2007).

Considering all the Sicilian boats fishing in the Strait of Sicily 1.995 tons were landed in 2003, and 1.598t in 2006 (from IREPA data). These figures correspond to less than 10% of the demersal landings in GSA 16 (Fiorentino *et al.*, 2008). Annual landings of hake for 2010-2011 were around a mean value of 2,000 t (UNEP-MAP-RAC/SPA. 2014).

The Maltese hake yield sharply decreased between 1980 (about 40 tons) and 1992 (about 1 ton); thereafter, it has fluctuated around 5 tons. This sharp reduction could be partially explained by the

change in the target species of Maltese trawlers, which have fished mainly for shrimps from the mid-1990s onwards (Fiorentino *et al.*, 2008).

**Deep-water rose shrimp fishery in the northern sector of the Strait of Sicily:**

The Strait of Sicily represents one of the most important fishing grounds in the Mediterranean for trawlers targeting the deep-water rose shrimp (Fortibuoni *et al.*, 2010). The *P. longirostris* is exclusively fished by mean of bottom trawling along the whole year (Regione Sicilia 2013).

Sicilian coastal trawlers (LOA between 12 and 24 m) targeting deep water rose shrimp are based in seven harbours along the southern coasts of Sicily. These trawlers operate mainly on short-distance fishing trips, which range from 1 to 2 days at sea, and fishing taking place on the shelf edge and upper slope. With 250 registered vessels this fleet formed the largest component of the fleet targeting rose shrimp in 2009. Sicilian trawlers over 24 m in length have longer fishing trips, which may have duration of up to 4 weeks.

With landings of around 9000t/year in 2011, it turns out that *P. longirostris* constitutes the most important demersal stock in the Strait of Sicily.

Taking into account the fleets operating in the area, the landings of *P. longirostris* range from 10% of the Maltese fleet up to 47% for Italian fleet of vessels LOA<20m. During the years 2005-2010, the total catches for Sicilian, Maltese and Tunisian fleets in the whole Strait of Sicily amounted to values ranging from 6000 - 10000 t, with catches from the Sicilian fleet ranging 85% of the total catches (Regione Sicilia 2013).

The deep-water rose shrimp represent the most important species in terms of contribution to the total income (30%). The price of this species has significantly declined in the last year from 13.47 €/kg to 9.24 €/kg (UNEP-MAP-RAC/SPA. 2014).

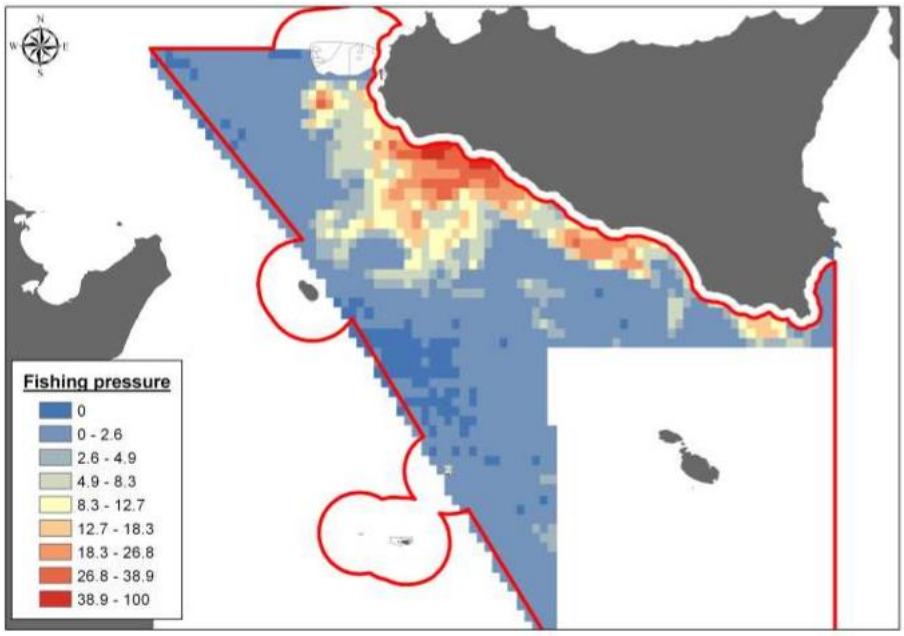



Fig. 4: Map of the spatial distribution of trawl-fishing pressure of the Sicilian fleet (Source: Vega Fernández *et al.*, 2012)

| ACTIVITY AND CATEGORY | ASSESS IMPORTANCE OF SOCIO-ECONOMIC | CONSERV. IMPACT | ESTIMATED No. of USERS | SEASONALITY |
|---|---|---|---|---|
| FISHING<br>Artisanal<br>Industrial<br>Other:<br>- Aquaculture<br>- | Socio-economic studies not available | Socio-economic studies not available | Data not publicly available | Data not publicly available |

### 3.3.2. Current human use and development (except for fisheries)

In the northern region of the Strait of Sicily, the main economic sectors are represented by maritime transportation industry; off-shore oil and gas exploitations and energy sector (including setting up of underwater cables and pipelines) and tourism (Vega Fernandéz *et al.*, 2012).

| ACTIVITY AND CATEGORY | ASSESS IMPORTANCE OF SOCIO-ECONOMIC | CONSERV. IMPACT | ESTIMATED No. of USERS | SEASONALITY |
|---|---|---|---|---|
| OTHER ACTIVITES<br>Tourism<br>Transport<br>Mining<br>-<br>- | Not available | Not available | Not available | |

# 4. REGIONAL IMPORTANCE OF THE SITE

This section aims at stressing the importance of the site for conservation at the regional scale.

## 4.1 PRESENCE OF ECOSYSTEMS/HABITATS OF PARTICULAR IMPORTANCE IN THE MEDITERRANEAN

The Strait of Sicily also holds important species and habitats that deserve protection on the basis of the uniqueness and rarity of its habitats/species/geomorphological features including:

i. Geomorphological features: Submarine volcanic activity; mud volcanoes; (potential) cold seeps.
ii. Habitat forming species: the scleractinian coral *Cladopsammia rolandi* (endemic to the Mediterranean); cold water deep-sea coral mounds composed of *Lophelia pertusa, Madrepora oculata* and Balanus spp.; yellow tree coral *Dendrophyllia cornigera; Isidella elongata; Corallium rubrum and Funiculina quadrangularis*.
iii. Vulnerable species like the Maltese skate *Leucoraja melitensis* which is confined largely to the Sicilian Straits.

Adventure Bank is characterised by persistent high demersal fish species diversity, to depths of 100 m. High demersal fish species diversity is also recorded at 400 – 600 m in the northwest of the Strait of Sicily and on the eastern edge of the Maltese EEZ (Garofalo *et al.*, 2007). Benthic habitats are characterised by high associated species diversity (including *Isidella elongata, Funiculina quadrangolaris, Cladopsammia rolandi, Lophelia pertusa, Madrepora oculata, Dendrophyllia cornigera, Isidella elongata, Corallium rubrum and Funiculina quadrangularis*) (Vega Fernández *et al.* 2012).

## 4.2 PRESENCE OF HABITATS THAT ARE CRITICAL TO ENDANGERED, THREATENED OR ENDEMIC SPECIES

The northern sector of the Strait of Sicily includes areas for critical sea birds and cetacean habitats, deep sea corals, seamounts, and highly productive, very shallow offshore banks (Oceana, 2011).

The Essential Fish Habitats located in the northern sector of the Strait of Sicily, in particular in Adventure and Malta Banks, have been recognized as vulnerable sites in the Mediterranean high seas due to both i) the habitat degradation, mainly as consequence of trawling activities and ii) overexploitation of juveniles of commercial stocks (De Juan & Lleonart 2010).

Vulnerable species resident or frequently observed in the region:

i. Marine mammals like Striped dolphins (*Stenella coeruleoalba*) and fin whales (*Balaenoptera physalus*) are present in the area;
ii. Marine turtles: loggerhead turtles (*Caretta caretta*), leatherback (*Dermochelys coriacea*) and green turtles (*Chelonia mydas*) with nesting sites;
iii. Elasmobranchs: The Maltese skate (*Leucoraja melitensis*), great white shark (*Carcharodon carcharias*), porbeagle (*Lamna nasus*), shortfin mako (*Isurus oxyrinchus*), sandbar shark (*Carcharhinus plumbeus*), giant devil's ray (*Mobula mobular*), blue shark (*Prionace glauca*); basking shark (*Cetorhinus maximus*);
iv. Seabirds: Shearwater species like *Calonectris diadema* and *Puffinus yelkouan*.

Rare habitats/assemblages are found in the northern sector of the Strait of Sicily such as facies formed by *Isidella elongata* and that formed by *Funiculina quadrangolaris* and white corals. [CIESM, 2011]. These forming species, along with other species described in the area such as *Cladopsammia rolandi, Lophelia pertusa, Madrepora oculata, Dendrophyllia cornigera, Isidella elongata, Corallium rubrum* and *Funiculina quadrangularis*, and the communities associated to these species, are vulnerable and fragile to human impact (Vega Fernández *et al.*, 2012)

Thick fossil coral frameworks with overgrowing coral assemblages mainly consisting of *Madrepora oculata* and *Lophelia pertusa* associated with *Corallium rubrum* and gorgonians have been described both eastern of Adventure Bank and off- Malta (Danovaro *et al.*, 2010).

### 4.3 OTHER RELEVANT FEATURES

#### 4.3.1. Educational Interest

Not applicable

#### 4.3.2. Scientific Interest

Important scientific aspects of the areas proposed:

i) High productivity of commercial stocks;
ii) High biodiversity;
iii) High conflicts for the use of the area

Most of the biological information on groundfish in the Strait of Sicily channel was obtained within the framework of two main programmes of assessment of demersal resources: the GRUND programme started in 1985 and funded by the Italian government and the international programme MEDITS, started in 1994 and supported also by the European Union.
On-going project in the area to identify management measures: MedSudMed
The area is also relevant for deep-sea explorations.

## 5. IMPACTS AND ACTIVITIES AFFECTING THE AREA

### 5.1 IMPACTS AND ACTIVITIES WITHIN THE SITE

#### 5.1.1. Exploitation of natural resources

Discards by Mediterranean unselective trawling fleets are significant. The effect on marine communities is twofold: at a single-species level, the population dynamics of a species are altered, and at the ecosystem level profound changes occur because of the disruption of food webs. Ecosystem modifications are triggered by the change in the biomass and demographic structure of the different species as well as by the increasing food supply for scavenger and opportunistic species. It is worth noting that the latter can result in the trophic connection of separate sub-systems (i.e. pelagic and benthic), making ecosystem consequences even more dramatic (Tudela 2004).

The northern sector of the Strait of Sicily is an intensively used area in terms of maritime transport. Maritime traffic crossing the Mediterranean Sea basin in order to pass through the Bosporus or the Suez Canal or to arrive at one of the countries located in the eastern part of the Mediterranean Sea basin (and vice versa), passes through the Strait of Sicily. The projected increase of the capacity of the Suez Canal will further prompt shipping traffic through the Strait of Sicily, which is a valuable economic activity in the area. The ecosystems of the Strait of Sicily have been substantially modified through fishing from early times, and the presence of aquaculture facilities add complexity to the burden of factors facilitating invasion by alien species. Summing up these factors it can be readily envisaged that the rate of biological invasions will increase in the area in upcoming years. It is generally the rule that few of them will persist, even fewer will have negative effects for nature conservation and the economic sustainability of fisheries, and more rarely some could have some positive effects. Human pressure is reported in figure Fig 5.

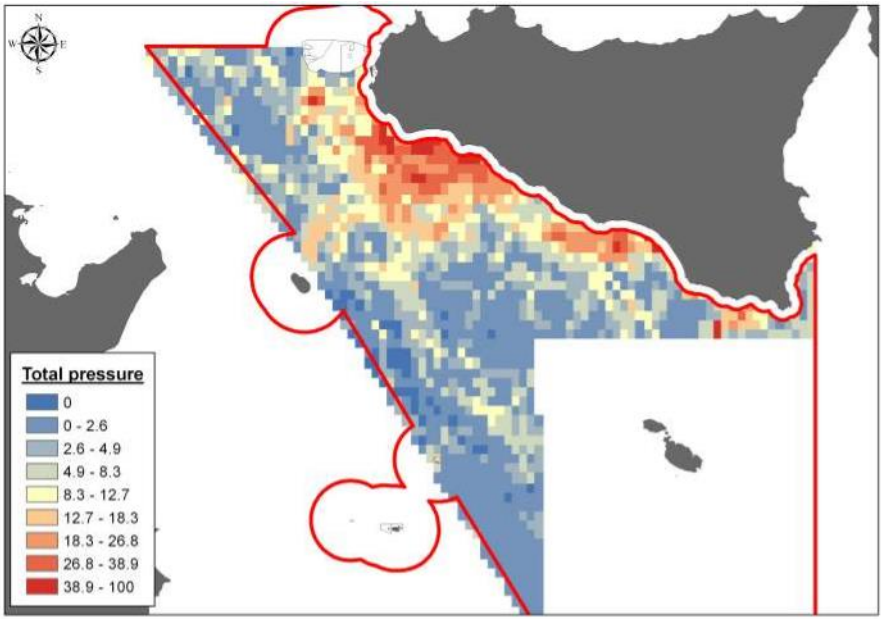



Fig 5: Map of the spatial distribution of the accumulated human pressures (Source: Vega Fernández *et al.*, 2012)

### 5.1.2. Threats to habitats and species

Invasive Alien Species under climate change: The Strait of Sicily is one of the main shipping routes of the world, linking the North Atlantic area to the Indo-Pacific one. This provides a privileged vector for the spread of exotic (or alien) species. Although biological invasions have been reported by both Atlantic and Indo-Pacific species, the second group can be expected to become progressively dominant. The reasons are is that the Mediterranean fauna is biogeographically close to that of the Indo-Pacific area. Moreover, the Mediterranean is becoming warmer. Therefore the Indo-Pacific fauna is adapted to environmental conditions quite similar to those found in the Mediterranean Sea. Until recently, migrations through the Suez Canal were largely curtailed by the salinity barrier represented by the Bitter Lake. However, the dilution of the salt deposits of the lake is progressively changing the picture. This evolution could be even accelerated by the planned enlargement of the capacity of the canal.

Projects for wind-mill farms in the Strait of Sicily contemplate the direct anchorage of generators to the rocky bottom of the off-shore banks. This is in conflict with conservation efforts, since off-shore banks communities are both exclusive and fragile. In some instances, banks hold the last remains of relict Mediterranean communities in a near-pristine status that is impossible to find in any other place. In addition, banks are of main importance for the sustainability of many fished populations due to their role in the oceanography of spawning and nursery grounds.

Noise: A detrimental effect of shipping is noise, especially for marine mammals since they depend on sound in their functioning. Shipping produces constantly acoustic pollution, which may affect large areas. Sound travels five times faster in water than in air since the density of water transmits acoustic energy much more efficiently. Hence, noise may extend throughout large volumes of water. The volume of shipping in the Mediterranean Sea results in high background noise levels that are likely to make it more difficult for whales to communicate with each other or to receive acoustic cues, for example to detect approaching vessels or other hazards (Policy research, 2011).

Prospections: The search for oil on and around Sicily has led to the realisation of a considerable number of oil drills (Fig. 6). The main impact of oil exploration is the production of high levels of noise by shooting air-compressed guns. The intensity and frequency of this acoustic contamination has a negative effect in marine mammals.

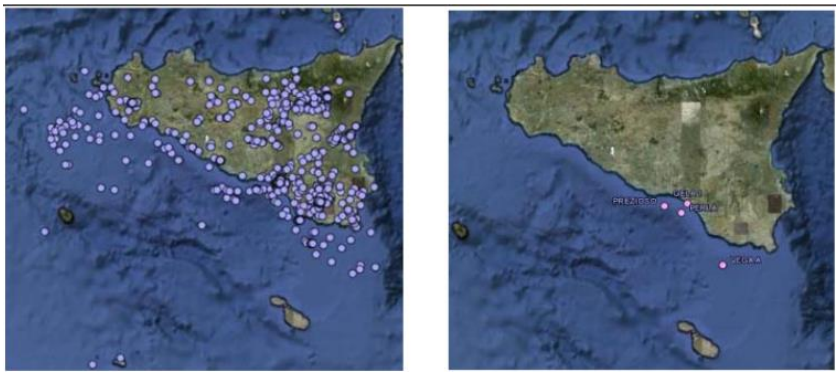


Fig. 6: Previous oil drills (left) and current offshore oil platforms (right) around Sicily (Source: MESMA project – Case Study Strait of Sicily)

## 5.2 IMPACTS AND ACTIVITIES AROUND THE SITE

### 5.2.1. Pollution

Oil spilling: High environmental pressure has been recorded as a consequence of the intensive maritime traffic (and corresponding collision risk /accident risk) in the area surrounding Malta. Given the countries' geographical features and their dependence on the Mediterranean Sea basin, the occurrence of an oil spill accident of considerable size in the Strait or in adjacent sea areas immediately has a severe impact on the coastlines and marine and coastal resources (Fig. 7; Policy Research 2011).

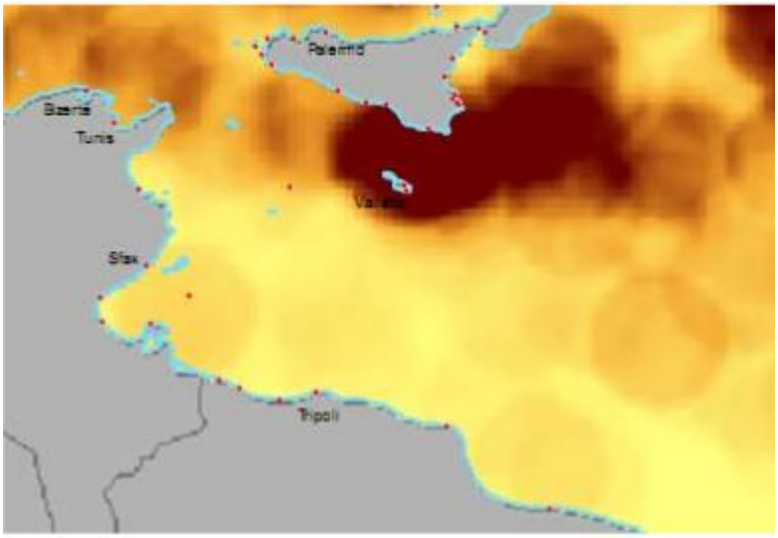



Fig. 7: Oil spill density in the area surrounding Malta (Source: Policy Research Corporation based on Joint Research Centre, of European commission, http://serac.jrc.it)

Wastewater: The northern sector of the Strait of Sicily A negative effect of coastal and marine tourism on the environment is caused by increased pressure on wastewater treatment facilities. During the summer season, the water purification system cannot cope with the additional large number of people (next to local population). As a result the wastewater is discharged directly into the sea (without purification), decreasing the water quality and increasing the probability of eutrophication (Policy Research 2011).

### 5.2.2. Other external threats, natural and/or anthropogenic

The substantial shale-locked hydrocarbon deposits located in the continental shelfs and shelf-edges of the central Mediterranean attracted the attention of oil companies. It is hence probable that the maritime territory will be subjected to space claim from energy companies to place off-shore wind-mill farms as well as oil and gas exploitation platforms. These activities directly impact the marine environment, raising conflicts with conservation and fishing, affected by the loss of rare or unique natural features and fishing grounds, respectively. In addition, wind-mill farms, as well as oil and gas platforms act as stepping stones facilitating the dispersion of alien species.

### 5.2.3. Sustainable development measures

In GSA 16, the Italian Government set an Italian National Strategic Plan for Fisheries and the Italian National Operative Programme (2007-2013): Management Plan GSA 16 (Sicily Strait) for trawlers > 18m LOB. Such a plan was approved in 2011 and became only partially operative mainly focusing its intervention in regulating the fleet capacity.

In GSA 15, the Maltese government has regulated the demersal fisheries only within the Maltese Fisheries Management Zone (FMZ) around the Maltese Islands and such regulation has been adopted at EU level (Council Regulation No 813/2004).

At international level no management plan has yet been put in place. During the Thirty-eighth session of the GFCM Commission held in Rome in May 2014 two proposals for management measures have been tabled but not approved by the Commission:

i. Draft European Union proposal for a GFCM Recommendation on the establishment of a set of minimum standards for bottom trawling fisheries on demersal stocks in the Strait of Sicily pending the development and adoption of a multiannual management plan;
ii. Draft proposal of Tunisia for a GFCM Recommendation on the establishment of a closing season in GSA 14.

## 6. EXPECTED DEVELOPMENT AND TRENDS[2]

### 6.1 EXPECTED DEVELOPMENT AND TRENDS OF THREATS TO AND PRESSURES UPON THE AREA

The marine environment can be expected to degrade as the result of a combination of human impact including trawling fishing, impacting energy exploitation and enhanced invasion by exotic species.

## 7. MANAGEMENT AND PROTECTION REGIME

### 7.1 LEGAL STATUS

Not applicable

### 7.1.1. Historical background of the management related to the area

Not applicable

[2] By expected development and trends are meant the development, which is thought most likely to occur in the absence of any deliberate intervention to protect and manage the site.

### 7.1.2. Regulatory measures currently ruling the management on the site

**Minimum sizes of marine organisms:** applying to EU vessels operating in the Mediterranean Sea regulated by the Council Regulation (EC) No 1967/2006 of 21 December 2006.

**Spatial restrictions:**

- Prohibited fishing over coralligenous habitats and maerl beds applying to EU vessels operating in the Mediterranean Sea regulated by the Council Regulation (EC) No 1967/2006 of 21 December 2006.

- Prohibited trawling at depth beyond 1000m applying to i) EU vessels operating in the Mediterranean Sea regulated by the Council Regulation (EC) No 1967/2006 of 21 December 2006 and ii) GFCM CPCs by Recommendation on Conservation and Management GFCM/29/2005/1

- Trawling within the 25-miles management zone around Malta subject to specific regulations (Council Regulation No 813/2004)

**Limits to fishing capacity:**

- Italian fleet reduction programme (Decreto 20 maggio 2011 - Adozione Piani di gestione della flotta a strascico in sostituzione del decreto direttoriale n. 44 del 17 giugno 2010 - Gazzetta Ufficiale 5 luglio 2011 n. 154 - Suppl. Ordinario n. 163)

- Guidelines on the management of fishing capacity in the GFCM area Resolution GFCM/37/2013/2

- Reduction of a minimum of 10 % of bottom trawling fishing effort shall be applied in all GFCM areas, unless proven unnecessary by sound scientific advice RES-GFCM/33/2009/1 On the management of demersal fisheries in the GFCM area

**Temporal restrictions:** A 30 days continuative stop of fishing activities per year for Italian vessels (D.M. 21 luglio 1988 attuativo della legge 19 luglio 1988 n. 278)

**Gear restrictions:** Square-mesh net of 40 mm codend or a diamond mesh size of at least 50 mm applying to i) EU vessels operating in the Mediterranean Sea regulated by the Council Regulation (EC) No 1967/2006 of 21 December 2006 and ii) GFCM CPCs by Recommendation GFCM/33/2009/2

### 7.1.3. Objectives

Not applicable

## 7.2 LEGAL BACKGROUND

Not applicable

## 7.3 LEGAL PROVISIONS FOR MANAGEMENT

### 7.3.1. Zoning regulating the area

There is no legal text protecting the area. Area considered accounts for a total of 2267 square km

### 7.3.2. Legal competencies

The proposed FRAs include fisheries for three GFCM priority stocks (European hake; deep-water rose shrimp; and red mullet)

The stock are shared by three GFCM CPCs (Italy, Malta and Tunisia)

GFMC Parties have agreed that dermersal fisheries management in GSA 16, along with other areas, should be addressed as a priority (REC.CM GFCM/30/2006).

### 7.3.3. Other legal provisions

Describe any other relevant legal provisions, such as those requiring a management plan or any other significant measures concerning the protection and management of the area.

According to of the GFCM Agreement adopted at the thirty-eighth session of the GFCM, CPCs are bound to adopt long term management plans, that should fulfil the minimum requirements detailed below, as laid down in Articles 5 and 8 of the Agreement:

- Prevent overfishing and minimize discards;
- Determine mechanism to ensure that the precautionary approach is properly implemented;
- Adopt multiannual management plans that guarantee the maintenance of stocks above levels which can produce maximum sustainable yield;
- Establish fisheries restricted areas for the protection of vulnerable marine ecosystems also including nursery and spawning area.

# 8. OBJECTIVES OF THE FRA AND PROPOSED MANAGEMENT MEASURES

## 8.1 OBJECTIVES OF THE FRA

Objective of the GFCM is to manage stock at level that can produce MSY and taking into account the Ecosystem Approach. There is global acceptance to adopt a wider Ecosystem Approach to Fisheries (EAF) using models that represent ecological processes important to the species in the ecosystem (FAO, 2008). The identification of spawning and nursery areas, in fact, allows defining discrete areas where the reduction of fishing pressure throughout the year or in discrete periods could be a valuable management tool (Caddy, 1999; Largier, 2003).

In GSA 15 and GSA 16, the GFCM Subcommittee on Stock Assessment reported that both deep-rose shrimp and European hake in GSAs are overexploited and for the latter a low biomass level has also been recorded (SAC-GFCM, 2014). These two species represent an important part of demersal landings and the effects of overfishing are highlighted also by the reduction in the production levels. As matter of fact, the bulk of the trawl catches in the Sicily channel is nowadays composed of recruits whose growth is enhanced by the reduced inter-specific competition.

The over-fishing of demersal resources has been a major issue in the Strait of Sicily (central Mediterranean) since the early eighties (Fiorentino *et al.*, 2008). The regulation of fisheries has so far been based on limitations of fishing capacity (licenses), minimum landing sizes, net mesh sizes and temporary fishing closures (Fiorentino *et al.*, 2008), but the establishment of no-fishing zones, particularly within nursery areas, has been increasingly advocated as a further component of the fishery management strategy (European Council Regulation n. 1967/2006).

Taking into account that in the Mediterranean mixed fisheries, selectivity of demersal trawl fisheries cannot be improved beyond certain level, spatial closures on nursery grounds have been widely advocated as a more effective means of limiting the capture of juveniles and enhancing the long-term sustainability of the fishery (Garofalo *et al.*, 2011).

The temporary or permanent restriction of fishing activity on spawning grounds is historically believed to be effective for preserving the reproductive potential of populations, and for enhancing recruitment. Furthermore, reducing fishing effort on juvenile stages is of the utmost importance when juveniles are the primary target of unselective fishing gear (Garofalo *et al.*, 2011).

Closure to fisheries of EFHs allows for proper juvenile protection in overfished stocks, in agreement with an ecosystem-based approach to fishery management. Indeed, in 2010 UNEP/RAC SPA put forward a proposal recommending that fishing with any towed gear be restricted in correspondence of the EFHs in Adventure and Malta Banks (UNEP-MAP-RAC/SPA 2010).

A wide array of sound scientific literature qualified the proposed FRAa areas as Essential Fish Habitat, i.e. habitats essential to critical life-history stages of target species Fiorentino *et al.*, 2003; Abella *et al.*, 2008; De Juan & Lleonart, J. 2010; Fortibuoni *et al.*, 2010; Garofalo et al. 2011; Vega Fernández *et al.*, 2012; Gristina *et al.*, 2013).

The establishment of FRA, where trawling fishing activities are interdict, is an essential tool for maintaining or rebuilding stocks and protecting their habitat. Moreover, all the area are habitats essential to critical life-history stages of target species and as such, the three areas meets one of the criterion for being included in a network of marine protected areas (Roberts *et al.*, 2003) to be implemented with the goal of achieving sustainable fisheries (Roberts *et al.*, 2005).

The permanent closure of the areas proposed will therefore protect the nursery grounds and enhance sustainability of the commercial stocks of European hake and deep-water rose shrimp in the northern sector of the Strait of Sicily, in line with the obligation laid in the GFCM Agreement. Moreover, permanent closures should be included in a long-term management plan aiming at rebuilding the stocks and allowing these to be recovered above levels that can produce the maximum sustainable yield, thus implementing the newly adopted objectives of the GFCM Agreement.

## 8.2 PROPOSED PROTECTION MANAGEMENT MEASURES FOR THE FRA

### 8.2.1. Management measures

Permanent closure of the areas to any kind of demersal fishing, towed or not, including trawl gears, bottom and midwater longlines, bottom nets (gillnets, trammelnets), traps, etc.

### 8.2.2. Monitoring, Control and Surveillance measures

Oceana considers that a management plan for the Strait of Sicily should encompass the FRAs declaration in order to ensure that GFCM Agreement objectives are met. This plan would include a set of Monitoring, Control and Surveillance measures, including but not limited to:

- Creation of a list of authorised vessels fishing in GSA 15 and GSA 16 for the demersal stocks to be revised on a yearly basis and fishing capacity assessed on the basis of fishing possibilities as to maintain fishing mortality at MSY level, in line with Recommendation MCS-GFCM/34/2010/2 on the management of fishing capacity;
- Vessels should have Vessel Monitoring System (VMS) on board active and transmitting position data at regular intervals in line with Recommendation MCS-GFCM/33/2009/7 concerning minimum standards for the establishment of a Vessel Monitoring System (VMS) in the GFCM area;
- Vessels should have Automatic Identification System (AIS) on board active and transmitting.

### 8.2.3 Socioeconomic impact(s) of the FRA

On a long-term benefit are expected as by preserving the nurseries area of key commercial species would support the current demersal fishery.

#### 8.2.3.1. Economic evaluation of the ecosystems services (not only marketable)

The permanent closure of the proposed FRAs nursery areas would contribute to shift multi-species demersal fisheries in the northern sector in the Strait of Sicily from the overfishing status to a more sustainable exploitation. The substantial improvement in exploitation pattern would result in increase of biomass of commercial stocks in the short term and an increase in the gains on the long-term.

# 9. OTHER RELEVANT INFORMATION

**Bibliography**


Abella A, Fiorentino F, Mannini A, Orsi-Relini L. 2008 Exploring relationships between recruitment of European hake (*Merluccius merluccius* L. 1758) and environmental factors in the Ligurian Sea and the Strait of Sicily (Central Mediterranean). Journal of Marine Systems 71(3-4):279-93

Caddy, J. F. 1999. Fisheries management in the twenty-first century: will new paradigms apply? Review in Fish Biology and Fisheries 9: 1-43.

Calanchi N., Colantoni P., Rossi P.L., Saitta M., Serri G. 1989. The Strait of Sicily continental rift systems: physiography and petrochemistry of the submarine volcanic centres. Marine Geology, 87: 55-83

CIESM 2011. Marine Peace Parks in the Mediterranean – A CIESM Proposal N 41 In CIESM Workshop Monographs [F. Briand Ed.] 128 pages Monaco

Civile D., Lodolo E., Zecchin M., Ben-Avraham Z., Baradello L., Accettella D., Cova A., Caffau M. 2015. The lost Adventure Archipelago (Sicilian Channel, Mediterranean Sea): Morpho-bathymetry and Late Quaternary palaeogeographic evolution. Global and Planetary Change 125: 36-47

Danovaro R, Company JB, Corinaldesi C, D'Onghia G, Galil B, et al. (2010) Deep-Sea Biodiversity in the Mediterranean Sea: The Known, the Unknown, and the Unknowable. PLoS ONE 5(8): e11832. doi:10.1371/journal.pone.0011832

De Juan, S., Lleonart, J. 2010. A conceptual framework for the protection of vulnerable habitats impacted by fishing activities in the Mediterranean high seas, Ocean & Coastal Management, 53, 717-723, doi:10.1016/j.ocecoaman.2010.10.005.

FAO 2008 Fisheries management. 2. The ecosystem approach to fisheries. 2.1 Best practices in ecosystem modelling for informing an ecosystem approach to fisheries. FAO Fisheries Technical Guidelines for Responsible Fisheries. No. 4, Suppl. 2, Add. 1. Rome, FAO. 2008. 78p.

FiorentinoF , Garofalo G., De Santi A., Bono G., Giusto G.B., Norrito G. 2003. Spatio-temporal distribution of recruits (0 group) of *Merluccius merluccius* and Phycis blennoides (Pisces, Gadiformes) in the Strait of Sicily (Central Mediterranean). Hydrobiologia 503: 223–236, 2003

Fiorentino, F., Ben Meriem, S., Bahri, T., Camilleri, M., Dimech, M., Ezzeddine-Naja S., Massa, F., Jarboui, O., Zgozi, S. Synthesis of information on some target species in the MedSudMed Project area (central Mediterranean). MedSudMed Technical Documents. No.15. GCP/RER/ITA/MSM-TD-15, Rome 2008: 67 pp.

Fortibuoni T., Bahri T., Camilleri M., Garofalo G., Gristina M., Fiorentino F. 2010. Nursery and spawning areas of deep-water rose shrimp, Parapenaeus longirostris (Decapoda: Penaeidae), in the Strait of Sicily (central Mediterranean Sea). Journal of Crustacean Biology, 30(2): 167-174

Furlani S., Antonioli F., Biolchi S., Gambin T., Gauci R., Lo Presti V., Anzidei M., Devoto S., Palombo M., Sulli A. 2013. Holocene sea level change in Malta. Quarternary International 288: 146-157

Gancitano, V., Cusumano, S., Badalucco, C., Rizzo, P., Comparetto, G., Sabatella, E., Fiorentino, F. (2007) Analisi di coorte in lunghezza del nasello (*Merluccius merluccius* L., 1758) (Pisces, Merluccidae) nello Stretto di Sicilia. Biol. Mar. Medit., 14(2): 354-355.

García Lafuente, J., S. Mazzola, L. Quintanilla, J. Delgado, A. Cuttita, and B. Patti. 2002. Hydrographic phenomena influencing early life stages of the Sicilian Channel anchovy. Fisheries Oceanography 11(1): 31-44.

Garofalo G., Fortibuoni T., Gristina M., Sinopoli M., Fiorentino F. 2011 Persistence and co-occurrence of demersal nurseries in the Strait of Sicily (central Mediterranean): Implications for fishery management. Journal of Sea Research 66: 29–38

Garofalo G., Fiorentino F., Gristina M., Cusumano S., Sinacori G. 2007. Stability of spatial pattern of fish species diversity in the Strait of Sicily (central Mediterranean). Hydrobiologia 580: 117–124

Gristina M., Fiorentino F., Gancitano V., Massi D., Mirto S., Garofalo G. 2013. The role of juveniles in structuring demersal assemblages in trawled fishing grounds. Estuarine, Coastal and Shelf Science 133: 78-87.

Largier, J. L. 2003. Considerations in estimating larval dispersal distances from oceanographic data. Ecological Applications 13(1): S71-S89.

Lermusiaux, P.F.J., Robinson, A.R., 2001. Features of dominant mesoscale variability, circulation patterns and dynamics in the Strait of Sicily. Deep-Sea Research I Oceanographic Research Paper 48 (9), 1953–1997.

Oceana 2011. MPA Network Proposal for the Mediterranean Sea. MedNet Report. 100 pp.

Ragonese, S., Andreoli, G., Bono, G., Giusto, G.B., Rizzo, P., Sinacori, G., 2004. Overview of the available biological information on demersal resources of the Strait of Sicily. MedSudMed 2004. Report of the Expert Consultation on the Spatial Distribution of Demersal Resources in the Straits of Sicily and the Influence of Environmental Factors and Fishery Characteristics: GCP/RER/010/ITA/MSM-TD-02. MedSudMed Tech. Docs, 2, pp. 67–74

Regione Sicilia 2013. Rapporto Annuale sulla Pesca e sull'acquacoltura in Sicilia 2013

Roberts, C.M., Andelman, S., Branch, G., Bustamente, R., Castilla, J.C., Dugan, J., Halpern, B., Lafferty, K., Leslie, H., Lubchenco, J., McArdle, D., Possingham, H., Ruckleshaus, M., Warner, R., 2003. Ecological criteria for evaluating candidate sites for marine reserves. Ecol. Appl. 13, S199–S214.

Roberts, C.M., Hawkins, J.P., Gell, F.R., 2005. The role of marine reserves in achieving sustainable fisheries. Philos. Trans. R. Soc. B Biol. Sci. 360, 123–132.

Russo T, Parisi A, Garofalo G, Gristina M, Cataudella S, et al. (2014) SMART: A Spatially Explicit Bio-Economic Model for Assessing and Managing Demersal Fisheries, with an Application to Italian Trawlers in the Strait of Sicily. PLoS ONE 9(1): e86222. doi:10.1371/journal.pone.0086222

Savini A., Malinverno E., Etiope G., Tessarolo C., Corselli C., 2009. Shallow seep-related seafloor features along the Malta plateau (Sicily channel – Mediterranean Sea): Morphologies and geo-environmental control of their distribution. Marine and Petroleum Geology 26 1831–1848

SAC-GFCM, 2014. Scientific Advisory Committee. Subcommittee on Stock Assessment. Report of the Fifteenth Session. Bar, Montenegro, 3–4 February 2014. 42pp.

STECF, 2006. Report of the Scientific, Technical and Economic Committee for Fisheries Opinion on 'Sensitive and Essential Fish Habitats in the Mediterranean Sea'. Brussels 3–7 April 2006, http://stecf.jrc.cec.eu.int/.

Tudela, S. 2004 Ecosystem effects of fishing in the Mediterranean: an analysis of the major threats of fishing gear and practices to biodiversity and marine habitats. Studies and Reviews. General Fisheries Commission for the Mediterranean. No. 74. Rome, FAO. 44p.

UNEP-MAP-RAC/SPA 2010. Fisheries conservation management and vulnerable ecosystems in the Mediterranean open seas, including the deep sea. By de Juan, S. and Lleonart, J. Ed. RAC/SPA, Tunis: 101pp.

UNEP-MAP-RAC/SPA. 2014. Status and conservation of fisheries in the Sicily Channel/ Tunisian Plateau. By H. Farrugio & Alen Soldo. Draft internal report for the purposes of the Mediterranean Regional Workshop to Facilitate the Description of Ecologically or Biologically Significant Marine Areas, Malaga, Spain, 7-11 April 2014

Vega Fernández T, Pace ML, Badalamenti F, D'Anna G, Fiorentino F, Garofalo G, Gristina M, Knittweis L, Mirto M, Pipitone C (2012). Application of the MESMA Framework. Case Study: Strait of Sicily. MESMA report, 320 pp.

Zibrowius H. 2003. The "white coral community", canyon and seamount faunas of the deep Mediterranean Sea. SAP BIO RAC/SPA.

## 10. CONTACTS

Ricardo Aguilar
**Research Director – Europe**
raguilar@oceana.org

María José Cornax
Fisheries Manager Campaigner
mcornax@oceana.org

Ilaria Vielmini, PhD
Marine Scientist
ivielmini@oceana.org

T +34.911.440.880
F +34.911.890
eu.oceana.org

**Appendix 8**

**Draft terms of reference for selected meetings**

**Inception meeting of the ACCOBAMS-GFCM 2-year project on interactions between endangered species and fishing activities (7-8 April 2015, Tunis, Tunisia)**

- Inform the coordinators of the pilot actions on the project (objectives, expected results, indicators, state of progress);
- Examine each pilot action and the conditions of its implementation, including an evaluation of needs for technical assistance;
- Present and examine:
    - The terms of reference for the coordinators of the pilot actions
    - The terms of reference of the experts that will guarantee the technical assistance
    - The terms of reference of the expert statistician for the preparation of protocols for the collection of data
- Discuss the modalities for collaboration and communication between the unit in charge of following the project[3] and the coordinators of the pilot actions.

**Second Working Group on Marine Protected Areas (June 2015 Tunis, Tunisia 2015)**

- Assess the information regarding time/area closures and other protection (e.g. national fishing restrictions)
- Follow-up on MPA developments under the MoU between GFCM and UNEP-MAP
- Follow up developments related to Vulnerable Marine Ecosystems (VMEs)
- Evaluate and eventually propose to the SAC new FRA proposals based on new scientific information
- Compile Mediterranean best practices showing evidence of the role of time/area closures and MPAs in enhancing fishing stocks health and fishers' income

**EIFAAC/ ICES /GFCM Working Group on Eels (Turkey, October 2015)**

- Progress the development of the whole-stock assessment methods using the latest available data
- Assess the latest trends in recruitment, stock and fisheries, including effort, and other anthropogenic factors indicative of the status of the stock;
- Progress an eel stock annex and make recommendations for further work;
- Review developments in the standardization of methods for data collection, analysis and assessment and make recommendations for further work;
- Identify relevant data deficiencies, monitoring needs and research requirements;
- Report on significant new or emerging threats to, or opportunities for, eel conservation and management.

[3] Composed of one member of the Secretariat of ACCOBAMS and of one member of the GFCM secretariat, the unit is responsible for supporting the different steps of the project as well as closely following the activities of the project.

**Workshop on the use of simulation and forecast bioeconomic models for the assessment of management measures**

- Review of the characteristics and the assumptions related to the different components of these models (e.g. biological, pressure and socioeconomic);
- Assessment of the potential effects on stocks and fleets of the implementation of different potential management measures on selected case studies, as provided by the first step of the roadmap proposed by SCESS:

    a) Identify biological, stock assessment, pressure and socioeconomic data (time series) and parameters needed to run the model;
    b) Identify components for a sensitivity analysis coherent with the model assumptions;
    c) Definition of biological and economic reference points;
    d) Run the scenarios according to the management measures defined in agreement with stakeholders (cfr. step 1) using the simulation and forecast model;
    e) Make an in deep analysis of the results evaluating if and how these meet the expected behaviour and wrap up model outputs.

- Decide on a reporting format which is adequate for sending the conclusions to the SAC and the Commission and provide the results of the simulations carried out in point 2 to the 18th session of the SAC using this format.

The meeting should be attended by stock assessment experts both on small pelagic and demersal resources and socioeconomic experts.

**Workshops for DCRF focal points on data submission (December 2015 and February 2016)**

- Assess the difficulties faced by the countries in collecting and transmitting the requested data;
- Evaluate the performance of the data submission tools tested during the pilot study;
- Analyze the quality of collected and transmitted data;
- Identify the steps forward including capacity building.

**Appendix 9**

**Template to submit proposals on small-scale fisheries case studies**

**Modèle pour la présentation des profils d'études de cas sur la pêche artisanale**

**1.** Name and geographical location of the case study area / Nom et emplacement géographique de l'étude de cas

**2.** Environmental and socioeconomic characteristics of the study area / Caractéristiques socioéconomiques et environnementales de la zone d'étude

**3.** Data availability and stakeholders implication for data gathering / Disponibilité des données et participation des parties prenantes à leur collecte

**4.** Basic information regarding ongoing projects on small-scale fisheries (if available) / Informations de base sur des projets en cours relatifs à la pêche artisanale (si disponibles)

**5.** Description of small-scale fisheries and other fisheries in the area (management plan if any, etc.) / Description de la pêche artisanale et des autres activités de pêche dans la région (description, plan de gestion le cas échéant, etc.)

**6.** Value chain profile and existing examples of diversification (if any) / Chaîne de valeur et exemples de diversification existants (le cas échéant)

**7.** Description of fisheries co-management regimes in place, planned or about to be established / Description des régimes de cogestion des pêches en place, prévus ou sur le point d'être établis

**8.** Existing Marine Protected Area (MPA) in the study area (if any) / Aires marines protégées (AMP) existantes dans la zone d'étude

**9.** Interactions between small-scale fisheries and other activities in the study area (aquaculture, fisheries, tourism, etc.) / Interactions entre la pêche artisanale et d'autres activités

**10.** Examples of best practices concerning governance and management measures in the study area / Exemples de bonnes pratiques concernant les mesures de gouvernance et de gestion dans la zone d'étude

**11.** Pictures and maps of the proposed study area if available / Images et les cartes de la zone d'étude proposée si disponible

**12.** Any other relevant information / Autres informations

**Appendix 10**

**Concept note**

# RESEARCH PROGRAMME ON STOCK EVALUATION AND MANAGEMENT TOOLS FOR THE MEDITERRANEAN RED CORAL

## INTRODUCTION

### Status quo of red coral fishery management in the Mediterranean region

The Mediterranean red coral (*Corallium rubrum*) is one of the most valuable marine living resources as larger specimens of this gorgonian can be prized several thousand euro/kg. The fishery follows a historic tradition including an artisanal industry specialized on carving and trading artistic objects and jewellery made from the red calcium carbonate skeleton of red coral. Several centuries of intense commercial harvesting led to a decline of yield before more stringent management rules were set up in the 1980s.

Fishery management began considering coral ecology in the 1870s, yet measures have been arbitrary and inconsequent in a fragmented landscape of scientific expertise and policy instruments. Most coral fisheries followed a mining strategy where one stock was depleted, before moving on to explore new areas and harvest new stocks (Tsounis et al. 2010). Declining fishing yields of the highly valuable Mediterranean red coral indicated overexploitation by the 1980s. In response, the General Fisheries Commission for the Mediterranean (GFCM) of the UN Food and Agriculture Organization (FAO) organised several technical consultations that produced guidelines and recommendations for management and highlighted the difficulties posed by this species (sessile and slow growing) to the application of regular models for the evaluation of its stocks. The need to further investigate its biology and distributional range was also put forward, (GFCM 1983, 1988). In 1994 dredging gears for coral harvesting were totally banned in the Mediterranean by several national and EU Laws. However, recent data led to new concerns about the sustainability of coral harvest by highlighting previous and ongoing overexploitation. The US and EU reacted in 2007 and 2009 by proposing to include the family Corallidae in CITES Appendix II to regulate trade (Tsounis et al. 2010). However, the proposals did not receive majority votes, due in part to the hope and promise that local management would provide a less obtrusive solution.

In 2014 the GFCM adopted at its thirty-eighth session "Guidelines for the management of Mediterranean red coral populations" agreed by all its members (GFCM 2014b). These Guidelines are based on conclusions of three technical workshops in 2010, 2011 and 2014 and aim to promote the implementation of two binding recommendations adopted in 2011[1] and 2012[2] which prohibit harvesting at depths less than 50 m, gear other than manual hammer by scuba divers and established a minimum size of 7 mm diameter in all its competence area. These preliminary measures are based on the existing knowledge of red coral populations, but what the process put forward was a peremptory need of undertaking formal assessments of the red coral stocks in the whole basin.

Limited resources and insufficient interdisciplinary work have so far limited the research needed to improve management guidelines, while a lack of human and financial resources hinders local management and efficient enforcement (Tsounis et al. 2013).

### Current challenges

Many meetings and workshops have been held about the ecology of *Corallium rubrum*, yet less than a handful of studies propose sustainable management guidelines in practical terms. Analyzing the workshop proceedings regarding Corallidae management, it becomes apparent that criteria for

[1] Rec. GFCM/35/2011/2 On the exploitation of red coral in the GFCM Competence Area

[2] Rec. GFCM/36/2012/1 on further measures for the exploitation of red coral in the GFCM area

sustainability in line with fishery biology are rarely mentioned. For example, the “survival of the species” is often mistaken for the final objective, in order to avoid extinction. But this point of view has unfortunately permitted the continuation of the ”boom and bust“ mining exploitation that depletes one stock after the other.

Recent data revealed that most stocks are overharvested to an extent where debates about extinction of the species arose (Bussoletti et al. 2010, Bruckner 2009 and 2014). While the risk of global species extinction is debatable, the industry certainly faces the threat of local or even economic extinction of its resource.

Industry representatives petitioned for the legalization of remote operated vehicles (ROVs) to harvest coral without exposing humans to the depths where large corals remain (GFCM 2014). ROV were previously used for prospecting only during limited time windows. While SCUBA diving at 100 – 130 m depth imposes a drastic physiological limitation on diving time, ROV harvest would provide access to the corals without any limitation of depth or time. Furthermore, it is known that harvesting deep populations without any physiological limitation as the one imposed nowadays to the divers, would mean that > 99 % of the world’s *C. rubrum* populations would be subjected to fishing pressure (i.e. except < 1 % that are protected areas), so that overharvesting these last viable stocks would lead to economic extinction. Therefore, the use of such type of devices would need the development of a reliable management system, through an experimental period to test how limitations of time and depth can be applied and controlled, as well as to assess their impact not only on the red coral colonies, but also on the fragile ecosystem that they inhabit.

A sustainable fishery shall provide by definition the same amount of yield perpetually from any stock, and the scientific community is challenged with providing managers with the diagnostic tools to steer the fishery accordingly (Cau et al. 2014). This will require an interdisciplinary approach joining coral ecology with fishery and demographic modelling. Furthermore, the holistic concept of ecosystem approach to manage single species in consideration of the impact on nursery services and overall system productivity and biodiversity is of outmost importance.

This emphasizes the urgent need for improved coral fishery management. Clearly, an adequately funded group of experts combining backgrounds from international policy, management, coral ecology, fishery, is required to improve the fishery management of a species that provides structure to Mediterranean ecosystems.

The GFCM continues to unite Mediterranean researchers, leading the collection of data and development of management guidelines of this resource through the organization of expert workshops (GFCM 2014a). The challenge of funding a project on Mediterranean red coral consists in identifying funding agencies that feel responsible for a conservation oriented programme that contributes to the sustainable management of this fishery. Possibilities include an array of in-kind funding by the GFCM, funding by the EU Commission through various programmes, some of which can include non-European participants in the Mediterranean basin. In addition, foundations are likely to play a crucial role. Close collaboration under single leadership is important, therefore networked programmes are ideal. The GFCM Secretariat will coordinate this effort by acting as the focal point for the information gathering, supervising work packages tasks of the different participants and fostering the transfer of results into management guidelines for the Mediterranean.

## THE PROGRAMME FOR RED CORAL FISHERY MANAGEMENT

### General structure

In accordance with the previous workshop's recommendations (GFCM 1988, 2010, 2011, 2014) the Programme will be articulated around the following five thematic/strategic areas as identified by the workshops:

1. Surveys at sea on unexplored red coral stocks, notably along the North-African coast as well as deep areas in the whole basin to evaluate their role as either reserves or future stocks
2. Compilation of biological data to support modelling of red coral populations

3. Development and/ or adaptation of stock assessment models for red coral
4. Evaluation of the concept of robotic remote (ROV) harvesting
5. Socioeconomic analysis with focus on future development of the industry

The activities are grouped into 4 work packages (WP) as described below.

**General objectives**

The overall focus of the red coral programme is to promote the successful management of red coral fisheries in the Mediterranean Sea, delivering on the ecosystem approach to fisheries (EAF) while improving livelihoods and economies of coastal communities.

**Strategy**

During the first year of the programme, a series of surveys and case studies on fisheries will be undertaken to address gaps of knowledge. An analytical framework to analyze the data is being developed by the GFCM, and shall be improved and expanded upon in the second year.

**Specific objectives**

Provisional identified specific objectives are summarized in the following suggested work packages:

**Work packages**

**WP1: Surveys at sea in selected areas of the Mediterranean basin**

The red coral stocks are being harvested, but little is known about its current abundance along Mediterranean coasts. It is crucial to determine the extension of stocks, identify new stocks, and quantify the abundance of coral in those stocks. Socioeconomic analysis of the fisheries is also required, e.g. with respect to currently used technology and potential for capacity building.

Surveys in off shore waters as well as in seamounts shall explore pristine populations or remote stocks that have been recovering for decades (e.g. Scerchi channel), in order to obtain a case study for comparison and baseline data to be used in production models. In this context, radioisotope analysis shall be used to resolve the maximum age of red coral in pristine habitats.

**WP2: Coral abundance and population structure in stocks**

In established fisheries, the areal extension of stocks needs to be precisely quantified with coordinates by local regional fishery management bodies and communicated to the Secretariat. Surveys need to be undertaken in all fisheries to actually assess and monitor the abundance and size structure of red coral in the stocks.

**WP3: Resilience of deep stocks and connectivity**

Research programmes on the resilience of especially deep stocks are required for imminent policy decisions: Growth rates have been measured, but there is a need for a better understanding of pan-geographical variability and growth rates of deep sea red coral below 100 m depth.

The resilience of shallow and deep stocks depends on their connectivity, as it determines their risk of extinction in case they are overharvested (adult corals do not migrate and dispersal capacities of larvae are unknown). Genetic tools as well as numerical simulations of ocean circulation integrated with data on larval behavior can address gaps of knowledge concerning connectivity.

**WP4: New generation fishery models**

At present, red coral fisheries are managed based on considerations for minimum size according to age at full maturity, but production models are required to specify maximum sustainable yield. Two types of models have been applied to assess two fisheries so far: The Beverton Holt Model in Spain and the Schaefer Model in Sardinia. The development of better models is required for precise yield

predictions, e.g. a matrix models. Furthermore, economic models to determine optimum yield are required.

**WP5: Economical development of the red coral fishery**

An analysis of the socioeconomic structure of industry is required to identify adequate management options. For example the income distribution and potential earnings need to be considered in light of the cost of alternative types of harvesting (including ROV). The analysis might for example lead to the establishment of fishery cooperatives as a management institution, if the amortisation of harvesting robots appears unfeasible.

Solutions for monitoring need to be identified, including estimates of monitoring and enforcement costs. Finally, research on alternative business models is required to consider scenarios of reduced raw material availability.

**Implementation**

GFCM Secretariat, national research centers and relevant partner organizations.

**Programme duration**

2/3 years

**Funding**

The implementation of the regional programme will be subject to available extra budgetary 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.

**Bibliography**

Bruckner AW (2009) Rate and extent of decline in *Corallium* (pink and red coral) populations: existing data meet the requirements for a CITES Appendix II listing. MEPS 397: 319-332

Bruckner AW (2014) Advances in management of precious corals in the family Corallidae: are new measures adequate? Current Opinion in Environmental Sustainability 2014, 7:1–8

Bussoletti, E., D. Cottingham, A. Bruckner, G. Roberts, and R. Sandulli (editors). Proceedings of the International Workshop on Red Coral Science, Management, and Trade: Lessons from the Mediterranean. NOAA Technical Memorandum 2010; CRCP-13, Silver Spring, MD 233 pp.

Cau A, Cannas R, Sacco F, Follesa MC (2014) Adaptive management plan for Red Coral (*Corallium rubrum*) in the GFMC competence area. GFCM-FAO, 2014; online: http://151.1.154.86/GfcmWebSite/SAC/SCMEE/2014/MgmtPlan-RedCoral/docs.html

GFCM (1984) Report of the GFCM Technical Consultation on Red Coral Resources of the Western Mediterranean and their Rational Exploitation. Palma de Mallorca, Spain, 13-16 December 1983. 142p; FAO Fisheries Report 306: 1-142

GFCM (1988) Report of the Second GFCM Technical Consultation on Red Coral of the Mediterranean. Torre del Greco, Italy, 27-30 September 1988. 162p. FAO Fisheries Report 413, 1-159

GFCM (2010) Report of the Transversal workshop on red coral, Alghero (Sardinia), Italy, 16-17 September 2010. online: http://151.1.154.86/GfcmWebSite/SAC/SCESS-SCMEE-SCSA/2010/RedCoral/docs.html

GFCM (2011) Report of the Transversal Workshop on Red Coral, Ajaccio (Corsica), France, 5-7 October 2011. Online: http://151.1.154.86/GfcmWebSite/SAC/SCESS-SCMEE-SCSA/2011/RedCoral/Draft-Report-RedCoral-GFCM-Ajaccio.pdf

GFCM (2014 a) Report of the Workshop on the Regional Management Plan on Red Coral in the Mediterranean, Brussels, Belgium m, 21–22 January 2014; online: https://gfcmsitestorage.blob.core.windows.net/documents/Reports/GFCM-Report-2014-SAC-RedCoral-Brussels.pdf

GFCM (2014b), Report of the Thirty-eighth session of the Commission, Rome, Italy, 19-24 May 2014. Appendix I. Guidelines for the management of Mediterranean red coral populations. Online: https://gfcmsitestorage.blob.core.windows.net/documents/Reports/GFCM-Report-Commission-38-en.pdf

Tsounis G, Rossi S, Grigg RW, Santangelo G, Bramanti L, Gili JM. (2010) The Exploitation and Conservation of Precious Corals. Oceanography and Marine Biology Annual Review. Vol. 48: 161-212

Tsounis G, Rossi S, Bramanti L, Santangelo G (2013) Management hurdles in the sustainable management of *Corallium rubrum*. Marine Policy 39: 361-

**Appendix 11(1)**

**Summary tables of national reports**

**Albania**

**Algeria**

**Bulgaria**

**Croatia**

**Cyprus**

**Egypt**

**France**

**Greece**

**Italy**

**Lebanon**

**Libya**

**Malta**

**Montenegro**

**Morocco**

**Romania**

**Slovenia**

**Spain**

**Turkey**

# Albania

## Section 1 - Description of fisheries

**A. Fishing grounds (GSAs):** 18

**B. Total landings:** 4 980 tonnes (2014); 3 889 tonnes (2013, 9 months)

**C. Fleet:** 587 vessels (2014); 584 vessels (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? |
|---|---|---|---|---|---|
| *Merluccius merluccius* | | Heavy overfishing status | 18 | Y | AdriaMed WG |
| *Parapenaeus longirostris* | | In overexploitation | 18 | Y | AdriaMed WG |

## Section 3 - Status of statistics and information system

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

As a positive recent development in Albania is the establishment and maintenance of a national fleet register. The fleet registry is maintained by MoA based on notifications from vessel owners and information from regional fishery officers who maintain a list of the vessels operating from the four ports. The fleet register is an accurate representation of the licensed vessels in the Albanian fleet. By the re-structuration of Fishery and Aquaculture Authority, which is in progress, the fishery statistics system will be operative and efficient and in line with GFCM requirements.

**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 regularly transferred to GFCM (through the Task 1 tool) and to other RFMOs (like ICCAT).

**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 |
|---|---|---|---|
| | 2013-to date | Biological sampling | The aim of this activity is to verify and test the feasibility of fisheries catch-and-effort data collection at national scale. |
| MEDITS | | Biological sampling | Collection and management of data |
| MEDIAS | | Biological sampling | Collection and management of data |

**B. Socioeconomic studies of fishing communities and fishing sector**

| Research/project title | Duration | Main topic | Description |
|---|---|---|---|
| Survey on socioeconomic data of Albanian fisheries | 2013-2014 | Collection of socioeconomic data | A socioeconomic data collection survey in line with the GFCM requirements; in particular of the GFCM Data Collection reference Framework. |

**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**

In 2014 Albania carried out the following main activities within the framework of AdriaMed:

- 3 scientific surveys (MEDITS, MEDIAS, DEPM survey) jointly carried out with the other Adriatic countries;
- 2 joint stock assessment (*Parapenaeus longirostris*, *Merluccius merluccius*) in GSA 18
- 1 socioeconomic survey (whole Albanian coasts)
- 1 biological sampling on fisheries commercial catches (port of Durres only)
- 5 training courses (acoustic surveys; eggs and larvae data collection; stock assessment models, R environment for statistical analysis, and socioeconomic data collection)
- support to the participation to GFCM related events (SAC, CAQ and their technical bodies)

- active involvement in technical meetings in the Adriatic Sea including Working Groups on demersal and small pelagic fisheries resources, Small Scale Fisheries, Study groups, and technical meetings.

## 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)**
Not new reserve areas and/or MPA from Albanian Authorities.

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

**A. By-catch events**
No data 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**
No data available.

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

**A. By-catch events**
No data available.

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

**A. By-catch events**
No data available.

## Section 12 - Proposals for future research programmes

- Progressing toward the identification of possible exploitation strategies and adequate indicators and reference points for multispecies fisheries
- Assessing the impact of fishing on communities and ecosystems
- Interactions between small scale fisheries and other fisheries

# Algeria

## Section 1 - Description of fisheries

**A. Fishing grounds (GSAs):** 04

**B. Total landings:** 83 231 tonnes (2014); 86 635 tonnes (2013)

**C. Fleet:** 4 569 (2013); 4 403 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? |
|---|---|---|---|---|---|
| *Sardina pilchardis* | 2014 | Increasing biomass | 04 | | |
| *Engraulis encrasicolus* | 2014 | Increasing biomass | 04 | | |
| *Sardinella aurita* | 2014 | Decreasing biomass | 04 | | |

## Section 3 - Status of statistics and information system

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

Le dispositif de collecte de données statistiques, mis en place en Algérie datant des années 1970, a connu diverses modifications et adaptations. Il s'agit d'un dispositif qui s'appuie sur des agents de collecte de données statistiques au niveau des ports de pêche, qui restituent les canevas renseignés aux antennes de pêche dont ils relèvent. Les dites antennes relayent quotidiennement ces données aux Directions de Wilaya qui, à leur tour, les transmettent mensuellement à la Direction Centrale du MPRH, qui consolide, traite et analyse les statistiques recueillies.

La collecte de données statistiques des débarquements se fait de façon exhaustive par les agents collecteurs de deux manières :

**La méthode directe**: L'agent assiste aux débarquements et relève les données directement sur le quai soit par :

- Le recensement: Le collecteur assiste à tous les débarquements et les dénombre sans exception tel qu'il est le cas des sardiniers.

- L'échantillonnage: Le collecteur assiste à quelques débarquements et fait une extrapolation sur le reste des chalutiers et petits métiers.

**La méthode indirecte**: Dans ce cas l'agent n'assiste pas directement aux débarquements mais il obtient l'information par le biais d'un intermédiaire. Cet intermédiaire peut être les agents des gardes côtes, les mandataires, ou les professionnels.

**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**

L'Algérie transmet annuellement des données relatives à la pêche et à l'aquaculture à la FAO, à la CGPM (Task1, Statlant 37A, et SIPAM) ainsi qu'à l'OADA.

**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 |
|---|---|---|---|
| AQUAPECHE 2020 | 2015-2020 | Dynamique des écosystèmes exploités par la pêche | L'objectif est la connaissance de la ressource halieutique et la dynamique de ses stocks exploités |
| AQUAPECHE 2020 | 2015-2020 | Aquaculture marine et continentale | Les thématiques développées dans ce programme traitent de problématiques de recherche liées aux activités aquacoles et à la gestion des ressources aquacoles continentales |
| AQUAPECHE 2020 | 2015-2020 | Ressources vivantes aquatique et environnement | Les projets de recherche visant la connaissance des écosystèmes aquatiques marins et continentaux, notamment sous l'aspect des interactions milieux - ressources (pêche, aquaculture, …). |

### B. Socioeconomic studies of fishing communities and fishing sector

| Research/project title | Duration | Main topic | Description |
|---|---|---|---|
| AQUAPECHE 2020 | 2015-2020 | Analyse des outils de gestion | L'objectif de ce programme est aussi d'étudier les différents scénarii envisageables de l'évolution de la filière pêche et aquaculture résultant de la mise en œuvre de nouvelles mesures de gestion |
| AQUAPECHE 2020 | 2015-2020 | Dynamique des systèmes d'exploitation | Les projets de recherche ciblant l'outil de production avec ces deux composantes majeures, la flottille (effort de pêche, engin de pêche, bio-économie…etc.) et le marin (socioéconomie 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

## 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

**REC.CM-CGPM/36/2012/2** relative à la réduction des captures accidentelles de cétacés dans la zone de compétence de la CGPM : Un Décret présidentiel n° 07-95 du 29 Safar 1428 correspondant au 19 mars 2007 portant ratification de l'Accord sur la conservation des cétacés de ma mer noire, de la Méditerranée et de la zone atlantique adjacente, a été signé à Monaco le 24 novembre 1996. Aussi, une étude socioéconomique et un recensement général des engins de pêche utilisés par nos pêcheurs, notamment le diamètre du monofilament utilisé, sont lancés, afin d'examiner la possibilité d'application de la recommandation suscitée dans la législation nationale. Sur la base des informations récoltées concernant l'engin de pêche et les impacts, **il sera procédé à l'amendement du décret 03-481 du 19 Chaoual 1424 correspondant au 13 décembre 2003 fixant les conditions et les modalités d'exercice de la pêche.**

**REC.MCS-CGPM/35/2011/1** concernant l'établissement d'un journal de bord de la CGPM, amendant la recommandation CGPM 34/2010/, une réflexion à l'échelle nationale est en cours avec les professionnels de la pêche, dans la perspective d'amender l'arrêté du 18 Rabie El aouel 1427 correspondant au 16 avril 2006 fixant le joural de pêche.

**REC.MCS-CGPM/33/2009/7** relative aux normes minimales pour l'établissement d'un système de surveillance des navires par satellite (ssn) dans la zone de compétence de la CGPM. Dans le cadre de la modification de la loi sur la pêche et l'aquaculture lancée en 2014 et qui est en cours d'adoption, un Projet de décret exécutif portant institution et définition des modalités de mise en œuvre du dispositif de Suivi, d'Analyse des Activités de Pêche et des Débarquements des produits de la pêche (D.S.A.A.P.D) est en cours de finalisation, ce qui permettra la transposition de la recommandation de la CGPM à l'échelle nationale, et également la transmission des données sur le VMS.

**REC.MCS-CGPM/32/2008/1** concernant un schéma régional relatif aux mesures du ressort de l'état du port dans le contexte de la lutte contre la pêche illicite, non déclarée et non réglementée dans la zone de compétence de la CGPM. Par ailleurs, une étude portant « Appui à l'évaluation des options stratégiques pour l'amélioration de la gestion et le développement des ports et abris de pêche », est en cours de finalisation, et porte notamment sur les résultats suivants :

- Résultat 1 : Les obstacles à une meilleure gestion et au développement des ports et abris de pêche liés à des dispositions législatives ou règlementaires,
- Résultat 2: Des recommandations concernant le statut juridique
- Résultat 3:La présentation de l'expérience de plusieurs pays de l'UE en matière de gestion des ports de pêche fonde le choix de plusieurs options d'intervention publique à analyser dans le contexte algérien.

- Résultat 4: La consultation des parties-prenantes fournit des éléments d'aide à la décision qui sont présentés sous la forme d'une analyse d'impacts des options prédéfinies de gestion des abris de pêche/sites d'échouage sont formulées.

L'étude est destinée à recueillir l'adhésion la plus large des parties prenantes pour la validation du plan opérationnel nécessaire à la transposition de la recommandation de la CGPM à l'échelle nationale, et également la transmission des données « Port state measure ».

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

**A. By-catch events**

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

**A. By-catch events**

## Section 12 - Proposals for future research programmes

- Appui au projet "Observatoire socioéconomique" notamment pour compléter l'application d'échantillonnage statistique, et ce, conformément aux exigences de la matrice TASK1 de la CGPM. L'objectif du projet est la mise en place de la version web de l'Application SSPAL (Système Statistique de la Pêche en Algérie).
- Assistance pour la mise en place de récifs artificiels avec étude d'impacts sur la ressource halieutique.
- Cartographie des habitats marins sensibles en vue de la mise à niveau de la réglementation nationale dans le domaine de la protection des ressources naturelles nationales et un réaménagement de l'effort de pêche national.
- Etude du déterminisme dans la dynamique des stocks exploités par le développement d'approches écosystémique dans le suivit des populations marines.
- Renforcement de la coopération régionale ;
- Dans le cadre de la mise en œuvre des décisions de la CGPM, il y a lieu d'initier des projets fédérateurs ainsi que, études de cas et expertise dans les différents domaines de recherche pêche et aquaculture, fin de soutenir et apporter l'assistance technique et le savoir-faire aux « Etats membres de la Commission».
- Favoriser le processus de dialogue et les mesures de prévention.

# Bulgaria

## Section 1 - Description of fisheries

**A. Fishing grounds (GSAs):** 29

**B. Total landings:** 8 547 tonnes (2014); 9 507 tonnes (2013);

**C. Fleet:** 2 005 (2014); 2 043 vessels (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? |
|---|---|---|---|---|---|
| *Psetta maxima* | | overexploited and in overexploitation | 29 | | |
| *Sprattus sprattus* | | sustainably exploited | 29 | | |
| *Squalus acanthias* | | depleted | 29 | | |
| *Engraulis encrasicolus ponticus* | | in overexploitation | 29 | | |
| *Trachurus trachurus* | | in overexploitation | 29 | | |

## 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. Socioeconomic 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 |
|---|---|---|---|
| PERSEUS FP7 | | | Policy-oriented marine Environmental Research for the Southern European Seas. |
| | | Driftnets | Study in support of the review of the EU regime on the small-scale driftnet fisheries |
| | | By-catch | Adverse fisheries impacts on cetacean populations in the Black Sea |
| | | MSFD | Technical and administrative support for the joint implementation of the Marine Strategy Framework Directive (MSFD) in Bulgaria and Romania |

## 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**

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.

## 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 2014.

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

**A. By-catch events**

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

**A. By-catch events**

## Section 12 - 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

## Section 1 - Description of fisheries

**A. Fishing grounds (GSAs):** 18, 19

**B. Total landings:** 74 705 tonnes (2013); 62 297 tonnes (2012)

**C. Fleet:** 7 733 vessels (2015); 7 770 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? |
|---|---|---|---|---|---|
| *Sardina pilchardus* | 2013 | high exploitation rate | 17 | Y | Y |
| *Engraulis encrasicolus* | 2013 | overexploited and in overexploitation | 17 | Y | Y |
| *Solea solea* | 2013 | overfished | 17 | Y | |
| *Merluccius merluccius* | 2013 | 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. The Fleet Register is a centralized structure, where field offices enter the data which are all immediately recorded and stored in a central database.

**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**

Currently, Croatia is developing a central DCF-GFCM database with information on technical and socioeconomic data on all vessels included in the Fleet Register in each referent year. By the end of 2015, linking of databases with the Institute of Oceanography and Fisheries databases is planned to incorporate biological data in the central DCF-GFCM database. All relevant statistics in regards to DCF and GFCM rules are incorporated within the central database in order to facilitate the preparation of reports.

**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 |
|---|---|---|---|
| MEDITS | 1996-to date | 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 |
| National Data Collection Programme | | Evaluation of fish resources | Monitoring of small pelagic stock by acoustic survey as independent evaluations of stocks abundance as well as collection of biological and fisheries related data |

**B. Socioeconomic studies of fishing communities and fishing sector**

| Research/project title | Duration | Main topic | Description |
|---|---|---|---|
| National Data Collection Programme | | Economic variables | Collection of the socioeconomic variables |

### C. Marine environment studies

| Research/project title | Duration | Main topic | Description |
|---|---|---|---|
| Permanent national monitoring project | | Environmental status, renewable energy | Monitoring of biotic and abiotic parameters relevant to the marine environmental and renewable resources. Collection of environmental data related to the marine ecosystems |

## 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 FAO 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 2014.

## 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

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.

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

### A. By-catch events

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

### A. By-catch events

## Section 12 - Proposals 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.

# Cyprus

## Section 1 - Description of fisheries

**A. Fishing grounds (GSAs):** 14, 15, 21, 25, 26

**B. Total landings:** 1 169 tonnes (2013)

**C. Fleet:** 404 vessels (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? |
|---|---|---|---|---|---|
| *Spicara smaris* | 2013 | Sustainable exploitation | 25 | Y | FAO EastMed PWGSA |

## Section 3 - Status of statistics and information system

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

The Cyprus National Database for the collection and storage of data in the fisheries sector is comprised of the following databases: i).the Data Collection Network System (Data Transmission), ii) the Central Database iii) the Fishing Vessel Fleet Register (FVR) and iv) the Electronic Reporting System (ERS). The database facilitates the storage of data and its transmission to the relevant International bodies.

**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**

The system comprises a series of sub-databases which include the following data: Fishing capacity, Fishing effort, Catches (Landings and Discards), Catch per Unit Effort data series, Biological Measurements, Economic data on the fishing fleet and processing industry. Updates of the National Database are made whenever necessary, for incorporating new requirements. All the data collected by the National database are dealt with confidence. Data access is limited to authorized personnel.

**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 Data Collection Programme | | Biological-Metier-related variables | Data on landings and discards for all the métiers foreseen were collected during 2014 through on-board and on-shore sampling. |
| National Data Collection Programme | | Stock-related variables | Data collection for the stock-related variables (age, length, weight, sex, maturity and fecundity). |
| MEDITS | | Biological sampling | The aim of the survey is to collect biological data from the Cyprus demersal species and creating time series of abundance and biomass indices and length frequency distributions. |

**B. Socioeconomic studies of fishing communities and fishing sector**

| Research/project title | Duration | Main topic | Description |
|---|---|---|---|
| National Data Collection Programme | | Economic variables | Collection of the socioeconomic variables |
| | | Socioeconomic surveys | To assess the economic situation of the fisheries sector in Cyprus |

### C. Marine environment studies

| Research/project title | Duration | Main topic | Description |
|---|---|---|---|
| | | Marine biodiversity | Research on marine ecology with a particular emphasis on marine biodiversity |
| | | Coastal ecosystems | Studies on the effects on the marine ecosystem from various anthropogenic activities, such as aquaculture, desalination, breakwaters, sewage etc. |
| | | Alien species | Monitoring studies on the appearance and expansion of invasive alien species in the marine environment of Cyprus |
| | | Eutrophication | Monitoring of eutrophication events by nuisance macroalgae |
| | | Sensitive species | Protection and conservation programmes for endangered aquatic species and their habitats, e.g., programme for the conservation of marine turtles (*Chelonia mydas* & *Caretta caretta*), monk seal (*Monachus monachus*), *Posidonia* seagrass meadows (*Posidonia oceanica*) etc. |
| | | Artificial reefs | Studies in the framework of the establishment of marine protected areas, including the development of artificial reefs. |
| | | Pollution | Monitoring of marine ecological and environmental parameters, as well as estimation of pollutants in marine organisms |
| | | Coastal waters | Assessment of the Ecological Quality Status of coastal 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

FAO EastMed 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)

Currently, five coastal/marine areas established for ARs development have been declared protected (fishing is forbidden) by relevant Ministerial Decrees.

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

### A. By-catch events

No information on by-catch of cetaceans was reported or recorded by the Department of Fisheries during 2013 within GSA 25.

## 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

Cyprus fishing fleets catch shark species only as bycatch, and in general such catches are relatively negligible. Information on shark catches are collected from various sources, i.e. logbooks, sales notes and receipts, inspection reports, observers on board, port sampling and interviews. It is noted that efforts are made for improving the identification of shark species by the fishermen and the DFMR personnel, and for recording shark catches on a species level. For 2013, the collected data regarding shark species that were caught by Cyprus fishing fleets and are included in Annex II or III of the SPA/BD Protocol are provided in the following table:

| Incidental catches of species listed in Annex II of SPA/BD Protocol | | |
|---|---|---|
| **Species** | **Catch weight** | **Comments** |
| ***Rhinobatos* spp.**[1] | **45 kg** | **Landed, infringement reported by inspectors** |
| | | |
| **Bycatch of species included in Annex III of SPA/BD Protocol** | | |
| **Species** | **Catch weight** | **Comments** |
| ***Centrophorus granulosus*** | **6 kg** | **Landed** |
| **Triakidae /(*Mustellus* spp.)** | **10 kg** | **Landed** |
| ***Prionace glauca*** | **255 kg** | **Landed** |
| ***Squalus* spp.** | **33 kg** | **Landed** |

[1] Infringements cited

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

### A. By-catch events

An average of 0.16 turtles (10.7 kg) were caught per fishing day, or 1 turtle every 6.35 fishing days weighing an average of 67.8 kg. All turtles were released alive. In 2013, due to the financial crisis in Cyprus and a substantial reduction of the available budget for the implementation of the National Programme, no subcontracting could be made and the data collection was arranged to be done by inspectors of the Control Division of DFMR during landing inspections. No sampling at sea could be made due to the limited resources.

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

### A. By-catch events

No information on seabirds' incidental taking was reported or recorded by the Department of Fisheries during 2013 within GSA 25.

## Section 12 - Proposals for future research programmes

- No research suggestions for consideration by SAC.

# Egypt

## Section 1 - Description of fisheries

**A. Fishing grounds (GSAs):** 26

**B. Total landings:** 63 027 tonnes (2013); 69 332 tonnes (2012)

**C. Fleet:** 4 278 (2013); 4 464 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? |
|---|---|---|---|---|---|
| *Pagellus erythrinus* | 2011 | in overfishing | 26 | | |
| *Euthynnus alletteratus* | 2013 | overexploited | 26 | N | |
| *Saurida undosquamis* | 2012 | in overfishing | 26 | Y | |
| *Mullus surmuletus* | 2013 | in overfishing | 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 by two methods (Census and Sampling). 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 |
|---|---|---|---|
| | 2012-2013 | Stock assessment | Three marine surveys to study the geographical distribution, relative abundance and biological parameters of the pelagic and demersal species 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. Socioeconomic studies of fishing communities and fishing sector**

| Research/project title | Duration | Main topic | Description |
|---|---|---|---|
| | | Socioeconomic data | A sampling survey in order to investigate the main socioeconomic characteristics of the fishing vessels by type of fishery, the study was conducted with the FAO 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)**

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 15 June each year (which is not applied last three years).

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

**A. By-catch events**

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

**A. By-catch events**

## Section 12 - Proposals for future research programmes

- There is a strong need for the appropriate measures of stock biomass and stock abundance, of the commercial species which would provide real stock information upon which management strategy could be developed, some of them may cover by FAO EastMed project.
- Mapping of the most important spawning and nursery grounds for the establishment of marine protected areas to be used as an effective fisheries management tool is needed.
- 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):** 07, 08

**B. Total landings:** 5 779 tonnes (2014, provisional data)

**C. Fleet:** 1 280 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* | | | 07 | | |
| *Sardina pilchardus* | | | 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 |
|---|---|---|---|
| OBSVENTES | 2010-to date | Echantillonnage biologique | Programme d'échantillonnage biologique et paramètres biologiques. 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. |
| MEDIAS | 2008-to date | Biological sampling | |
| MEDITS | 1993-to date | Biological sampling | Campagne française de chalutage annuelle d'évaluation des ressources démersales. |
| OBSDEB | | Enquêtes d'activités et des embarquements 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. |
| SELPAL | 2013-2015 | Thon rouge | Programme sélectivité de la flottille palangrière ciblant le thon rouge dans le golfe du Lion. |

## B. Socioeconomic 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 | 2010-to date | 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. |
| RéPAST | 2015 | By-catch and discards | Ce nouveau projet financé par France Filière Pêche est une extension du projet SELPAL qui vise à évaluer les taux de mortalité de la raie violette ou pélagique (*Pteroplatytrygon violacea*), espèce très fréquemment capturée par la pêcherie palangrière ciblant le thon rouge, lors de la remontée de l'engin; à clarifier les temps de résidence et leurs habitats critiques, à connaitre leurs mouvements à petite et grande échelles, à tester l'existence de sous-populations différenciées génétiquement |

## 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)**

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

**A. By-catch events**

| **Espèce/Engin** | | CHALUT | FILET | HAMECON | Non déterminé | Total |
|---|---|---|---|---|---|---|
| *Caretta caretta* | Indéterminé | 1 | 23 | | | *24* |
| | Mort | 3 | 18 | 2 | 1 | *24* |
| | Vivant | 44 | 21 | 9 | 47 | *121* |
| *Dermochelys coriacea* | Vivant | | 1 | | 2 | *3* |
| *Lepidochelys kempii* | Mort | | 1 | | | *1* |
| *Chelonia mydas* | Vivant | | 2 | | | *2* |
| Non identifiée | Indéterminé | | | | 3 | *3* |
| | Mort | | 2 | | 7 | *9* |
| | Vivant | 1 | 1 | 1 | 40 | *43* |
| **Total général** | | **49** | **67** | **8** | **100** | **230** |

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

**A. By-catch events**

## Section 12 - Proposals for future research programmes

# Greece

## Section 1 - Description of fisheries

**A. Fishing grounds (GSAs):**

**B. Total landings:** 63 638 tonnes (2013 provisional data); 60 725 tonnes (2012);

**C. Fleet:** 15 706 (31/12/2014); 15 844 vessels (31/12/2013);

## 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* | 2000-2008 | Fully exploited | 22 | | |
| *Sardina pilchardus* | 2000-2008 | | 22 | | |
| *Mullus barbatus* | 2009 | Healthy stocks | 22, 23 | | |
| *M. surmuletus* | 2009 | Healthy stocks | 22, 23 | | |
| *Merluccius merluccius* | 2009 | Slight overfishing | 22, 23 | | |
| *Parapeneus longirostris* | 2009 | Slight overfishing | 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 fisheries statistics data keep getting more accurate and valid. The pilot introduction of OSPA (Integrated Information Technology System) and the gradual implementation of ERS gives the system an immediate and valid aspect. December 2014 only the BFT fishery is obliged to use ERS, but given the time, the large pelagics fishery, the trawlers and purse seines, are bound to introduce into the system and start obligatory using it. Since The Hellenic Statistical Authority (EL.STAT) remains the administrative body gathering fisheries data.

**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**

The Directorate General for Fisheries (Ministry of Rural Development, and Food) collects data on: a) fish landings for specific species (BFT, swordfish and albacore) daily, pursuant ICCAT recommendations and the EU legislation; b) trade data concerning imports, exports and re-exports of swordfish and big-eyed tuna; c) imports of fishery products from third countries; d) fish landings from vessels that land catches to foreign ports. Moreover, the National Fleet Registry (NFR) is kept and includes vessels technical characteristics. NFR is the provider to Community Fleet Registry.

**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 | 2011-2014 | Biological-Metier-related variables | Data on landings and discards for all the métiers foreseen were collected during 2014 through on-board and on-shore sampling. |
| National Fisheries Data Collection Programme | 2011-2014 | Stock-related variables | Data collection for the stock-related variables (age, length, weight, sex, maturity and fecundity). |
| National Fisheries Data Collection Programme | 2011-2014 | Eel monitoring | Annual and 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 | 2011-2014 | Biological sampling | |
| MEDIAS | 2011-2014 | Biological sampling | |

| Research/project title | Duration | Main topic | Description |
|---|---|---|---|
| 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. |
| STOCKMED | | 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). |
| | | 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. |
| EPILEXIS | | Gear selectivity | Selectivity of the diamond and square mesh of the trawl cod end, biological and economic consequences and fish behavior comparative study |
| MEDPEL | | Catch and by-catch rate | 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. |
| CREAM | | EAF | Coordinating research in support to application of EAF (Ecosystem Approach to Fisheries) and management advice in the Mediterranean and Black Seas. |

### B. Socioeconomic studies of fishing communities and fishing sector

| Research/project title | Duration | Main topic | Description |
|---|---|---|---|
| National Fisheries Data Collection Programme | 2011-2014 | Economic variables | Collection of the socioeconomic variables |
| BEMTool | | Bio-Economic Modelling tools | Development of an integrated bio-economic modeling tool to develop and support multi-objective approaches for fisheries management. |
| 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 socialeconomic local development of small-scale fishing communities thus favouring the diversification of fishing activities and the socioeconomic 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. |
| DeFishGear | | Coastal ecosystems and pollution | Improving marine, coastal and delta rivers environment by joint management in the Adriatic area through its contribution to reduce pollution of marine environment with litter by addressing the source of marine litter pollution related to fisheries, by direct removal of marine litter from the environment through promoting "Fishing-for-litter' and "Derelict fishing gear management system" activities and by proposing common monitoring programme of marine litter in all participating countries. |
| ADRIPLAN | | Marine spatial planning | The project aims to deliver a commonly-agreed approach for the development of cross-border Maritime Spatial Planning (MSP) in the Adriatic-Ionian Macro-Region, focusing mainly on two study areas, one in Northern Adriatic, and a second one in Southern Adriatic - Northern Ionian Sea. |
| ECODISC | | By-catch and discards | ECODISC aims at understanding how fisheries discards affect ecological processes and biogeochemical cycles, and how this can be managed. These are addressed by a series of experiments and tools (maps, statistical and mathematical models) that aim to elucidate discards fate and their use as a food source by the ecosystem communities, and integrate this information to explore ecosystem effects of a possible application of partial or full discards ban. |
| 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. |
| 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 |

| Research/project title | Duration | Main topic | Description |
|---|---|---|---|
| | | | 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. |
| DISCATCH | | By-catch and discards | Pilot project on catch and discard composition including solutions for limitation and possible elimination of unwanted by-catches in trawl net fisheries in the Mediterranean. |
| ECOPARKS | | Artificial reefs | The project aims at the establishment of two artificial reef parks in the island of Chios and Limnos. The parks will be equipped with innovative devices which act as artificial reef but provide extended aggregation and protection to juvenile fish against a limited cost compared with the conventional artificial reefs. The new devices enable the fishing industry to apply large-scale fish protection programmes Aggregating Devices (FADs). The parks will serve as exhibition installations for the fishing industry and policy makers. |

## 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 2014-December 2014):

- Greek researchers from Public Institutes, along with other colleagues from the EastMed Project staff and from other participating countries, continued working on the ongoing projects.

## 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 incidental by-catch of seabirds was reported during 2014.

## 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**

Sharks and rays are not target species by the Greek fishery. Data, concerning incidental sharks and rays by-catch in 2014, was monitored by the National Fisheries Data Collection Programme. At the time being, existing data is being processed by the competent authorities and will soon be available.

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

### A. By-catch events

No incidental by-catch of sea turtles was reported during 2014.

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

### A. By-catch events

No incidental by-catch of cetaceans was reported during 2014.

## Section 12 - 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:** 172 624 tonnes (2013); 195 800 tonnes (2012)

**C. Fleet:** 12 582 vessels (2013); 12 897 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* | 2012 | Exploited unsustainably | 12, 13, 14, 15, 16 | Y | |
| *M. merluccius* | 2013 | Exploited unsustainably | 18 | Y | |
| *M. merluccius* | 2013 | Exploited unsustainably | 09 | N | Y |
| *M. merluccius* | 2013 | Exploited unsustainably | 10 | Y | |
| *M. merluccius* | | Exploited unsustainably | 17 | Y | |
| *Mullus barbatus* | 2013 | Harvested sustainably | 10 | Y | |
| *M. barbatus* | 2013 | Exploited unsustainably | 09 | N | Y |
| *M.barbatus* | 2013 | Exploited at levels close to sustainability | 18 | N | Y |
| *M. barbatus* | | Exploited unsustainably | 11 | N | Y |
| *M. barbatus* | 2012 | Exploited unsustainably | 17 | N | Y |
| *M. barbatus* | 2012 | Exploited unsustainably | 19 | Y | Y |
| *Solea vulgaris* | 2013 | Exploited unsustainably | 17 | Y | |
| *Mullus surmuletus* | 2012 | Exploited unsustainably | 15, 16 | Y | Y |
| *Nephrops norvegicus* | 2013 | Exploited unsustainably | 09 | N | Y |
| *Nephrops norvegicus* | 2013 | Exploited unsustainably | 18 | N | Y |
| *Parapenaeus longirostris* | 2013 | Exploited unsustainably | 18 | Y | |
| *P. longirostris* | 2013 | Exploited unsustainably | 12, 13, 14, 15, 16 | Y | |
| *P. longirostris* | 2013 | Harvested sustainably | 09 | N | Y |
| *P. longirostris* | 2012 | Exploited unsustainably | 19 | N | Y |
| *P. longirostris* | 2013 | Exploited unsustainably | 10 | Y | |
| *Aristaeomorpha foliacea* | 2013 | Exploited unsustainably | 19 | Y | |
| *Micromesistius poutassou* | 2013 | Exploited unsustainably | 09 | N | Y |
| *Engraulis encrasicolus* | 2013 | Overexploited and in overexploitation | 17 | Y | |
| *Sardina pilchardus* | 2013 | Intermediate abundance, exploitation status uncertain | 16 | Y | |
| *S. pilchardus* | 2013 | Biomass above reference point and in overexploitation | 17 | Y | |

## Section 3 - Status of statistics and information system

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

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.

**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.

## 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 | 2014 | Fisheries | Module on evaluating the fishing sector |
| MEDITS | 2014 | Biological sampling | |
| MEDIAS | 2014 | Biological sampling | |
| | | Stock assessment | Optimization of sampling methodologies for stock assessment |
| | | Stock assessment | Preliminary assessment of the main species of Elasmobranchs |
| | | Fish products safety | Nutritional and safety aspects of fish species from fishery and aquaculture |
| | | Fish products safety | 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 |
| | | Discards | Monitoring and assessment of discards, both for small pelagic species and for demersal for the implementation of art. 15 of Reg. (UE) 1380/2013. |
| | | Management plans | Development of an innovative technical scientific framework for the preparation of the management plans for fisheries for the implementation of the Reg. (UE) n. 1380/2013. |

### B. Socioeconomic studies of fishing communities and fishing sector

| Research/project title | Duration | Main topic | Description |
|---|---|---|---|
| | | Socioeconomics indicators | Productive structures analyses and socioeconomic characteristics of Italian Fisheries. |
| | | | Sustainability and management tools for Italian fishery: an impact assessment of TURF |
| National Fisheries Data Collection Programme | 2014 | Economics | Module on evaluating the economic situation |
| | | Bio-economy | Bio-economic models |

### C. Marine environment studies

| Research/project title | Duration | Main topic | Description |
|---|---|---|---|
| National Fisheries Data Collection Programme | 2014 | Marine ecosystem | Module on evaluating the effects of fishing sector on the marine ecosystem |
| | | By-catch | Assessment of by-catch of protected species in the pelagic trawl |
| | | Bio-economy | Bio-economic models |

## 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*, GSA 12-16) have been produced in the south-central Mediterranean (Straits of Sicily);
- 7 joint stock assessment (*Parapenaeus longirostris GSA 18, Merluccius merluccius GSA 17 and GSA 18, Solea solea GSA 17, Engraulis encrasicolus GSA 17, Sardina pilchardus GSA 17*) have been produced in the Adriatic Sea;
- 2 stock assessment (*Mullus surmuletus* GSA 26, *Saurida undosquamis* GSA26 ,and *Aristaeomorpha foliacea* GSA 19) have been produced with the support of the EastMed Project.
- Involvement either trainer and/or trainees in 10 theoretical or on-the-job training activities on the collection, storing and processing of fishery related data;
- Involvement in 32 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 support has been provided to Turkey, Egypt, Lebanon, Albania, and Montenegro for the establishment of a monitoring system for fisheries (socioeconomic and catch and effort).

## 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

- In accordance with the provisions of the **Recommendation GFCM/38/2014/1** Italy is in the process of prohibiting the use of any gears targeting small pelagics within 6 M with derogation for fishing vessels with LoA>15m (within 4 M), from 1 to 30 July 2015 from Monfalcone to Termoli.
- In accordance with the provisions of the **Recommendation GFCM/38/2014/1** Italy is in the process of impose a maximum of 180 fishing days per year, not exceeding 20 days per month. For 2015, for vessels targeting specifically anchovy, the limit is 144 fishing days per year.

## Section 7 - Environment protection measures

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

- Information on the main Italian Marine Managed Areas (MMA) were reported recently reviewed in Pipitone et al. (2014). Results showed that fish biomass has increased and some evidence of ecological and socioeconomic benefits has been documented.
- Researches on identification of nurseries to be protected by the towed gears, impact of towed gears is considered relevant for improving the exploitation of commercial stocks and marine ecosystems, since reduction in juvenile mortality is considered as one of the main prerequisite for the future sustainability of trawl fisheries in the Mediterranean, (eg Garofalo et al., 2011).
- Very recent analyses have revealed considerable variation in current nursery protection with an high protection for coastal species (e.g. red mullet) and a minimal protection seen for deeper species (e.g. hake) (Colloca et al., 2015).
- A high interspecific spatial overlap between nursery areas was mainly found along the shelf break indicating a high potential for the implementation of conservation measures to protect key recruitment areas.

- An original approach to assess the effects of nurseries closure on stock status and fishery performance was recently given by the SMART model (Russo et al., 2014). This approach combined geo-referenced information from trawl surveys, monitoring of commercial catches, and VMS data for assessing bio-economic feedback in different management scenarios.
- SMART is applied to demersal fishery in the Strait of Sicily, one of the most productive fisheries of the Mediterranean Sea. According to the model a series of strategically designed areas of trawling closures could significantly improve the resource conditions of demersal fisheries in the Strait of Sicily.

## 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* | 36 | 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 | 3 | | | Mid-water pair trawls | | 17 | Y | | **0** |
| *Mustelus mustelus* | n. a. | 324 | | | Mid-water pair trawls | | 17 | Y | | **0** |
| *Mustelus spp.* | III | 6 | | | Mid-water pair trawls | | 17 | Y | | **0** |
| *Myliobatis aquila* | n. a. | 227 | | | Mid-water pair trawls | | 17 | N | | **227** |
| *Prionace glauca* | III | 2 | | | Mid-water pair trawls | | 17 | Y | | **0** |
| *Pteromylaeus bovinus* | n. a. | 8 | | | Mid-water pair trawls | | 17 | N | | **8** |
| *Squalus acanthias* | III | 414 | | | Mid-water pair trawls | | 17 | Y | | **0** |

## Section 10 - 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* | 49 | 2013 | Mid-water trawlers | | 17 | | 10 | 39 | |

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

### A. By-catch events

No incidental by-catch

## Section 12 - Proposals for future research programmes

- Definition of Fisheries at a multispecies – multi fleet basis; fishing effort limits at the multispecies level should be developed. Assessment of strategies for the optimal yield of the fishery resources, in line with the objectives of MSY and EAF of the new CFP, with the identification of new indicators and reference points for a multi-species fisheries.
- Assessment of effects of management steps such as harvesting plans, use of non-damaging gear or spatial management (FRA, MPA, fishery rotational areas) in the view of marine spatial planning. Ecosystem effects of the fisheries, to be considered in spatial terms with the aim to reduce the impact on the sea bed and restore fishery sustainability.
- In the context of Ecosystem Approach, development of a common data base, shared by countries, using georeferentiation and reporting both bathymetric, substratum features and biocenoses, essential fish habitat and including inshore and offshore areas; Coupling of hydrological information with biological data should be improved at regional level.

Further research topics 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 programme;
- Assisting the development of a common geo referred data base reporting both bathymetric, substratum features, biocenoses, and fishing grounds at regional level.

# Lebanon

## Section 1 - Description of fisheries

**A. Fishing grounds (GSAs):** 27

**B. Total landings:** 2 981 tonnes (2014); 4 540 tonnes (2012)

**C. Fleet:** 1 661 vessels (2014); 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? |
|---|---|---|---|---|---|

Not available

## 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**

EastMed Project Pilot Catch Assessment Survey: to contribute to the improvement and implementation of a "National Artisanal Fisheries Dependent Data Collection Programme" in Lebanon.

**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 |
|---|---|---|---|
| Historical Catch Reconstruction for fisheries in Lebanon at the MRCZM-IOE-UOB | 2014 | Data collection | To reconstruct the Lebanese historical catch for Lebanon since 1950 based on available historical data. |

**B. Socioeconomic studies of fishing communities and fishing sector**

| Research/project title | Duration | Main topic | Description |
|---|---|---|---|

Not available

**C. Marine environment studies**

| Research/project title | Duration | Main topic | Description |
|---|---|---|---|
| CANA | | Oceanographic surveys | Establishing Monitoring and Sustainable Development of the Lebanese Sea |

## 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:

- Pilot Survey on Fisheries Dependent Data Collection in Lebanon Including Training

## 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**

Not available

## Section 7 - Environment protection measures

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

Not available

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

**A. By-catch events**

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**

Few incidents of bycatch were recorded. Citations were given to infringer fishermen. Two unidentified large specimens were returned to sea.

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

**A. By-catch events**

Not available

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

**A. By-catch events**

Not available

## Section 12 - Proposals for future research programmes

- Promote and integrate fisheries research as part of Ecosystem Based Management
- Support fish stock assessments of commercial species in Lebanon
- Identify nursery grounds of priority species and recommend protection measures for management of the fisheries sector
- Support research initiatives for the proper restoration of degraded coastal and marine sites
- Identify and monitor common stocks in the East-Mediterranean Basin
- Monitor invasive species in Lebanese waters and their population dynamics
- Research the impact of invasive species on commercial stocks in particular and the coastal marine ecosystem in general with a special emphasis on *L. scleratus*
- Update on a yearly basis the list of coastal marine biodiversity richness in Lebanese territorial waters
- Monitor marine food chains and webs in the perspective of climate change with a special emphasis on macro-primary producers

# Libya

## Section 1 - Description of fisheries

**A. Fishing grounds (GSAs):** 21

**B. Total landings:** No accurate total landing of fish in 2014 due to difficulties to collect all the production from our (13) offices which distributed along the whole Libyan coast

**C. Fleet:** 4 641 (2014)

## Section 2 - Status of stocks of priority species

| Species/Stock | Ref. year | Stock status | GSA | Presented to GFCM WGs? | Presented to any other forum? |
|---|---|---|---|---|---|
| *No stock assessment and no species evaluated during the intersessional period* | | | | | |

## Section 3 - Status of statistics and information system

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

Libya has signed two projects with FAO (FAO UTF Project) to create statistical and information system, projects formulation were accomplished in November 2014.

**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**

MedSudMed to collect data on bottom trawl fisheries and *Parapenaeus longirotris* and *Merluccius merluccius* catch in Libya

**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 |
|---|---|---|---|
| | 2008 and 2010 | Acoustic surveys | Finalizing reports of acoustic and ichthyoplankton surveys conducted along the Libyan coast |
| | | Demersal species | Finalizing report on "phenomenon of current dusky grouper (*E. marginatus*) mortalities in Libya: diagnosis and revising" |

**B. Socioeconomic studies of fishing communities and fishing sector**

| Research/project title | Duration | Main topic | Description |
|---|---|---|---|
| *No studies* | | | |

**C. Marine environment studies**

| Research/project title | Duration | Main topic | Description |
|---|---|---|---|
| *No studies* | | | |

## Section 5 - Involvement in activities of FAO regional projects

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

- 12th meeting of the MedSudMed coordination committee in Tunisia, 14-16 April 2014.
- Meeting on Deep-water rose shrimps, European hake and related fisheries in the MedSudMed Project area Malta, 24 26 June 2014.

## 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)**

- Trawl fishing for demersal fish species was prohibited during the period June-July 2013.
- Fishing for sponges in Libyan waters is being forbidden from 1 November to 30 May of each year (no sponge harvest this year).

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

**A. By-catch events**

Cetaceans are not target species and no incidental catch is recorded

## 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**

MBRC has issued an identification manual on cartilaginous fishes as 1st step towards the process of conservation of sharks and rays

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

**A. By-catch events**

No incidental by-catch

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

**A. By-catch events**

No incidental by-catch

## Section 12 - Proposals for future research programmes

# Malta

## Section 1 - Description of fisheries

**A. Fishing grounds (GSAs):** 15

**B. Total landings:** 2 395 tonnes (2014); 2 357 tonnes (2013)

**C. Fleet:** 1 016 vessels (31/12/2014); 1 040 vessels (31/12/2013)

## Section 2 - Status of stocks of priority species

| Species/Stock | Ref. year | Stock status | GSA | Presented to GFCM WGs? | Presented to any other forum? |
|---|---|---|---|---|---|
| *Merluccius merluccius* | 2013 | Overexploited with relative high biomass | 12-16 | | |
| *Parapenaeus longirostris* | 2013 | Overexploited with relative high biomass | 12-16 | | |

## 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. For submission obligations in connection with GFCM, EC and ICCAT, in the future the data will be exported from the FIS, processed for the end user's needs and a copy of the data sent will be stored in the 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. The fisheries statistics being collected have been submitted to international organisations for stock assessment purposes and scientific analysis. In 2014 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. EU horizontal framework project MAREA
v. EU horizontal framework project STOCKMED
vi. Working Group on Stock Assessment of Demersal Species (WGSAD)

**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 |
| CREAM | Up to 2014 | 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 | Up to 2014 | Bibliographic review | Identification of distinct biological units (stock units) for different fish and shellfish species and among different GFCM-GSA. |

### B. Socioeconomic studies of fishing communities and fishing sector

| Research/project title | Duration | Main topic | Description |
|---|---|---|---|
| National Data Collection Programme | | Economic variables | Collection of the socioeconomic variables |

### 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. |
| | | Benthic habitats | 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 |

## 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 2014, Malta participated to the 12th Coordination Committee Meeting (14-16th April 2014, Tunisia, Malta). The aim of the 12th Coordination Committee meeting was to discuss activities planned for the coming period. In June 2014 MedSudMed organised a technical meeting on Management Plans of *Parapenaeus longirostris* and *Merluccius merluccius* with the stakeholders, administration and scientific personell. The meeting took place in Malta. Malta also took part in the FAO-MedSudMed Working Groups on Demersal Fishery Resources (21-27 September 2014 and 11-12th November 2014, Rome, Italy). During the session for the western Mediterranean Sea, the stock assessment of *Parapenaeus longirostris* and *Merluccius merluccius* was carried out.

## 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

Catches of cetaceans are being monitored through this source. 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 - Recommendation GFCM/35/2011/4 on the incidental by-catch of sea turtles in fisheries in the GFCM competence area

### A. By-catch events

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

### A. By-catch events

## Section 12 - Proposals for future research programmes

# Montenegro

## Section 1 - Description of fisheries

**A. Fishing grounds (GSAs):** 18

**B. Total landings**: 561 tonnes (2013); 623 tonnes (2012);

**C. Fleet:** 131 vessels (2014); 117 vessels (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? |
|---|---|---|---|---|---|
| *Merluccius merluccius* | 2013 | in overexploitation with intermediate biomass level | 18 | Y | |
| *Parapenaeus longirostris* | 2013 | in overexploitation with low biomass level | 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 at the moment, because the programming phase of some sub-systems is ongoing. The plan is by the end of 2019 to have fully operated FIS, which will be able to automatically share all necessary data between all relevant authorities / parties.

**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**

Activities within the AdriaMed project framework continued. The pilot study on biological sampling data on Montenegrin coast has been continued through 2014.

**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 – Vessel Monitoring System – Vessels over 10m LOA;

**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 (with AdriaMed) | 2015 | Biological sampling | Biomass estimation of small pelagic species in GSA 18 using DEPM and Acoustic methods. |
| MORM-MONT | 2012-2015 | 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. Socioeconomic studies of fishing communities and fishing sector**

| Research/project title | Duration | Main topic | Description |
|---|---|---|---|
| MAREA SEDAF | 2013-2014 | Socioeconomic data | Improve knowledge of the main socioeconomic 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 | | Coastal ecosystems | 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**

Activities within the AdriaMed project framework continued.

## 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 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 in Montenegro.

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

**A. By-catch events**

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

**A. By-catch events**

## Section 12 - Proposals for future research programmes

# Morocco

## Section 1 - Description of fisheries

**A. Fishing grounds (GSAs):** 03

**B. Total landings:** 34 134 tonnes (2013); 35 937 tonnes (2012);

**C. Fleet:** 2 961 vessels (2013); 3 437 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* | 2013 | | 03 | | |
| *Sardina plichardus* | 2013 | fully exploited | 03 | | |
| *Mullus barbatus* | 2013 | in overexploitation | 03 | | |

## 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**

L'INRH a transmis la base de données de la matrice «Tâche 1» pour l'année 2012 au Secrétariat de la CGPM en Mai 2014. Cette matrice actualisée a regroupé la table « Tâche 1.1 » réservée à la segmentation de la flottille de pêche nationale méditerranéenne, la « Tâche1.2 » qui regroupe les données socioéconomiques, la « Tâche 1.3 », consacrée aux données d'exploitation à savoir l'effort de pêche et la « Tâche1.5 » relative aux données biologiques. Actuellement, l'INRH assure les traitements nécessaires des données pour ressortir les matrices de la « Tâche1», relative à l'année 2013.

**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 |
| | | | Recherches sur la révision des tailles marchandes des principales espèces exploitées |

**B. Socioeconomic studies of fishing communities and fishing sector**

| Research/project title | Duration | Main topic | Description |
|---|---|---|---|
| | 2013-2015 | Socioeconomic data in MPAs | Mise en place d'un système de collecte des données d'exploitation et socioéconomiques par les communautés des pêcheurs au sein du Parc National d'Al Hoceima |
| | | Bio-economy | Modélisation bioéconomique sur la pêcherie sardinière |
| | | | Études socioéconomiques des principales activités de pêche |
| | 2013-2015 | Small-scale fisheries | Analyse socioéconomique du secteur de la pêcherie artisanale |
| | 2013-2015 | Coastal fisheries | Etude de la structure, dynamique et performances socioéconomiques des systèmes d'exploitation et des filières céphalopodière et des petits pélagiques |

### C. Marine environment studies

| Research/project title | Duration | Main topic | Description |
|---|---|---|---|
| | | Elasmobranchs | Etudes sur l'inventaire des espèces des Elasmobranches peuplant la méditerranée marocaine. |
| | | | Études de l'interaction entre l'activité de pêche et son environnement |
| | | 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). |

## 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)

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

### A. By-catch events

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

### A. By-catch events

## Section 12 - 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 et lancement d'un programme de suivi de leur exploitation.
- 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.
- Etude sur les ressources côtières exploitées (prospection de terrain et suivi des indicateurs de l'exploitation).
- L'adoption de modèles intégrant l'effet des changements globaux et des facteurs environnementaux pour l'évaluation de l'état des stocks exploitées.
- Etude de la structure, dynamique et performances socioéconomiques des systèmes d'exploitation et des filières d'autres pêcheries et des activités d'exploitation des ressources littorales.
- Analyse socioéconomique du secteur de la pêcherie artisanale.
- Evaluation de l'impact des plans d'aménagement sur les pêcheries.

# Romania

## Section 1 - Description of fisheries

**A. Fishing grounds (GSAs):** 29

**B. Total landings:** 1 712 tonnes (2013); 835 tonnes (2012)

**C. Fleet:** 196 (2013); 261 (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? |
|---|---|---|---|---|---|

## 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.

**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**

Reports and data are transmitted to Romanian NAFA in the frame of National Data Collection Programme. In the same Programme, 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.

**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 Data Collection Programme | | Evaluation of fish resources | |
| 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. |
| MISIS | | MSFD | Guiding Improvements in the Black Sea Integrated Monitoring System |

**B. Socioeconomic 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 |
|---|---|---|---|
| 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 |
| 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

In relation with **Recommendation GFCM/36/2012/2** on mitigation of incidental catches of cetaceans in the GFCM area, the DG Mare project "Adverse Fisheries Impacts on Cetacean Populations in the Black Sea" was implemented by a consortium of organizations from Bulgaria, Romania, Turkey and Ukraine in coordination Mac Alistar Elliot &Partners Company. The objective of the project was 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, recommendations on mitigation measures for the fisheries identified to have the highest adverse impacts/by-catch rates were drafted. The scientific information and advice promoted possible management actions at international level, based on sound scientific knowledge shared among the Black Sea riparian countries.

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

### A. By-catch events

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

### A. By-catch events

## Section 12 - 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:** 254 tonnes (2014); 238 tonnes (2013)

**C. Fleet:** 169 vessels (01/01/2015); 170 vessels (01/01/2014)

## 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* | 2014 | Overexploited and in overexploitation | 17 | Y | |
| *Sardina plichardus* | 2014 | Biomass above reference point and in overexploitation | 17 | Y | |

## Section 3 - Status of statistics and information system

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

InfoRib (relevant fisheries data), VMS (VMS data), Aquaspec, (inspection data), ERS (electronic reports), BIOS (biological database).

**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, Socioeconomic 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 | 1996-to date | Biological sampling | Collection and management of data |
| MEDIAS | 2007-to date | Biological sampling | Collection and management of data |
| SOLEMON | | | |
| | 2014-to date | Ichthyoplankton | Pilot study on ichthyoplankton in Slovenian territorial waters targeting sardine and anchovy eggs and juveniles using Daily Egg Production Method (DEPM) protocol |

**B. Socioeconomic 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

In the framework of FAO AdriaMed project:

- Stock assessment of several species
- 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):*

- 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". An amended plan was sent at the end of the October 2014. 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 harbours located in GSA 17. Under the provisions of this plan it is not possible to fish for small pelagics more than 20 days per month and maximum 180 days per year.

## Section 7 - Environment protection measures

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

- Two fisheries protected areas: Portorož and Strunjan

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

### A. By-catch events

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

### A. By-catch events

## Section 12 - Proposals for future research programmes

# Spain

## Section 1 - Description of fisheries

**A. Fishing grounds (GSAs):** 01, 02, 05, 06, 07

**B. Total landings:** 66 244 tonnes (2013); 59 703 tonnes (2012)

**C. Fleet:** 2 853 vessels (31/12/2013); 2 843 vessels (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? |
|---|---|---|---|---|---|
| *Aristeus antennatus* | 2013 | In overexploitation with relative intermediate biomass | 01 | | |
| *A. antennatus* | 2013 | In overexploitation | 05 | | |
| *A. antennatus* | 2013 | In overexploitation | 06 | | |
| *Merluccius merluccius* | 2013 | In overexploitation | 05 | | |
| *M. merluccius* | 2013 | In overexploitation with relative intermediate biomass | 06 | | |
| *M. merluccius* | 2013 | In overexploitation and with relative low biomass | 07 | | |
| *Mullus surmuletus* | 2013 | In overexploitation and with relative low biomass | 05 | Y | |
| *M. barbatus* | 2013 | In overexploitation with relative high biomass | 06 | | |
| *M. barbatus* | 2013 | In a high overfishing status with a relative low biomass | 07 | | |
| *Engraulis encrasicolus* | 2013 | Biomass above reference point and in overexploitation | 06 | Y | |
| *Sardina pilchardus* | 2013 | Depleted with low fishing mortality | 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**

FAO and IEO, signed a Letter of Agreement on August 2014 aiming to obtain "Technical assistance on support fisheries management in the western and central Mediterranean during 2014". Both parties agreed that the IEO, will provide certain services defined in the LoA in support of the FAO-CopeMed Project.

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

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 Programme 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 Sub directorate 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 |
| PARLE | | Discards | Assessment of discards |
| LANDMED | | Discards | Assessment of discards |
| VADEAR | | Discards | Assessment of discards |
| 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. Socioeconomic 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 |
|---|---|---|---|
| LANBAL | | MPAs and SSF | Studies of the artisanal fisheries in the Menorca Channel around the MPA of Levant / Cala Ratjada and in the wider channel as controls of the effects of protection in the Columbretes MPA. |
| THE PINNA PROJECT | | MPAs | to quantify the population of an endangered species (*Pinna nobilis*) at MPAs and control areas. |
| AZIMUT CENIT | | Renewable energy | Study the offshore wind farms OWF impacts on marine biota. |
| COCONET | | 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. |
| SARAS | | Sea floor mapping | Processes in the sea floor along Alboran Basin and margins |
| MONTERA | | Sea floor mapping | Searching geohabitats on seamounts and related benthic communities |
| CONTOURIBER | | Sea floor mapping | Sedimentary dynamic of the drift deposits driven by contour currents around continental margins. |
| INDEMARES | 2009-2015 | 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

## 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

**B. By-catch events**

## 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**

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

**B. By-catch events**

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

**B. By-catch events**

## Section 12 - 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. Following the recommendations of experts and SAC advice, there is a need to implement scientific measures in defining stocks in shared stock areas.

# Turkey

## Section 1 - Description of fisheries

**A. Fishing grounds (GSAs):** 22, 24, 28, 29

**B. Total landings:** 339 047 tonnes (2013); 396 322 tonnes (2012);

**C. Fleet:** 16 437 vessels (?); 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**

Over the last years, markedly progress has been made in development of fisheries data collection system in Turkey. Fisheries Information System (FIS), an integrated Web-based database, has been developed.

**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**

The integrated FIS includes registry of commercial fishing vessels, fishing license 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.

**D. Existing databases and synergies with other applications**

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 |
|---|---|---|---|
| The Estimation of Demersal Fish Stocks in West Black Sea | 2011-2015 | Stock assessment | To estimate the size of demersal stocks in the region and to estimate the main population parameters regarding to the stock |
| The Monitoring of the Status of Deep Sea Pink Shrimp (*Parapenaeus longirostris*)Stock in Marmara Sea | 2011-2014 | Stock assessment | To determine the main population parameters (the distribution of size-frequency, size-weight-sex etc.) and the properties of the catch landed (the amount of the stock, CPUE, by-catch and discards etc.) for deep sea pink shrimp |

**B. Socioeconomic studies of fishing communities and fishing sector**

| Research/project title | Duration | Main topic | Description |
|---|---|---|---|
| The Effects of Gillnets in Black Sea Fisheries | 2015-2017 | Socioeconomic assessment | To establish the inventory of gillnets, to conduct a socioeconomic analysis, to determine the selectivity of gillnets, to monitor commercial fishing |

### C. Marine environment studies

| Research/project title | Duration | Main topic | Description |
|---|---|---|---|
| Investigation of Some Physical and Chemical Characteristics in Water Column of Trabzon | | Physical and chemical parameters | The project aims to assess variations of some physical and chemical parameters (temperature, salinity, sigma-t, electrical conductivity, pH, dissolved oxygen, chlorophyll-a, the light transmission, bench disc) in the water column |
| Determination of Terrestrial Pollution Effect to Coastal and Marine Ecosystem in Eastern Black Sea | | Pollution | The project aims to determine the effects of land-based pollutants in coastal and marine ecosystem |
| Determination of Ecological Quality in the Eastern Black Sea Coast and Species Diversity of Benthic Invertebrate Organisms | | Benthic community | Assessing the benthic invertebrate species abundance |

## 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

- No fishing activity for turbot is permitted from 15 April to 15 June
- The minimum legal mesh size for bottom-set nets used to catch turbot is 400 mm
- The minimum landing size for turbot is 45 cm total length
- It is prohibited to catch sword fish from 1 October to 30 November and from 15 February to 15 March
- No fishing activity for common sole is permitted from 1 January to 1 February
- The minimum landing size of Sea bass has been increased from 18 cm to 25 cm and for Dentex from 20 cm to 35

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

### A. By-catch events

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

### A. By-catch events

## Section 12 - Proposals for future research programmes

- None

**Appendix 11(2)**

**National reports**

**Albania**

**Algeria**

**Bulgaria**

**Croatia**

**Cyprus**

**Egypt**

**France**

**Greece**

**Italy**

**Lebanon**

**Libya**

**Malta**

**Montenegro**

**Morocco**

**Romania**

**Slovenia**

**Spain**

**Turkey**

# ALBANIA/ALBANIE

## Description of the fisheries

Provide the following information (use tables provided where appropriate):

Description of the fishing grounds and GSA.

Total landings by group of targeted species.

Total landings by species (estimated if needed)

**The fish production for 2014**

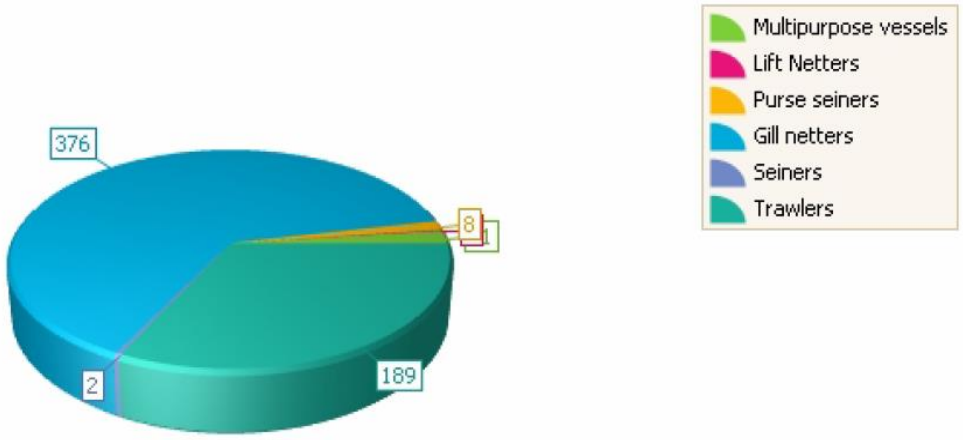
| Nr. | Water categories | 2014 |
|---|---|---|
| 1 | Marine | 2780 |
| 2 | Coastal | 700 |
| 3 | Lagoons | 210 |
| 4 | Inland waters | 2050 |
| 5 | Aquaculture | 700 |
| 6 | Mollusks | 1500 |

**Fishing Fleet:**

As a positive recent development in Albania, a national fleet register has been set up. The fleet register is managed by MoA based on notifications from vessel owners and information from regional fishery officers who maintain a list of the vessels operating from the four ports. The fleet register is an accurate representation of the licensed vessels in the Albanian fleet.

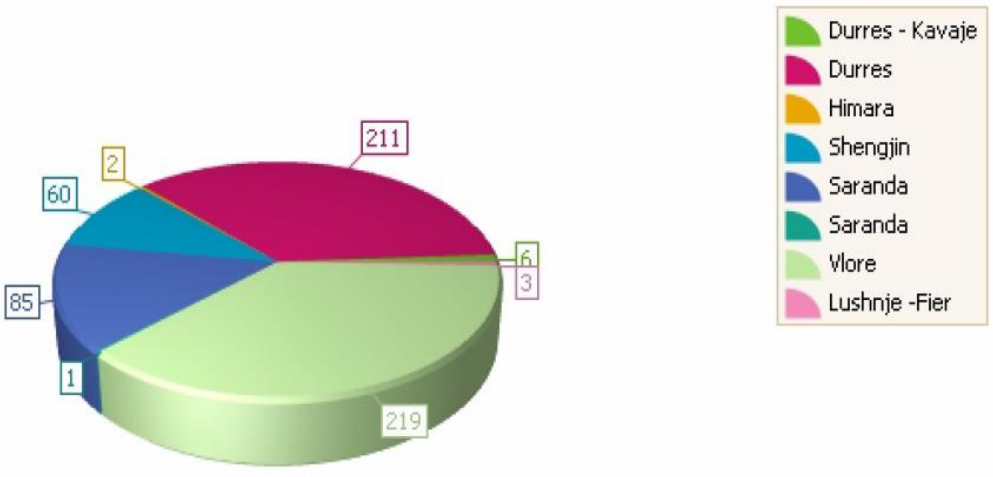
***The distribution of fishing vessels according the vessel type***

| Vessel Type | Number | % |
|---|---|---|
| Multipurpose vessels/Multipurpose vessels | 11 | 1.9% |
| Lift Netters/Lift Netters | 1 | 0.2% |
| Purse seiners/Purse seiners | 8 | 1.4% |
| Gill netters/Gill netters | 376 | 64.1% |
| Seiners/Seiners | 2 | 0.3% |
| Trawlers/Trawlers | 189 | 32.2% |
| | 587 | |

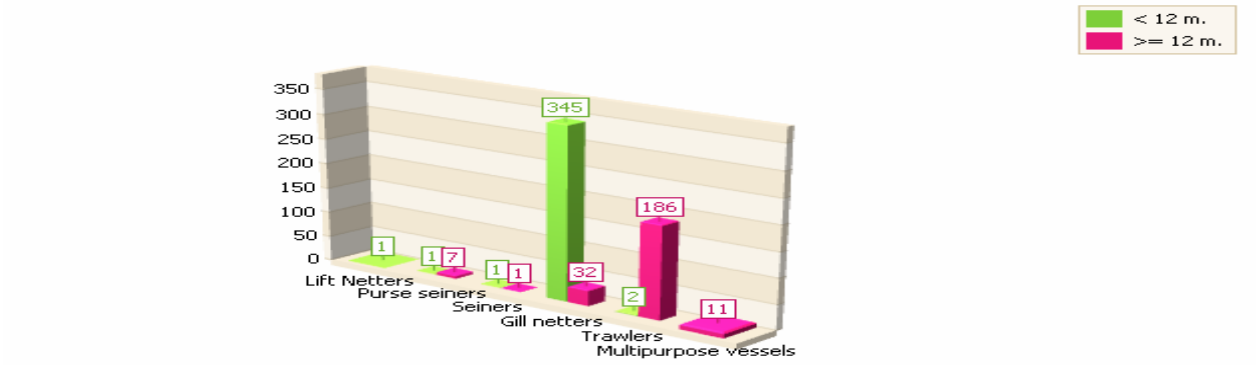



***The distribution of fishing vessels according the Fish harbours***

| Port | Number | % |
|---|---|---|
| Durres - Kavaje/Durres - Kavaje | 6 | 1.0% |
| Durres/Durres | 211 | 35.9% |
| Himara/Himara | 2 | 0.3% |
| Shengjin/Shengjin | 60 | 10.2% |
| Saranda/Saranda | 85 | 14.5% |
| Saranda/Saranda | 1 | 0.2% |
| Vlore/Vlore | 219 | 37.3% |
| Lushnje -Fier/Lushnje -Fier | 3 | 0.5% |
| | 587 | |



***Albanian Fishing Vessel according the LOA (range and average)***

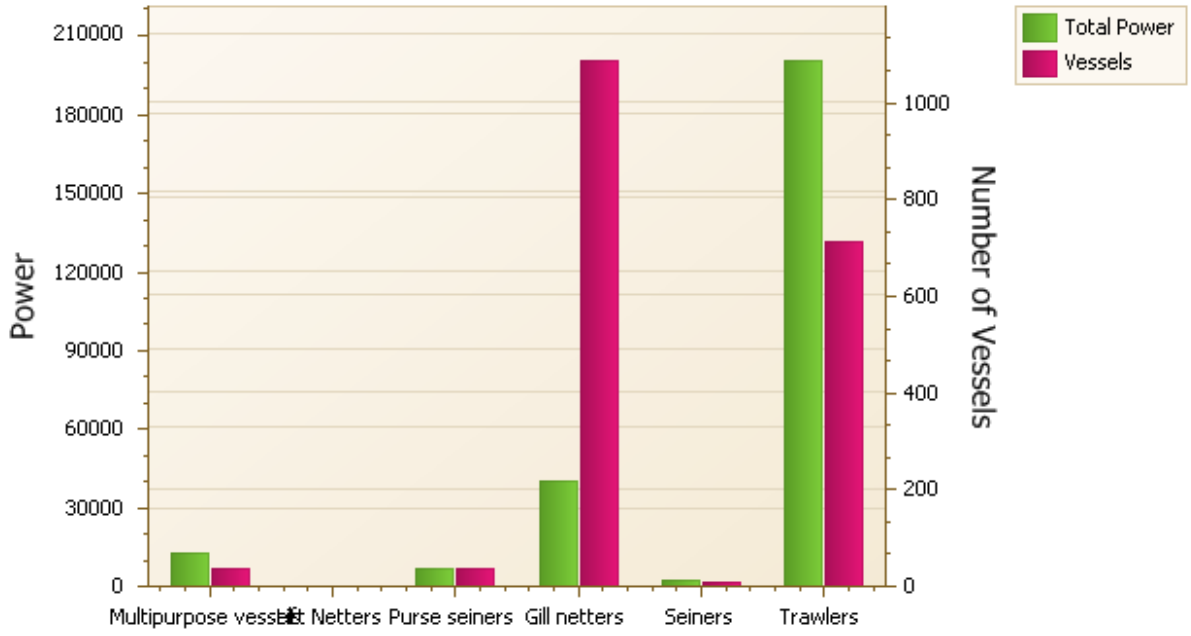



| Vessel Type | < 12m. | % | >= 12m. | % | Total |
|---|---|---|---|---|---|
| Lift Netters/Lift Netters | 1 | 0,29% | 0 | 0,00% | 1 |
| Purse seiners/Purse seiners | 1 | 0,29% | 7 | 2,95% | 8 |
| Seiners/Seiners | 1 | 0,29% | 1 | 0,42% | 2 |
| Gill netters/Gill netters | 345 | 98,57% | 32 | 13,50% | 377 |
| Trawlers/Trawlers | 2 | 0,57% | 186 | 78,48% | 188 |
| Multipurpose vessels/Multipurpose vessels | 0 | 0,00% | 11 | 4,64% | 11 |
| | **350** | | **237** | | **587** |

***Albanian Fishing vessel according the Total HP + GT (or GRT)***

| Vessel Type | Number | Total Power |
|---|---|---|
| Multipurpose vessels/Multipurpose vessels | 38 | 12537,11 |
| Lift Netters/Lift Netters | 2 | 67,12 |
| Purse seiners/Purse seiners | 35 | 6326,06 |
| Gill netters/Gill netters | 1087 | 40458,36 |
| Seiners/Seiners | 9 | 2572,95 |

| | | |
|---|---|---|
| Trawlers/Trawlers | 713 | 200693,37 |
| | **1884** | **262654,97** |




**Status of stocks of priority species**

Indicate the species evaluated during the inter-sessional period expressing the exploitation status for each stock. The report should also indicate the geographical sub-areas covered by the assessment and whether those have been presented to the GFCM Working Groups or to any other instances.

| | **Specie** | **Amount (tonnes)** |
|---|---|---|
| 1 | Mullus barbatus | 213,5 |
| 2 | Dentex dentex | 19,0 |
| 3 | Solea spp. | 63,0 |
| 4 | Sparus spp. | 40,0 |
| 5 | Loligo spp | 107,6 |
| 6 | Penaeus spp. | 376,3 |
| 7 | Merlucius merlucius | 297,0 |
| 8 | Octopus spp | 185,3 |

| | | |
|---|---|---|
| 9 | Mustelus mustelus | 35,7 |
| 10 | Squalus spp. | 28,4 |
| 11 | Raja spp. | 29,2 |
| 12 | Pagellus spp. | 59,0 |
| 13 | Sepia officinalis | 97,7 |
| 14 | Boops boops | 130,2 |
| 15 | Small pelagic | 453,0 |
| 16 | Dicentrarchus labrax | 38,7 |
| 17 | Different fishes | 1150,0 |
| 18 | Anguilla anguilla | 15,0 |
| 19 | Ujk | 1,4 |
| 20 | Serranus spp. | 2,4 |
| 21 | Trachurus trachurus | 43,2 |
| 22 | Sarda sarda | 2,0 |
| 23 | Squatina spp. | 3,2 |
| 24 | Rhombet | 2,7 |
| 25 | Scomber scombus | 6,7 |
| 26 | Zeus faber | 2,9 |
| 27 | Mugilidae | 73,6 |
| 28 | Lichia amia | 39,4 |
| 29 | Chelidonichthys spp | 4,3 |
| 30 | Seriola dumerili | 5,0 |
| 31 | Lice | 3,6 |
| 32 | Aterina spp | 1,2 |
| 33 | Venus gallina, ruditapes etc | 0,5 |

The information used to assess the status of fisheries resources in the seas around Albania derives by both fishery independent data (MEDITS trawl-survey) and national monitoring of commercial landings. The evaluated species are those with highest commercial value in Albania fisheries. The assessments dealing with stocks shared with other Adriatic countries were performed within the GFCM framework and were supported by the FAO Regional Project AdriaMed, through its Working

Group of Demersal Fisheries Resources and the Study Group on demersal fisheries resources of GSA 18.

Concerning demersal fisheries resources, a heavy overfishing status of hake *Merluccius merluccius,* was detected in Southern Adriatic Sea (GSA 18) while the stock of *Parapenaeus longirostris* was found in overexploitation (GSA 18).

**Status of the statistics and information system**

Description of the national system of fishery statistics and/or any improvement/change occurred. 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. Type of data collected, transmission to GFCM Secretariat and other international bodies. Description of the inventory of existing databases and the synergies with other applications.

Legally, the submission of combined data on fishing vessels, logbooks are regulated by-law (law Nr. 64, of date 31.05.2012 "On Fisheries" (articles from 74 to 84), also, the DCM Nr.301, concerning the 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.

Under the above law (Chapters XVIII, XX, XXI) and specific by-laws DCM Nr. 302 *establishing a system to prevent, determine and eliminate illegal, unreported and unregulated fishing (IUU)*, DCM Nr.407 "*On establishing a control system for ensuring compliance with the rules of the management fisheries policy"* building the VMS system carried out from IMOC Centre (Intergovernmental Operational Maritime Centre) and Fishery Control Structure, the Ministry of Agriculture, Rural Development and Water Administration is working at the establishment of a system to ensure the proper treatment of data, from data collection to the data analyses unit in the Ministry.

By the re-structuration of Fishery and Aquaculture Authority, which is in progress, the fishery statistics system will be operative and efficient, according to the above legal acts, and in line with GFCM requirements.

Fishery statistics are regularly transferred to GFCM (through the Task 1 tool) and to other RFMOs (like ICCAT).

Regarding biological data from commercial fisheries, a pilot action on biological sampling in the fishing port of Durrës is carried out by the Laboratory of Fisheries and Aquaculture of Durrës (LFAD-Agricultural University of Tirana) with the support of the FAO AdriaMed Project. The aim of this activity is to verify and test the feasibility of fisheries catch-and-effort data collection at national scale. The pilot action started in May 2013. Data were used to tune the stock assessment performed in GSA 18 on *Merluccius merluccius* and *Parapenaeus longirostris*.

Regarding fisheries independent data, data are gathered through the MEDITS trawl surveys, the MEDIAS acoustic survey and the Adriatic DEPM survey (GSA 18). The data are collected by the Laboratory of Fisheries and Aquaculture (Agricultural University of Tirana) with the support of the FAO AdriaMed Project.

Regarding socioeconomic data, the Ministry of Environment, Forestry and Water Management, Directorate of Fisheries Policies of Albania in 2013 and the Ministry of Agriculture, Rural Development and Water Administration in 2014 organized, with the support of the FAO AdriaMed Project, a socioeconomic data collection survey in Albania in May 2013 and June 2014. The surveys are in line with the GFCM requirements; in particular of the GFCM Data Collection reference Framework (DCRF, task 1.5, according to the Recommendation GFCM/33/2009/3).

**Status of research in progress**

Description of the results of the continuing and in progress research projects of interest to GFCM Sub-Committees and Working Groups, with particular emphasis on management oriented assessment and GFCM priority species.

In 2014, the support of the FAO AdriaMed Project continued through a pilot action aimed at testing the feasibility of fisheries catch-and-effort data collection at national scale and providing preliminary data for stock assessment of selected fisheries resources. The pilot action is carried out by the LFAD (agricultural University of Tirana).

The FAO AdriaMed Project also provided training opportunities for Albanian staff from LFAD on acoustic surveys; eggs and larvae data collection; stock assessment models, R environment for statistical analysis, and socioeconomic data collection.

These AdriaMed and GFCM joint initiatives have provided the only training opportunities for Albanian fisheries staff. Therefore, in addition to the critical role in developing effective assessment and management of shared resources, the AdriaMed project and the GFCM structure also represent an essential capacity-building vehicle for Albanian scientists.

More broadly, AdriaMed aim was to "*continue to provide technical assistance with the aim of harmonizing existing fisheries management strategies and the possibility to continue discussion on management focusing on the whole (GSA 17 and 18), or part of the Adriatic Sea will be explored*" (from AdriaMed, 2014). The AdriaMed co-ordination meeting in March 2014 tabled a FAO Fisheries and Aquaculture Department (FI) proposal to integrate AdriaMed into a single FAO-FI Regional Fisheries Programme. It is unclear whether this will be taken forward and if so, the implications for the planned activities described above.

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

Description of the achievement and/or progress in activities related to the national research on the socioeconomic aspects of the fishing communities and fishing sector.

In July 2014 the Ministry of Agriculture, Rural Development and Water Administration organized, with the support of the FAO AdriaMed Project, a socioeconomic data collection survey in Albania. The survey is in line with the GFCM requirements, in particular of the GFCM Data Collection reference Framework (DCRF, task 1.5, according to the Recommendation GFCM/33/2009/3). Data collected were used to feed the analysis of the EU-Sedaf Project (SocioEconomic Development of Adriatic Fisheries) namely Improved knowledge of the main socioeconomic aspects related to the most important fisheries in the Adriatic Sea.

**Marine environmental studies in progress**

Description of the main results from actions and studies carried out during the inter-sessional period which is relevant to the impact of the marine environment changes on the priority stocks and on the ecosystem alteration originated by the fisheries activities.

The Ministry of Environment is in charge to carry up the different environment analyses and studies. After our interventions and interest to this Ministry, also, checking the annual environmental reports published by the Ministry of Environment, on the basis of various monitoring done by scientific institutions under them, there is not any environmental analysis on marine and ecosystem alteration originated from fisheries activities. The environmental reports, when analyzing the marine environment, only deal with different pollutions of the marine coastal water to predict the quality of beaches, before starting the summer season.

**Involvement in activities of FAO regional projects**

Description of activities carried out during the inter-sessional period by Regional Projects, level of involvement, results obtained and assistance received.

The Republic of Albania, through the Ministry of Agriculture, Rural Development and Water Administration, is partner of the FAO-AdriaMed Project (Scientific Cooperation to Support Responsible Fisheries in the Adriatic Sea). The Project is conceived to contribute to the promotion of

cooperative fishery management in the Adriatic Sea. It includes Albania, Croatia, Italy, Montenegro, Slovenia, and it is operative since 1999.

National research Institutions (e.g. LFAD) contribute and participate to the development of the FAO AdriaMed Project activities. These includes: surveys at sea, staff trainings, data collection, technical discussion, data sharing, joint analysis, joint stock assessment, and development. The numerous meetings called by the Project see the active participation of National fisheries administration and research institutions with the aim of identify possibilities to elaborate possible management options to be adopted within the framework of AdriaMed.

In 2014 Albania carried out the following main activities within the framework of AdriaMed:

-3 scientific surveys (MEDITS, MEDIAS, DEPM survey) jointly carried out with the other Adriatic countries

-2 joint stock assessment (*Parapenaeus longirostris*, *Merluccius merluccius)* in GSA 18;

-1 socioeconomic survey (whole Albanian coasts);

-1 biological sampling on fisheries commercial catches (port of Durres only);

-5 training courses (acoustic surveys; eggs and larvae data collection; stock assessment models, R environment for statistical analysis, and socioeconomic data collection);

-support to the participation to GFCM related events (SAC, CAQ and their technical bodies);

-active involvement in technical meetings in the Adriatic Sea including Working Groups on demersal and small pelagic fisheries resources, Small Scale Fisheries, Study groups, and technical meetings.

**Management measures**

Description of the management measures (legislation, regulations, etc) taken in direct response to GFCM recommendations during inter-sessional period including the assessment of their effects**.**

During the intersessional period, some regulations have been approved. These regulations deal mainly with some Consultative Commissions and their functionality, like Central Consultative Commission for Fisheries and Aquaculture, the Commission for examining the requests for aquaculture and inland water fishery and aquaculture activities, the Committee for Scientific Research, Technical, and Economical Coordination, etc.

Of most importance is the Strategy for Fisheries and Aquaculture which is in its final phase. This Strategy, prepared in a frame of European Commission Framework Contract Europeaid/127054/c/ser/multi, is an evidence of the importance that have to Albanian economy the fishing and aquaculture sector. After finishing the first phase, the fisheries sector assessment report, which provides a coherent and concise appraisal of the current status of the fisheries sector, now, is in its second phase, the Strategic Plan for 2015-2025. The main components of this assessment report are: the sector review ('stock-taking' of the sector), diagnosis (analysis of the sector), and presentation of options for development. The report is an important step in the strategic planning process and is an input to the preparation of a fisheries sector strategic plan to be completed within April, 2015.

**Environment protection measures**

Description of recent activities in establishing reserve areas during the intersession; and, whenever relevant scientific information do exist, highlighting the roles of existing marine protected areas in securing better opportunity for the sustainability of fish stocks.

Not new reserve areas and/or MPA from Albanian Authorities.

**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.

This recommendation is not applicable in Albania since coral fishing in Albanian marine waters is prohibited by law (Law Nr.64, of date 31.05.2012 "On Fisheries")

**With regard to: *Recommendation GFCM/35/2011/3 on reducing incidental by-catch of seabirds in fisheries in the GFCM Competence Area***

Provide information on seabirds' incidental taking with reference to fisheries concerned, characteristics of gear type, times, locations (either by GSA or statistical rectangles) and affected species, if this information is available.

No data available.

**With regard to: *Recommendation GFCM/35/2011/4 on the incidental by-catch of sea turtles in fisheries in the GFCM Competence Area***

Provide information on the interaction of the fishing fleets with sea turtles in GFCM fisheries by gear type and characteristics: times, soak duration, depths and locations, target species, sea turtles species and disposition status of sea turtle specimen(s) (i.e. discarded death or released alive).

No data available.

**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 available.

**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 available.

**<u>Proposals for future research programmes</u>**

*Other recommendations will be added (possibly) when they request specific information to be transmitted through National Reports to SAC.*

Some possible research activities are proposed:

- Progressing toward the identification of possible exploitation strategies and adequate indicators and reference points for multispecies fisheries;
- Assessing the impact of fishing on communities and ecosystems
- Interactions between small scale fisheries and other fisheries

# ALGERIA/ALGÉRIE

## Description des pêcheries nationales

### Description des lieux de pêche et GSA

La côte algérienne, couvrant toute la GSA 04, est située dans la partie sud de la Méditerranée occidentale. Elle s'étend de la frontière marocaine à la frontière tunisienne sur plus de 1280 km. Elle présente des échancrures plus ou moins largement ouvertes vers le nord et qui forment les baies et les golfes suivants dont les plus important sont le golfe de Ghazaouet, la baie de Bou-Ismaïl, la baie d'Alger et les golfes d'Annaba et de Skikda. La côte algérienne est caractérisée par un plateau continental très réduit sauf au niveau des deux zones frontalières Ghazaouet et El Kala. On estime que la superficie totale du plateau continental accessible à la pêche avoisine les 22 000 km² sur les 90 000 km² sous juridiction nationale.

La pêche en Algérie présente un caractère côtier prononcé. Sa pratique se limite à la bande littorale où se concentre la quasi-totalité de l'effort de pêche national. Une autre caractéristique de la pêche en Algérie est qu'une bonne partie de l'aire concernée par cette activité est constituée de fonds rocheux et durs impropres au chalutage classique et beaucoup plus propice à l'activité artisanale. Les seules superficies chalutables se situant au niveau des principales baies ce qui induit de fortes pressions sur certains habitats clés et vitaux pour la survie et le maintien de la plupart des stocks halieutiques.

La pêche en Algérie est multi-spécifiques multi-engins. Les espèces ciblées sont la sardine, l'anchois, la sardinelle et les chinchards. Pour les espèces démersales, il y a les rougets, le merlu, les pageots, les crevettes et les céphalopodes (seiches et poulpes). Les petits pélagiques représentent plus de 70% des débarquements dont plus de 86% sont à l'actif des senneurs.

### Les débarquements par groupes d'espèces

Tableau 1. Production nationale (*) par groupe d'espèce (tonnes)

(*) : La production de l'aquaculture et de plaisance ne sont pas inclues.

| Groupes d'espèces | 2013 | 2014 |
|---|---|---|
| Poissons Démersaux | 7 796 | 6002 |
| Poissons Petits Pélagiques | 74 222 | 72064 |
| Poissons Grands Pélagiques | 1 433 | 1466 |
| Crustacés | 1 732 | 2164 |
| Mollusques | 1 452 | 1535 |
| Total | 86 635 | 83 231 |

**Le total des débarquements par espèce (tonnes) Principales espèces**

| Espèces/Années | 2013 | 2014 |
|---|---|---|
| Allache | 12510,475 | 13354,15 |
| Anchois | 989,57 | 2411,365 |
| Bogue | 4989,229 | 4372,835 |
| Crevette Blanche | 892,787 | 1084,113 |
| Crevette Rouge | 620,161 | 849,477 |
| Espadon | 521,357 | 612,4624 |
| Merlu | 669,873 | 976,492 |
| Pageot | 346,528 | 370,761 |
| Poulpe | 854,146 | 928,3714 |
| Rouget | 757,15 | 768,11 |
| Sardine | 35873,241 | 39701,821 |
| Saurel | 11967,594 | 9095,513 |
| Sépia | 219,3775 | 276,551 |
| **Total** | **71211,488** | **74802,024** |

**La flotille nationale**

**Nombre et caractéristiques de la flotille par métier :**

| Segmentation par longueur | Chalutier | Petit métier | Sardinier | Thonier | Total général |
|---|---|---|---|---|---|
| <6m | 0 | 1963 | 0 | 0 | 1963 |
| [6:12[ | 1 | 792 | 397 | 0 | 1190 |
| [12:18[ | 145 | 32 | 710 | 0 | 887 |
| [18:24[ | 296 | 4 | 122 | 0 | 422 |
| >=24 | 84 | 5 | 2 | 15 | 107 |
| Total général | 526 | 2796 | 1231 | 15 | 4569 |

## État des statistiques et du système d'information

### Le dispositif statistique national

Le dispositif de collecte de données statistiques, mis en place en Algérie dans les années 1970, a connu diverses modifications et adaptations. Il s'agit d'un dispositif qui s'appuie sur des agents de collecte de données statistiques au niveau des ports de pêche, qui restituent les canevas renseignés aux antennes de pêche dont ils relèvent.

Lesdites antennes relayent quotidiennement ces données aux Directions de Wilaya qui, à leur tour, les transmettent mensuellement à la Direction Centrale du MPRH, qui consolide, traite et analyse les statistiques recueillies.

S'étalant sur environ 1280 Km, la côte algérienne se compose de quatorze (14) wilayas à façade maritimes dont cinq (05) à l'est, cinq (05) au centre et quatre (04) à l'ouest. Elle est caractérisée par un plateau continental réduit à l'exception de la région de Ghazaouet à l'extrême ouest et la région d'El Kala à l'extrême est.

La collecte de données statistiques des débarquements se fait de façon exhaustive par les agents collecteurs de deux manières :

-La méthode directe: L'agent assiste aux débarquements et relève les données directement sur le quai soit par:

- Le recensement: Le collecteur assiste à tous les débarquements et les dénombre sans exception comme c'est le cas avec les sardiniers sardiniers.

- L'échantillonnage: Le collecteur assiste à quelques débarquements et fait une extrapolation sur le reste des chalutiers et petits métiers.

-La méthode indirecte: Dans ce cas l'agent n'assiste pas directement aux débarquements mais il obtient l'information par le biais d'un intermédiaire. Cet intermédiaire peut être les agents des gardes côtes, les mandataires, ou les professionnels.

Le secteur de la pêche a connu une progression remarquable sur tous les plans, y compris sur son dispositif statistique, dont nous résumerons ci-après les principales actions accomplies.

- Sur le plan juridique

-Promulgation du décret exécutif N°04-186 du 12 Joumada El Oula 1425 correspondant au 30 juin 2004; fixant les conditions et modalités de collecte des informations et des données statistiques, portant sur:

-les modalités d'intervention des agents statisticiens;

-les différentes catégories de documents et formulaires de collecte et de transmission des informations statistiques ainsi que la périodicité de leur établissement et de leur transmission.

-Arrêté du 05 Joumada Eloula correspondant au 12 juin 2005, relatif au permis et à l'autorisation de pêche.

-Arrêté du 31 Juillet 2007, fixant les différentes catégories de documents et formulaires de collecte et de transmission des informations statistiques ainsi que la périodicité de leur établissement et de leur transmission

- Sur le plan des documents statistiques

Mise en place de nouveaux canevas qui cernent l'ensemble des aspects liés à l'activité de la pêche pour un suivi rigoureux nécessaire à l'élaboration des projections d'avenir (canevas décadaire, canevas mensuel, canevas semestriel.

- Sur le plan des travaux de recherche

-Réalisation d'un Recensement Général des Activités de la Pêche Maritime en collaboration avec l'Office National des Statistiques, qui a permis d'avoir une base de données nationales des activités de la pêche en amont en matière des débarquements, de la flottille et des professionnels ou en aval, en matière d'infrastructures et de superstructures.

-Etude sur la consommation des poissons par les ménages: c'est une enquête réalisée sur un échantillon de 14 000 ménages répartit sur l'ensemble du territoire national;

-Mise en place d'un système d'échantillonnage des débarquements des pêches

Assistance technique de la FAO au profit du MPRH pour la réalisation d'un projet pilote avec l'objectif de valider la faisabilité de l'introduction des procédures d'échantillonnage pour la collecte des données de la pêche maritime en Algérie. Trois wilayas représentatives des régions de l'ouest, du centre et de l'est ont été sélectionnées pour l'application d'un nouveau système basé sur l'échantillonnage (SSPAL « Système Statistique de la Pêche en Algérie »).

Les résultats du projet pilote ont été évalués par le projet TCP/ALG/3301 en Septembre 2012 en concluant que le système pilote pouvait constituer un modèle pour la mise en œuvre d'un programme statistique de la pêche côtière.

**La gestion des données**

Le secteur a mis en place une application développée sur Access dédiée à la saisie et traitement des données relatives aux débarquements des pêches, de l'aquaculture, de la flottille, des inscrits maritimes, sur les importations et les exportations, etc. Les données sont transmises chaque décade et chaque mois par voie électronique, puis transférés automatiquement à l'application Access.

Pour ce qui est des progrès de recherche et études sur les aspects socioéconomiques, le MPRH a réalisé les enquêtes suivantes:

- **Enquête sur le circuit de la commercialisation en Algérie (2012/2013**) avec un échantillon représentatif de différentes catégories intervenant dans le circuit de commercialisation (armateurs, mandataires, grossistes, détaillants, concessionnaires (aquaculture)).

- **Enquête socioéconomique sur la population des marins pêcheurs en Algérie (2013)** réalisée sur trois strates; patrons de pêche, mécaniciens et marins simples.

- **Enquête Nationale sur la pêche artisanale en Algérie (2014),** réalisée sur les bateaux de pêche ayant une longueur inférieure à 7 m.

Ces enquêtes ont permis au secteur de collecter des données socioéconomiques et des données relatives à l'effort de pêche,

L'Algérie transmet annuellement des données relatives à la pêche et à l'aquaculture à la FAO, à la CGPM (Task1, Statlant 37A , et SIPAM) ainsi qu'à l'OADA.

**Données relatives à l'effort de pêche (flottille, collectif marin)**

La collecte se fait auprès de:

- Directions de la Pêche et des Ressources Halieutiques (DPRH) des Wilayas (autorisations annuelles des pêches);
- L'autorité maritime locale (flottille, collectif marin, etc.);
- L'autorité chargée de la gestion des ports de pêche (infrastructure et superstructure, etc.);
- L'autorité chargée des douanes (importation, exportation, etc.);
- L'autorité vétérinaire (instance de contrôle, etc.).

**<u>État des stocks des espèces prioritaires</u>**

**Les petits pélagiques**

Les sardines (sardines, sardinelles et anchois), les saurels et la bogue, sont la composante essentielle de la ressource halieutique algérienne. La caractéristique de cette ressource se traduit par une variabilité saisonnière du niveau quantitatif de la biomasse d'une part, et de sa composante spécifique d'autre part, donnant ainsi la dominance d'un groupe d'espèces au profit d'un autre groupe pour une saison donnée et d'une année à une autre.

Les campagnes d'évaluation de la ressource des petits pélagiques, réalisées à bord du N/R BELKACEM GRINE, donnent un aperçu de ce qui compose cette ressource, qualitativement et quantitativement pour les années 2013 et 2014. Aussi, la campagne acoustique de 2011 a été analysée sur le volet détection.

Les valeurs de densité de poisson obtenues ont été faibles sur l'ensemble du plateau continental et ce pour les 3 années (2011, 2013 et 2014), indiquant la supériorité des détections côtières entre 20 et 70 m de profondeur. Une dominance de la région ouest en densité de poisson, suivi de la région centre puis celle de l'est.

Les valeurs absolues les plus remarquables des détections par mile nautique ont été observées au niveau des baies, golfes et surtout, aux alentours des Iles Habibas. La valeur moyenne des détections a presque triplée entre 2011 et 2013, passant ainsi de 225.94 m²/mn à 652.17 m²/mn. En 2014, cette valeur a diminué de presque de moitié par rapport à celle de 2013, donnant une valeur de 289.38 m²/mn. C'est probablement le fait de la variabilité qui caractérise les petits pélagiques.

La biomasse totale des petits pélagiques, estimée en 2013 et 2014, a subit une baisse de l'ordre de 20 000 tonnes.

Cette baisse a touché surtout la bogue et à moindre ampleur les saurels puis la sardinelle. Par contre, on observe une augmentation de la biomasse de la sardine et l'anchois respectivement de 10 000 et de 7000 tonnes.

La répartition de cette ressource étant la même que ce soit, en 2013 ou 2014, la région ouest présente la biomasse la plus importante suivi de la région est et enfin celle du centre, représentant respectivement 43, 30.5 et 26.5 %. Par contre, pour les abondances, on a enregistré une augmentation de la part du stock reproducteur de la sardine en 2014 ainsi qu'une présence des recrues en différents secteurs des 3 régions.

Idem pour le stock d'anchois mais c'est le cas contraire pour la sardinelle et les saurels. Malgré la baisse de la biomasse totale toutes espèces confondues, celles de la sardine et de l'anchois présentent

une reprise entre 2013 et 2014 mais qui restent inférieures aux niveaux des 140 000 tonnes identifiées lors des campagnes de 1982 et 2003.

**Les stocks démerseaux**

L'analyse des résultats obtenus lors de la campagne ALDEM 2013, plusieurs remarques et constatations ont été relevées. Nous rappelons aussi le peu ou l'inexistence d'études antérieures récentes qui pourraient être le point de référence pour l'argumentation et la comparaison de nos résultats. En effet la dernière campagne démersale réalisée sur nos côtes et qui suit le même protocole retenu pour ALDEM 2013 remonte à l'année 2004, celle-ci est réalisée dans le cadre de la coopération algéro-espagnole en matière d'évaluation des ressources halieutiques.

Néanmoins, et suite au traitement et analyse des données recueillies lors de cette campagne, les conclusions ci-dessous peuvent être apportées:

S'agissant des poissons, les espèces les plus abondantes sont le rouget de vase, le pageot acarné et le pageot commun. Les meilleurs rendements obtenus sont notés dans le secteur centre et ceci pour la majorité des espèces cibles étudiées, contrairement à la partie ouest du littoral algérien qui présente des faibles rendements, beaucoup moins pour le merlu et le pageot acarné. Dans le secteur est, on remarque que le merlu est le plus pêché comparativement aux secteurs ouest et centre.

Les deux espèces de crevettes sont présentes dans les trois secteurs, le rendement en poids pour la crevette blanche est quasiment le même pour toute la côte algérienne, celui de la crevette rouge est très marquée dans le secteur ouest. Les rendements les plus élevés pour les mollusques céphalopodes sont ceux de la région ouest excepté le poulpe où on remarque une légère hausse pour le secteur centre.

Du point de vue répartition par strates, il a été relevé que c'est au niveau des strates A (20 à 50 m) et B (50 à 100 m) qu'il y a eu le maximum de rendements en poids et en effectifs. Les espèces les plus pêchés sont le rouget de vase en première position suivi du pageot acarné et du pageot rose. Le merlu est plus présent dans les strates C (100 à 200 m) et D (200 à 500 m). Les meilleurs rendements pour la crevette rouge sont celles de la strate E (500 à 800 m) alors que la crevette blanche est plus abondante dans la strate D (200 à 500 m).

D'une manière générale, les espèces rarement capturées sont le merlan bleu (présent uniquement dans le secteur centre et ouest), la mustelle, la lotte, la langoustine et la seiche.

Les espèces accompagnatrices représentent, dans beaucoup de régions, plus de 50% des prises. Ceci est plus marqué dans le secteur ouest. Ces espèces concernent surtout le chinchard commun, le chinchard à queue jaune et les sparidés représentés par la bogue, le sparaillon et dans une moindre mesure le pagre; viennent ensuite les centracanthidae (la gerle, mendole ou tchoukla) et quelques sélaciens, notamment la raie étoilée, la raie miroir et la raie râpe (plus marqués dans le secteur est) ainsi que la petite roussette.

Les rejets sont plus importants dans les strates profondes D (200 à 500 m) et E (500 à 800 m). On note moins de rejets dans la strate A (20 à 50 m).

**<u>État et activités de la recherche en cours</u>**

La fragilisation observée des écosystèmes aquatiques, induite par les changements climatiques et les activités anthropiques (pollution, destruction des habitats et l'urbanisation, surexploitation etc.), a convaincu l'État algérien de la nécéssité de mettre en œuvre des actions urgentes pour le développement d'une politique de recherche scientifique cohérente adaptée aux impératifs d'une gestion rationnelle des ressources naturelles aquatiques.

Dans ce cadre, une analyse prospective a été menée par le Centre National de la Recherche et du Développment de la Pêche et de l'aquaculture CNRDPA, en concertation avec tous les acteurs et partenaires. Cette concertation, qui a été menée sous l'égide du Ministère de la Pêche et des

Ressources Halieutiques, a porté sur les axes stratégiques à développer dans le domaine de la recherche dédiée aux activités de pêche et d'aquaculture. Cette réflexion a abouti à la définition des priorités ayant servi à l'élaboration du Plan Opérationnel 2015-2020 du secteur de la pêche et de l'aquaculture.

Les actions proposées et les axes prioritaires retenus ont été définis en totale cohérence avec les Orientations Stratégiques du programme sectoriel AQUAPECHE 2020 du Ministère de la Pêche et des Ressources halieutiques.

Ce processus est apparu d'autant plus nécessaire que la gestion des ressources vivantes en général et celle des ressources aquatiques en particulier nécessite de nos jours des approches intégrées prenant en compte les enjeux internationaux et les problématiques régionales (méditerranéennes notamment).

Les domaines de compétence du CNRDPA, qui a été chargé de mettre en oeuvre ce Programme, couvrent à la fois:

- la recherche-développement;
- l'observation et le traitement des données;
- l'expertise.

S'inspirant des orientations du plan stratégique, le Plan Opérationnel 2015-2020 se décline en cinq programmes totalisant 25 projets de recherche traitant chacun d'un aspect particulier de l'activité sectorielle:

**Programme I -** « ***Dynamique des écosystèmes exploités par la pêche*** »: dont l'objectif est la connaissance de la ressource halieutique et la dynamique de ses stocks exploités.

**Programme II –** « ***Aquaculture marine et continentale*** »: les thématiques développées dans ce programme traitent de problématiques de recherche liées aux activités aquacoles et à la gestion des ressources aquacoles continentales.

**Programme III –** « ***Ressources vivantes aquatique et environnement*** »: sont regroupés sous cette thématique les projets de recherche visant la connaissance des écosystèmes aquatiques marins et continentaux, notamment sous l'aspect des interactions milieux - ressources (pêche, aquaculture, …).

**Programme IV –** « ***Dynamique des systèmes d'exploitation*** »: on retrouve sous cette dénomination les projets de recherche ciblant l'outil de production avec ces deux composantes majeures, la flottille (effort de pêche, engin de pêche, bio-économie…etc.) et le marin (socioéconomie de la pêche).

**Programme V –** « ***Analyse des outils de gestion*** »: sous ce thème sont regroupés tous les projets qui, tout en s'appuyant sur les résultats des programmes précédents, visent le diagnostic et l'analyse des différents types de mesures de gestion et de régulation des activités de la pêche et de l'aquaculture. L'objectif de ce programme est aussi d'étudier les différents scénarii envisageables de l'évolution de la filière pêche et aquaculture résultant de la mise en œuvre de nouvelles mesures de gestion.

A titre indicatif, il est présenté ci-après les projets de recherche inscrits au titre du programme I intitulé « *Dynamique des écosystèmes exploités par la pêche* »:

sous-programme I1. **Dynamique de l'écosystème des petits pélagiques exploités:**

Projet I11. Évaluation des stocks des petits pélagiques par acoustique.

Projet I12. Analyses des débarquements et estimation des biomasses de petits pélagiques (sardine, anchois et allache).

sous-programme I2. **Dynamique de l'écosystème démersale exploité**:

Projet I21. Évaluation des stocks démersaux par chalutage

Projet I22. Analyse des débarquements des espèces démersales par la pêche chalutière et estimation des biomasses exploitables.

sous-programme I3. **Dynamique des grands pélagiques**

Projet I31. Estimation des paramètres biologiques et Analyse des débarquements des grands pélagiques (espadon et thonidés)

Aussi, dans le cadre de la stratégie de développement du secteur de la pêche et de l'aquaculture SNDPA, l'Algérie a sollicité les services de la FAO et du PNUD pour appuyer la formulation de sa Stratégie Nationale de Développement de la Pêche et de l'Aquaculture. Un projet d'appui basé sur des expertises complémentaires confiées à des consultants nationaux et internationaux et encadrées par des experts internationaux de la FAO et du PNUD a été entrepris, et porte sur:

**1-** L'expertise relative aux aspects socioéconomiques de la pêche et de l'aquaculture a porté principalement à:

- analyser les connaissances disponibles sur la situation sociologique et économique des populations activant dans le secteur de la pêche et de l'aquaculture notamment celles activant dans la pêche artisanale;
- évaluer les connaissances et identifier les contraintes et les besoins sociétaux en s'appuyant sur les enquêtes et les études existantes;
- analyser le rôle de la Chambre des Pêches et de l'Aquaculture et identifier les contraintes et les déficiences à l'effet d'améliorer les conditions socio-professionnelles des gens de mer;
- proposer des solutions réalistes à prendre en compte par le consultant international en charge du plan global de gestion et par les juristes.

**2-** L'expertise relative à un état des lieux de la situation de l'aquaculture en milieu marin et continental en Algérie;

**3-** Une expertise en écotourisme;

**4-** Une expertise océano-physique relative à:

- La définition des critères de sélection des sites d'implantations portuaires et aquacoles;
- La définition des normes des caractéristiques physiques de choix des sites d'implantations portuaires et aquacoles;
- La définition des méthodes de prévision, de protection et de lutte contre les phénomènes naturels impactant les ouvrages portuaires et aquacoles;
- La définition des mesures de suivi du comportement des ouvrages portuaires dans le temps.

**5-** Une expertise sur l'organisation et le fonctionnement des circuits de commercialisation de la pêche et de l'aquaculture, ainsi que sur l'industrie de la pêche et de l'aquaculture en Algérie.

Pour ce qui est de l'amélioration des conditions socioéconomiques des professionnels, le MPRH a engagé des actions, notamment:

- la promulgation et la mise en place de nouveaux régimes de protection sociale des marins pêcheurs;

- la promulgation des dispositions législatives relatives à l'indemnisation des marins pêcheurs pendant la période de repos biologique avec des aides indirectes pour la réalisation d'actions à caractère collectif au profit des professionnels de la pêche;
- l'installation de médecins du travail au niveau des ports de pêche et de correspondants sociaux de la sécurité sociale au niveau des ports de pêche (MPRH/MTESS);
- l'élaboration et l'examen en cours au niveau du SGG (Secrétariat Général du Gouvernement) du projet de décret améliorant l'organisation, le fonctionnement et les missions de la chambre nationale de la pêche et de l'aquaculture;
- la création de l'Association Nationale de Solidarité des Marins Pêcheurs (une association à caractère social et humanitaire);
- la réorganisation de la profession, notamment à travers la création des Chambres de Pêche et de d'Aquaculture à l'échelle de Wilaya (CPAW) et de la Chambre Algérienne de la Pêche et de l'Aquaculture (CAPA) ainsi que du Conseil National Consultatif (CNC) à l'échelle nationale

La CAPA est appuyée par quatorze CPAW et sept Chambres Inter Wilaya (CPAIW). Les Chambres ont un statut d'Établissement Public à caractère Industriel et Commercial (EPIC) doté de la personnalité morale et de l'autonomie financière.

Par ailleurs, dans le cadre de la mise en oeuvre du Programme National de la Recherche scientifique (PNR) chapeauté par la Direction Générale de la Recherche Scientifique et Technologique, le Ministère de la Pêche et des Ressources Halieutiques a été chargé du pilotage du PNR-Pêche et aquaculture. Ce dernier a vu l'inscription de pas moins de 23 projets de recherche pris en charge par différents laboratoires de recherches universitaires et centres de recherches partenaires, traitant tous de problématiques liées au domaine de la pêche et de l'aquaculture.

**Études environnementales marines en cours et mesures de protection de l'environnement**

Parmi les actions menées entre 2012 et 2014 qui ont contribué positivement au renforcement des conditions de bonne gestion environnementale du secteur, on notera la mise en fonctionnement du Laboratoire National de Contrôle et d'Analyse des Produits de la Pêche et de l'Aquaculture et de la Salubrité des Milieux.

Le Laboratoire National de Contrôle et d'Analyse des Produits de la Pêche et de l'Aquaculture et de la Salubrité des Milieux est une structure à compétence nationale, relevant du MPRH. Le Laboratoire a été créé par Décret exécutif (n°12-215 du 15 mai 2012).

Parmi les autres actions publiques positives on retiendra, également:

- La prise en charge intersectorielle relative à la dépollution de la baie de Bou Ismail;
- La mise en place de commissions au niveau des Directions de la Pêche et de l'Aquaculture (DPRH) des Wilayas chargées du suivi périodique de la salubrité des milieux aquatiques, des établissements aquacoles et de la traçabilité des intrants;
- L'installation officielle du groupe interministériel, chargé de la mise en place d'un dispositif national de prévention et de suivi de la salubrité des zones de pêche et d'aquaculture;
- L'organisation de l'opération ports bleus au niveau de l'ensemble des ports de pêche des Wilayas à façade maritime;
- La redynamisation du Comité Sectoriel Permanent de la Recherche Scientifique et du Développement Technologique (CSPRSDT).

D'un point de vue juridique, la réglementation algérienne a abordé les principaux points en matière de protection de l'environnement.

Avec sur le plan international, la ratification de plusieurs Conventions, Protocoles et Accords (ex.: Convention sur la diversité biologique, signée à Rio de Janeiro le 5 juin 1992, Convention de Stockholm sur les polluants organiques persistants, adopté à Stockholm 22 mai 2001.

Protocole relatif aux aires spécialement protégées et à la diversité biologique en Méditerranée, signé à Barcelone le 10 juin 1995, Accord sur la Conservation des cétacés de la mer Noire, de la Méditerranée et de la zone atlantique adjacente, signé à Monaco 24 novembre 1996;

Adhésion de la République algérienne démocratique et populaire à la convention internationale sur l'intervention en haute mer en cas d'accident entraînant ou pouvant entraîner une pollution par les hydrocarbures, adoptée à Bruxelles le 29 novembre 1969 et son protocole, Londres le 2 novembre 1973.

Aussi, d'un point de vue règlementaire apparaissent quelques manques ou faiblesses en ce qui concerne notamment:

- la standardisation des protocoles d'échantillonnage, de transport, d'emballage et de conservation des échantillons (eau, air, sol, faune, flore et autres), au niveau de l'ensemble du territoire national, avec la participation des autres secteurs institutionnels.

- la standardisation des protocoles d'analyses au laboratoire qui devrait être respectée par l'ensemble des acteurs nationaux, en collaboration avec les autres secteurs institutionnels (laboratoires, centres de recherches et autres).

- Les types de paramètres à analyser avec détermination des seuils limites de contamination, en fonction du zonage de la propriété, du terrain ou de l'espace en question.

- L'efficacité dans l'application de la loi en matière de taxes environnementales qui peuvent contribuer à la diminution substantielle de la pollution au niveau de la mer, des oueds et des plans d'eau douce et espaces environnants.

- Les règles concernant la gestion environnementale détaillée des activités de pêche et d'aquaculture pour chaque professionnel du secteur.

- Les normes nationales concernant les seuils limites de contamination (niveaux agricole, résidentiel, commercial et industriel);

- Les mesures d'hygiène et de salubrité, applicables aux produits de la pêche et de l'aquaculture;

- La mise aux normes de la réglementation au vue des standards internationaux.

D'un point de vue administratif, l'organisation des services spécialisés en matière de suivi et de contrôle de l'environnement, de gestion administrative des différents dossiers, de services de formation et de sensibilisation des professionnels de la pêche et de l'aquaculture ainsi que des moyens humains et matériels à mobiliser.

Les efforts fournis par l'Algérie dans le domaine de l'aménagement, de la protection et de la valorisation du littoral, ont été principalement couronnés par la mise en place de la Loi Littoral 02-02. Celle-ci, encadre l'utilisation et la valorisation de l'espace côtier et veille au respect des vocations des zones côtières. Y sont rattachés plusieurs décrets d'exécution dont les résultats peuvent conduire à une meilleure réflexion sur les sites d'implantations portuaires et aquacoles. Parmi ces instruments:

- Les Plans d'Aménagement Côtier (PAC, Décret exécutif n° 09-114 du 7 avril 2009). En application des dispositions de l'article 26 de la loi n° 02-02 du 5 février 2002;
- Les Etudes d'Aménagement du Littoral (EAL). Au sens de l'article n°2 du décret exécutif n° 07-206, il est institué l'élaboration d'une Étude d'Aménagement du Littoral;
- Le classement des zones côtières sensibles. En application des dispositions des articles 29 et 30 de la Loi Littoral (02-02), le décret exécutif n° 09-88 définit les modalités de classement des zones critiques du littoral;

- Les notices ou études d'impact sur l'environnement constituent un élément très concluant dans les études d'implantation et de conception d'ouvrages portuaires et de fermes aquacoles. Au sens du décret exécutif n° 07-145 l'étude (ou la notice) d'impact vise à déterminer l'insertion d'un projet dans son environnement en identifiant et en évaluant les effets directs et/ou indirects du projet, et vérifie la prise en charge des prescriptions relatives à la protection de l'environnement par le projet concerné.
- Aménagement portuaire, Convention État-Entreprise: l'objet de cette convention est de préciser les droits et obligations de l'État et du bénéficiaire de l'affectation des ports et abris de pêche (entreprise) ainsi que les conditions, d'exploitation et de développement de ces ouvrages, installations et équipements qui y sont implantés.

En matière de données d'océanographie physique, plusieurs institutions se répartissent les charges, parmi lesquelles:

- Le Service Hydrographique des Forces Navales (SHFN);
- L'Agence Spatiale Algérienne (ASAL);
- L'Office Nationale de la Météorologie (ONM);
- Le Ministère des Travaux Publics (MTP);
- L'Ecole Nationale Supérieure des Sciences de la Mer et de l'Aménagement du Littoral (ENSSMAL);
- Le Conseil National de l'Information Géographique (CNIG);
- L'Observation National de l'Environnement et du Développement Durable (ONEDD).

**Mesures de gestion**

Parmi les mesures de gestion établies par les instances du secteur de la pêche, il y a lieu de signaler les plus pertinentes:

- La taille minimale marchande pour chaque espèce commerciale qui est supérieur à la 1ère taille de maturité sexuelle afin de permettre aux jeunes individus de participer au processus de la reproduction;
- L'instauration de taille réglementaire des mailles pour chaque type d'engin;
- L'instauration d'une période de fermeture de la pêche au chalut durant la période de reproduction de la majorité des espèces démersales;
- Une période de fermeture pour les palangriers ciblant l'espadon;
- L'interdiction de chalutage à moins de 50m de profondeur afin de préserver les habitats sensibles;

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 socioéconomiques, 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.

Le tableau n° 3 ci-dessous, résume les principales mesures (techniques et juridique) de gestion des pêcheries algériennes, certaines mesures sont en voie de préparation ou de finalisation.

| Thème | Aménagement des pêcheries | Situation actuelle |
|---|---|---|
| Durabilité | Cadres de gestion | -art.12 Loi cadre du 3 juillet 2003<br>-plans PAGPA * |
| Politique de gestion | Plan d'aménagement des pêcheries<br><br>-mesures techniques | -plans PAGPA *<br><br>-régulation de l'effort de pêche<br>-utilisation d'engins sélectifs<br>-fixation des tailles minimales par espèce<br>-maillage réglementé<br>-périodes et zones de pêche interdite temporairement<br>-octroi d'autorisation et licence de pêches |
| Ajustement des capacités | Elimination de la surcapacité de la pêche | -Art15 de la loi du 3 juillet<br>Limitation de l'effort de pêche<br>-autorisation préalable pour toute nouvelle unité de pêche |
| Concertation | Consultation des parties nationales pour la conduite d'une pêche responsable | -conseil consultatif de la pêche et de l'aquaculture (art.11) |
| Surveillance | Surveillance et contrôle des pêches | -unités de contrôle en mer et au débarquement (art .62) |
| Coopération | Coopération en vue de la conservation des stocks | -membre de la CGPM, ICCAT ,UMA, UAPP<br>-participation à des projets régionaux |
| Politique régionale | Echanges d'informations et coopération régionale | -participation aux groupes de travail *ad hoc* de la CGPM , ICAAT, COPEMED |
| Système d'information | Collecte de données et d'avis en matière d'aménagement | -concertation et propositions d'aménagement sur la base d'un système d'informations statistiques<br>-évaluation périodique de la ressource par le CNRDPA |
| Impact des aménagements | -études d'impact socioéconomiques des plans d'aménagement | -peu d'études |
| Moyens d'application | Application de l'aménagement | -sanctions prévues par le cadre juridique en cours de renforcement |
| Approches de précautions | Aires Marines Protégées | -décret 03-147 du 29 /3/2003<br>AMP aux Iles Habibas et d'autres en voie de création (Gouraya,Tipaza etc.) préservation des espèces remarquables |

**Mise en œuvre des décisions de la CGPM**

Dans le cadre du suivi de la mise en oeuvre des décisions de la CGPM, le secteur a entrepris les actions suivantes:

**Loi modifiant et complétant la loi n° 01-11 Rabie Ethani 1422 correspondant au 03 juillet 2001 relative à la pêche et à l'aquaculture adoptée par le Sénat.**

À ce titre, il est proposé de modifier et de compléter les dispositions de la loi cadre n° 01-11 relative à la pêche et à l'aquaculture, en y intégrant les principes suivants:

- La valorisation du corail au niveau national par l'interdiction de son exportation à l'état brut et semi-fini;
- La traçabilité du corail, durant son processus de transformation et de sa commercialisation à l'état brut et semi-fini;
- Un rehaussement du degré de gravité des infractions liées à la pêche et à la commercialisation du corail, avec un durcissement des peines et des sanctions;
- Un renforcement du dispositif de surveillance et de suivi à distance des activités des navires corailleurs (balise de géolocalisation)

Par ailleurs, cette loi inscrit le développement des activités de la pêche et de l'aquaculture, dans le cadre des principes d'une pêche responsable, d'une aquaculture durable et d'une préservation de la ressource et de l'environnement marin.

A cet effet, la modification de la loi a introduit, particulièrement, de nouveaux instruments concernant:

- Les plans d'aménagement et de gestion des pêcheries;
- L'action participative des professionnels de la pêche et de l'aquaculture dans le processus de formulation et de mise en œuvre des politiques du secteur;
- Les systèmes de surveillance à distance des navires de pêche par la mise en place d'un système de géolocalisation.

  -Article 20 bis: Les navires armés et équipés à la pêche sont astreints dans les conditions et les modalités fixées par voie réglementaire, à la balise de positionnement;

  -Art 79 bis: Est puni d'une amende de 500.000 DA à 1.000.000 DA quiquonque n'équipe pas son navire de pêche d'une balise de positionnement prévue à l'article 20 bis de la présente loi;
- L'aménagement et la gestion des zones d'activité aquacoles.

Aussi, les modifications introduites mettent l'accent, dans le cadre de la préservation des ressources halieutiques, sur une meilleure identification des pratiques de pêche destructrices et illicites, l'aggravation des sanctions et le renforcement des moyens de lutte.

Pour ce faire, la loi a été complétée par l'intégration des éléments suivants:

- L'identification des pratiques illicites telles que le recours aux substances toxiques et dangereuses;
- Le durcissement des sanctions liées à la pêche illicite, particulièrement dans leur volet financier;
- Le renforcement des moyens de lutte, permettant la saisie des navires et des engins de pêche en situation d'infraction, le retrait du fascicule de navigation maritime et la radiation des gens de mer.

**REC.CM-CGPM/36/2012/2** relative à la réduction des captures accidentelles de cétacés dans la zone de compétence de la CGPM.

Un Décret présidentiel n° 07-95 du 29 Safar 1428 correspondant au 19 mars 2007 portant ratification de l'Accord sur la conservation des cétacés de la mer Noire, de la Méditerranée et de la zone atlantique adjacente, a été signé à Monaco le 24 novembre 1996.

Aussi, une étude socioéconomique et un recensement général des engins de pêche utilisés par nos pêcheurs, notamment le diamètre du monofilament, sont en cours afin d'examiner la possibilité d'application de la recommandation suscitée dans la législation nationale.

Sur la base des informations récoltées concernant l'engin de pêche et les impacts, **il sera procédé à l'amendement du décret 03-481 du 19 Chaoual 1424 correspondant au 13 décembre 2003 fixant les conditions et les modalités d'exercice de la pêche.**

**REC.MCS-CGPM/33/2009/7** relative aux normes minimales pour l'établissement d'un système de surveillance des navires par satellite (SSN) dans la zone de compétence de la CGPM.

Dans le cadre de la modification de la loi sur la pêche et l'aquaculture lancée en 2014 et qui est en cours d'adoption, un **Projet de décret exécutif portant institution et définition des modalités de mise en œuvre du dispositif de Suivi, d'Analyse des Activités de Pêche et des Débarquements des produits de la pêche (D.S.A.A.P.D) est en cours de finalisation,** ce qui permettra la transposition de la recommandation de la CGPM à l'échelle nationale, et également la transmission des données sur le VMS**.**

**REC.MCS-CGPM/32/2008/1** concernant un schéma régional relatif aux mesures du ressort de l'état du port dans le contexte de la lutte contre la pêche illicite, non déclarée et non réglementée dans la zone de compétence de la CGPM.

Par ailleurs, une étude portant « Appui à l'évaluation des options stratégiques pour l'amélioration de la gestion et le développement des ports et abris de pêche », est en cours de finalisation, et porte notamment sur les résultats suivants:

- Résultat 1: Les obstacles à une meilleure gestion et au développement des ports et abris de pêche liés à des dispositions législatives ou règlementaires;
- Résultat 2: Des recommandations concernant le statut juridique;
- Résultat 3: La présentation de l'expérience de plusieurs pays de l'UE en matière de gestion des ports de pêche fonde le choix de plusieurs options d'intervention publique à analyser dans le contexte algérien;
- Résultat 4: La consultation des parties prenantes fournit des éléments d'aide à la prise de décision qui sont présentés sous la forme d'une analyse d'impacts des options prédéfinies de gestion des abris de pêche/sites d'échouage sont formulées.

L'étude est destinée à recueillir l'adhésion la plus large des parties prenantes pour la validation du plan opérationnel nécessaire à la transposition de la recommandation de la CGPM à l'échelle nationale, et également la transmission des données « Port state measure ».

**REC.MCS-CGPM/35/2011/1** concernant l'établissement d'un journal de bord de la CGPM, amendant la recommandation CGPM 34/2010/, une réflexion à l'échelle nationale est en cours avec les professionnels de la pêche, dans la perspective **d'amender l'arrêté du 18 Rabie El aouel 1427 correspondant au 16 avril 2006 fixant le joural de pêche**

**Les propositions de futurs programmes de recherche**

- Appui au projet "Observatoire socioéconomique" notamment pour compléter l'application d'échantillonnage statistique, et ce, conformément aux exigences de la matrice TASK1 de la CGPM. L'objectif du projet est la mise en place de la version web de l'Application SSPAL (Système Statistique de la Pêche en Algérie).
- Assistance pour la mise en place de récifs artificiels avec étude d'impacts sur la ressource halieutique.
- Cartographie des habitats marins sensibles en vue de la mise à niveau de la réglementation nationale dans le domaine de la protection des ressources naturelles nationales et un réaménagement de l'effort de pêche national.
- Etude du déterminisme dans la dynamique des stocks exploités par le développement d'approches écosystémique dans le suivit des populations marines.

Recherche développement dans le domaine des techniques et engins de pêche responsables adaptés à la réalité des pêcheries algériennes

**Autres recommandations**

-Renforcement de la coopération régionale;

-Dans le cadre de la mise en œuvre des décisions de la CGPM, il y a lieu d'initier des projets fédérateurs ainsi que des études de cas et expertises dans les différents domaines de recherche pêche et aquaculture, afin de soutenir et apporter l'assistance technique et le savoir-faire aux « États membres de la Commission ».

-Favoriser le processus de dialogue et les mesures de prévention;

## 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 100-120 m.) - from Cape Kartalburun (close to the Romanian border) to the river Rezovo (close to the Turkish border). The exploitation of the fish resourses is limited in the helf area (depths under 100-150 m concentrate high amounts of $H_2S$ that limits the life). Fishing by active fishing gears is carried out on small fishing vessels (>12 m) 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 March until 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 2014 were 8 546.69 t, decreased with 10.11% in comparison with 2013.

The catches realized by LOA segments in 2014 analytical assessment bearing in mind the total decrease in landings with 10.11% in 2014 (in comparison with 2013) is as follows: 5.99 to 11.99 m was 2246.4 t; 12 to 23.99 LOA were 3574 t and the fishing fleet LOA over 24m realized 2676.2 t.

Table 1 Landings of major fish and shellfish species from Black Sea, 2014

| | |
|---|---|
| **Picked dogfish** */Squalidae/* | 34.01 |
| **Sardine** */Sardina pilchardus/* | 1.15 |
| **European sprat** */Sprattus sprattus sulinus/* | 2 279.29 |
| **Anchovy** */Engraulis encrasicholus ponticus/* | 369.67 |
| **Garfish** */Belone belone/* | 3.02 |
| *Whiting/Merlangius merlangus euxinus/* | 4.08 |
| **Grey mullet/***Mugil cephalus/* | 16.32 |
| **Pilengas** */Mugil soiuy/* | 0.12 |
| **Golden grey mullet** */Liza aurata/* | 2.57 |
| **Leaping mullet** */Liza saliens/* | 17.01 |
| **Atherina** */Atherina spp./* | 57.60 |
| **European bass** */Dicentrachus labrax/Morone labrax/* | 0.09 |
| **Bluefish** */Pomatomus saltatrix/* | 304.74 |
| **Scad** */Trachurus mediterraneus ponticus/* | 113.14 |
| **Red mullet** */Mullus barbatus ponticus/* | 313.77 |
| **Mullet** */Mullus surmuletus/* | 15.04 |
| **Bonito/***Sarda sarda/* | 5.51 |
| **Gobiidae** */Gobiidae/* | 63.70 |
| **Turbot** */Psetta maxima/* | 39.45 |
| **Flounder** */Platichthys flesus luscus/* | 0.08 |
| **Sand sole** */Solea nasuta/* | 0.02 |
| **Thornback Ray** */Raja clavata/* | 70.32 |
| **Common stingray** */Dasyatis pastinaca/* | 2.95 |
| **common prawns** */Leander spp./* | 1.75 |
| **Sand prawn** */Crangon sp./* | 0.26 |
| **Crab** */Eriphia verrucosa/* | 0.16 |
| **Baby clam** */Mya arenaria/* | 61.76 |
| **Black mussel** */Mytilus galloprovincialis/* | 16.23 |
| **Rapa whelk** */Rapana spp./* | 4 732.41 |
| **Others** | 0.01 |
| Total | **8 546.69 t** |

The targeted species landings are listed on table 1. The major share belongs to the sprat (*Sprattus sprattus* –2279.29 t) and rapa whelk (*Rapana venosa* – 4732.41 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 but slightly decreased. Turbot (*P.maxima*) together with sprat catch is under regulation and community TACs have been set for both species ($TAC_{2013}$ = 43.2 t (turbot); $TAC_{2013}$= 8032.5 t (sprat) for Bulgaria. The reported landings of turbot are 39.45 t (2014). 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 from 2336 (2011) to 2043 (2013) and 2005 (2014).

Table 2 Capacity of the fishing fleet in 2014

| LOAm | Number of vessels | GT | kW | Average age |
|---|---|---|---|---|
| till 6 m | 688 | 508.35 | 6 085.46 | 16 |
| 6 to 12 m | 1225 | 2601.38 | 33420.23 | 21 |
| 12 to 18 m | 61 | 1 182.967 | 9372.61 | 15 |
| 18 to 24 m | 19 | 816.93 | 4004.66 | 40 |
| over 24 m | 12 | 1 310,04 | 3 509,55 | 29 |
| **Total** | **2005** | **6 419.66** | **56392.51** | |

**Status of stocks of priority species**

Five full stock assessments, all at the Black Sea scale, except for Azov Sea anchovy -two distinct stocks of both anchovy subspecies (Black Sea anchovy assessment from Ukraine and Turkey together, and Azov Sea anchovy); -horse mackerel (Trachurus *mediterraneus ponticus*); -piked dogfish; -sprat ; and -turbot 3 ii. catch data on bonito (*Sarda sarda*) and rapa whelk (*Rapana venosa*) fisheries.

1. **Sprat. *Sustainable. Fcurr/Flim = 0.70; Advice: Do not increase fishing mortality.*** is a relatively short-lived pelagic species and catches are predominately age-1 and age-2 fishes. Fishes that are 4 years or older are rarely caught. Discards of sprat are evidently very low. Most of the reported landings of sprat since 2004 were taken by Turkey (47%).

   For the period 1993 to 2012, catches of sprat in the Black Sea increased steadily from a low level of about 17 thousand tons in 1993 to a first peak level of about 72 thousand tons in 2002, and a subsequent peak of almost 121 thousand tons in 2011. Catch during 2013 was only 27 thousand tons.

   The Integrated Catch Analysis (ICA) method was applied to catch-at-age data assembled for the entire Black Sea for the period 1993 to 2013.

   The EWG endorses the stock assessment for sprat and considers that the stock was exploited unsustainably during 2010, 2011 and 2012 (but not during 2013). The catch forecast for 2014 based on the accepted proxy for $F_{MSY}$ (exploitation $\leq$ 40%) is 48 775 t, which is more than the catch forecast under status quo fishing.

   There is concern that the fishery for sprat produces significant quantities of bycatch and discard of other fish species, such as whiting.

   There should be increased sampling of the sprat fishery by at-sea observers to quantify the amount of bycatch and discarding.

2. **Anchovy. *In overexploitation. Fcurr/Flim = 1.4; Advice: Reduce fishing mortality.*** The status of the anchovy fishery before and after the collapse that occurred in 1989 seemed to show different patterns in the various areas/countries of the Black Sea. Although catch levels

in Turkey recovered to values similar to those recorded before the collapse, catch levels in the rest of the Black Sea countries remained lower than before the collapse. This pattern could be partially explained by the differences in the specifications of the fishing fleets involved. However, anchovy biomass levels at the Black Sea scale do not seem to have recovered to the levels recorded before the collapse. The XSA stock assessment method was applied to Black Sea anchovy catch-at-age data for age-classes 0 to 4+ from the period 1988 to 2012. CPUE data from the Turkish purse seine fleet were used as the primary tuning index. The ASPIC surplus production method was applied to catch and effort data for the period 1970 to 2013, with fishing effort measured in terms of the number of purse seiners. Both the XSA and the ASPIC assessments assume that the CPUE series provide valid indices of stock biomass and that fishing power has not changed over time. The XSA and ASPIC assessment results differed in their interpretation of trends in biomass during the 1990s but gave similar estimates of trends in biomass and fishing mortality in recent years. The XSA estimates of F for 2013 was 1.2, corresponding to an exploitation rate of 0.59, which is higher than the precautionary threshold of 0.4 exploitation recommended for small pelagic fish.

3. **Horse mackerel**. ***In overexploitation. Fcurr/Flim = 1.95; Advice: Reduce fishing mortality.*** New tuning information collected by a commercial catch per unit effort (CPUE) study in Turkey (2005–2013) was used to tune an XSA model for horse mackerel. The stock assessment was considered to be an improvement on that from the previous year (when the stock assessment was considered preliminary due to uncertainties and lack of reliable tuning information). The stock was considered to be "in overexploitation", and in the absence of a reference point for biomass, the biomass level was considered to be uncertain. Participants highlighted the need to continue harmonizing the various methods used to estimate fish age between institutes. Participants also pointed out the limitations of using CPUE as a tuning index in general, but in particular given that the species is not the main target of most of the fishing fleets involved. Participants proposed obtaining acoustic-based estimates of horse mackerel biomass as a solution (see the section of this report on surveys).

4. **Picked dogfish**. ***Depleted Fcurr/Flim = 3.73; Advice: Implement recovery plan.*** The only information on dogfish catches provided to the group was collected by Romania. Based on this data, a number of assessment models were used (VIT and XSA), which led to an Fcurrent estimate of 0.112. Two different reference points for this stock were available, a VIT-based FMSY (0.5) and an estimate of FMSY for dogfish populations in the North Atlantic (0.03). Despite the uncertainty related to an appropriate reference point for F, trends in the catches clearly showed a large decline (more than 75 times lower than that of the previous record), and estimates of biomass and recruitment were more than 20 times lower than the previous estimates. Therefore, the Black Sea dogfish population was considered to be depleted.

5. **Turbot.** ***Fcurr/Flim = 5.12 Status: Overexploited and in overexploitation. Advise: Implement a recovery plan.*** The amount of IUU catches continues to be perceived as very high (up to four times the declared catches). However, reliable estimates of IUU catches were not available. Moreover, different ad-hoc approaches had been used for the purposes of stock assessment in the past (for more information, refer to the report of the first meeting of the SGSABS). The estimation of reliable values for IUU catches and the reduction of IUU fishing were both considered priorities for the turbot stock; ii. Some uncertainties in stock units and spatial dynamics for this stock remain. The trends in landings and survey results from the various parts of the turbot distribution range are different which may indicate the existence of spatial dynamics not accommodated in the stock assessment model. No new information on stock identification and stock limits was presented to the group, and participants highlighted the need to increase research in this area. Participants also highlighted the need to incorporate spatial dynamics into the stock assessment model, with a view of providing advice at spatial scales conducive to the adoption of effective management measures; and iii. Participants underlined the need to improve and harmonize age-reading between researchers and institutes. Additionally, participants called for the improvement of catch statistics at the Black Sea level (including data from Georgia and the Russian Federation).

6. **Bonito**. ***Unknown. No advice***. A tentative stock assessment of bonito based on a biomass model (ASPIC) was attempted. The assessment was not considered reliable due to the short time series available and the high fluctuation exhibited by the indices.
7. **Rapa whelk.** ***Unknown. No advice.*** No new data about rapa whelk along the Bulgarian coast were presented.

**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 the following registers trough ISS:

- 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**

- PERSEUS FP7 - Policy-oriented marine Environmental Research for the Southern European Seas - www.perseus-fp7.eu
- ComFish FP7 - http://ec.europa.eu/research/bioeconomy/agriculture/projects/comfish_en.htm
- 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"Phase I and II (POMs)

**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, 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 programmes;
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 bycatch restrictions;
5. Closed zones and seasons – zones closed for fishing activities, after scientific advice;

**Marine environmental studies in progress**

- Field studies of distribution of species / assessment of the status of species and habitats throughout the country - I phase (BG161PO005/11/3.0/03/24);
- Monitoring the marine environment under the MSFD in Bulgaria (IO-BAS responsible in Bulgaria)

**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 bycatch 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. A total of 120 different species were landed in 2013. The most important ones in terms of quantity are listed in the tables below. The trends in terms of quantities landed have been stable over time, with the share of small pelagic species by far dominating the overall structure.

Total landings by main targeted species (in tons) in 2013:

| | 2013 |
|---|---|
| *Sardina pilchardus* | 53429,786 |
| *Engraulis encrasicolus* | 9233,833 |
| *Scomber japonicus* | 591,586 |
| *Mullus barbatus* | 1091,723 |
| *Merluccius merluccius* | 1119,268 |
| *Eledone spp* | 569,748 |
| *Trachurus spp* | 278,896 |
| *Nephrops norvegicus* | 296,686 |
| *Spicara spp* | 155,999 |
| *Octopus vulgaris* | 188 |
| *Solea solea* | 251,828 |
| *Boops boops* | 95,821 |
| *Sprattus sprattus* | 72,81 |
| *Parapenaeus longirostris* | 311,965 |
| *Oblada melanura* | 40,275 |
| *Loligo vulgaris* | 98,628 |
| *Pagellus erythrinus* | 70,197 |
| *Sarpa salpa* | 57,199 |
| *Triglidae* | 70,654 |
| *Lophius spp.* | 106,222 |

*Note: Total landings in 2013 in Croatia were 74705,09 tons.*

Vessels registered for commercial fishing on date 01.03.2015. (source: Croatian Fleet register):

| | | |
|---|---|---|
| **number of vessels** | 7733 | |
| **LOA (range and average)** | **number** | |
| **< 12 metres** | 7084 | |
| **12 - 24 metres** | 519 | |
| **more than 24 metres** | 130 | |
| **Total kW + GT** | 53380,48 GT | 424817,98 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 pelagic**

SAM assessment tuned by acoustic was preformed within AdriaMed Project framework (Rome, 2014: 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 (Rome, 2014).

Outputs of these assessments demonstrated that sardine in GSA 17 exploitation rate is higher than the Patterson's reference point (E=0.53); Bcurrent is above both limit and precautionary reference point with positive trend.Recommendations of the WG was reducing fishing mortality and revise stock advice next year. SCSA adopted WG proposals.

For anchovy stock in the GSA 17 SAM assessment with acoustic tuning is considered for the advice, but some inconsistencies were noted in historcal perspective 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=0.49) and Biomass level is at a low level (below 30 percentile). Managment advice was given as fishing mortality should be reduced immediatly.

**Demersal resources**

Assessment of common sole (*Solea solea*) stock in GSA 17 has been performed and presented to SCSA (Rome, 2015). 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 haker (*Merluccius merluccius*) 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 the last few years for most of the 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 the majority of demersal stocks. Situation with the most important demersal stock as 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).

The Republic of Croatia has established links between responsible authorities (the 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.

Since 2000, Croatia has 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. Logbooks contain 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. License holders of vessels below 10 m LoA are obliged by national regulation to submit monthly fishing reports of their fishing activities; therefore the entire commercial fleet is covered. In 2011, Croatia 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. Electronic logbooks were set up on all vessels above 12 m LoA by the end of 2014.

First sales of catches are regulated as explained in prior report.

All sales data are reported via a web-based application in an electronic form. These data include relevant information on the vessel and the buyer, as well as on prices and quantities. Average prices of marine species are calculated on the basis of prices and quantities collected via sales notes.

Currently, Croatia is developing a central DCF-GFCM database with information on technical and socioeconomic data on all vessels included in the Fleet Register in each referent year. By the end of 2015, linking of databases with the Institute of Oceanography and Fisheries databases is planned to incorporate biological data in the central DCF-GFCM database. All relevant statistics in regards to DCF and GFCM rules are incorporated within the central database in order to facilitate the preparation of reports.

**Status of research in progress**

Monitoring of small pelagic stocks by acoustic survey as independent evaluations of stocks abundance as well as collection of biological and fisheries related data has been undertaken through the national data collection framework (DCF). Also, through DCF other fisheries segments have been monitored.

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 socioeconomic data.

Monitoring of coastal fisheries 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.

In 2014, all monitoring projects were included in the data collection framework (DCF) for according to EU regulation in force.

Project *"SOLEMON" Evaluation of stock of Common Sole (Solea solea) and other flatfish in the Adriatic sea* is an international project under the umbrella of FAO AdriaMed for evaluations of common sole and other flatfish using "beam trawl" (rapido).

Project *"UWTV Survey"* is an international project under the 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.).**

National socioeconomic survey is fully in line with the EU Data Collection Framework. The socioeconomic data collected within the DCF is adapted to conform to the GFCM Task 1.

**Marine environmental studies in progress**

Croatia has been conducting a permanent national monitoring project 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 programmes for fishery resources.

**Involvement in activities of FAO Regional Projects**

Croatia is fully involved in all activities conducted within the Regional FAO AdriaMed project.

**Management measures**

All recommendations on bluefin tuna and swordfish in the Mediterranean Sea as adopted by ICCAT and GFCM are fully incorporated in the 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 the 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 2014.

**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.

# CYPRUS/CHYPRE

## Description of the Fisheries

The Cyprus capture fisheries consist of the small-scale inshore fishery (artisanal fishery), the trawl fishery and the polyvalent fishery.

The small scale inshore fishery fleet consists of small wooden and or fiber glass vessels with length ranging between 4 to 12 m (OAL), and an average length of 8.2 m. It operates within the territorial waters of Cyprus (Geographical Sub-Area 25-Cyprus). Fishing gears used are mainly passive gears (bottom set nets and bottom longlines), targeting demersal species.

The Polyvalent fishery fleet consists of 23 licensed vessels with length ranging between 12 – 26 m (OAL), and an average length of 16 m. The fleet operates with passive polyvalent gears, both in the territorial waters of Cyprus GSA 25 and international waters of the Eastern Mediterranean, mainly in GSA 26-South Levant. Polyvalent vessels target highly migratory species, such as bluefin tuna (*Thunnus thynnus)*, swordfish (*Xiphias gladius*) and albacore (*Thunnus alalunga*) with surface longlines. Demersal species are also targeted in a lesser extent.

The bottom trawl fishery consists of vessels with length ranging between 21,4 to 26,8 m (OAL) and are categorized into trawlers fishing in Cyprus waters (GSA 25) and trawlers fishing in International waters (Central and Eastern Mediterranean) (GSA 14, GSA 15, GSA 21).

Thus the fishing grounds where the Cyprus fleet operates are distinguished as "Cyprus waters" and "International waters". For the purpose of this report the term "Cyprus Waters" is used to describe the marine area under the effective control of the Government of Cyprus. It is known that since 1974, the most important fishing grounds of Cyprus are not accessible to the Government of the Republic of Cyprus. From the 846 sq. nautical miles of continental shelf and the total coastline of 773 km, only about 60 percent and 45 percent respectively are effectively controlled by the Government of Cyprus.

Table 1 presents information on fishing effort (number of licensed vessels, working days and total KW and GT) per active fleet category for the year 2013.

Table 1: Cyprus Fishery 2013

| YEAR 2013 | Production Metric tonnes | Effort (Working Days) | Number of Vessels | LOA (m) | Fleet Total GT | Fleet Total KW |
|---|---|---|---|---|---|---|
| Artisanal Fishery (A& B) | 536 | 46629 | 369 | 8.31 | 1224 | 18628 |
| Bottom Trawl Fishery Cyprus Waters | 110 | 398 | 2 | 23.8 | 174 | 174 |
| Bottom Trawl Fishery International waters | 75 | 319 | 7 | 25.8 | 781 | 2487 |
| Polyvalent Fishery | 448 | 1682 | 26 | 16.3 | 935 | 4310 |

**Status of stocks of priority species**

During the intersessional period, the stock of *Spicara smaris* in GSA 25 was assessed as being in sustainable exploitation (S), with a relative intermediate biomass (**OI**). The stock assessment was performed during the Second Meeting of the Permanent Working Group on Stock Assessment (EastMed PWGSA) organized by the FAO-EastMed Project (Scientific and Institutional Cooperation to Support Responsible Fisheries in the Eastern Mediterranean) in Kavala – Greece, 9 – 14 September 2013. The assessment was further presented and accepted in 2014 by the relevant GFCM scientific committees and finally approved during the 38th Session of GFCM.

**Status of the statistics and information system**

The authority responsible for the collection and management of fishery statistics in Cyprus is the Department of Fisheries and Marine Research (DFMR) of the Ministry of Agriculture, Natural Resources and Environment.

**The data collected by the fishery statistical system are used to fulfill the following objectives:**

a) To serve as a guide for management purposes, i.e. to direct the DFMR to decide on the introduction of measures and regulations for the fishery

b) To provide statistical information to other bodies: The data are transmitted to the International Organizations and Agencies, where Cyprus has the legal obligation to send, i.e. FAO, GFCM, ICCAT and the European Union.

c) To be analysed for scientific purposes: Along with length distributions collected by sampling, the data are used to evaluate the stocks of the five most important commercial demersal fish species.

The Cyprus National Database for the collection and storage of data in the fisheries sector is comprised of the following databases: i).the Data Collection Network System (Data Transmission), ii) the Central Database iii) the Fishing Vessel Fleet Register (FVR) and iv) the Electronic Reporting System (ERS). The database facilitates the storage of data and its transmission to the relevant International bodies.

The system comprises a series of sub-databases which include the following data: Fishing capacity, Fishing effort, Catches (Landings and Discards), Catch per Unit Effort data series, Biological Measurements, Economic data on the fishing fleet and processing industry. Updates of the National Database are made whenever necessary, for incorporating new requirements.

All the data collected by the National database are dealt with confidence. Data access is limited to authorised personnel.

**Status of research in progress**

Cyprus implements annually the National Fisheries Data Collection Programme, in accordance with the Community Data Collection Framework - DCF (Regulations (EC) 199/2008 and (EC) 665/2008, Decision 93/2010/EU). The Department of Fisheries and Marine Research is the national authority of Cyprus responsible for the implementation of the DCF. Being the only beneficiary for the data collection, it is engaged with all DCF activities.

The national programme contains 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

Particularly for the biological sampling, Cyprus collects information for the evaluation of length and age composition of landings, and the estimation of biological parameters (growth, maturity) for a number of demersal and large pelagic species.

During the intersessional period, the GFCM demersal priority species for which biological sampling was performed (for collecting length, age, maturity and sex data) are: *Boops boops*, *Mullus barbatus*, *Mullus surmuletus*, *Pagellus erythrinus*. Sampling was also conducted for *Spicara smaris*, which is of great national commercial importance. Furthermore, systematic length sampling was performed for an additional number of species, including *Sparisoma cretense*, *Siganus rivulatus*, *Siganus luridus*, *Merluccius merluccius*, *Pagrus pagrus*, *Diplodus sargus*, *Diplodus vulgaris*, *Serranus cabrilla* and *Spicara maena*.

Biological sampling was also conducted for the ICCAT and GFCM priority species *Thunnus alalunga*, *Thunnus thynnus* and *Xiphias gladius*. Data have been submitted to ICCAT, contributing to the assessment of the status of the stocks.

Discards sampling is also performed annually for the evaluation of discard rates from the different fleet segments.

The research survey at sea performed under the DCF is the International Bottom Trawl Survey in the Mediterranean (MEDITS) around Cyprus waters (GSA 25). The aim of the survey is to collect biological data from the Cyprus demersal species and creating time series of abundance and biomass indices and length frequency distributions. The trends of these data provide information on the status of the Cyprus fishery resources, which may contribute to their management.

Research in Aquaculture is being done in the Department's experimental stations. The research projects of Aquaculture include reproduction, development of brood stock populations and good quality and quantity of eggs and larvae of species cultured.

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

The DFMR carries out socioeconomic surveys to assess the economic situation of the fisheries sector in Cyprus. The sources for collecting the socioeconomic data are the Inshore Fishery Production Reports, Logbooks, the Fishing Licenses and the Sales Notes from the fishmongers for verifying the quantities of production and the value of production of the Inshore Fishery. Moreover, an important tool used for the economic analysis is the face-to-face interviews. Some of the target variables are income, gross value of landings, production cost, financial position of fishermen, investments, live/weight prices per species and number of persons employed.

**Marine environmental studies in progress**

Marine ecological research is undertaken through various national and EU-funded projects and includes:

- Research on marine ecology with a particular emphasis on marine biodiversity.
- Studies on the effects on the marine ecosystem from various anthropogenic activities, such as aquaculture, desalination, breakwaters, sewage etc.
- Monitoring studies on the appearance and expansion of invasive alien species in the marine environment of Cyprus.
- Monitoring of eutrophication events by nuisance macroalgae.
- Protection and conservation programmes for endangered aquatic species and their habitats, e.g., programme for the conservation of marine turtles (*Chelonia mydas* & *Caretta caretta*), monk seal (*Monachus monachus*), *Posidonia* seagrass meadows (*Posidonia oceanica*) etc.
- Studies in the framework of the establishment of marine protected areas, including the development of artificial reefs.
- Monitoring of marine ecological and environmental parameters, as well as estimation of pollutants in marine organisms.
- Assessment of the Ecological Quality Status of coastal waters, under the Water Framework Directive (2000/60/EC).
- Study of the ecology and monitoring of the environmental parameters of the Larnaca Salt Lake complex and Akrotiri wetlands.
- Implementation of the Habitats Directive (92/43/EEC) as regards to coastal waters.
- Implementation of the Marine Framework Strategy Directive (2008/56/EC).

**Involvements in activities of FAO Regional Projects**

The Department of Fisheries and Marine Research participates in the EastMed regional project and activities.

**Management measures**

The National and Community legislation provide for a number of management measures for the regulation of the Cyprus fisheries, including:

- Restrictive access to fisheries (limited number of licenses for each fleet segment)
- Effort control: Restrictions on the use of fishing gears (quantities, soaking time, depth and distance off shore)
- Establishment of Fisheries Protected Areas (Implementation of (EC) Regulation 1967/2006)
- Regulation of fishing capacity (scrapping, assignment for other uses than fishing, engine restrictions, ceiling of the fleet vessel register)
- Minimum sizes of marine organisms (restriction of catching, retain on board, transship, landing, transfer, store, sell and market)
- Technical conservation measures: minimum mesh sizes
- Seasonal and area closures

Moreover, the DFMR formulated and implements a Fisheries Management Plan for the Cyprus Fleet targeting demersal and mesopelagic stocks in the coastal zone of the Republic of Cyprus. The Plan includes measures which are aimed at reducing the fishing effort for all categories of professional vessels that are active in the territorial waters, under the exclusive control of the Republic of Cyprus and to adjust the fishing fleet to the availability of such stocks. The main measures, which have been programmed, include the permanent withdrawal of vessels, the use of more selective fishing methods, the reduction in the number of fishing licenses, the reduction in the permitted fishing tools, the creation of fishing protected areas and stricter control measures.

During the intersessional period the ICCAT recommendations on the management of Mediterranean swordfish, the multiannual recovery plan for bluefin tuna and the conservation of thresher sharks, endorsed by GFCM, were implemented.

**Environment protection measures**

In the framework of the implementation of EU Habitat Directive (92/43/EEC), five (5) coastal/marine areas were included in the Natura 2000 network, since 2008, while an additional area was added in the network during 2011. Very important habitat types such as Posidonia oceanica beds and flora and fauna species, that are included in the Annexes I & II of the Directive (92/43/EEC), can be found in some or all of these marine N 2000 areas. Preliminary management plans have been prepared for almost all the marine N 2000, from which fisheries management measures are currently proposed only for one marine N 2000. These latter fisheries management measures for the one marine N 2000 site have been presented to the various stakeholders and by the end of this year, it is expected to put in practice. These measures interalia aim to the protection of the juveniles of groupers and to the overall long term recovery of fish stocks.

Moreover, a development of Artificial Reefs (ARs) has been initiated in Cyprus since 2009, which aims to the increase of biodiversity, the restoration and enhancement of fish stocks and the subsequent increase of fishery productivity in the surrounding areas, as well as the attraction of diving tourism and the public awareness on environment protection. The project for the ARs construction & deployment is ongoing, since their fully development will need some more years to be completed. Currently, 5 coastal/marine areas established for ARs development and these have been declared protected (fishing is forbidden) by relevant Ministerial Decrees.

**With regard to: Recommendation GFCM/35/2011/2 on the exploitation of red coral in the GFCM Competence Area**

There is no exploitation of red coral by the Cyprus Fleet.

**With regard to Recommendation GFCM/35/2011/3 on reducing incidental by-catch of seabirds in fisheries in the GFCM Competence Area**

No information on seabirds' incidental taking was reported or recorded by the Department of Fisheries during 2013 within GSA 25.

**With regard to: Recommendation GFCM/35/2011/4 on the incidental by-catch of sea turtles in fisheries in the GFCM Competence Area**

Cyprus National Legislation has been protecting sea turtles by banning capturing orharming sea turtles in any way (since 1978) and by setting closed fishing areas, especially sensitive nesting areas (since 1990). In addition the National Legislation has been harmonized with the provisions of the Habitat Directive where sea turtles are a priority species, as well as the Biodiversity Protocol of the Barcelona Convention.

Accidental catches by the pelagic longline fleet are recorded by observers through on- board sampling of the catches, which is part of the National Data Collection Programme of Cyprus under the EU Data Collection Framework (DCF). According to the 2012 on- board sampling, only one species of turtle (*Caretta caretta*) was by-caught on surface longlines. An average of 0.16 turtles (10.7 kg) were caught per fishing day, or 1 turtle every 6.35 fishing days weighing an average of 67.8 kg. All turtles were released alive. In 2013, due to the financial crisis in Cyprus and a substantial reduction of the available budget for the implementation of the National Programme, no subcontracting could be made and the data collection was arranged to be done by inspectors of the Control Division of DFMR during landing inspections. No sampling at sea could be made due to the limited resources.

Additionally data are systematically collected and monitored by DFMR concerning sea turtle strandings, including case of injured turtles.

**With regard to Recommendation GFCM/36/2012/2 on mitigation of incidential catches of cetaceans in the GFCM area**

No information on by-catch of cetaceans was reported or recorded by the Department of Fisheries during 2013 within GSA 25.

**With regard to: Recommendation GFCM/36/2012/3 on fisheries management measures for conservation of sharks and rays in the GFCM area**

Cyprus fishing fleets catch shark species only as bycatch, and in general such catches are relatively negligible. Information on shark catches are collected from various sources, i.e. logbooks, sales notes and receipts, inspection reports, observers on board, port sampling and interviews. It is noted that efforts are made for improving the identification of shark species by the fishermen and the DFMR personnel, and for recording shark catches on a species level.

For 2013, the collected data regarding shark species that were caught by Cyprus fishing fleets and are included in Annex II or III of the SPA/BD Protocol are provided in the following table:

| **Incidental catches of species listed in Annex II of SPA/BD Protocol** | | |
|---|---|---|
| **Species** | **Catch weight** | **Comments** |
| ***Rhinobatos* spp.**[1] | **45 kg** | **Landed, infringement reported by inspectors** |
| | | |
| **Bycatch of species included in Annex III of SPA/BD Protocol** | | |
| **Species** | **Catch weight** | **Comments** |
| ***Centrophorus granulosus*** | **6 kg** | **Landed** |
| **Triakidae /(*Mustellus* spp.)** | **10 kg** | **Landed** |
| ***Prionace glauca*** | **255 kg** | **Landed** |
| ***Squalus* spp.** | **33 kg** | **Landed** |

All relevant provisions from Recommendation GFCM/36/2012/3, EU legislation and other RFMO recommendations have been included in the fishing license rules.

**Proposal for future research programmes**

At this point Cyprus has no research suggestions for consideration by SAC.

1 Infringement cited

# EGYPT/ÉGYPTE

## Description of the fisheries

Egypt is situated in the *eastern corner* of North Africa, (Southern Mediterranean Sea).The Egyptian Mediterranean coast (GSA 26 - South Levant) extends from the Libyan boarder in the West (El Sallum area in Egypt) till the Palestinian boarder in the East (Rafah area), covering a distance of 1100 km long. The Egyptian Mediterranean coast contains six Northern coastal lagoons opening to the Mediterranean Sea (Maruit, Edku, Burollus, Manzala, Port Fouad and Bardawil lagoons).

The fishing grounds along the Egyptian Mediterranean coast are divided into four regions; Western region (from Alexandria to El-Salloum), Nile Delta region, Demietta region, and Eastern region (From Port Said to Rafah).

The continental shelf is narrow in the western area comparable to the wider central delta region and its eastern side. Fish production in this area is very low due to the nature of the bottom (mostly rocky) and the limited fishing grounds for trawling.

The main fishing ground used by the Egyptian vessels is the continental shelf of the Nile delta; recently extended to the eastern side of the Sinai peninsula and seasonally to the western side of Alexandria. The seabed along the middle and eastern area is flat, mostly muddy to sandy and is suitable for trawling.

There are nine official main landing centres (Fishing harbours). Most of them are located along the Nile River Delta region as shown in figure (1). Inshore fisheries are widespread; it depends on small-scale fishermen with small boats along the coast.

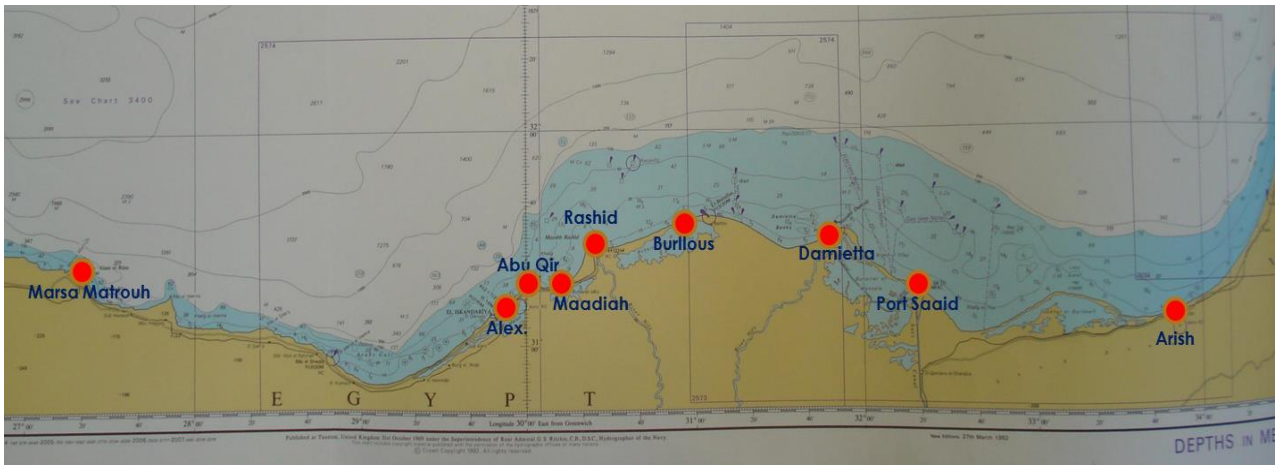



Figure (1): Map of the Egyptian Mediterranean coast indicating the main fishing ports

### *Total fish landings*

Fish production in Egypt depends mainly on Aquaculture which constitutes about 75% (as shown in Figure2) while the fish landings from the natural fisheries in Egypt constitute about 25% of the total fish production in the year 2013 (GAFRD, 2013).

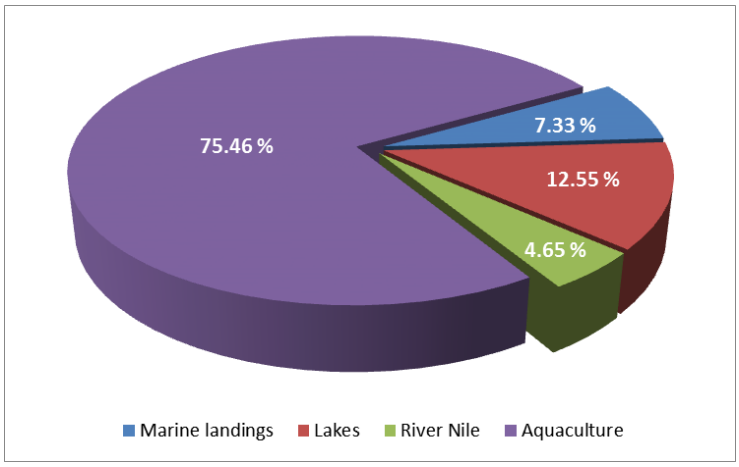



Figure (2): The total fish production according to the different sources during 2013 in Egypt.

Marine fisheries (Mediterranean and Red Seas together) in 2013 represent about 30% of natural fisheries (including the lakes and the River Nile) and about 7.3% of the total production.The landed catch from the Egyptian Mediterranean Sea is represented by about 59% of total marine catch in Egypt (GAFRD, 2013).

According to the General Authority for Fish Resources Development statistics book (GAFRD, 2013); the landed catch of the Egyptian Mediterranean coast during the last 10 years (from 2004 to 2013) is shown in Figure (3). It shows that, the landed catch increased from (47 481 MT) in 2004 to (88882 MT) in 2008 which is considered as the highest landed catch during the mentioned ten years. After that, the landed catch decreased gradually till 2013 (63027 tons). The gradual decrease over the last five years indicates an overfishing status in the Egyptian Mediterranean coast.

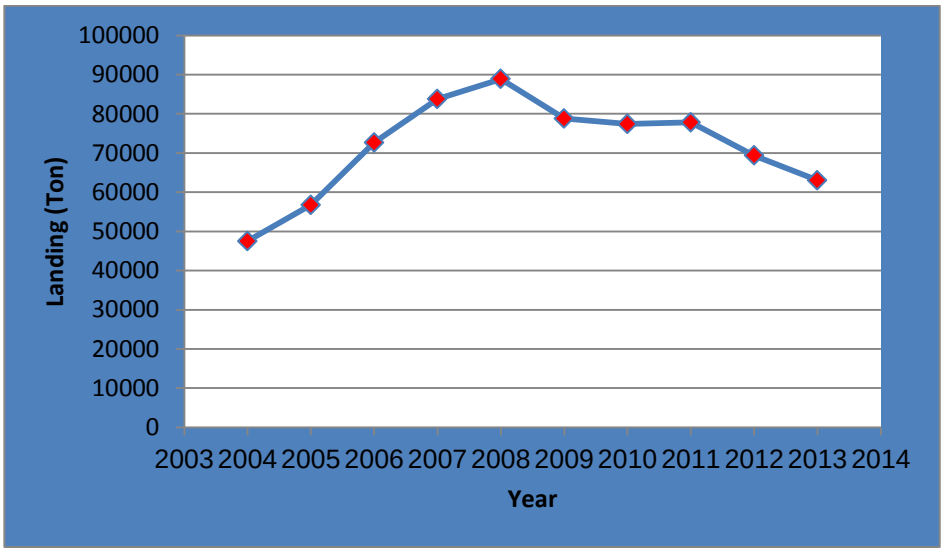



Figure (3): The landed catch of the Egyptian Mediterranean coast from 2004 to 2013.

The most common species caught by the Egyptian fishing fleet are Sardines spp. (16.25%), Shrimp (9.45%), Bogue (6.67%), Anchovy (5.72%), Grey Mullets (4.87%), Crabs (3.61%), Red Mullet (3.05%), Red Porgy (3.02%), Common Cuttlefish ( 2.79%) and others as shown in Table (1).

**Table (1): Species composition of the Egyptian Mediterranean Sea Landed catches during 2013 (GAFRD, 2013)**

| .Species / group | Scientific name | Catch (MT) | % |
|---|---|---|---|
| Sardinellasnei | *Sardinella spp.* | 10244 | 16.25 |
| Shrimp | *Penaeus & Metapenaeus spp.* | 5953 | 9.45 |
| Bogue | *Boopsboops* | 4202 | 6.67 |
| Molluscs | *Ex Mollusca* | 4094 | 6.50 |
| Anchovy & small sardine | *Engraulis encrasicolus* | 3604 | 5.72 |
| Gray mullet | *Mugil spp. & Liza spp.* | 3069 | 4.87 |
| Crabs | *Portunusspp* | 2274 | 3.61 |
| Red mullet | *Mullus spp.* | 1924 | 3.05 |
| Red porgy | *Pagrus spp. & Pagellus spp.* | 1905 | 3.02 |
| Cuttlefish | *Sepia officinalis* | 1760 | 2.79 |
| Hairtail | *Trichiuruslepturus* | 1042 | 1.65 |
| Annular Sea breams | *Diplodusannularis* | 1031 | 1.64 |
| Gilthead Sea bream | *Sparusaurata* | 1022 | 1.62 |
| Sea bass | *Dicentrarchuslabrax* | 967 | 1.53 |
| Spinefeet | *Siganus spp.* | 931 | 1.48 |
| Gurnard | *Eutriglagurnardus* | 927 | 1.47 |
| Little tuna | *Euthynnus alletteratus* | 849 | 1.35 |
| Barracudas | *Sphyraena spp.* | 826 | 1.31 |
| Lizardfish | *Saurida undosquamis* | 821 | 1.30 |
| Diplodus spp. | *Diplodussargus & D. vulgaris* | 772 | 1.22 |
| Horse mackerel | *Trachurustrachurus* | 732 | 1.16 |
| Sole | *Solea spp.* | 682 | 1.08 |
| Bluefish | *Pomatomussaltatrix* | 620 | 0.98 |
| Meagre | *Argyrosomusregius* | 599 | 0.95 |
| Grouper | *Epinephelus spp.* | 504 | 0.80 |
| King fish | *Scomberomoruscommerson* | 478 | 0.76 |
| Black spotted bass | *Dicentrarchuspunctatus* | 338 | 0.54 |
| Squilla | *Squilla spp.* | 215 | 0.34 |
| Others | | 10642 | 16.88 |
| Total | | 63027 | 100.00 |

Sardine spp. and shrimp spp. are considered as the most dominant species in the landed catch of the Egyptian Mediterranean coast. The landed catch of these two species through the last 10 years

indicates that the catch increased from the years 2004 to 2007 for sardine and to 2008 for shrimp due to increasing in fishing effort with access to new fishing grounds especially in the western area through these years. The catch of the sardine (pelagic spp.) started to increase in 2012 which may be attributed to the change in the environmental parameters and decreased again in 2013.

Shrimp spp. landings were nearly the same from 2008 to 2011 and it decreased sharply in 2012 and 2013 as most of the demersal species due to the overfishing status of these species and the non-stopped fishing activities through the last two years as shown in Figure (4).

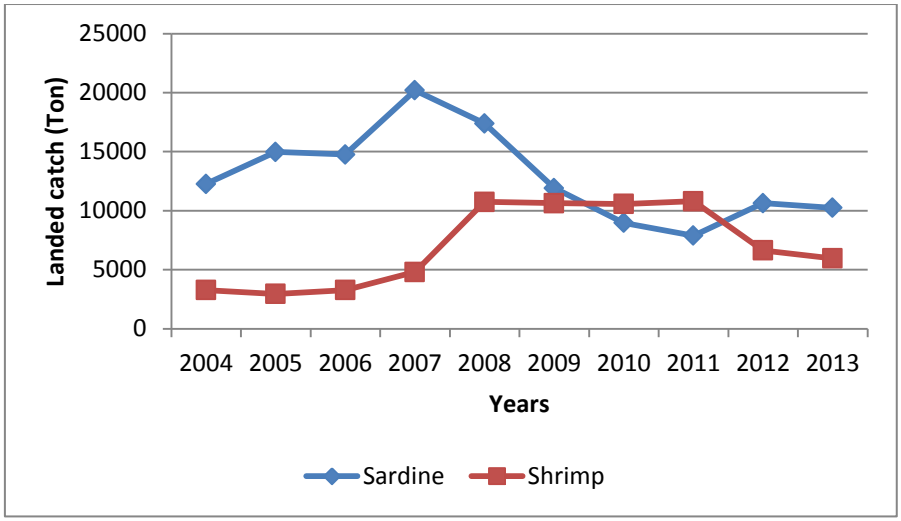



Figure (4): The landed catch of sardine spp. and shrimp spp. in the Egyptian Mediterranean coast from 2004 to 2013.

***The fishing fleets and fishing gears***

The fishing fleet in 2013 was made up of about 1084 trawlers (operating on the Mediterranean coast of Egypt), 1140 vessels officially using longliners, 571 vessels using passive nets and 247 purse seiners (GAFRD, 2013).

The bulk of the fleet is composed of vessels with a wooden hull. Most of the vessels (71.1%) are motorised. Many vessels have a Global Positioning System (GPS) and small electronic fish finders, while the rest have very limited navigational or safety equipment. Most vessels are only capable of fishing in inshore waters and are not equipped to store the catch in good conditions, as they lack, for example, facilities for ice production. In small-scale fisheries, fish is landed without ice while larger vessels (bottom trawlers, purse seiners and some long-liners) usually load ice on board before leaving the harbour. Bottom otter trawlers with an average length of 19 m (from 12-30 m with a horse power ranging from 86-1150) were registered in the Mediterranean harbours of Egypt (Force project report 2013).

Table (2) shows the number of the vessels according to the used fishing gears, the range and average of the length, the GT and the HP of the vessels per each fishing gears. In many cases, especially in small-scale fisheries, the gear is operated by hand, even if several small vessels are equipped with hydraulic or mechanical net haulers. Their fishing activity is usually limited to shallow depths (up to 50 m).

**Table (2): Numbers of the vessels according to the used fishing gears, the range and average of the length, the GT and the HP of the vessels per each fishing gears (2013).**

| Fishing method | Number | | Length (m) | GT | HP |
|---|---|---|---|---|---|
| **Gill & Trammel nets** | 571 | Average | 10 | 13.2 | 32.1 |
| | | Range | 3.56-19.3 | 0.6-33.8 | 3.3-106 |
| **Hooks & line** | 1140 | Average | 11.6 | 13.7 | 71.3 |
| | | Range | 3.3-23.5 | 0.6-86.3 | 6-400 |
| **Purse Seine** | 247 | Average | 16.3 | 29.88 | 158.9 |
| | | Range | 10.35-23.55 | 3.98-95.16 | 27-425 |
| **Trawl** | 1084 | Average | 19.2 | 40.0 | 191.45 |
| | | Range | 12.25-29.35 | 8.9- 132.78 | 70-1150 |

Table (3) shows the numbers of the vessels licenses according to the used fishing gears, the non-motorized vessels, the registered fishermen and the recreational licenses in each fishing port of the Egyptian Mediterranean coast for the years 2012 and 2013 (GAFRD, 2012 & 2013) .

**Table (3): Numbers of the vessels licenses according to the used fishing gears, the non-motorizedvessels, the registered fishermen and the recreational licenses in each fishing port (2013 comparing with 2012).**

| Fishing port | Motorized boats | | | | Non-motorized boats | Registered Fishermen | Recreational licenses |
|---|---|---|---|---|---|---|---|
| | Trawl | Purse seine | Long line | Nets | | | |
| Marsa Matrouh | | | 2 | 12 | 49 | 83 | |
| Alexandria | 32 | 6 | 191 | 37 | 178 | 345 | 2093 |
| AbuQir | 32 | 17 | 115 | 211 | 68 | 1331 | |
| Al Maadia | 101 | 42 | 104 | 75 | 38 | 902 | 6 |
| Rashid | 99 | 21 | 67 | 58 | 131 | 612 | 17 |
| Motobas | 1 | 13 | 13 | 3 | 43 | | |
| Baltim (Burullus) | 13 | 24 | 192 | 1 | 119 | 1217 | |
| Damietta | 584 | 19 | 193 | 13 | 132 | 2359 | 1870 |
| Port Said | 222 | 56 | 249 | 6 | 472 | 923 | |
| El-Arish | - | 49 | 14 | 155 | 6 | 1006 | 324 |
| Total (2013) | 1084 | 247 | 1140 | 571 | 1236 | 8778 | 4310 |
| Total (2012) | 1098 | 237 | 1233 | 478 | 1418 | 13596 | 5349 |

Crew composition varies enormously according to the type of gear, the technological features on board and vessel size. Purse seining is the fishing activity that requires the highest number of seamen on board (17 - 23 fishermen on average), mainly because of the poor level of technology that sets out how work is distributed on board, as many people are employed to carry out tasks which should be performed by existing technology. Trawlers usually have a crew of 6 - 8 fishermen, while fleet compartments usually operate with a crew of three or five people and most of the boats are individually owned.

As regards artisanal fisheries, vessels are typical artisanal Mediterranean examples ranging from 4–12 m in length and powered by small outboard or inboard engines from 6-120 hp. The main fishing gear types used include hand lines, long lines, gill nets and trammel nets. They target both demersal and pelagic species, which change from one season to the next.

Recreational fishing practices are widespread along the Mediterranean coast. This type of fishing commonly uses fishing lines and passive nets, but the catches are not recorded.

**Stocks Status of priority species in the recent years**

The stock status of the most economic species were studied by different authors during the recent years and concluded as follows:

*Pagelluserythrinus, Merlucciusmerluccius*and *Siganusrivulatus* comprised high percentages in trawl catch in 2010 in the Egyptian Mediterranean area. Most of the commercial fish species are caught with average sizes below 15.0 cm; therefore they are mostly caught before attaining their first sexual maturity (Alsayes*etal.*, 2010).

The round sardinella stock in the Eastern Mediterranean Sea, North Sinai coast was in a balanced position. Salem *et al*. (2010) calculated the current exploitation rate (E = 0.51) and the maximum allowable limit of exploitation was 0.87.

El Haweet *et al.* (2011) showed that the fisheries status of *Pagelluserythrinus* in the Mediterranean Sea coast of Egypt is in overfishing; the current F(0.55-0.72) is higher than $F_{0.1}$(0.27-0.30) and $F_{max}$(0.54-0.57) for the commercial and survey fish samples.

The data of four deep-water shrimp trawlers from the Mediterranean waters of Egypt using standard Italian trawl of 40mm codend was used to evaluate the resources of Aristaeomorphafoliacea and A. antennateus. Hauls from east of the Nile Delta region give about 33% more by-catch/haul than west. On the contrary, the western region gave about 7% more shrimp than the eastern one (Ibrahim, *et al*., 2011).

Assessment of the round sardinella(*Sardinellaaurita*), in the East Mediterranean Sea (North Sinai) by using length frequency and yield per recruit analysis indicated that the stock is in a balanced position and the current exploitation rate is lower than the expected $E_{Max}$ and $E_{0.1}$ (Abdel Hakim *et al.,* 2012).

The catch per unit of effort (CPUE) of Albacore *Thunnus alalunga* was assessed during an experimental fishing trip conducted on board of commercial Egyptian long liner. The CPUE for albacore ranged from 7 to 22 fish/1000 hooks for the different fishing trips, with an average CPUE of 12 fish/1000 hooks (SE±4.4) (Gabr and El Haweet, 2012).

The biological reference points and the effect of age at first capture on Y/R, as well ascohort 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.

El-Haweet (2013) made some biological studies of the invasive species *Nemipterus japonicus* as a Red Sea immigrant into the Mediterranean Sea.

Pinello *et al*. (2013) studied the small scale fleet perform as a case in Egypt. EastMed project in 2014 studied the socioeconomic analysis of the Egyptian fisheries and the potential exploitation of the Venus clam *Chamelea Gallina* in Egypt.

Farrag M. (2014) studied the Stock assessment of *Lagocephalus sceleratus* from the Egyptian Mediterranean Sea Coast.

Brush tooth lizard fish, *Saurida undosquamis* is represented by about 70% (912 tons) 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, 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 status of overexploitation(Mahmoud *et al*., 2014).

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 surmuletus*

constituted about 55% of red mullets. Mahmoud *et al*. (2015) found the ratio between $F_{cur}$ and $F_{0.1}$ indicates that the stock of *Mullus surmuletus* was in overexploitation during 2011, 2012 and 2013.

**Status of the statistics and information system**

GAFRD collects fisheries data by two methods (Census and Sampling). This system is going to be computerized in order to register every fishing unit and record 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. Though these initiatives are appropriate, both surveillance activities (including prosecution) and the fisheries statistics collection system (particularly the number of data collectors) require further improvement.

Both data groups (Census and Sampling) are approved by the fisheries data collection committee. Members of the fisheries data collection committee are appointed by the Minister of Agriculture and Land Reclamation. The Committee is currently composed 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) supports the development of regionally-consistent fisheries management plans among the Eastern Mediterranean countries. The project was launched in September 2009 for five years and was recently extended to June 2015. Thestocks of five important species are evaluating lizard fish, red mullet, shrimp, sepiaand sardine.

The Arab Academy for Science and Technology and Maritime Transport started a study to improve 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 being conducted in different universities and at the National Institute of Oceanography and Fisheries, eg. *Synodussaurus*, family Mullidae, family Trichiuridae, family Triglidaeand Sole.

The National institute of Oceanography and Fisheries (NIOF) conducted three marine surveys from April 2012 to February 2013 to study the geographical distribution, relative abundance and biological parameters of the pelagic and demersal species.

**Status of the social sciences studies achieved during the intercessional period (economy, relevantlegislation, sociology, etc.)**

A sampling survey was conducted in order to investigate the main socioeconomic characteristics of the fishing vessels by type of fishery with the EastMed project support. Some socioeconomic indicators were calculated and compared with values of other similar sectors (e.g. agriculture). The assessment of these indicators will also be used to give management advice to the Ministry in order to improve the economic conditions of people involved in fisheries. A relatively higher salary for fishermen is due to 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**

FAO EastMed Project of pilot study on Implementation of the 40 mm square mesh size GFCM Resolution to the Egyptian trawl fleet will be developed. The study will focus on selectivity rather than on efficiency.

**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 15 June each year (which was not applied over the last three years).

**Research suggestions for consideration by SAC**

- There is a strong need for appropriate measures on stock biomass and stock abundance, the commercial species which would provide real stock information upon which management strategy could be developed, some of them may cover by EastMed project.
- Mapping of the most important spawning and nursery grounds for the establishment of marine protected areas to be used as an effective fisheries management tool is needed.
- Fishing harbour facilities need to be improved on 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.

**Al-Sayes A., Sh. Fattouh, S. Abu Enin and T. Soliman (2010).** Development of Trawl and Shrimp Fisheries at the Egyptian Mediterranean Area. World Journal of Fish and Marine Sciences 2 (1): 01-07, 2010.

**El-Haweet A.A.K., El-Ganiny A.A. and Mahmoud H.H. (2011).** Stock assessment of Common Pandora, *Pagelluserythrinus* in the Egyptian Mediterranean Coast.Working group on stock assessment of demersal species (SAC - GFCM). Chania, (Crete) Greece.

**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.Turkish Journal of Fisheries and Aquatic Sciences, 13:629-638.

**El-Haweet( 2013).** Biological studies of the invasive species Nemipterusjaponicus (Bloch, 1791) as a Red Sea immigrant into the Mediterranean Sea" Egyptian Journal of Aquatic Research, 39, 267–274.

**(FORCE)** Fisheries & aquaculture Oriented Research Capacity in Egypt project's report (2013): European Union.

**Gabr, M. H. and El Haweet, A. (2012).** Pelagic Longline Fishery for Albacore (*Thunnus alalunga*) in the Mediterranean Sea off Egypt. Turkish Journal of Fisheries and Aquatic Sciences 12: 735-741.

**(GAFRD) General Authority for Fisheries Resources Development (2012 &2013).** Ministry of Agriculture and land Reclamation. Fish Statistics Book.

**Ibrahim M.A., Hasan M.W., El-Far A.M., Farrag M.M.S. and El-Sayed E.F. (2011).** Deep sea shrimp resources in the south eastern Mediterranean waters of Egypt.Egyptian Journal of Aquatic Research, 37(2), 131-137

**FAO EastMed (2014).** Socio-Economic Analysis of Egyptian Fisheries:Options for Improvement. GCP/INT/041/EC-GRE-ITA/TD-19.

**FAO EastMed(2014).** A Study to Investigate the Potential Exploitation of the Venus clam *ChameleaGallina* in Egypt. GCP/INT/041/EC-GRE-ITA/TD-20.

**Farrag M. (2014).** Stock assessment of *Lagocephalussceleratus* from the Egyptian Mediterranean Sea Coast.Ph. D. thesis, Al Azhar University Asuit, Egypt.

**PinelloD., Dimech M., Elhaweet A. and Salah A.(2013).** How does an outnumbered small scale fleet perform? The case in Egypt" First Regional Symposium on Sustainable Small-Scale Fisheries in the Mediterranean and Black Sea. General Fisheries Commission for the Mediterranean, 27–30 November 2013, St. Julian's, Malta.

**Mahmoud H. H., Alaa A.K. El Haweet and Mark Dimech (2014).** Stock assessment of the alien species Brushtooth lizard fish, *Saurida undosquamis* (Richardson, 1848) in the Egyptian Mediterranean coast.Egyptian Journal of Aquatic Research 40, 443 – 450.

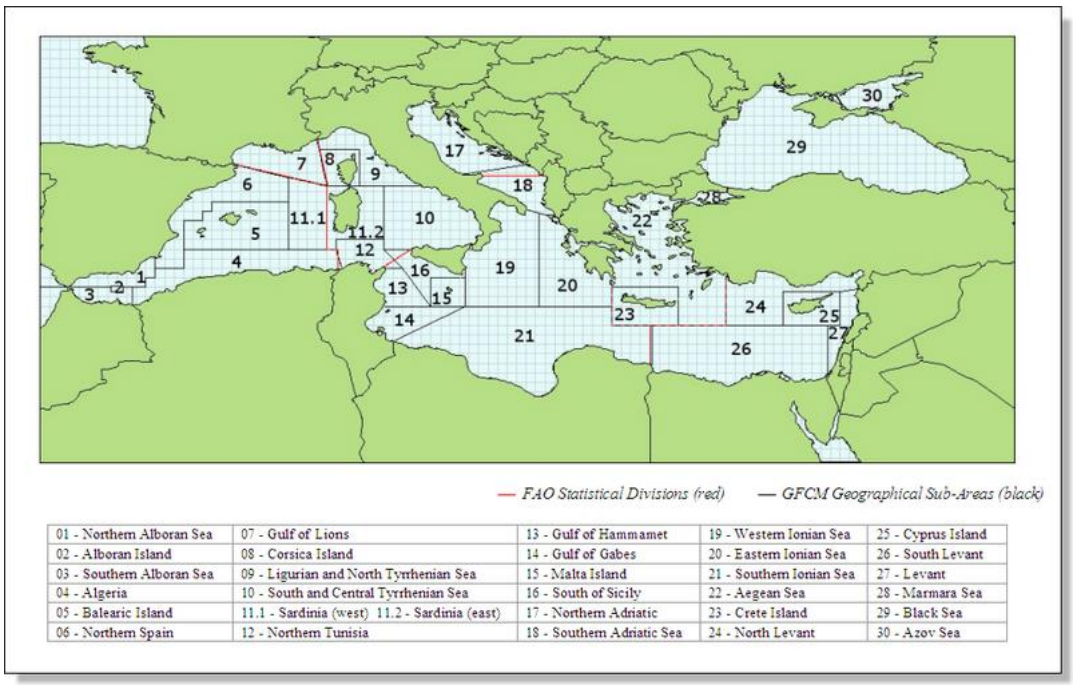
**Mahmoud H.H., Alaa A.K. El Haweet and Mark Dimech (2015).** Stock assessment of stripped red mullets "*Mullus surmuletus*" from the eastern Mediterranean, Egypt (GSA 26).Subcommittee on stock assessment (SCSA), GFCM.

**Salem, M., El-Aiatt, A.A. and Ameran, M. (2010).** Age, Growth, Mortality and Exploitation Rates of Round Sardinella, *Sardinellaaurita*from the East Mediterranean Sea (North Sinai Coast)Research Journal of Fisheries and Hydrobiology, 5(1): 32-38.

# 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. À 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:




## Description des flottilles

Le tableau suivant renseigne le nombre de navires actifs au moins un mois dans l'année par type d'engin en 2012

| Flottille | Nombre de navires | Puissance totale (kW) | Jauge totale (U.M.S.) | Nombre de marins |
|---|---|---|---|---|
| Senneurs à thons rouge | 10 | 7 768 | 2 610 | 100 |
| Senneurs (hors thons rouges) | 39 | 7 414 | 887 | 149 |
| Chalutiers de fond | 61 | 18 324 | 5 154 | 218 |
| Chalutiers pélagiques et mixtes | 10 | 3 055 | 1 330 | 43 |
| Ganguis | 21 | 1 091 | 101 | 33 |
| Dragueurs | 11 | 951 | 53 | 19 |
| Fileyeurs exclusifs | 325 | 24 325 | 1 086 | 433 |
| Fileyeurs polyvalents | 316 | 31 059 | 1 272 | 442 |
| Telliniers | 20 | 782 | 22 | 25 |
| Capéchades | 157 | 4 908 | 153 | 179 |

| Flottille | Nombre de navires | Puissance totale (kW) | Jauge totale (U.M.S.) | Nombre de marins |
|---|---|---|---|---|
| Métiers de l'hameçon | 39 | 3 277 | 224 | 59 |
| Plongeurs mer | 34 | 2 391 | 63 | 56 |
| Plongeurs étang | 43 | 2 426 | 55 | 52 |
| Divers petits métiers mer | 32 | 2 268 | 77 | 40 |
| Divers petits métiers étang | 105 | 5 484 | 141 | 128 |
| Divers petits métiers étang-mer | 57 | 3 781 | 109 | 70 |
| Total | 1 280 | 119 304 | 13 337 | 2 048 |

Source SIH/IFREMER : Synthèse des flottilles de pêche 2012, Façade Méditerranée

**Débarquements des principales espèces exploitées en Méditérranée en 2014 (données provisoires)**

| Nom commun | Nom latin | Code espèce FAO | Débarquements (t) |
|---|---|---|---|
| Thon rouge | *Thunnus Thynnus* | BFT | 2199 |
| Anchois | *Engraulis encrasicolus* | ANE | 1270 |
| Merlu européen | *Merluccius merlucius* | HKE | 1068 |
| Sardine | *Sardina pilchardus* | PIL | 488 |
| Poulpe | *Octopus vulgaris* | OCC | 377 |
| Dorade royale | *Sparus aurata* | SBG | 174 |
| Rouget | *Mullus surmuletus* | MUR | 153 |
| Loup | *Dicentrachus labrax* | BSS | 50 |

**<u>États des principaux stocks exploités</u>**

*Evaluation du stock partagé franco-espagnol de merlu (M. merluccius) du golfe du Lion (GSA 07)*

Le stock de merlu est dans un état de surexploitation avec une abondance relative faible et 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 1998-2013. Après avoir atteint de très fortes valeurs en 2010 et 2011, la mortalité par pêche a diminué ces 2 dernières années. Cependant, la biomasse des reproducteurs et le recrutement sont encore à de faibles niveaux, avec de légers signes d'amélioration. Le niveau d'exploitation courant est bien au-dessus du niveau estimé durable, puisqu'une analyse prospective a montré pour le point de référence ($F_{0.1}$) une valeur de 0.17, avec un F actuel de 1.67. L'importante diminution du nombre de chalutiers depuis 1998 (réduction de 40%) est susceptible de commencer à avoir un effet positif sur le stock.

*Evaluation du stock partagé franco-espagnol de rouget (M. barbatus) du golfe du Lion (GSA 07)*

Le stock du rouget de vase est dans un état de surexploitation (forte mortalité par pêche et abondance relative forte) avec périodiquement de plus forts recrutements (2005, 2006, 2007 et 2010). Le niveau d'exploitation est au-dessus du niveau estimé durable, puisque le point de référence $F_{0.1}$ est égal à 0.14 et que la mortalité par pêche courante ($F_{current\ 2011\text{-}2013}$) est égale à 0.45. Cependant la mortalité par pêche est la plus faible de la série et la biomasse des reproducteurs suit une tendance croissante. L'exploitation est principalement concentrée sur les jeunes individus (age 0-2), de plus 60% du recrutement (age 0) est mature. La biomasse courante (2011-2013) est au-dessus des 66th percentile.

*Evaluation du stock d'anchois et de sardine du golfe du Lion (GSA 07)*

Pour la sardine, la biomasse reste stable à des niveaux intermédiaires, bien qu'elle soit légèrement plus faible cette année en raison de la quasi absence de recrutement. Les indices biologiques sont toujours

au rouge: faible taille, très mauvaise condition. Pour la première fois depuis plusieurs années, le pic lié au recrutement n'a pas été observé (résultat similaire pour le sprat). Ceci peut s'avérer inquiétant pour les années à venir puisque la population semble vivre quasi entièrement sur le recrutement depuis quelques années. L'effort de pêche et les captures sont toujours extrêmement faibles, en raison de ces problèmes de taille et de l'absence de marché en résultant. **La population est donc considérée comme étant en déséquilibre écologique pour des raisons environnementales non liées à la pêche**. Néanmoins, **il est important que la pression de pêche n'augmente pas** sur cette population déjà en grande difficulté. Il est nécessaire de noter que les très mauvaises conditions météorologiques expérimentées durant la campagne cette année ont fortement contraint le nombre de chaluts réalisés (23 au lieu de 40/45 en général). L'erreur associée à l'évaluation est donc plus grande et il se peut qu'une partie du recrutement n'ait pas été détectée en raison de ce faible nombre de chaluts, notamment près de la côte.

Pour l'anchois, la biomasse est légèrement remontée cette année par rapport à l'année dernière, et se situe maintenant entre Blim et Bpa. Néanmoins, cela reste faible comme depuis les cinq dernières années. Les captures et l'effort restent relativement faibles eux aussi. Enfin, la distribution en taille montre que les anchois sont légèrement plus grands cette année. En revanche, l'indice de condition est au plus bas. **Le stock est considéré comme ayant une biomasse faible et il est donc conseillé de réduire la mortalité par pêche, même si celle-ci est déjà relativement faible.**

**<u>Statistiques et système d'information</u>**

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 (OBSVENTES) et paramètres biologiques*

Les actions « Echantillonnages biologiques des captures » et « paramètres biologiques », dans le golfe du Lion (GSA 7), visent à obtenir la structure en taille et/ou en âge des captures (apports commerciaux) des principales espèces exploitées par différents métiers, ainsi que les paramètres biologiques afférents, pour l'évaluation des stocks. L'échantillonnage des débarquements est réalisé sous criée ou sur les quais pour les navires >12 m. Depuis 2010, ces échantillonnages couvrent les navires <12 m (seulement 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 m*

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

*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 2013, 25 chalutiers (soient 79 marées) ont été échantillonnés dans le golfe du Lion (GSA 7).

*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 de la Corse (65 traits) et dans le golfe du Lion (23 traits), en fin de printemps. Elle a lieu à la même période en Méditerranée (France, Espagne, Italie, Grèce, Chypre, Malte, Slovénie, Croatie, Monténégro, Albanie) et mer Noire (Roumanie et Bulgarie). Le programme Medits, lancé en 1993 a permis de standardiser les modalités pratiques d'échantillonnage (période, échantillonnage biologique, engin de capture…) et ainsi de constituer une base de connaissances commune sur les ressources démersales exploitées. Les observations biologiques sont réalisées selon le protocole décrit dans la dernière version de "Instruction manual MEDITS" (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 MEDIAS-France (GSA 07)*

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

**Programmes de recherche en cours**

*Poursuite du Programme sélectivité de la flottille palangrière ciblant le thon rouge dans le golfe du Lion (projet SELPAL)*

L'objectif principal du projet SELPAL (financé par France Filière Pêche (FFP)) est de quantifier l'impact de la pêcherie palangrière ciblant le thon rouge sur les espèces sensibles (requins, raies, oiseaux, tortues) et de tester des mesures pour augmenter la sélectivité et atténuer ces impacts défavorables par la description de la pêcherie et par la connaissance appropriée de la biologie et de l'écologie des espèces sensibles dans le golfe du Lion. Ce projet de deux ans porté par la profession se terminera en décembre 2015. Six requins peau bleue, cinq tortues marines (quatre tortues caouanne *Caretta caretta* , une tortue verte *Chelonia mydas*) et un espadon ont été marqués au cours de la dernière saison. Ces opérations de marquage réalisées afin d'étudier les déplacements verticaux et horizontaux (migration) mais aussi la mortalité. Un site dédié permet de suivre les actions du programme et voir les déplacements de certains individus marqués (http://amop-selpal.com).

*Projet RéPAST (Raie pastenague pélagique)*

Ce nouveau projet financé par France Filière Pêche (FFP) est une extension du projet SELPAL qui vise à évaluer les taux de mortalité de la raie violette ou pélagique (*Pteroplatytrygon violacea*), espèce très fréquemment capturée par la pêcherie palangrière ciblant le thon rouge, lors de la remontée de l'engin; à clarifier les temps de résidence et leurs habitats critiques, à connaitre leurs mouvements à petite et grande échelles, à tester l'existence de sous-populations différenciées génétiquement.

*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 trois 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–MARBEC 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). Il est à signaler la capture exceptionnelle de deux tortues vertes (retrouvées vivantes) par des filets calées durant l'été 2014.

*Projet EcoPelGol (Ecologie de l'Ecosystème Pélagique du Golfe du Lion)*

Le projet EcoPelGol (Ecosystèmes Pélagiques du Golfe du Lion, 2012-2015) repose essentiellement sur les données acquises pendant les campagnes PELMED. Alors que la biomasse d'anchois et de sardines a considérablement chuté ces dernières années, entraînant avec elle une crise de la pêcherie, leur abondance (i.e. le nombre de poissons) s'est maintenue ou a augmenté dans le cas de la sardine. Nous avons donc autant ou plus de poissons mais moins de biomasse. Dans le même temps, nous avons pu montrer un changement important de la structure en taille ces dernières années, les sardines et les anchois étant beaucoup plus petits depuis 2008. Cette diminution de la taille des sardines résulte à la fois d'une baisse de la croissance et d'une perte des individus les plus âgés (perte des classes d'âges > 2 ans), alors que seule la croissance semble en cause pour l'anchois. Associés à ces

changements, une diminution forte de la condition corporelle (réserves de l'individu, souvent associées au gras d'un individu) a été observée chez les 2 espèces. Les poissons, bien que nombreux, sont donc plus petits et moins gras qu'auparavant, ce qui explique en partie la chute de l'effort de pêche et des captures. Enfin, nous avons pu montrer que les individus les plus touchés par cette chute de condition étaient les individus les plus âgés, fournissant un premier indice au déséquilibre démographique observé. Ces études mettent donc en évidence une possible surmortalité adulte des sardines et un changement environnemental potentiel, source d'une croissance plus faible et d'une moins bonne condition. Reste à déterminer quels paramètres de l'environnement ont changé. Les hypothèses envisagées et en cours d'étude concernent des modifications du plancton ou/et de la charge en pathogènes dans le milieu, etc. Enfin, une quantification de la pression effectuée par la prédation des thons sur les petits pélagiques est en cours.

**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 ont été également déclarés conformes.

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 atteindre à partir de 2015 et au plus tard en 2020 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 ».

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.

Après la déclaration conforme du Plan de gestion Chalut, l'État français a transposé ce document en texte réglementaire. Des règlements complémentaires ont précisé 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.

**Déclarations en lien avec la recommandation *CGPM 35/2011/4 sur les prises accidentelles de tortues marines dans la zone de compétence de la CGPM***

Bilan des captures de tortues marines (et mortalité) enregistrées par type d'engins de pêche sur la côte française entre 2000 et 2014 (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) -données partielles pour 2014

| **Espèce/Engin** | | CHALUT | FILET | HAMEÇON | Non déterminé | Total |
|---|---|---|---|---|---|---|
| *Caretta caretta* | Indéterminé | 1 | 23 | | | *24* |
| | Mort | 3 | 18 | 2 | 1 | *24* |
| | Vivant | 44 | 21 | 9 | 47 | *121* |
| *Dermochelys coriacea* | Vivant | | 1 | | 2 | *3* |
| *Lepidochelys kempii* | Mort | | 1 | | | *1* |
| *Chelonia mydas* | Vivant | | 2 | | | *2* |
| Non identifiée | Indéterminé | | | | 3 | *3* |
| | Mort | | 2 | | 7 | *9* |
| | Vivant | 1 | 1 | 1 | 40 | *43* |
| **Total général** | | **49** | **67** | **8** | **100** | **230** |

# GREECE/GRÈCE

## Description of fisheries

**Table 1. Landing data for 2013 and final data for 2012**

Note that landings cover data from vessels equipped with engines having power more than 19HP.

BFT data include both landings and transfers to fishfarms.

Data source is the EL.STAT (National Statistical Authority). Data source for large pelagics is DG for Sustainable Fisheries and Port Police.

| | COMMON NAME | SCIENTIFIC NAME | LANDINGS 2013 (TONS) | LANDINGS 2012 (TONS) |
|---|---|---|---|---|
| | Sole | *Solea vulgaris* | 799 | 528 |
| | Others | | 51 | 22 |
| FLATFISH | | | 850 | 550 |
| | Hake | *Merluccius merluccius* | 4700 | 4050 |
| | Others | | 6014 | 5433 |
| GROUNDFISH | | | 10714 | 9483 |
| | Horse mackerels | *Trachurus spp.* | 1810 | 2280 |
| | Mackerel | *Scomber scombrus* | 100 | 120 |
| | Sardine | *Sardina pilchardus* | 6870 | 5150 |
| | Anchovy | *Engraulis encrasicolus* | 8750 | 9510 |
| | Other pelagics | | 8605 | 8531 |
| PELAGICS | | | 26135 | 25591 |
| | Bluefin tuna | *Thunnus thynnus* | 178 | 176 |
| | Albacore | *Thunnus alalunga* | 93 | 126 |
| | Other tunas | | 1450 | 1127 |
| | Swordfish | *XIphias gladius* | 1731 | 877 |
| TUNAS | | | 3452 | 2306 |
| OTHER FISH | | | 12163 | 12940 |
| TOTAL FISH | | | 53314 | 50870 |
| | Lobster | *Palinurus spp.* | 105 | 125 |
| | Norway lobster | *Nephrops norvegicus* | 300 | 300 |
| | Shrimp | *Parapenaeus longirostris* | 1850 | 1600 |
| | Other crustaceans | | 1802 | 1631 |
| TOTAL CRUSTACEANS | | | 4057 | 3656 |
| | Mussel | *Mytilus galloprovincialis* | 82 | 67 |
| | Other shellfish | | 278 | 280 |
| TOTAL MOLLUSCS | | | 360 | 347 |
| | Squid | *Loligo vulgaris* | 780 | 835 |
| | Cuttlefish | *Sepia officinalis* | 1550 | 1190 |
| | Octopus | *Octopus vulgaris* | 1900 | 1880 |
| | Other cephalopods | | 1677 | 1948 |
| TOTAL CEPHALOPODS | | | 5907 | 5852 |
| GRAND TOTAL | | | 63638 | 60725 |

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 (31/12/2014).

**Table 2. Fishing fleet characteristics**

| LOA (m) | No of vessels | Capacity (GT) | Engine Power (KW) |
|---|---|---|---|
| **0-9.99** | 14.267,00 | 25.458,65 | 246.568,96 |
| **10-14.99** | 849,00 | 9.155,19 | 64.882,52 |
| **15-23.99** | 388,00 | 16.104,72 | 76.216,19 |
| **24-49.99** | 202,00 | 25.992,80 | 64.042,14 |
| **TOTAL** | **15.706,00** | **76.711,36** | **451.709,81** |
| | | | |
| **Average LOA** | 7.44 | | |
| **Range of LOA** | **min** | **max** | |
| | 2.56 | 40.00 | |

**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* – GSA 22 (Aegean Sea-NWpart)**

In GSA 22 the Greek anchovy fishery is almost exclusively exploited by the purse seine fleet. Concerning the regulations enforced, they concern a closed period from 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 of 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 tons in 2009. During 2014 the survey covered all the targeted populations. The new data are under processing and analysis.

**Sardine, *Sardina pilchardus* in the Aegean sea – GSA 22 (Aegean Sea-NW part)**

In GSA 22 the Greek sardine fishery is almost exclusively exploited by the purse seine fleet. Concerning the regulations enforced, they concern a closed period from 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 of 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 have remained stable since 2008.. During 2014 the eco-survey covered all targeted populations. The new data are under processing and analysis and will be presented this year.

**Conclusions for both anchovy and sardine**

The conclusions based on those assessments should be considered preliminary and cautiously because they are based on a short time series of data. Based on the assessment results the anchovy stock is considered to be sustainably harvested, operating below but close to an optimal yield level, though with no expected room for further expansion. On the other hand the stock of sardine resulted 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 the years to come, while the stocks should be monitored on 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 status and their current (2009) exploitation rates are at safe levels. The stocks for this 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 < 50 m had positively affected the status of their stocks. New data collected during 2014 are under processing and analysis and will be presented this year.

**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 status and their current (2009) exploitation rates are at safe levels. The stocks of the above-mentioned 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 < 50 m had positively affected the status of their stocks. New data collected during 2014 are under processing and analysis and will be presented this year.

**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 no relevant data is available, it is reasonable to assume that the recent banning of bottom trawling in depths < 50 m 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. New data collected during 2014 are under processing and analysis and will be presented this year.

**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 over 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 no relevant data is available, it is reasonable to assume that the recent banning of bottom trawling in depths < 50 m 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. New data collected during 2014 are under processing and analysis and will be presented this year.

**Brief description of work progress for the Action A2.1 in the framework of the "*National Programme for the collection of fishing data 2014*"**

The work of the Action A2.1for the Eel concerning the year 2014, was realized (like the previous two years) according to the proposal for the Hellenic Management Plan for Fishery Products and the Hellenic Eel Management Plan (HEMP). According to the above plans, the Fisheries Research Institute in collaboration with the Department of Biology of the University of Patras and the Department of Biological Applications and Technologies of the University of Ioannina, have started working on the 2014 project.

In 2014 the analysis of the age structure of the eel population of the HEMU-1 (North Western Greece), HEMU-2 (Western Peloponnesus) and HEMU-3 (North EasternGreece) has started using samples collected in 2014. However, the number of eel samples collected from the Fishing Collaboratives in the HEMU-3 was quite small. According to the fishermen, the reason why the landings were very low this year was the abnormal weather conditions prevailed in the area of North Eastern Greece.

Meanwhile, regarding the 2014 project, eel samples have been collected from Lake Vistonida during the winter and summer 2014 and some eel samples from River Evros in May and October 2014. Moreover, the data on eels' landings from the lagoons of Eastern Macedonia and Thrace, the Ambracian Gulf and Messolonghi lagoon were also collected.

Apart from the data collection and elaboration, the Fisheries Research Institute completed the recruitment process, hiring three scientists for the elaboration of the samples and the filed trips. Moreover, the procedure for awarding subcontracts with the University of Ioannina (Department of Biological Applications and Technologies) and University of Patras (Department of Biology) were completed. Also, meetings were held to coordinate the work between the above mentioned stakeholders.

It must be mentioned that all the data that were collected during the 2013 project, were included in the final technical report for the "*National Programme for the collection of fishing data*", submitted to the Ministry of Rural Development and Food, in Greek and in English. Also, the data were submitted to the *Joint EIFAAC/ICES Working Group on Eels.*

**Status of the statistics and the information system**

The fisheries statistics data keep getting more accurate and valid. The pilot introduction of OSPA (Integrated Information Technology System), practically the gradual implementation of ERS gives the system an immediate and valid aspect. Since December 2014, only the bft fishery is mandatory to use ERS. But given the time, the large pelagics fishery, the trawlers and purse seines are bound to introduce into the system and start obligatory using it.

The Hellenic Statistical Authority (EL.STAT) remains the administrative body that collects fisheries data. The Directorate General for Sustainable Fisheries collects and validates various data concerning, among others:

a. fish landings for specific species (bft, swordfish and albacore) daily, in line with ICCAT recommendations and the EU legislation. The Bluefin catch document is also collected daily with details about the caught specimens' presentation.

b. trade data concerning imports, exports and re-exports of swordfish and big-eyed tuna are kept, pursuant the Reg (EC) 1984/2003.

c. data concerning imports of fishery products from third countries in line with the Reg (EC) 1005/2008.

d. fish landings from vessels that land catches to foreign ports.

Moreover, the National Fleet Registry (NFR) is kept and includes vessels technical characteristics. NFR is the provider to Community Fleet Registry.

**Status of research in progress**

In Greece, the Mediterranean fisheries research is carried out primarily by the Hellenic Centre for Marine Research (HCMR) and the Fisheries Research Institute that belongs to the Hellenic Agricultural Organisation (DEMETER). 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 2011-2014**

The following actions were carried out in 2014.

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 2013. 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 1,395 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 during 2014 through on-board and on-shore sampling.***

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 2014 – Action for the eel 2014" from January until December 2014, 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 2014 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.

*Research surveys at sea*

*MEDITS* Regarding the MEDITS survey, the sampling was fully implemented in the Ionian, Aegean and Cretan Seas (GSAs 20, 22, 23)

*MEDIAS* Regarding the MEDIAS survey, this has been also fully accomplished according 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.

**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 on 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 to 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: First, the consumer can be protected from fraudulent substitutions of species in fisheries products and second, the relevant national or European authorities can be informed in cases of illegal, uncontrolled, and unreported (IUU) fisheries.

In Greece, recent relevant examples have included 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 gillnets, trammel nets and bottom nets suitable to enable the Fisheries Inspectors to assess 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 help improve 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, this project provides a list of gaps and suggestions for further investigation including the genetic characterisation of provisional stock units already identified.

**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 help 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 interaction between 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 of both the fishing sectors and the control/inspection bodies. Information must also be independently collected through the fishing-nets makers, door manufacturers and, if 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 once each project has been approved by DG MARE. Then, the proposal will be submitted for evaluation and approval of 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 includes 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 that prevail 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 database (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 socioeconomic 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.

**Maximising yield of fisheries while balancing ecosystem, economic and social concerns (MYFISH).** The project 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.

**System for the Assessment of Acceptable Ecological Flows in Rivers and Streams of Greece (ECOFLOW/ 961- 02.5031301).** The ECOFLOW project aims to create a systematic and standardized procedure for assessing ecologically acceptable flows in rivers and streams whose flow regime is impacted by water resource development. The flow of running waters sustains the web of life, and the ecological quality of waters in an entire river basin. Flow regime impairments has been little-studied in Greece, and remains a much neglected aspect of the national legislation, despite widespread conflicts over water resource management and uses. A specialized consortium of scientists and relevant industry corporations will work together to achieve pioneering research and technological development and provide an important contribution to water-quality protection on a nation-wide level. State-of-the-art methods and software products will be developed to assess impaired flow regime impacts in the uniquely varied streams and rivers of Greece. Fish and hydrogeological elements will be used as indicators for ecological quality. This work differs from instream methods previously applied in temperate-climate countries since it will be specifically adapted to the Mediterranean's unique bio-geoclimatic and ecological conditions. Lastly this project promotes the implementation of the EU Water Framework Directive through providing a scientifically sound basis for assessing ecologically appropriate flow regimes using scientifically defensible analytical tools.

**Derelict Fishing Gear Management System in the Adriatic Region (DeFishGear/ 985-01.3021308)**. DeFishGear project is coherent with the strategic theme "Improving marine, coastal and delta rivers environment by joint management in the Adriatic area" through its contribution to reduce pollution of marine environment with litter by addressing the source of marine litter pollution related to fisheries, by direct removal of marine litter from the environment through promoting "Fishing-for-litter' and "Derelict fishing gear management system" activities and by proposing common monitoring programme of marine litter in all participating countries.

HCMR will be involved in 5 out of 10 workpackages (WP1, WP2, WP4, WP5, WP6) of the project. The first 2 correspond to common activities among partners related to project management and the dissemination of project results. In WP4,5,6 HCMR will be involved in the following:

In Corfu-Thesprotia region, the reserach vessel 'Philia' and a ROV will be used for marine litter assessment on the sea bottom the water column and for the assessment of microplastics abundance in surface waters. HCMR will collaborate with the other project partners in the development of plans and protocols. HCMR will also work in collaboration with FB12 for the assessment of litter on beaches. HCMR will provide guidance to other partners on sample preparation for microplastic identification. Finally, HCMR will be involved in implementing pilot actions in the ports of Corfu and Igoumenitsa (Greece), in order to manage and reduce fishing gear litter: fishermen awareness campaigns; derelict fishing gear collection for recycling; fishing-for-litter.

MANAGING THE EFFECTS OF MULTIPLE STRESSORS ON AQUATIC ECOSYSTEMS UNDER WATER SCARCITY" (GLOBAQUA). GLOBAQUA has assembled a multidisciplinary team of leading scientists in the fields of hydrology, chemistry, ecology, ecotoxicology, economy, sociology, engineering and modeling in order to study the interaction between multiple stressors within the frame of strong hydrological pressure on water resources. The aim is to achieve a better understanding how current management practices and policies could be improved by identifying the main drawbacks and alternatives.

**Plesionika Manage (02.2031403).** The aim of this study is to test with two different experimental designs the size selectivity, trap type efficiency, seasonal depth migration of the pandalid shrimp, the economic sustainability, trap selectivity, biological indices, the socioeconomic fisheries profile and Alternative Management Scenarios.

1. The aim of the first design is to test the size selectivity, trap type efficiency and seasonal depth migration of the pandalid shrimp
2. In the second design we aim to investigate the spatial/geographical variation of shrimp trap fishery catches in the south-eastern Aegean Sea.

**"Selectivity of the diamond and square mesh of the trawl codend, biological and economic consequences and fish behavior comparative study" (EPILEXIS).** The objective of this project is to study the selectivity of diamond and square mesh of the codend in the bottom trawl, the biological

and economic consequences of their implementation and the behavior and condition of the retained fish and escapees. In this context, we will study the selectivity of the 40 mm square and 50 mm diamond mesh size in the codend of the trawl, which were determined based on the EU regulation (EC 1967/2006) as the minimum mesh sizes for this gear. For comparison purposes, the selectivity of the 40 mm diamond mesh size will also be examined, which was used until now, but is no longer in use based on EU regulation (EC 1967/2006). Data collection will take place during experimental fishing, in conditions as close as possible to those carried out by commercial fishery (using commercial fishing vessels, trawls and other commercial fishing equipments, testing hauls of commercial fishery). The study will be carried out by covering the codend. Based on these data, the selectivity parameters, the composition of the catch, the percentage of commercial catch, by-catch and discards and quantity of the retained and escapees will be studied for each mesh size, for two seasons and three depth zones. In addition, underwater cameras inside the trawl and between the codend and the cover will be used for the study of the behavior and condition of the retained fish and escapees. Finally, economic data, related to each mesh size, will be collected (quantity and quality of landings, landings' commercial value, fuel cost, gear cost etc). All the above data will form the basis for assessing the biological and economic consequences of the application of each mesh size in order to propose the most adequate one. The results of this project will be disseminated through a website, publications, participation in conferences and a workshop with the related stakeholders.

**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 socioeconomic 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'

**ADRiatic Ionian maritime spatial PLANning (ADRIPLAN).** The project aims to deliver a commonly-agreed approach for the development of cross-border Maritime Spatial Planning (MSP) in the Adriatic-Ionian Macro-Region, focusing mainly on two study areas, one in Northern Adriatic, and a second one in Southern Adriatic - Northern Ionian Sea. This approach will rely on a comprehensive assessment (environmental, legal, administrative, socioeconomic), and will be developed taking into

account the multiple demands and possibilities, with the contribution of both institutional members and observers participating in the project. In addition there will be interaction with key stakeholders whose activities are among the most important in the region (e.g. fisheries, tourism). The ultimate goal is to promote harmonized implementation of the relevant legal framework, namely the Mediterranean Protocol on Integrated Coastal Zone Management, and the proposed Directive ICZM-MSP (COM (2013) 133 final).

Spatially resolved Ecosystem models and their Application to Marine MANagement (SEAMAN). The sustainable use of the marine ecosystems set out for example in the Marine Strategy Framework Directive (MSFD) and the Common Fisheries Policy (CFP) an improved knowledge about the processes impacting the environment is needed. Spatially explicit ecosystem models are getting increasingly important to manage the challenges of natural conservation, sustainable use and economic exploitation. They are useful for understanding marine ecosystem dynamics, disentangle the region-specific impact of various ecosystem drivers and form a powerful tool to evaluate different management options in complex systems. However, uncertainties related to process formulations of growth, respiration, mortality and regenerative production, uncertainties related to the zooplankton compartment and conceptual challenges related to trophic coupling and fish behaviour limit the applicability of state of the art 3-d ecosystem models to marine ecosystem management significantly. Further limitations for an integrative ecosystem approach to management are lacking model instruments to assess ecosystem stressors such as the advance of invasive alien species or the impact of anthropogenic pollutants throughout the various trophic levels.

**Technical Improvement of the fishing gear 'trawl' in order to enhance its use and achieve energy efficiency.** The conclusions from several RTD projects conducted by the Institute for Marine Biological Resources and Inland Waters show that there is a great need to redesign the fishing gear 'trawl' in a scientific way based on the vessel characteristics and its equipment in order to achieve the following goals:

- improve its use and productivity by allowing the increase of fishing speed by 2 fold
- minimize energy losses due to friction of the trawl components in the water
- redesign the trawl using modern CAD/CAM/CAE tools and hydrodynamic models
- redesign the main frictional components such as the doors and recalculate the angle of attack

**ECOsystem effect of fisheries DISCards (ECODISC).** The European Commission has decided the gradual banning of fisheries discards by imposing obligation for landing of unwanted catch as key point of the reform of the Common Fishery Policy. Discards constitute food source for several groups of species (especially seabirds and benthic scavengers) and cause alteration of trophic interactions which affect ecosystem functioning and structure. The effect of a discards ban on the environment is largely unknown, especially for oligotrophic systems like the Mediterranean Sea. ECODISC aims at understanding how fisheries discards affect ecological processes and biogeochemical cycles, and how this can be managed. These are addressed by a series of experiments and tools (maps, statistical and mathematical models) that aim to elucidate discards fate and their use as a food source by the ecosystem communities, and integrate this information to explore ecosystem effects of a possible application of partial or full discards ban. First the spatio-temporal distribution of discards in the Ionian Sea will be analyzed, discard management scenarios that are likely to be applied will be defined and resultant changes in discards quantities will be explored. A series of on board experiments will shed light on the survival of discards, their fate after sinking and their use by opportunistic benthic scavengers. A series of research trips is designed to explore discards use by seabirds and analyze their dependency by this food levy. The information gained will be integrated in an existing ecosystem model which will be updated to focus on the interactions of discarding with seabirds and benthic communities. The model will be used to simulate the defined discards ban management scenarios and results will be used to assess if discards play important role for the conservation of seabirds and/or the sustainability of fisheries resources. Finally, based on the model outcomes, management strategies will be evaluated.

**VALUE: Exploitation of the discards within the reformed CFP without the creation of income for the fishermen.** The study aims to analyse in detail the logistics of the discard landings at the auction markets using as case study the Keratsini monger market. In addition the study of their exploitation as raw material for the preparation of food pellets for the feeding of sea bream in cages. The results of the project will provide recommendations for the proper handling of the discards in order to be suitable for the purpose of fishfeed making.

**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. A number of aspects of these relationships needs 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 indicators 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 (socioeconomic 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 an increase 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 designed 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 socioeconomic 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)**

(1) 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 (CoralFISH).** The CoralFISH project aims to support the implementation of an ecosystem-based management approach in the deep-sea by studying the interactions 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 their living conditions. 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 with potential 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. 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 socioeconomic 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 programme 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 Programme 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 and medium 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 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: 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. Reaching this goal is complicated as there is no 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 taken into account, aiming at procedures that would enable the MSY approach to become more 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 states 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 from being completed but some extensive mapping in several areas has been carried out and 3. the scientific community is highly sensitive to the issue of Mediterranean habitats inventories as demonstrated by the effort of RAC/SPA. 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 develop different

scenarios for changing governance structures and legislation in order 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 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 undertaken 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:

-Build an ICZM governance platform up 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, socioeconomic 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 to 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 of aquaculture development 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). Those tools prove to be the most appropriate for the classification of ecological status of the Mediterranean transitional and coastal waters, using benthic macrophytes as bioindicators.

**Fish Fry Protecting Devices (ECO-NET).** The proposed project aims at meeting the market demand for innovative products that could assist the fishing industry to apply large-scale fish protection programmes using relatively inexpensive materials and techniques. The idea is to use nets, which is an inexpensive material, already used in the fishing industry, and develop a series of Fish Aggregating Devices (FADs).

**Architecture and roadmap to manage multiple pressures on lagoons (ARCH/ 877).** 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

**Pilot project on catch and discard composition including solutions for limitation and possible elimination of unwanted by-catches in trawl net fisheries in the Mediterranean (DISCATCH)**. Conservation standards for sustainable exploitation, within an ecosystem approach to fisheries management, increasingly urge the elimination of the wasteful practice of biomass discarding at sea. Understanding the reasons for discarding and identification of solutions to tackle the bycatches of unwanted species and specimens is essential if discards are to be eliminated without affecting the minimum requirements of conservation standards. To strengthen the scientific basis for the ecosystem approach to fisheries management the EU requires knowledge on the impact of fishing on the structure, functioning and services of the ecosystem as well as on the socioeconomic aspect of innovations in fisheries technology and management. The current project will provide this basis. The success of this multi-disciplinary project, however, will critically depend on a clear a priori understanding of how these different topics are inter-linked and fit into the overall framework of the project.

The aim of DISCATCH will be to support the identification of viable solutions to address factors determining the catches of unwanted species and specimens in trawl fisheries with a view to reducing unwanted catches and eliminating discards. The main objectives of DISCATCH are:

- to provide an overall assessment of the fishing fleet discarding behaviour and to identify the main reasons for discarding in Mediterranean continental shelf demersal and small pelagic trawl fisheries.

- to identify measures, including technical ones related to fishing gear characteristics, to mitigate or eliminate bycatches of unwanted species and measures to eliminate discarding based on existing or new measures.

**Monitoring of the state and abundance of Ladigesocypris ghigii (Pisces, Cyprinidae) population in Gadouras stream (Rhodes Island), during the construction of the Gadouras dam (ΓΚΙΖΑΝΙ ΓΑΔΟΥΡΑΣ/ 402- 02.4070101).** The objective of the project is to keep monitoring the abundance of the *Ladigesocypris ghigii* population that inhabits the Gadouras stream in Rhodes Island, (since the construction of the Gadouras dam is still ongoing), until the end of 2008.

**Monitoring of ecological water quality of rivers, coastal and transitional waters of Greece (article 8 Directive 2000/60/EU)**

**Fish Fry Protecting Devices (ECONET).** The proposed project aims at meeting the market demand for innovative products that could assist the fishing industry to apply large-scale fish protection programmes using relatively inexpensive materials and techniques. The idea is to use nets, which is an inexpensive material, already used in the fishing industry, and construct a series of Fish Aggregating Devices (FADs).

**Fish Net Greece: Conserving the Corfu killifish.** This project aims to use monitoring, captive breeding, research and trial translocation of the critically endangered Corfu Killifish *Valencia letourneuxi* in order to stabilise its population and prevent extinction in the wild. In this, the Kastoria Aquarium will contribute too with establishment of stocks of this species, in aquaria as well as in seminatural conditions. In particular, the project will undertake the translocation of the target species from two sites where they currently exist in sufficient numbers, and move them to two sites that are suitable habitats where none of these species are present, (though they are present in the basin), or where they are few in number. Some habitat restoration or enhancement will be undertaken on these sites, and the translocation will be conducted according to IUCN reintroduction guidelines. A Follow-up two –year monitoring phase to test the success of the actions will be undertaken. Finally, the project includes an awareness campaign, which will use interpretation panels and direct communication with local communities.

**Creation of an ecosystem based fisheries model for the management of the Vovli lake.** The aim of the project “Creation of an ecosystem-based fisheries model for the management of the Volvi lake” is the integrated approach and the selection of exploitation models of the lake ecosystem. The main research areas of the project are: • The development of an ecosystem-based fisheries model that will correspond to the existing exploitation conditions of the Volvi lake.• The development of scenarios

and model analysis that will lead to the prioritization of critical points for the production and the future sustainability of fish stocks. • Data entry and database creation according to the project's needs.

• The recording and analysis of the characteristics of the fishers involved in the lake in relation to their occupation type and their dependence degree. • The development of a fisher's typology and of people dependent, in varying degrees, on the fisheries exploitation of the lake.• The impact assessment of changing the exploitation operational framework, according to the scenarios developed

• The presentation, the commenting and the evaluation of different scenarios for the optimization of exploitation taking into consideration the ecological and socioeconomic impact assessment.

**Pilot parks for fish fry protection (ECOPARKS).** The proposed project aims at the establishment of two artificial reef parks in the islands of Chios and Limnos. The parks will be equipped with innovative devices developed by HCMR which act as artificial reef but provide extended aggregation and protection to juvenile fish against a limited cost compared with the conventional artificial reefs. The new devices enable the fishing industry to apply large-scale fish protection programmes Aggregating Devices (FADs). The parks will serve as exhibition installations for the fishing industry and policy makers.

**Involvment in activities of fao regional projects**

**Participation in EastMed FAO Project activities (April 2014-December 2014)**

During the period April 2014-December 2014, a number of Greek researchers from Public Institutes, along with other colleagues from the EastMed Project staff and from other participating countries, continued working on the ongoing projects.

**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.

**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 Eel Management Plan includes measures targeting 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**

No derogation of Paragraph 4 is applied.

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

No incidental by-catch of seabirds was reported during 2014.

**Recommendation GFCM/35/2011/4 on the incidental by-catch of sea turtles in fisheries in the GFCM Competence Area**

No incidental by-catch of sea turtles was reported during 2014.

**Recommendation GFCM/36/2012/2 on mitigation of incidental catches of cetaceans in the GFCM area**

No incidental by-catch of cetaceans was reported during 2014.

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

Sharks and rays are not target species for the Greek fishery. Data, concerning incidental sharks and rays by-catch in 2014, was monitored by the National Fisheries Data Collection Programme. At the time being, existing data is being processed by the competent authorities and will soon be available.

# ITALY/ITALIE

## Description of the fisheries

The production structure of the Italian fishing sector in 2013 consists of 12,582 vessels, for a total of 159 thousand GT (gross tonnage) and 1,009 thousand kW.

In accordance with the management policies of the fleet capacity at EU level, over the last decade all the structural parameters of the fleet decreased. The fishing capacity of the national fishing fleet is subject to adjustment plans that provide for the gradual withdrawal of fishing vessels.

Compared to 2011, fleet capacity has decreased by 1.6% in terms of number and 3% in terms of GT. The reduction of fishing capacity involved especially larger vessel, as evidenced by the average size of the national fleet GT, equal to 13.5 tons in 2004 and 12.6 tons in 2013.

The largest segment is the small fishing vessels with 8,572 units, followed by the trawlers with 2,437 units and hydraulic dredgers (707), while the smallest segments are polyvalent vessels (461 units), purse seiners (224), longliners (177) and pair trawlers (146).

During 2013, the total landings amounted to 172,624 tones equivalent, in terms of revenues, to 831.56 million euro. The results achieved by the national fishing sector last year confirm the continuation of a situation of downsizing that has been affecting the sector in recent years. Between 2004 and 2013, the level of landings decreased from 288 thousand tons to 171 thousand tons, that is to say a reduction of 41%.

The negative trend in landings recorded in 2013, was only partially linked to the smaller size of the production structure and the activity levels of the national fleet, that were substantially stable. In the last year, there has been a substantial drop in average production rates. The daily catch was, on average, equal to 116 kg against 126 kg in 2012; the reduction of the average productivity was mainly related to the small pelagic fisheries with purse seiners and pair trawlers.

As for the revenues, they decreased by 12% over the year. The average prices settled at € 4.76/kg, steady from the year before.

The decrease in revenues has affected most of the areas, with some exceptions concerning, in particular, the area of the North Tyrrhenian Sea. In Liguria and Tuscany, the good performance of revenues is linked to the small-scale sector. In all other regions, there are losses in the levels of landings in particular in Abruzzo (about 5000 tons of landings less) and Emilia Romagna (a lower production of about 9000 tons from the previous year).

The species most landed in 2013, were anchovies (29,664 tons.), followed by sardines (22,606 tons.) and clams (14,598 tons.); substantial drop in catches were recorded for both anchovies and clams. In particular, the production of anchovies decreased by 31% and the prices remained stable at € 1.87/kg.

The analysis of the profitability indicators shows a strong contraction in the added value and in the gross profit; for the first time, RoFTA, which represents the return on investment, was even negative. Decreasing economic performance affected all the fishing areas, with the exception of the Adriatic regions (GSA 18 and GSA 17); particularly in GSA 18, the increase in activity level and the average productivity allowed the fleet to increase landings, and thus the value of production, with positive effects on profits.

**Table 1. Capacity and economic indicators by fleet segments, 2013**

| | 2013 | | | | | | |
|---|---|---|---|---|---|---|---|
| | Total fleet | Trawlers | Pelagic fleet | Dredges | Small scale fishery | Multipurpose vessels | Longlines |
| **Capacity Indicators** | | | | | | | |
| Volume of landings ('000ton) | 172.62 | 69.65 | 52.86 | 16.50 | 27.13 | 3.40 | 3.08 |
| Value of landings (EUR million) | 831.56 | 447 | 92 | 43 | 195 | 29 | 25 |
| | | | | | | | |
| **Economic indicators** | | | | | | | |
| Fleet - number of vessels | 12582 | 2420 | 357 | 707 | 8421 | 507 | 170 |
| Fleet - total GT ('000) | 159 | 99 | 23 | 9 | 16 | 7 | 5 |
| Fleet - total kW ('000) | 1009 | 482 | 105 | 76 | 236 | 74 | 34 |
| Days at sea (000) | 1494 | 350 | 41 | 47 | 985 | 50 | 20 |
| Employment | 27053 | 7820 | 2313 | 1366 | 13473 | 1369 | 704 |

*Source*: MIPAAF – National Programme on Data Collection

**Table 2 Main species harvested by quantity and value**

| **species** | **Landings, tons** | **Revenues (mln €)** | **Average price (€/kg)** |
|---|---|---|---|
| European Anchovy | 29,664.2 | 55.4 | 1.87 |
| European pilchards | 22,605.7 | 16.6 | 0.73 |
| Striped venus | 14,598.3 | 33.5 | 2.29 |
| European Hake | 9,766.9 | 67.2 | 6.88 |
| Deep-water rose shrimp | 8,310.6 | 54.3 | 6.54 |
| Common cuttlefish | 5,685.9 | 43.8 | 7.71 |
| Mullets | 5,304.0 | 5.9 | 1.12 |
| Striped mullet | 5,130.2 | 24.1 | 4.69 |
| Spottail mantis squillid | 4,970.1 | 28.3 | 5.70 |
| Gastropods nei | 4,009.1 | 11.6 | 2.90 |
| Swordfish | 2,862.0 | 29.2 | 10.20 |
| Common cuttlefish | 2,786.5 | 21.0 | 7.54 |
| Giant red shrimp | 2,780.1 | 51.9 | 18.68 |
| Atlantic horse mackerel | 2,543.3 | 4.1 | 1.62 |
| Squids | 2,522.1 | 14.0 | 5.57 |
| Other species | 49085.2 | 370.5 | 7.55 |
| | 172,624.2 | 831.6 | 4.82 |

*Source*:MIPAAF- National Programme on Data Collection

**Status of stocks of priority species (2015)**

The information used to assess resources status in the seas around Italy derives by both fishery independent data (MEDITS trawl-survey, SOLEMON 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 7 GSAs surrounding Italy, represent the reference spatial scales for evaluation and assessment of commercial stocks based on analytical methods (e.g. Extended Survival Analysis: XSA, Length Cohort Analysys: LCA, Statistical Catch-at-Age: SCAA) and surplus production models.

The assessed stocks were those with highest commercial value for Italian fisheries. The assessments dealing with stocks shared with other Mediterranean countries were performed within the GFCM framework and were supported by FAO Regional Projects AdriaMed and MedSudMed. Stocks exploited almost exclusively by Italian vessels were assessed by the STECF (EWG on Mediterranean Sea) of the European Commission.

Table 1 summarizes the assessment results for stocks assessed in 2013-2014 and presented either at GFCM WGs or STECF EWGs or both. Hake (*Merluccius merluccius*) was in an overfishing status in all the areas where it was assessed (GSAs 12-16, 9, 10, 17, 18) as observed over the last years. Clear signs of recovering were observed for red mullet (*Mullus barbatus*) in some areas (GSAs 10 and 18) where the stocks are exploited sustainably. On the contrary, red mullet stocks are still exploited unsustainably in central-Northern Adriatic, western Ionian Sea (GSAs 17 and 19), Sardinia (GSA 11) and in slight overfishing in North Tyrrhenian and Ligurian Sea (GSA 9).

A situation of overfishing was also reported for sole (*Solea vulgaris*) in the Adriatic Sea (GSA 17), striped red-mullet (*Mullus surmuletus)* in the Strait of Sicily (GSAs 15-16) and blue whiting (*Micromesistius poutassou*) in GSA 9.

As regards the crustaceans, Norway lobster (*Nephrops norvegicus*) resulted in overfishing in northern Tyrrhenian (GSA 9) and South Adriatic (GSA 18). A status of overfishing was also reported for giant red shrimp (*Aristaemorpha foliacea*) in Western Ionian Sea (GSA 19). The stocks of deep water rose shrimp (*Parapenaeus longirostris*) were found in overexploitation in southern Tyrrhenian (GSA 10) and southern Adriatic (GSA 18). In the Strait of Sicily (GSA 16 and adjacent GSAs) the stock is slightly above the adopted $F_{MSY.}$ Finally, the stock appeared as sustainable exploited in GSA 9 where the standing stock has proved to be positively affected by the ongoing warming trend in sea surface waters.

Concerning the small pelagics, signs of overfishing for the stock of anchovies *Engraulis encrasicolus* were reported in the Adriatic Sea (GSA 17) where the stock was unsustainably exploited and at low biomass level. Sardine (*Sardina pilchardus*) was in overexploitation in GSA 17 even though its biomass is above the limit reference point (Blim). In GSA 16, the stock displays intermediate level of biomass although its overexploitation status is uncertain.

**Table 1. List of stocks assessed in 2013-2014 in Italian GSAs**

| SPECIES | GSA | Method | Years | Fcur | F01 | Stock status | Working Group |
|---|---|---|---|---|---|---|---|
| Anchovy | 17 | SAM | 1975-2013 | | | Overexploited and in overexploitation | GFCM |
| Blue whiting | 9 | XSA | 2009-2013 | 0.38 | 0.32 | Exploited unsustainbly | STECF |
| Deep water rose shrimp | 9 | XSA | 2006-2013 | 0.69 | 0.71 | Harvested sustainably | STECF |
| Deep water rose shrimp | 12-16 | XSA | 2005-2013 | 0.88 | 0.70 | Exploited unsustainbly | GFCM |
| Deep water rose shrimp | 18 | XSA | 2006-2013 | 1.62 | 0.74 | Exploited unsustainbly | GFCM |

| SPECIES | GSA | Method | Years | Fcur | F01 | Stock status | Working Group |
|---|---|---|---|---|---|---|---|
| Deep water rose shrimp | 19 | XSA | 2006-2012 | 1.6 | 0.67 | Exploited unsustainbly | STECF |
| Deep water rose shrimp | 10 | XSA | 2006-2013 | 1.6 | 0.92 | Exploited unsustainbly | GFCM |
| Giant red shrimp | 19 | XSA | 2008-2013 | 0.65 | 0.29 | Exploited unsustainbly | GFCM |
| Hake | 9 | XSA | 2005-2013 | 1.3 | 0.22 | Exploited unsustainbly | STECF |
| Hake | 18 | SCAA-a4a | 2007-2013 | 0.8 | 0.2 | Exploited unsustainbly | GFCM |
| Hake | 12-16 | XSA | 2007-2012 | 0.63 | 0.14 | Exploited unsustainbly | GFCM |
| Hake | 10 | XSA | 2006-2013 | 0.74 | 0.16 | Exploited unsustainbly | GFCM |
| Hake | 17 | SCAA-SS3 | | 0.53 | 0.26 | Exploited unsustainbly | GFCM |
| Norway lobster | 9 | XSA | 2006-2013 | 0.43 | 0.21 | Exploited unsustainbly | STECF |
| Norway lobster | 18 | XSA | 2007-2013 | 0.85 | 0.14 | Exploited unsustainbly | STECF |
| Red mullet | 9 | XSA | 2006-2013 | 0.76 | 0.6 | Exploited unsustainbly | STECF |
| Red Mullet | 18 | XSA | 2007-2013 | 0.48 | 0.45 | Exploited at levels close to sustainability | STECF |
| Red mullet | 10 | XSA | 2006-2013 | 0.5 | 0.5 | Harvested sustainably | GFCM |
| Red mullet | 11 | XSA | | 1.07 | 0.11 | Exploited unsustainbly | STECF |
| Red mullet | 17 | SCAA | 2006-2012 | 0.55 | 0.21 | Exploited unsustainbly | STECF |
| Red mullet | 19 | LCA | 2006-2012 | 1.2 | 0.38 | Exploited unsustainbly | STECF, GFCM |
| Sardine | 16 | Harvest ratios (catches/biomass from survey) | 1998-2013 | | | Intermediate abundance, exploitation status uncertain | GFCM |
| Sardine | 17 | SAM | 1975-2013 | | | Biomass above reference point and in overexploitation | GFCM |
| Sole | 17 | SCAA-SS3 | 1970-2013 | 0.46 | 0.31 | Exploited unsustainbly | GFCM |
| Striped red mullet | 15-16 | XSA | 2006-2012 | 0.78 | 0.19 | Exploited unsustainbly | STECF, GFCM |

**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 Programme 2014, 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 programme comprised the following modules, that were already summarized in the 2014 report.

Module of evaluation of the fishing sector; Module of evaluation of the economic situation of the aquaculture and processing industry sectors; Module of evaluation of the effects of the fishing sector on the marine ecosystem; Module for management and use of the data covered by the data collection framework

For the 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.

Particular attention was paid to the regional approach and compliance with Regional Coordination Meeting for the Mediterranean and Black Sea (RCMMed & BS) was ensured. Concerning the two surveys MEDITs and MEDIAS, they have been carried out in line with the 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. University Departments and Research Institutes were mainly involved. The preliminary or complete reports, abstracts and resumes of previous projects of interest for GFCM are available at DG marine fisheries and aquaculture and may be requested by e-mail PEMAC1@politicheagricole.it :

The main topics under investigation are:

Scientific bases and tools to support the building up of management plans in the CFP (Common Fishery Policy) and the environmental and economic policies context.

Assessment of bycatch of protected species in the pelagic trawl

Nutritional and safety aspects of fish species from fishery and aquaculture

Bio-economic models

Optimization of sampling methodologies for stock assessment

Preliminary 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

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,

Capacity of restitution of coastal lagoons environments supporting local coastal stocks, qualitative and quantitative aspects;

The following projects have just been activated:

Monitoring and assessment of discards, for both small pelagic species and for demersal for the implementation of art. 15 of Reg. (UE) 1380/2013

Development of an innovative technical scientific framework for the preparation of the management plans for fisheries for the implementation of the Reg. (UE) n. 1380/2013

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

See paragraph above . Main projects in progress:

Productive structures analyses and socio-economic characteristics of Italian Fisheries

Sustainability and management tools for Italian fishery: an impact assessment of TURF

**Marine environmental studies in progress**

None from DG marine fisheries and aquaculture

**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*".

Italy's contribution to the achievement of FAO Regional Projects objectives is not exclusively financial, as it also includes partnerships 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 scientific surveys have been jointly carried out in the Adriatic Sea;
- 2 joint stock assessment (*Parapenaeus longirostris, Merluccius merluccius, GSA 12-16*) have been produced in the south-central Mediterranean (Straits of Sicily);
- 7 joint stock assessment (*Parapenaeus longirostris GSA 18, Merluccius merluccius GSA 17 and GSA 18, Solea solea GSA 17, Engraulis encrasicolus GSA 17, Sardina pilchardus GSA 17*) have been produced in the Adriatic Sea;
- 2 stock assessment (*Mullus surmuletus GSA 26, Saurida undosquamis GSA 26 and Aristaeomorpha foliacea* GSA 19) have been produced with the support of the EastMed Project.
- Involvement either as trainer and/or trainees in 10 theoretical or on-the-job training activities on the collection, storing and processing of fishery related data;
- Involvement in 32 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 support has been provided to Turkey, Egypt, Lebanon, Albania, and Montenegro for the establishment of a monitoring system for fisheries (socio-economic and catch and effort).

**Management measures**

In accordance with the provisions of the Recommendation GFCM/38/2014/1 Italy is in the process of prohibiting the use of any gears targeting small pelagics within 6 M with derogation for fishing vessels with LoA>15m (within 4 M), from 1 to 30 July 2015 from Monfalcone to Termoli

In accordance with the provisions of the Recommendation GFCM/38/2014/1, Italy is in the process of setting a maximum of 180 fishing days per year, not exceeding 20 days per month. For 2015, for vessels targeting specifically anchovy, the limit is 144 fishing days per year

**Environment protection measures**

Research on effects of Marine Managed Area (MMA), including Marine Protected Areas and Fishery Restricted Areas, off Italian coast are well documented in literature. Information on the main Italian MMA

were recently reviewed in Pipitone et al. (2014). Results showed that fish biomass has increased and some evidence of ecological and socioeconomic benefits has been documented. Since reduction in juvenile mortality is considered as one of the main prerequisite for the future sustainability of trawl fisheries in the Mediterranean, researches on identification of nurseries to be protected by the towed gears is considered relevant for improving the exploitation of commercial stocks and marine ecosystems (e.g. Garofalo et al., 2011). Very recent investigation in the Mediterranean, including also Italian coasts, have shown considerable variations in current nursery protection with a high protection for coastal species (e.g. red mullet) and a minimal protection seen for deeper species (e.g. hake) (Colloca et al., 2015). A high interspecific spatial overlap between nursery areas was mainly found along the shelf break indicating a high potential for the implementation of conservation measures to protect key recruitment areas. An original approach to assess the effects of nurseries closure on stock status and fishery performance was recently given by the SMART model (Russo et al., 2014). This approach combined geo-referenced information from trawl surveys, monitoring of commercial catches, and VMS data for assessing bio-economic feedback in different management scenarios. SMART was applied to demersal fishery in the Strait of Sicily, one of the most productive fisheries of the Mediterranean Sea. According to the model a series of strategically designed areas of trawling closures could significantly improve the resource conditions of demersal fisheries in the Strait of Sicily.

**With regard to:** ***Recommendation GFCM/35/2011/2 on the exploitation of red coral in the GFCM Competence Area***

No studies were carried out at the national level to apply a derogation for the prohibition of the exploitation of red coral colonies at depth less than 50 m. A national management framework is still lacking. However, local management plans are implemented in Sardinia and Tuscany; in the two regions, local regulations provide for the prohibition of the exploitation at depth less than 50 m.

**With regard to:** ***Recommendation GFCM/35/2011/3 on reducing incidental by-catch of seabirds in fisheries in the GFCM Competence Area***

No information available at this point.

**With regard to:** ***Recommendation GFCM/35/2011/4 on the incidental by-catch of sea turtles in fisheries in the GFCM Competence Area***

Within the framework of implementation activities of Regulation (EC) n. 812/2004, MIPAAF funds a long-term research and monitoring programme on bycatch of cetaceans and other protected species and species of conservation concern, including turtles, in mid-water trawlers.

Since 2006, bycatch rates of loggerhead turtles (*Caretta caretta*) have been classified as medium-low (higher seasonally), ranging from 0.014 to 0.042 animals per haul, with an average observed annual mortality rate of about 6% (released alive rate of 94%). Bycatch rates show a high interannual variability. In 2013 the mortality rate showed a sensible increase (see table below), whereas the total bycatch estimate was similar to that recorded in 2007 (1939 turtles CV=0.22; 95% CIs=1730-2067).

| | |
|---|---|
| **GSA** | 17 |
| **Year** | 2013 |
| **Gear** | Mid-water trawlers |
| **Species** | *Caretta caretta* |
| **Common name** | *Loggerhead turtles* |
| **Bycatch rate (n. events)** | 0.031 (n=49) |
| **Dead or Comatose rate (n. events)** | 0.006 (n=10) |
| **Released animals** | 39 |
| **Total estimate of bycatch** | 1412 (1322-1468); CV=0.17 |
| **Total estimate of Dead/Comatose animals** | 288 (215-343); CV=0.36 |
| **Annual % dead / comatose** | 20 |

**With regard to:** ***Recommendation GFCM/36/2012/2 on mitigation of incidental catches of cetaceans in the GFCM area***

Regulation (EC) n. 812/2004 framework aim to the evaluation of cetaceans bycatch in specific fishing gears. Since 2006, bycatch rates of bottlenose dolphins (*Tursiops truncatus*) in mid-water trawlers have been classified as low, ranging from 0.000 to 0.002 animals per haul, with an average observed annual mortality rate of about 82% (two animals were released alive out of eleven). In 2013 two animals were bycaught and the mortality rate was 100%. A 7-year annual average estimate was calculated on the basis of all monitoring data collected between 2007 and 2013, both in terms of total estimated fishing effort and number of observed by-caught dolphins (n=11). The estimate for the GSA 17 was 36 bottlenose dolphins (CV=0.36; 95% CIs=27-43).

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.

**With regard to:** ***Recommendation GFCM/36/2012/3 on fisheries management measures for conservation of sharks and rays in the GFCM area***

Always within the same research and monitoring programme, framework data on elasmobranch species were collected. It is important to notice that most of bycaught animals are released at sea alive, except for those belonging to certain species and genus. *Alopias vulpinus*, *Squalus sp*, *Mustelus sp* and *Prionace glauca* are usually retained by fisherman and marketed.

| **Metier** | **Fishing area** | **Main target species** | **Incidentally caught cetaceans species** | **Number of incidents** | **Incidental catch rates** | **Released at sea** |
|---|---|---|---|---|---|---|
| Mid-water pair trawls | GSA 17 | Anchovy | *Alopias vulpinus* | 3 | 0.002 | 0 |
| | | | *Mustelus mustelus* | 324 | 0.200 | 0 |
| | | | *Mustelus spp* | 6 | 0.004 | 0 |
| | | | *Prionace glauca* | 2 | 0.001 | 0 |
| | | | *Squalus acanthias* | 414 | 0.256 | 0 |
| | | | *Myliobatis aquila* | 227 | 0.140 | All |
| | | | *Pteromylaeus bovinus* | 8 | 0.005 | All |

Additional information collected under the same research and monitoring programme on species relevant to this resolution are contained Fortuna et al. (2014) and La Mesa et al. (2015).

**Proposals for future research programmes**

Main research lines to improve the regional management of fisheries should include:

- definition of Fisheries at a multispecies – multi fleet basis; fishing effort limits at the multispecies level should be developed. Assessment of strategies for the optimal yield of the fishery resources, in line with the objectives of MSY and EAF of the new CFP, with the identification of new indicators and reference points for a multi-species fisheries.
- assessment of effects of management steps such as harvesting plans, use of non-damaging gear or spatial management (FRA, MPA, fishery rotational areas) in the view of marine spatial planning. Ecosystem effects of the fisheries , to be considered in spatial terms with the aim to reduce the impact on the sea bed and restore fishery sustainability.
- In the context of Ecosystem Approach, development of a common geo referenced data base, shared by countries, including bathymetries, substratum features, biocenoses distribution, essential fish habitat both inshore and offshore areas. Coupling of hydrological information with biological data should be improved at regional level.

Considering the research topics, the following matters 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 and communities 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 fishery 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 programme;

- assisting the development of a common geo referred data base reporting bathymetric, substratum features, biocenoses, and fishing grounds at regional level.

**References**

Colloca F., Garofalo G., Bitetto I., Facchini M.T., Grati F., Martiradonna A., Mastrantonio G., Nikolioudakis N., Ordinas F., Scarcella G., Tserpes G., Tugores m.P., Valavanis V., Carlucci R., Fiorentino F., Follesa M.C., Iglesias M., Knittweis L., Lefkaditou E., Lembo G., Manfredi C., Massutí E., Pace M.L., Papadopoulou N., Sartor P., Smith C.J., Spedicato M.T. (2015) The seascape of demersal fish nursery areas

in the North Mediterranean Sea, a first step towards the implementation of spatial planning for trawl fisheries. Accepted. PLoS ONE;

Fortuna, C.M., Kell, L., Holcer, D., Canese, S., Filidei, E., Mackelworth, P., Donovan, G. 2014. Summer distribution and abundance of the giant devil ray (Mobula mobular) in the Adriatic Sea: baseline data for an iterative management framework. Scientia Marina 78(2):277-237.

Garofalo G., T. Fortibuoni , M. Gristina , M. Sinopoli, Fiorentino F. (2011) Persistence and co-occurrence of demersal nurseries in the Strait of Sicily (central Mediterranean): Implications for fishery management. J. Sea Res. 66, 1: 29–38.

La Mesa, G., Annunziatellis, A., Filidei, E.Jr., Fortuna, C.M. 2015. Modeling environmental, temporal and spatial effects on twaite shad (Alosa fallax) by-catches in the central Mediterranean Sea. Fishery Oceanography.

Pipitone C., Badalamenti C., Vega Fernández T. and D'Anna G. (2014) Spatial Management of Fisheries in the Mediterranean Sea: Problematic Issues and a Few Success Stories. In: Magnus L. Johnson and Jane Sandell, editors, Advances in Marine Biology, Vol. 69, Oxford: Academic Press: pp. 371-402;

# LEBANON/LIBAN

## Description of the fisheries

Provide the following information (use tables provided where appropriate):

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 group of targeted species.

Total landings by species (estimated if needed)

A pilot study for catch assessment for Lebanon, funded by EastMed Project and supervised by the University of Balamand (UOB), was carried out in 2014. The data obtained are preliminary. Stratification was very extensive which made data collection unsustainable and prohibitive in the long run. The pilot project covered 14 fishing harbors along the Lebanese coast (Table 3) representing around 80% of the total Lebanese fleet.

Table 1 represents the totals of commercial fish catches for the most important species of Lebanon. Data were collected in 2014 by the team of the Ministry of Agriculture (MOA) in collaboration with UOB.

**Table 1: Total commercial catch by species of Lebanon, 2014 (Source: MOA and UOB)**

| Fish Species | MOA FLOUCA WEB – Commercial Catch by Species Lebanon 2014 (Ton) |
|---|---|
| *Siganus rivulatus* | 530.8 |
| *Clupeidae* | 325.8 |
| *Euthynnus alletteratus* | 274.1 |
| *Lithognathus mormyrus* | 253.5 |
| *Boops boops* | 225.9 |
| *Pagellus erythrinus* | 172.2 |
| *Diplodus sargus* | 152.8 |
| *Sphyraena sphyraena* | 118.4 |
| *Oblada melanura* | 112.8 |
| *Seriola dumerili* | 86.1 |
| *Pagellus acarne* | 83.0 |
| *Sphyraena chrysotaenia* | 73.1 |
| *Other (72 species)* | 572.5 |
| TOTALS | 2,981 |

Fleet:

In order to carry out the pilot catch assessment, fleet size was derived from a Rapid Boat Census held during the EastMed Project pilot project entitled “Pilot Survey on Fisheries Dependent Data Collection in Lebanon Including Training” implemented by the UOB, and funded by the FAO-EastMed Project. The project

covered 14 fishing harbors along the Lebanese coast (Table 3) representing around 80% of the total Lebanese fleet.

The number of vessels by fleet segment for the year 2014 was as follows.

**Table 2: Number of vessels by fleet segment, 2014**

| Fleet Segments | | |
|---|---|---|
| **0-6 m** | **6-12 m** | **>12 m** |
| 42 | 157 | 9 |
| 45 | 332 | 11 |
| 10 | 24 | 0 |
| 16 | 40 | 1 |
| 20 | 27 | 2 |
| 18 | 29 | 0 |
| 32 | 51 | 0 |
| 16 | 41 | 1 |
| 56 | 147 | 13 |
| 98 | 8 | 0 |
| 48 | 51 | 3 |
| 19 | 107 | 1 |
| 17 | 44 | 10 |
| 6 | 108 | 1 |
| Total number of boats in the 14 targeted harbors | | 1,661 |

- LOA (range and average)

Table 3 below shows the results of the Rapid Boat census carried out in 2014 for the purposes of carrying out the Pilot Catch assessment.

**Table 3: Average GT by Boat/Gear category, 2014**

| GT average by Boat/Gear category | |
|---|---|
| MOT 0-6 m Gillnet/Entangling net | 9.27 |
| MOT 0-6 m Hooks & Lines | 0.64 |
| MOT 0-6 m Pots and traps | 2.48 |
| MOT 0-6 m Recreational gear | 0.56 |
| MOT 6-12 m Gillnet/Entangling net | 2.76 |
| MOT 6-12 m Hooks & Lines | 10.29 |
| MOT 6-12 m Pots and traps | 8.92 |
| MOT 6-12 m Recreational gear | 3.29 |
| MOT 6-12 m Surrounding nets | 2.53 |
| MOT Large boat Surrounding nets | 6.69 |

The Rapid Boat Census did not collect LOA data. The available data derived from a 2004 general census; whereby the data were:

- Range: 2.5-24.8 m
- Average: 6.92m

- Total KW (or HP) + GT (or GRT)

  The Rapid Boat census did not collect individual KW/HP and/or GT/GRT. The available data date back to 2004 vessel census as follows:

  - KW: 48,341 (for 2,378 vessels)
  - GT: 18,426 ton (data available for only 608 vessels)

Nevertheless the 2014 Rapid Boat Census showed the following:

**Table 4: Average HP by Boat/Gear category, 2014**

| HP average by Boat/ Gear category | |
|---|---|
| MOT 0-6 m Gillnet/Entangling net | 65.81 |
| MOT 0-6 m Hooks & Lines | 18.08 |
| MOT 0-6 m Pots and traps | 87.43 |
| MOT 0-6 m Recreational gear | 58.98 |
| MOT 6-12 m Gillnet/Entangling net | 7.97 |
| MOT 6-12 m Hooks & Lines | 15.62 |
| MOT 6-12 m Pots and traps | 189.53 |
| MOT 6-12 m Recreational gear | 125.39 |
| MOT 6-12 m Surrounding nets | 29.30 |
| MOT Large boat Surrounding nets | 260.67 |

**Status of stocks of priority species**

Indicate the species evaluated during the intersessional period expressing the exploitation status for each stock. The report should also indicate the geographical sub-areas covered by the assessment and whether those have been presented to the GFCM Working Groups or to any other instances.

N/A

**Status of the statistics and information system**

Description of the national system of fishery statistics and/or any improvement/change occurred. 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. Type of data collected, transmission to GFCM Secretariat and other international bodies. Inventory of existing databases. Synergies with other applications.

The main objective of the EastMed Project Pilot Catch Assessment Survey was to contribute to the improvement and implementation of a "National Artisanal Fisheries Dependent Data Collection Programme" in Lebanon. The different phases of the project included several activities where the related personnel where trained on:

- Catch/Effort forms for data collectors followed by pilot testing of the "National Artisanal Fisheries Dependent Data Collection Programme".
- Evaluation and endorsement of the "National Artisanal Fisheries Dependent Data Collection Programme" including the reconfiguration of FLOUCA to operate through the web, FLOUCA Web.

- Collection of local fish species names in order to include them in the "Guide for Commercial Fish Species of Lebanon".
- Collection of local fishing gear names in order to include them in the "Guide for Common Fishing Gears of Lebanon".
- Update of the boat/gear census on a regular basis for the ports being monitored by the Programme.

**Status of research in progress**

Description of the results of the continuing and in progress research projects of interest to GFCM Sub-Committees and Working Groups, with particular emphasis on management oriented assessment and GFCM priority species.

- ***Biological Study and Stock Assessment of Boops boops, Diplodus sargus sargus, and Portunus pelagicus off the Coast of North Lebanon, a Master Thesis at the MRCZM-IOE-UOB (www.balamand.edu.lb); 2014-2015*:** This thesis will study the biology and growth of *Boops boops*, *Diplodus sargus sargus*, and *Portunus pelagicus* and will hold single species length based stock assessment for the three species. The study will investigate the status of the commercial stocks of *Boops boops* and *Diplodus sargus sargus*, and the Lessepsian species *Portunus pelagicus*. Results obtained for the *Boops boops* and *Diplodus sargus sargus* will be compared to a previous study at the MRCZM-IOE-UOB in 2011-2012 where the commercial stocks of these two species were evaluated. Results are expected to be published in related scientific journals.
- ***Historical Catch Reconstruction for fisheries in Lebanon at the MRCZM-IOE-UOB (www.balamand.edu.lb) 2014:*** The MRCZM team collaborated with the Fisheries Center of the University of British Columbia (UBC), Vancouver, Canada, in order to reconstruct the Lebanese historical catch for Lebanon since 1950 based on available historical data. All the available related data provided the baseline information for reconstructing the historical fisheries catch of Lebanon from 1950 till 2010. Available patchy historical information supported by the estimates generated by FLOUCA allowed calculating the values of total catches for Lebanese coastal regions from 1950 to 2010 for a total of 345,000 t, that being 2.4 times the 141,000 t reported by the FAO on behalf of Lebanon. This evaluation provided a more comprehensive measure of fisheries catches in Lebanese coastal regions since it covered a broad range of sectors such as artisanal, subsistence and recreational fishing in addition to discard estimates (Nader *et al*. 2014). The publication can be accessed online at the UBC Fisheries Centre (www.fisheries.ubc.ca/publications/fcrrs) and the Sea Around Us project website (www.seaaroundus.org) as follows:

  *Nader, M., Indary, S., and NR. Moniri. 2014. Historical fisheries catch reconstruction for Lebanon (GSA 27), 1950-2010. Fisheries Centre Working Paper #2014-11, Fisheries Centre, University of British Columbia, Vancouver (Canada). 19 p.*

  It is hoped that the reconstructed datasets will better reflect the country's catch history. It is also hoped that the reconstruction approach will improve, correct or enhance the national catch data collection and data estimation and reporting for future years. As well, this document will be part of the World Fisheries Atlas that is expected to be published before the end of 2015 by Island Press. Also, it constitutes the material for a paper that will be published in an international journal analyzing the global summation of the reconstructed catches from around the world during the last 12 years.
- ***Biological Study and Stock Assessment of Boops boops, Diplodus sargus sargus, and Lagocephalus scleratus off the Coast of North Lebanon, a Master Thesis at the MRCZM-IOE-UOB (www.balamand.edu.lb) 2011-2012:*** This thesis studied the biology and growth of *Boops boops*, *Diplodus sargus sargus*, and *Lagocephalus sceleratus* and held single species length based stock assessment for the three species. The study investigated the stock status of the commercial species *Boops boops* and *Diplodus sargus sargus*, and the status of the population of the Lessepsian species *Lagocephalus sceleratus* negatively affecting the national fishery and the surrounding ecosystem. Results of the three species are being published in related scientific journals.

- Fanelli E., Azzurro E., **Bariche M.**, Cartes E., Maynou F., *in press.* Depicting the novel eastern Mediterranean food web: a stable isotopes study following Lessepsian fish invasion. *Biological Invasions.*
- Marras S., Cucco A., Antognarelli F., Azzurro E., **Bariche M.**, Butenschön M., Kay S., Di Biletto M., Quattrocchi G., Sinerchia M., Domenici P., 2015. Predicting future thermal habitat suitability of competing native and invasive fish species: from metabolic scope to oceanographic modelling. *Conservation Physiology* 3. Doi:10.1093/conphys/cou059.
- Fanelli E., Azzurro E., Battaglia P., Romeo T., **Bariche M.**, Maynou F., Andaloro F., 2014. Preliminary data on the isotopic composition of native and Lessepsian pelagic species. *Biologia Marina Mediterranea* 21(1): 115-116.
- Geiger M.F., Herder F., Monaghan M.T., Almada V., Barbieri R., **Bariche M.**, Berrebi P., Bohlen J., Casal-Lopez M., Delmastro G.B., Denys G.P.J., Dettai A., Doadrio I., Kalogianni E., Karst H., Kottelat M., Kovacic M., Laporte M., Lorenzoni M., Marcic Z., Ozulug M., Perdices A., Perea S., Persat H., Porcelotti S., Puzzi C., Robalo J., Sanda R., Schneider M., Slechtova V., Stoumboudi M., Walter S., Freyhof J., 2014. Spatial heterogeneity in the Mediterranean Biodiversity Hotspot affects barcoding accuracy of its freshwater fishes. *Molecular Ecology Resources*. Doi: 10.1111/1755-0998.12257.
- **Bariche M.**, Kazanjian G., Azzurro E., 2014. A lag of 25 years: evidence from an old capture of *Fistularia commersonii* Rüppel, 1838 from Lebanon (Mediterranean Sea). *Journal of Applied Ichthyology*, 30: 535-536.
- Lombarte A., Tuset V.M., **Bariche M.**, Maynou F., Azzurro E., 2014. Sagittal otolith morphology helps to explain the invasion success of Lessepsian species. *Fifth International Otolith Symposium, Mallorca, Balearic Islands, 20-24 October 2014.*
- Mancusi C., Baino R., Barone M., Vacchi M., Gil de Sola L., Morey G., Bradai M.N., Kallianotis A., Soldo A., Hemidas F., Saad A., Dimech M., Peristeraki P., **Bariche M.**, Clo S., De Sabata E., Castellano L., Garibaldi F., Tinti F., Pais A., Sperone E., Micarelli P., Poisson F., Carlucci R., Bottaro M., Cebrian D., Fortuna C., Seret B., Ferretti F., El-Far A., Saygu I., Shakman E.A., Bartoli A., Guallart J., Damalas D., Lanteri L., Megalofonou P., Notarbartolo di Sciara G., Follesa C., Cannas R., Kabasakal H., Zava B., Cavlan G., Colombo S., Serena F., 2014. MEDLEM Database, a data collection on large cartilaginous fishes in the Mediterranean basin: 50. *Sharks International, Durban, South Africa, 2-6 June 2014.*

**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 socioeconomic aspects of the fishing communities and fishing sector.

N/A

**Marine environmental studies in progress**

Description of the main results from actions and studies carried out during the intersessional period which is relevant to the impact of the marine environment changes on the priority stocks and on the ecosystem alteration originated by the fisheries activities.

- Defining the legal, political and institutional gaps, preparing legal and regulatory texts and drafting reform policies for marine biodiversity- Ministry of Environment – 2014 – Ongoing.
- Updating the national biodiversity strategy and action plan (NBSAP) and preparing the fifth national report (5NR) to the Convention on Biological Biodiversity (CBD). Ministry of Environment – 2014– Ongoing.
- In the framework of the **CANA project on "Establishing Monitoring and Sustainable Development of the Lebanese Sea"**, funded by the Italian Government and the CNRS-Lebanon; and

by means of the Multi-Beam Echo-Sounder (MBES) system Kongsberg EM 710 installed on R/V CANA-CNRS; crucial information on the geo-morphological structure of the seafloor, including those extraordinary conformations (i.e. steep, dramatic canyons cutting the continental shelf of Beirut and Jounieh) and objects of different nature hidden by the profundity of the sea such as shipwrecks and archaeological submerged sites, was collected and investigated. Original data were acquired over Central Lebanese coastal waters.

- 21 sites along the coastal area are inspected to monthly determine surface inshore parameters such as temperature, salinity, nutrients, chlorophyll-a, pheopigments and microbiological features (i.e. faecal coliforms & faecal streptococci). Two sites (coastal and offshore stations) have been monthly surveyed in the area of Batroun to collect data on temperature, salinity, nutrients, phytoplankton, microzooplankton, zooplankton, chlorophyll-a, pheopigments, CO2 acidification of the sea & partial CO2. In the same period, Toxic algae with particular focus on the dinoflagellate Ostreopsis siamensis were closely examined in 2 rocky sites (Abboud-Abi Saab et al., 2013[1]).
- Several water column profiles down to 350 m where performed monthly with CTDs in order to study seasonal variations of seawater characteristics and to relate them to water contamination and global warming.
- Research activities for the analysis of sediment characteristics of different coastal areas of the Lebanese sea were undertaken also in 2014 aiming to evaluate the state of environment of these zones subject to the impact of various anthropogenic stresses such as chemical industries, treated and untreated sewage water and urban development explosion. Some of these studies have been published last year and others are still on-going.
- The nature of chemical by-products discharged from the phosphate fertilizers plant at Selaata and the factory of cement at Chekka in combination with the hydrodynamic movements and the geographical distribution of the investigated marine zones greatly influenced the structure and composition of the sediment and led to the variability of the obtained results. These two chemical plants appear to increase the level of stress toward the marine environment of the Lebanese northern coast (Fakhri at al., 2014[2]). Further studies on sediments characteristics are still on-going and covering hot spots of the Lebanese coast.
- CANA experts working on Heavy Metal Contaminants are carrying on with analyses of the levels of lead, cadmium and copper in marine sediments in different ports. This assessment is enabling researchers to evaluate for the first time the extent of trace metal contamination in these sediments. To evaluate the risk that these metals represent to living organisms, a study of their mobility in the presence of chemical reagents (ethylene diamine tetraacetic acid) is performed. On the other hand, analyses on the levels of some organic contaminants (Polycyclic Aromatic Hydrocarbons, PAHs) present in these sediments is carried out. In March 2013, a sediment sampling campaign was performed in the port of Tripoli. The port was characterized by many anthropogenic activities: urban and industrial wastewaters, small boats effluents, ancient boats and solid wastes, etc. The calculation of geochemical index showed that the sediment quality of the fishing port of Tripoli, varies between moderately and highly polluted, for the three trace elements (Pb, Cu, Cd). Studies on mobility show that extremely small percentage of copper is in ion exchange position thus representing the highest risk to the water column and to living organisms. In addition, in the presence of a complexing agent like EDTA, the mobility of the three elements increases tremendously, especially for Cd that represents the highest risk in the long term. The sediments of the port of Tripoli were found to be mostly contaminated with high molecular weight 5-6 ring aromatic hydrocarbons, which are highly

[1] ABBOUD-ABI SAAB M., FAKHRI M., KASSAB M.T., MATTAR N. (2013) Seasonal and Spatial Variations of the Dinoflagellate *Ostreopsis siamensis* in the Lebanese Coastal Waters (Eastern Mediterranean). Cryptogamie, Algologie, 34(1):57-67. 2013. Published By: Association des Amis des Cryptogames.

[2] FAKHRI M., ABBOUD-ABI SAAB M., NAJJAR E. (2014) Impact of chemical industries on the variability of Northern Lebanese marine sediment's characteristics. Submitted to "Estuaries & Coastal Protected Areas " ECPA 2014, 04 - 06 November 2014, Izmir – Turkey

toxic and carcinogenic. This is potentially due to diesel fuel consumption and incomplete combustion of fossil fuels. Same studies are now in the phase of implementation in the fishing port of Dora.

**Involvement in activities of FAO regional projects**

Description of activities carried out during the intersessional period by Regional Projects, level of involvement, results obtained and assistance received.

Within the context of the FAO-EastMed Project, an agreement was signed between the EastMed project and the UOB to initiate a "Pilot Survey on Fisheries Dependent Data Collection in Lebanon Including Training", funded by Greece, Italy and the European Community, to support the development of regionally-consistent fisheries management plans among the Eastern Mediterranean countries. The MRCZM-IOE-UOB contributed to improve and implement the national fisheries dependent data collection programme through the expansion of the original FLOUCA into FLOUCA Web and through training related staff of the Lebanese Ministry of Agriculture on the expanded application. FLOUCA Web operates as an internet-driven system with outposts at selected major ports of the Lebanese coastline and is quite transparent in its operations. As can be seen, several initiatives have been launched in the past few years to properly and sustainably manage marine and coastal resources, taking into consideration the well-being of coastal communities.

**Management measures**

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

**N/A**

**Environment protection measures**

Description of recent activities in establishing reserve areas during the intersession; and, whenever relevant scientific information do exist, highlighting the roles of existing marine protected areas in securing better opportunity for the sustainability of fish stocks.

N/A

**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.

N/A

**With regard to:** *Recommendation GFCM/35/2011/3 on reducing incidental by-catch of seabirds in fisheries in the GFCM Competence Area*

Provide information on seabirds' incidental taking with reference to fisheries concerned, characteristics of gear type, times, locations (either by GSA or statistical rectangles) and affected species, if this information is available.

N/A

**With regard to:** *Recommendation GFCM/35/2011/4 on the incidental by-catch of sea turtles in fisheries in the GFCM Competence Area*

Provide information on information on the interaction of the fishing fleets with sea turtles in GFCM fisheries by gear type and characteristics: times, soak duration, depths and locations, target species, sea turtles species and disposition status of sea turtle specimen(s) (i.e. discarded death or released alive).

N/A

**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.

N/A

**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.

Few incidents of bycatch were recorded. Citations were given to infringer fishermen. Two unidentified large specimens were returned to sea.

**Proposals for future research programmes**

*Other recommendations will be added (possibly) when they request specific information to be transmitted through National Reports to SAC.*

- Promote and integrate fisheries research as part of Ecosystem Based Management
- Support fish stock assessments of commercial species in Lebanon
- Identify nursery grounds of priority species and recommend protection measures for management of the fisheries sector
- Support research initiatives for the proper restoration of degraded coastal and marine sites
- Identify and monitor common stocks in the East-Mediterranean Basin
- Monitor invasive species in Lebanese waters and their population dynamics
- Research the impact of invasive species on commercial stocks in particular and the coastal marine ecosystem in general with a special emphasis on *L. sceleratus*
- Update on a yearly basis the list of coastal marine biodiversity richness in Lebanese territorial waters
- Monitor marine food chains and webs in the perspective of climate change with a special emphasis on macro-primary producers

# LIBYA/LIBYE

**Description of the fisheries 2014**

- GSA 21
- No accurate total landing of fish in 2014 due to difficulties to collect all the production from our (13) offices which distributed along the whole Libyan coast
- Total landing by group or species is not available due to difficulties facing our offices which are distributed along the whole Libyan coast.
- Fleet segment (the total number as mentioned in the report 2013 with some changes due to damages in some fishing harbors.)

| Fleet segment | No. of vessels | HP | GT |
|---|---|---|---|
| Polyvalent small-scale vessels without engine (<12 metres) | 77 | | |
| Polyvalent small-scale vessels with engine (<6 metres) | 1,663 | | |
| Polyvalent small-scale vessels with engine (6-12 metres) | 1,635 | | |
| Trawlers (12 - 24 metres) | 170 | | |
| Trawlers (> 24 metres) | 93 | | |
| Purse Seiners (>12 metres) | 143 | | |
| Long liners (> 6 metres) | 11 | | |
| Tuna Seiners (> 12 metres) | 39 | | |
| Polyvalent vessels (> 12 metres) | 810 | | |
| **Total** | **4641** | **384100** | **164928** |

**Status of stocks of priority species**

No stock assessment and no species evaluated during the intersessional period.

**Status of the statistics and information system**

- Libya has signed two projects with FAO (FAO UTF Project) to create statistical and information system, projects formulation were accomplished in November 2014.
- We will have technical support from MEDSUDMED to collect data on bottom trawl fisheries and *Parapenaeus longirotris* and *Merluccius merluccius* catch in Libya.

**Status of research in progress**

- Finalizing reports on acoustic and ichthyoplankton surveys conducted along the Libyan coast in 2008 and 2010 with the support of MEDSUDMED.
- Finalizing the report on "phenomenon of current dusky grouper (*E. marginatus*) motalities in Libya: diagnosis and revising".

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

No studies

**Marine environmental studies in progress**

No studies

**Involvement in activities of FAO Regional Projects**

- Attending the 12th meeting of the MEDSUDMED coordination committee in

Tunisia, 14-16 April 2014.

- Attending the meeting on Deep-water rose shrimps, European hake and related fisheries in the MedSudMed Project area in Malta, 24-26 June 2014

**Management measures**

- Trawl fishing for demersal fish species was prohibited during the period June-July 2013.

- Fishing for sponges in Libyan waters is being forbidden from 1 November to 30 May of each year.(No sponge harvest this year)

**Environment protection measures**

**No activities**

**With regard to:** *Recommendation GFCM/35/2011/2 on the exploitation of red coral in the GFCM Competence Area*

No exploitation of red coral exist in Libya.

**With regard to:** *Recommendation GFCM/35/2011/3 on reducing incidental by-catch of seabirds in fisheries in the GFCM Competence Area*

**No incidental by-catch**

**With regard to:** *Recommendation GFCM/35/2011/4 on the incidental by-catch of sea turtles in fisheries in the GFCM Competence Area*

**No incidental by-catch**

**With regard to:** *Recommendation GFCM/36/2012/2 on mitigation of incidental catches of cetaceans in the GFCM area*

Cetacean are not target species and no incidental catch is recorded.

**With regard to:** *Recommendation GFCM/36/2012/3 on fisheries management measures for conservation of sharks and rays in the GFCM area*

MBRC has issued an identification manual on cartilaginous fishes as 1st step towards the process of conservation of sharks and rays.

# MALTA/MALTE

## Description of the fisheries

The Maltese Islands are found in GFCM's Geographical Sub Area 15 (GSA 15). 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 2014 was 1016 of which 399 (39.2%) vessels and 617 (60.7%) 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 7 069.9 t and 72 733.8 kW respectively. The length of full-time and part-time registered vessels ranged between 3.45 to 35 m and 3.65 to 11.6 m respectively.

**Table 1. Number and type of Maltese fishing vessels by length class, status December 2014.**

| Registration type | Number of vessels by length class | | | | |
|---|---|---|---|---|---|
| | VL0006 | VL 0612 | VL1224 | VL2440 | N° of vessels |
| Full-time commercial | 131 | 199 | 59 | 10 | 399 |
| Part-time commercial | 379 | 238 | - | - | 617 |
| Grand Total | 510 | 437 | 59 | 10 | 1016 |

**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 | 140.5 | 948.2 | 3170.7 | 1665.6 | 5924.9 |
| Part-time commercial | 384.5 | 760.4 | - | - | 1144.9 |
| Grand Total | 525.0 | 1708.6 | 3170.7 | 1665.6 | 7069.9 |

**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 | 3930.1 | 19418.7 | 14714.0 | 4923.1 | 42986.0 |
| Part-time commercial | 9572.4 | 20175.5 | - | - | 29748.0 |
| Grand Total | 13502.5 | 39594.2 | 14714.0 | 4923.1 | 72734.0 |

Catches recorded in 2014 from logbooks and Catch Assessment Survey (Table 3), were dominated by chub mackerel (*Scomber japonicus*), swordfish (*Xiphias gladius*), dolphin fish (*Coryphaena hippurus*), blue fin tuna (*Thunnus thynnus*) and albacore (*Thunnus alalunga*) in decreasing order of importance as shown in Table 3 below. Chub mackerel is mainly caught by lampara and is used as feed in aquaculture. The fishery of this species depends mostly on spans of good weather. Catches of dolphin fish 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 3. The ten most important marine capture fisheries in terms of catches (from logbooks and CAS data) for the Maltese fleet in 2014

| Scientific Name | FAO 3A Code | Weight (t) | % dist. |
|---|---|---|---|
| *Scomber japonicus* | MAS | 827.3 | 34.5 |
| *Xiphias gladius* | SWO | 376.5 | 15.7 |
| *Coryphaena hippurus* | DOL | 207.7 | 8.7 |
| *Thunnus thynnus* | BFT | 148.8 | 6.2 |
| *Thunnus alalunga* | ALB | 62.0 | 2.6 |
| *Sprattus sprattus* | SPR | 57.0 | 2.4 |
| *Mullus surmuletus* | MUR | 45.3 | 1.9 |
| *Boops boops* | BOG | 42.9 | 1.8 |
| *Lepidopus caudatus* | SFS | 37.3 | 1.6 |
| *Naucrates doctor* | NAU | 36.9 | 1.5 |
| Grand Total | | 2395.0 | 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 2014 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 2014 GFCM demersal working group workshop. The biological reference points used were $F_{current}/F_{0.1}$.

**Table 4. Results of stock assessment conducted in 2014**

| GSA | English Name | Scientific Name | Reference year | $F_{current}/F_{0.1}$ | Stock Status |
|---|---|---|---|---|---|
| 12-16 | Hake | *M. merluccius* | 2007-2013 | 4.5 | Overexploited with relative high biomass |
| 12-16 | Deep-water pink shrimp | *Parapenaeus longirostris* | 2005-2013 | 1.3 | Overexploited with relative high biomass |

**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 with 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 bluefin 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 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 2014, 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. EU horizontal framework project MAREA
v. EU horizontal framework project STOCKMED
vi. Working Group on Stock Assessment of Demersal Species (WGSAD)

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. For submission obligations in connection with GFCM, EC and ICCAT, in the future the data will be exported from the FIS, processed for the end user's needs and a copy of the data sent will be stored in the 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:

- Ecosystem Approach to Fisheries (EAF) management (EU FP7 project CREAM) – A course was held on the Ecosystem Approach to Fisheries in the Mediterranean and Black Seas: Scientific Advice. This project finished in April 2014 with the 3rd Coordination meeting, followed by a workshop and the International Dissemination Course.

- 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 – The STOCKMED project consisted of the identification of distinct biological units (stock units) for different fish and shellfish species and among different GFCM-GSA. The overall purpose was to contribute to the definition of the different biological units as an essential knowledge for proper data acquisition and subsequent assessment of the state of resources and, consequently, for the formulation and implementation of knowledge based management measures. This project was completed in 2014.
- 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 intercessional period**

Socioeconomic 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 socioeconomic 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.

Socioeconomic 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 socioeconomic 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 socioeconomic 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 2014, Malta participated to the 12th Coordination Committee Meeting (14-16th April 2014, Tunis, Tunisia). The aim of the 12th Coordination Committee meeting was to discuss activities planned for the coming period. In June 2014 MedSudMed organised a technical meeting on Management Plans of *Parapenaeus longirostris* and *Merluccius merluccius* with the stakeholders, administration and scientific personel. The meeting took place in Malta. Malta also took part in the FAO-MedSudMed Working Groups on Demersal Fishery Resources (21-27 September 2014 and 11-12th November 2014, Rome, Italy). During the session for the western Mediterranean Sea, the stock assessment of *Parapenaeus longirostris* and *Merluccius merluccius* 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. These management plans are valid till 2015.

**Environment protection measures**

With regard to: *Recommedation 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 fishes.

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

## Description of the fisheries

Montenegro is part of GSA 18 which includes Albania on the east coast and Italy on the west coast. In front of Montenegro is south Adriatic basin with the greatest depth of 1228 m. The area of territorial water is 2460 km² and continental shelf 3885 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 2013 total landing of pelagic fish was 226 tons, demersal fish 269 tons, cephalopods 44 tons and crustaceans 22 tons (Statistical Yearbook 2014).

**Table 1. Montenegro fleet**

| LOA | Number | KW | GT |
|---|---|---|---|
| Minor gear without engine < 6 m | 5 | | 5.14 |
| Minor gear with engine < 6 | 59 | 382.3 | 70.78 |
| Minor gear with engine 6-12 m | 30 | 1725.48 | 101 |
| Trawl 6-12 m | 4 | 607 | 43.86 |
| Trawl 12-24 m | 13 | 2707.15 | 342.81 |
| Trawl > 24 m | 3 | 1510 | 462.4 |
| Purse seiners 6-12 m | 13 | 472.31 | 34.95 |
| Purse seiners 12-24 m | 3 | 750.24 | 98 |
| Purse seiners > 24m | 1 | 795 | 130 |
| TOTAL | 131 | 8949 | 1288.98 |

## Note:

Montenegro is carrying out a census. According to scientific research, the following permissions can be issued to complete the census:

- 3 fishing vessels longer than 24m LOA, using fishing gear bottom trawl;
- 3 fishing vessels longer than 12m LOA, using purse seine nets, and
- 86 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 2014, 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 5000 $km^2$. 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 2014 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 ($W_G$), and gonad maturity stage (according to the MEDITS protocol) were collected. The results of the second 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.

Representatives from the Institute of Marine Biology of the University of Montenegro participated at the meeting of the FAO AdriaMed Working Group on Small-Scale Fisheries, hosted by the Institute of Oceanography and Fisheries in Split (Croatia) on 16 and 17 December, 2014. At the meeting, participants discussed the state of small-scale fisheries in the countries surrounding the Adriatic Sea. Delegates from Bosnia and Herzegovina were also present, making this the first meeting where the representatives of all Adriatic countries (Italy, Slovenia, Croatia, Bosnia and Herzegovina, Montenegro and Albania) were present. A proposal of a case study was made regarding the use of gillnets, trammel nets and pots and traps in the Adriatic, and dr Fabio Grati was appointed coordinator. The results of the study will be presented at the Second regional Symposium on Sustainable Small-Scale Fisheries in the Mediterranean and the Black Sea, to be held in Algeria in May, 2015.

Joint stock 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. The results were very similar to those of previous reports, with Montenegrin total fishing fleet contribution to the fishing mortality of European hake in 2013 being estimated to less than 2% (82% Italian trawlers, 6% Italian longliners, 10% Albanian trawlers, 1% Montenegrin trawlers and <1% Montenegrin gill- and trammel netters) and 3% for deep-water pink shrimp (67% Italian trawlers, 30% Albanian trawlers). Hake stock is estimated to be in overexploitation with intermediate biomass levels, while stock of deep-water pink shrimp is also estimated to be in overexploitation, but with low biomass levels. Results of the stock assessment were presented at GFCM Working Group for Stock Assessment of Demersal Species (Rome, Italy, 24-27 November, 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 the entire Montenegrin and Albanian continental shelf, while from 2010, the survey has been expanded to the entire GSA 18. In 2014, the survey started in Italian territorial waters on 16/07/2014 and ended in the area of Boka Kotorska Bay on 03/08/2014. A total of 64 ichthyoplankton samples were collected in the area of south-eastern Adriatic Sea. Hydrographic data (temperature, salinity, conductivity, oxygen and water density) were taken at each position, while a total of 14 pelagic trawls were made in total (from which 7 in Montenegrin waters).

Those surveys were conducted 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 suggestions of the GFCM SCSA Working Group of Small Pelagic Species. Revised methodology was presented in detail 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.

Further challenges are to collect relevant information on landings from eastern part and to continue with application of two direct methods for biomass estimation in the entire GSA 18, in order to provide valuable data for future stock assessment that will ensure sustainable development of pelagic fisheries in the Eastern part of GSA 18.

**Status of the statistics and information system**

Montenegro has a Fisheries Information System (FIS), which is not fully operated at the moment, because the programming phase of some sub-systems is ongoing.

FIS currently consists of 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;

Montenegro is planning through the IPA 2014 (starting in 2016) to develop more sub-systems:

- Register of fishermen;
- Electronic logbook;
- Sales notes;
- Biological and sampling data;
- application for automatic reporting from base;
- Register of licences for aquaculture

The purpose is to have fully operated FIS by the end of 2019, which will be able to automatically share all necessary data between all relevant authorities / parties.

**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 2014. 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 2015. In the frame of Project MEDITS (supported by FAO AdriaMed Project) biomass estimation of demersal resources will be continued in 2015.

In December 2013 Montenegro joined MAREA SEDAF Project - Improved knowledge of the main socioeconomic aspects related to the most important fisheries in the Adriatic Sea. The first kick-off meeting was held in Bar, Montenegro, 6 and 7 February 2014, the second on 17-18 February in Rome, and the last one was held on 17-18. December 2014 in Split.

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)" has begun, with the support of the Ministry of Science. The project will go on next year.

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

Within the framework of the MAREA SEDAF project (specific contract nr.10) „Improved knowledge of the main socioeconomic aspects related to the most important fisheries in the Adriatic Sea", each country responsible had to collect, review and scrutinize the available information on the main socioeconomic indicators at fleet segment level and on the basis of the main fisheries identified.

In Montenegro the availability of economic and social data was low so to fulfill the requirements and objectives of the project; a specific data collection has been implemented in the period April-June, 2014 with the support of ADRIAMED. Socioeconomic sample survey was conducted in cooperation with the ADRIAMED and Ministry of Agricultural and Rural Development of Montenegro. The main goal was to examine the socioeconomic situation of the fisheries in Montenegro referred to the year 2013.

The achieved results were processed and will be included in final report.

**Marine environmental studies in progress**

The management plan for marine ecosystems was conducted as a pilot project in two main phases in aneighteen-month programme (July 2009 – December 2010). The first phase of the management plan was referred to characterization of the study area (environmental and socioeconomic assessment) and identification of the main strategies for biodiversity conservation. The second phase was the preparation of the management plan and the implementation of the strategies identified in Phase 1.

The pilot area included the city of Petrovac which belongs to the Budva Municipality.

Also, scientists from the Institute were involved in the process of creating 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**

As explained in section 4, Montenegro is making significant efforts to develop information systems, which is an essential component to establish efficient control of fishing activities for the sustainable management of the available sea resources. Consequently, Montenegro made many efforts to develop sustainable measures.All trawlers in Montenegro now use square mesh which size is 40 mm, Vessel monitoring system are set for all vessels over 10 m LOA, Fleet register has been implemented and the amendment of marine fishery and Mariculture legislation is under parliamentary procedure.

Regarding the GFCM Recommendation 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, Stenella 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 2015, at which was agreed that Montenegro in further period will endeavour to incorporates recommendations of GFCM in domestic legislation.

**Research suggestions for consideration by SAC**

None.

# MOROCCO/MAROC

## Introduction

La pêche sur la façade méditerranéenne revêt une grande importance économique et sociale au Maroc. La production halieutique en Méditerranée (sans Tanger) s'élève à une moyenne d'environ 3 % de la production totale nationale en poids, avec une valeur économique moyenne de 4,5 % de la valeur totale des débarquements au titre de l'année 2013.

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 socioéconomiques relatives au secteur halieutique.

## Description des pêcheries

La pêche en zone Méditerranée marocaine a réalisé en 2013 une production de **34 134 tonnes** d'une valeur de **403,6 millions de dirhams**. Elle peut être classée en trois types de pêcheries:

**-Pêcherie petits pélagiques**

Les principales espèces des petits pélagiques ciblées par cette pêcherie sont: sardine, chinchard, maquereau et l'anchois.

**-Pêcherie grands pélagiques**

Cette pêcherie cible principalement thon rouge, espadon et thonidés mineurs (listao, bonite, melva, etc.).

**- Pêcherie démersale**

Les principales espèces ciblées par cette pêcherie sont le merlu, le grondin, la sole, le pageot acarne, le poulpe, la dorade, les rougets, la crevette rose, la bogue, la seiche, le pageot commun et le merlan bleu.

La production par groupe d'espèces (sans le port de Tanger) est présentée ci-dessous sur la base des statistiques des pêches de 2013 établies par l'Office National des Pêches (ONP, 2013):

***Tableau 1: Production en Méditerranée par groupe d'espèces en 2013***

| Espèces | Poids (Tonnes) | Valeur (KDhs) |
|---|---|---|
| CEPHALOPODES | 3 789 | 99 972 |
| COQUILLAGE | 448 | 1 679 |
| CRUSTACES | 563 | 49 588 |
| POISSONS PELAGIQUES | 22 986 | 161 702 |
| POISSONS DEMERSAUX | 6 347 | 90 696 |
| TOTAL | 34 134 | 403 637 |

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 2013, elle est constituée de:

***Tableau 2: Flotte marocaine opérationnelle en Méditerranée au titre de l'année 2013***

| Flotte | Nombre | TJB total | PM total | LHT moy | Engins utilisés | Pêcheries cibles |
|---|---|---|---|---|---|---|
| **SENNEURS** | 148 | 7 966 | 53 063 | 19 | Senne tournante coulissante | Pêcherie des petits pélagiques |
| **PALANGRIERS** | 128 | 3 790,75 | 28 182 | 14 | palangre, filet fixe, ligne, nasses, etc. | Pêcheries grands pélagiques et espèces démersales |
| **CHALUTIERS** | 119 | 6 503 | 42 920 | 20 | Chalut de fond | Pêcherie démersale |
| **BARQUES** | 2566 | 6 016 | 45 120 | 6 | Ligne, nasses, filet fixe, etc. | Pêcheries démersale et grands pélagiques |

**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 (Arrêté ministériel n°1154-88 du 03 octobre 1988);
- 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 (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 en Atlantique Nord et en Méditerranée, prévu en 2014;
- Projet de plan d'aménagement de la pêcherie des espèces de merlu en Atlantique Nord et en Méditerranée, prévu en 2014;
- Projet de plan d'aménagement de la pêcherie des grands crustacés en Atlantique Nord et en Méditerranée, prévu en 2014;
- Projet d'Arrêté ministériel fixant les distances minimales à partir desquelles l'emploi des filets trainants est autorisé en Méditerranée, prévu 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 créés/sont 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;
- 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'en 2016. Cependant, elle est ouverte en zone atlantique Méditerranéenne (entre cap Spartel et Larache) au niveau de l'isobathe située entre 40 et 80 mètres et réglementée par l'Arrêté du 6 juillet 2011 qui 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.

**Recommandation CGPM/36/2012/3 concernant des mesures de gestion des peches pour la conservation des requins et des raies dans la zone de competence 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 :

D'autres mesures de gestion sont appliquées sur les espèces de requins à savoir l'interdiction de pêche de trois espèces de requins (requin marteau (*famille des spyrnidae exception faite de l'espèce dite Sphyrna tiburo*), requin océanique (*Carcharhinus longimanus*) et requin renard à gros yeux (A*lopias superciliosus*)) par l'adoption de l'Arrêté n° 1654-12 du 9 avril 2012. De même, un projet de plan de conservation 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.

**<u>Évaluation des stocks en Mediterranée</u>**

Durant chaque année, selon la liste des espèces prioritaires établie au niveau de la CGPM et afin de répondre à une politique nationale visant la gestion des pêcheries marocaines, les principales espèces débarquées en Méditerranée marocaine font l'objet d'un suivi régulier par l'INRH pour la collecte de données nécessaires à l'analyse des indicateurs d'exploitation et l'évaluation de l'état des stocks.

En effet, au cours de l'année 2014, les travaux d'échantillonnage biologique et des fréquences de taille ont concerné 7 espèces. Ces espèces sont en l'occurrence: le rouget de vase « *Mullus barbatus* », la besugue « *Pagellus acarne* », la bogue « *Boops boops* », le pageot commun « *Pagellus erythrinus* » le poulpe « *Octopus vulgaris* », le chinchard « *trachurus trachurus* » et la sardine « *sardina pilchardus* ».

Les espèces évaluées pendant la période d'intersession sont le merlu commun « *Merluccius merluccius* », le rouget de vase « *Mullus barbatus* » et la sardine commune « *Sardina pilchardus* ».

**Cas des espèces des petits pélagiques**

Pour ce groupe d'espèces, les travaux d'évaluation ont porté sur la sardine, étant donné qu'elle constitue l'une des espèces cibles et est majoritairement présente dans les débarquements des senneurs. Concernant l'anchois, la discontinuité de ses débarquements et le peu de données d'échantillonnage biologique sur l'espèce en question rendent les travaux d'estimation de son stock difficiles à réaliser.

Il est à souligner que pour les senneurs actifs en Méditerranée marocaine, la sardine et l'anchois constituent les deux principales espèces ciblées; la sardine pour son abondance et l'anchois pour son prix élevé.

Pour cette nouvelle session, l'évaluation de la situation du stock de la sardine était conduite en utilisant une approche analytique (LCA), basée sur l'analyse des données des structures en taille des débarquements réalisés depuis l'année 2005 et jusqu'à l'année 2013. En ce sens, les données des fréquences de taille des échantillons de la sardine ont été ventilées aux captures commerciales réalisées durant la période 2005-2013.

Les paramètres de croissance de Von-Betalanffy nécessaires pour le calcul de la mortalité naturelle sont estimés par DCF data collectés en 2002 au niveau de la zone géographique GSA 03, en utilisant la dernière version du programme INBIO 2.0 (Sampedro et al., 2005). La mortalité naturelle est estimée par l'utilisation du modèle Gislason (Gislason et al., 2010) et le taux moyen d'exploitation de référence est celui de Patterson (1992) E=0,4.

Le niveau d'exploitation du stock de cette espèce est déterminé en analysant la courbe du rendement par recrue et le calcul des points de référence biologique à savoir Fmax et F0.1.

Le taux moyen d'exploitation E=F/Z est estimé à une valeur de l'ordre de 0,35 (valeur inférieure à 0,4 qui est suggérée comme point de référence biologique pour les petits pélagiques (Patterson, 1992): ce qui indique un taux d'exploitation optimal pour le stock de cette espèce.

La courbe du rendement par recrue peut aller jusqu'à 1,13 qui correspond à Fmax. Cette valeur qui est proche de 1 indique une situation de pleine exploitation pour le stock de la sardine méditerranéenne marocaine.

**Les recommandations qui en découlent soulignent à ne pas augmenter la mortalité par pêche de la sardine méditerranéenne marocaine.**

## Cas des espèces démersales

En Méditerranée marocaine, les ressources démersales font l'objet d'une exploitation multi-spécifique exercée principalement par une flottille chalutière et dans une moindre mesurepar une flotte de petits métiers.

Les principales espèces demersales ciblées par ces flottilles sont composées des pageots acarnes, rougets de vase, crevettes rose, merlus, bogues, poulpes, chinchards, seiches, pageots communs et merlans bleus. Ces espèces représentent environ 80% du volume des captures de ce grand groupe des espèces de fond.

Pour cette nouvelle session, les travaux de suivi et d'évaluation de l'état du stock ont porté sur deux espèces, à savoir le merlu européen « ***Merluccius merluccius*** » et le rouget de vase « ***Mullus barbatus*** »

- le merlu européen « ***Merluccius merluccius*** »

Parmi les espèces démersales ciblées par l'activité de la pêche chalutière au niveau du GSA03, il existe le merlu européen « *Merluccius merluccius* ». La moyenne de la production annuelle de cette espèce est d'environ 168 tonnes. Pendant la période 2003-2013, l'effort de pêche exercé par les chalutiers qui ciblent cette espèce a varié entre 7 277 et 11 100 jours de pêche.

L'évaluation de l'état du stock de merlu européen s'est basée sur l'utilisation des données d'échantillonnage biologique des débarquements de la pêche chalutière pour la période 2003-2013, mais également les données des indices d'abondance provenant des campagnes scientifiques de chalutage réalisées par le Navire de Recherche de l'INRH « Charif Idrissi ».

Cette évaluation, qui était inscrite dans le cadre d'un groupe d'évaluation interne à l'INRH et qui avait pour objectif la standardisation des méthodes et technique d'évaluation des stocks du merlu européen provenant des pêcheries marocaines (méditerranéenne et atlantique), était effectuée en appliquant le modèle de production, moyennant le logiciel CECAFE Schaeffer model (CECAFE Dynamic Schaeffer model, 2007).

Les résultats obtenus indiquent que l'état de stock de cette espèce est pleinement exploité avec une biomasse relativement importante.

MSY= 187, $B_{0.1}$=115; $F_{MSY}$=1,62; $F_{0.1}$=1,46; $F_{current}$=1,02; $B_{current}$=145, Cur_SustProd=174 (93%)

Les résultats de cette étude d'évaluation ont été considérés comme préliminaires par le groupe qui a recommandé aussi de ne pas augmenter l'effort de pêche exercé sur le merlu méditerranéen marocain, jusqu'à la prochaine évaluation de l'état de son stock.

- le rouget de vase « ***Mullus barbatus*** »

Le rouget de vase *Mullus barbatus* est l'une des espèces les plus ciblées également par les chalutiers dans la zone géographique GSA03. En effet, et selon les statistiques officielles, près de 111 bateaux ciblent cette espèce.

La moyenne des débarquements annuels de cette espèce ont été situé à environ 375 tonnes. L'effort de pêche appliqué par les chalutiers montre une nette diminution depuis 2010 pour atteindre sa valeur minimale en 2013 qui est d'environ 10 600 jours de pêche. Pendant la période 2010-2013, la composition en tailles des captures ont varié entre 5 et 29 cm de longueur à la fourche.

Les analyses d'évaluation du stock du rouget de vase ont été réalisées en procédant à l'application des modèles structuraux et globaux, moyennant le logiciel VIT (Lleonart & Salat, 2000) et le logiciel CECAFE Schaeffer model (CECAFE Dynamic Schaeffer model, 2007).

Ces analyses ont été réalisées a partir des données sur l'effort de pêche, les captures et les CPUE durant la période 2004-2013, mais aussi sur une série de données sur la composition en tailles de cette espèce durant la période 2010-2013.

Les paramètres de croissance utilisés dans cette étude ($L\infty$, k et t0) sont ceux obtenus lors d'une étude de croissance de cette espèce en Méditerranée marocaine. La valeur de F terminale adoptée est de l'ordre de 0,5. La mortalité naturelle a été calculée en utilisant la méthode de Dabali et al, 1994.

Les résultats obtenus par les deux méthodes d'évaluation appliquées sur cette espèce indiquent que le stock est en état de surexploitation avec une biomasse relativement faible.

- **Model analytique**: Fcur=1,09; F0.1=0,48, Fmax=0,87 et Fcur/F0,1=2,27
- **Production model:** MSY=763; BMSY=1756; B0,1=1932; F0,1=0.39; Fcurrent=0.48; FMSY=0.43

A l'issue des résultats obtenus sur l'état de stock du rouget de vase, il est recommandé de réduire la mortalité par pêche exercée sur ce stock.

**<u>Statistiques et système d'information</u>**

Depuis la création de la Tâche 1 de la CGPM, la base qui regroupe les différentes données sur l'activité de pêche au niveau de chaque GSA (données biologiques, d'exploitation et de flottille), le Maroc s'est engagé à fournir toute l'information disponible, en raison de l'importance de cette action.

Toutefois, certaines de ces données sont difficiles à collecter ou nécessitent un effort et des moyens financiers importants, notamment les données socioéconomiques, les données sur l'effort de pêche (zone de pêche par engin) et aussi certaines données biologiques, comme les rejets dont leur collecte nécessite l'embarquement des observateurs scientifiques à bord des navires de pêche commerciale.

L'INRH a transmis la base de données de la matrice «Tâche 1» pour l'année 2012 au Secrétariat de la CGPM en mai 2014. Cette matrice actualisée a regroupé la table « Tâche 1.1 » réservée à la segmentation de la flottille de pêche nationale méditerranéenne, la « Tâche1.2 » qui regroupe les données socioéconomiques, la « Tâche 1.3 », consacrée aux données d'exploitation à savoir l'effort de pêche et la « Tâche 1.5 » relative aux données biologiques.

Actuellement, l'INRH assure les traitements nécessaires des données pour ressortir les matrices de la « Tâche1», relative à l'année 2013.

La flottille opérationnelle en Méditerranée marocaine est caractérisée par une forte mobilité entre les différents ports de pêche, ce qui induit une difficulté pour bien cerner cette flotte.

**Études sociales et économiques**

Les principaux travaux scientifiques réalisés en 2013 et en cours de réalisation, ont concerné :

- Étude socioéconomique de la pêcherie sardinière: ce travail est en cours et porte sur la modélisation socioéconomique de la pêcherie en vue de simuler des mesures de gestions et d'optimiser l'exploitation.
- Établissement d'un système communautaire de l'activité de pêche artisanale au niveau du Parc National d'Al Hoceima: ce travail réalisé en partenariat avec la FAO et le Haut Commissariat aux Eaux et Forêt et à Lutte Contre la Désertification, porte sur la mise en place d'un système de collecte des données d'exploitation et socioéconomiques par les communautés des pêcheurs au sein du Parc National d'Al Hoceima.
- Établissement d'une base de données socioéconomique pour la pêche artisanale dans la lagune de Nador: Disposer des données nécessaires pour établir un état de référence de cette activité en vue de suivre son évolution avec les nouveaux aménagements établis dans cet écosystème.
- Programme cadre national de suivi de l'activité de pêche artisanale: ce suivi est mené au niveau de 10 sites en Méditerranée marocaine couvrant 29% de la flottille de pêche artisanale.
- Étude de la structure, dynamique et performances socioéconomiques des systèmes d'exploitation et des filières céphalopodière et des petits pélagiques.

**État des programmes de recherche en cours**

Les études de recherche en cours au niveau de 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;*.
- Les études portant sur l'interaction entre l'activité de pêche et son environnement;
- Les études socioéconomiques des principales activités de pêche;
- La préparation d'un guide sur les ressources halieutiques marocaines (Atlantique et Méditerranée);
- La réalisation d'un inventaire des espèces d'élasmobranches peuplant la Méditerranée marocaine et la collecte des données relatives à leur exploitation (capture et effort de pêche);
- Le suivi des enquêtes inscrites dans le cadre du programme d'étude des interactions entre les Cétacés et la pêche au niveau de la GSA 03;
- L'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.

**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 démersales à durée de vie courte (crevette rose du large).

**Propositions de programmes de recherche future**

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 d'élasmobranches peuplant la GSA 03 et le lancement d'un programme de suivi de leur exploitation;
- 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'étude sur les ressources côtières exploitées (prospection de terrain et suivi des indicateurs de l'exploitation)
- L'adoption de modèles intégrant l'effet des changements globaux et des facteurs environnementaux pour l'évaluation de l'état des stocks exploités;
- L'étude de la structure, de la dynamique et des performances socioéconomiques des systèmes d'exploitation et des filières d'autres pêcheries et des activités d'exploitation des ressources littorales;
- L'analyse socioéconomique du secteur de la pêcherie artisanale;
- L'évaluation de l'impact des plans d'aménagement sur les pêcheries.

# 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. Taking into account the evolution of the marine fisheries in the last 25 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 consider the fisheries to be small-scale fisheries. The Romanian fishing area is comprised between Sulina and Vama Veche; coastline extends for over 240 km, which can be divided into two main geographical and geomorphologic sectors:

- the northern sector (about 158 km in length) lies between the secondary delta of the Chilia branch and Constantza, constituted of alluvial sediments;
- the southern sector (about 85 km 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 (200 m depth) varies from 100 to 200 km 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 increases very quickly (Fig. 1 and 2).

Pursuant to the provisions of Emergency Ordinance no. 57 of 20 June 2007, on the regime of natural protected areas, the conservation of natural habitats, wild flora and fauna (Official Gazette no. 442 of 29 June 2007), approved by Law no. 49/2011, as well as of European Directives 79/409/EEC and 92/43/EEC, the following natural protected areas were established in the Romanian marine zone:

***1. ROSPA0076 Black Sea***: site of Community importance, according to the 79/409/EEC Birds Directive, directly nominated Special Protected Area - SPA - through GD no. 1284/2007, regarding the declaration of avifaunistic protected areas as an integrating part of the Natura 2000 European ecological network in Romania**,** 147,242.9 ha;

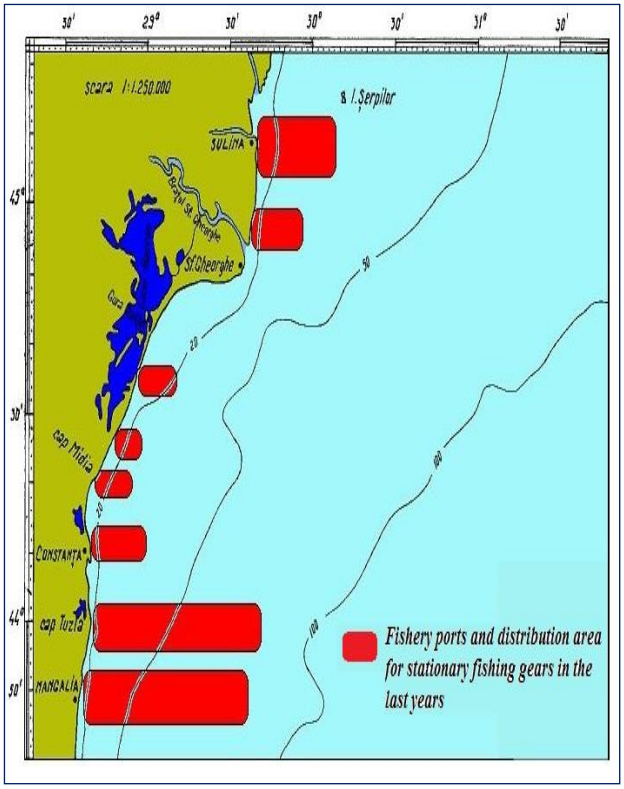



**Fig. 1** Fishery ports and distribution area for stationary fishing gears

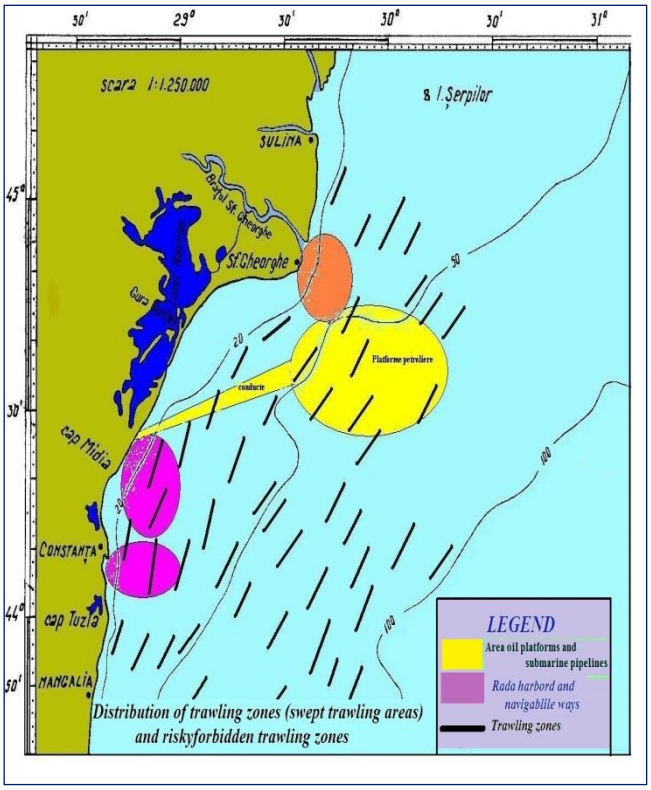



**Fig. 2** Distribution of trawling zones

2. ***ROSCI0269 - Vama Veche - 2 Mai***: site of Community Importance, according to the 92/43/EEC Habitats Directive, adopted through 2009/92/EC Decision, which overlaps the Vama Veche-2 Mai Marine Reserve, natural protected area of national importance - 50 km$^2$ (5,272 ha)(Custodian NIMRD "*Grigore Antipa*"). The marine reserve, is located in the south of the Romanian littoral, near the Bulgarian border (Fig.3). This is an area with a high diversity of the biotopes and biocoenosis, being settled on the migration routes of the main pelagic and benthic fishes and marine mammals;

3. ***ROSCI0094 - The Sulphur Seeps in Mangalia***: site of Community importance, according to Habitats Directive 92/43/EEC, established by Decision 2009/92/EC. Located in the sandy area, at the bottom of the underwater cleve, being strongly connected to the Dobrogean limestone complex. The site is unique on the Romanian littoral and requires an interdisciplinary study in order to identify both the causes of these emmissions, as well as their effects on the marine ecosystem. The surface of the marine protected area is of approx. 3.62 km$^2$ ;

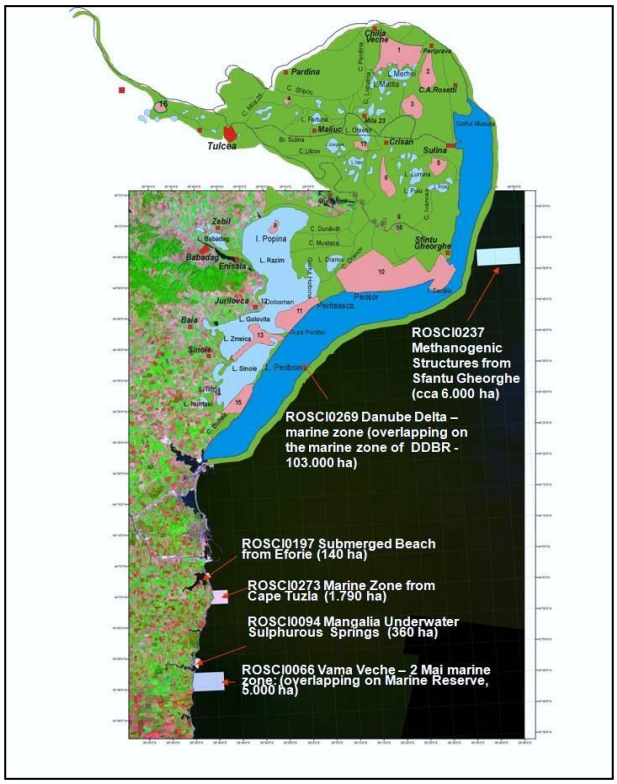



**Fig. 3** Site distribution on the Romanian littoral

4. ***ROSCI0197 - Submerged beach from Eforie North - Eforie South***: site of Community importance, according to the Habitats Directive 92/43/EEC, established by Decision 2009/92/EC. Located in the South of the littoral, the site is characterized by hydrodynamic processes and natural habitats typical for an open beach. The surface of the marine protected area is of approx. 1.4 km$^2$ (141 ha);

5. ***ROSCI0273 - Marine area from Cape Tuzla***: site of Community importance, according to the Habitats Directive 92/43/EEC, established by Decision 2009/92/EC. Located in an area with reef-type rocky bottom, the most varied and steep in the Romanian sector. It covers a surface of 17.86 km$^2$ (1,738 ha);

6. ***ROSCI0237 - Submerged methanogenic carbonate structures Sf. Gheorghe***: site of Community importance, according to the Habitats Directive 92/43/EEC, established by Decision 2009/92/EC. Located in the NW part of the Black Sea, at depths between 35 m and 784 m, the marine structures caused by gas emission overcome the oxyc/anoxyc interface, characteristic for this sea. The area covers 60 km$^2$ (6.122 ha);

7. ***ROSCI0066 - Danube Delta - marine zone***: site of Community importance, according to the Habitats Directive 92/43/EEC, established by Decision 2009/92/EC, overlapping the marine area of Danube Delta Biosphere Reserve - natural protected area of national and international importance - 121.697 ha; The shallow waters up to 20 m depth of the northern part are included in the Biosphere Reserve of Danube Delta (declared through the Low no. 82/1993). The marine 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).

8. ***ROSCI0281 - Cape Aurora***: site of Community importance, according to the Habitats Directive 92/43/EEC, established by Order of the Minister of the Environment and Forests no. 2387/2011;

9. ***ROSCI0293 - Costinesti - 23 August***: site of Community importance, according to the Habitats Directive 92/43/EEC, established by Order of the Minister of the Environment and Forests no. 2387/2011.

***Total landings by group of 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 six-seven months of the season (March-September), when usually the turbot migrates to the coastal area for reproduction and other species migrate for feeding. In general, the total fishing season is 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 hydroclimatic conditions and at last but not least, the state of fish stocks. The species in the catches mirrored only partly the composition of Black Sea ichtyofauna from the Romanian sector, because the type of gear determines 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 the 2000-2013 period, the level of total catches decreased from 2476 tons to 444 tons (2008), 330 tons (2009), 258 tons (2010), 568 tons (2011), 835 (2012) and 1,712 tons (2013), according to official registers. In the 2011–2013 period, the total catches increased compared to the previous period due to the rapa whelk catches. In 2013, the main species catches have been: rapa whelk (1,388 tons/78.15 %, of total catches); anchovy (117 tons); sprat (99 tons); turbot (43 tons); horse mackerel (26 tons); shad (35 tons) and gobies about 12 tons (Fig. 4).

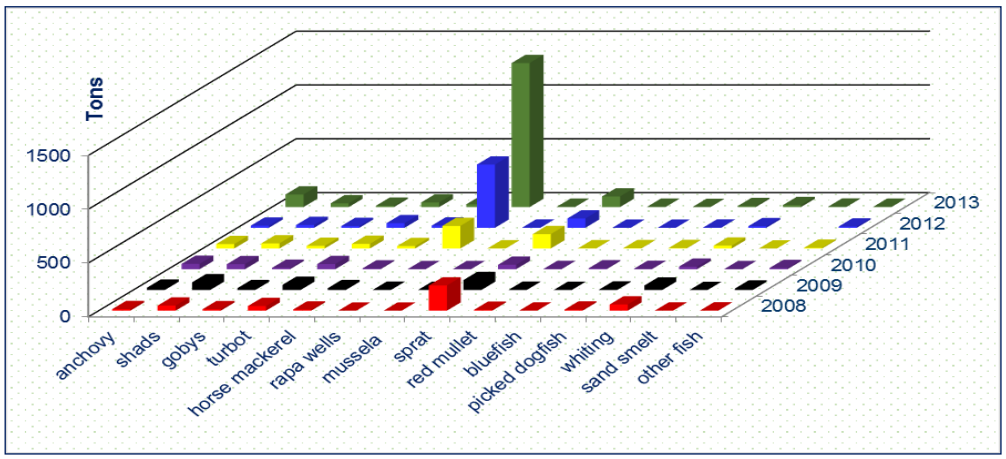



**Fig. 4** Total catches and structure of the species at the Romanian littoral, during 2008 - 2013

The main catches are obtained with trawls, pound nets and gillnets (Fig. 5)

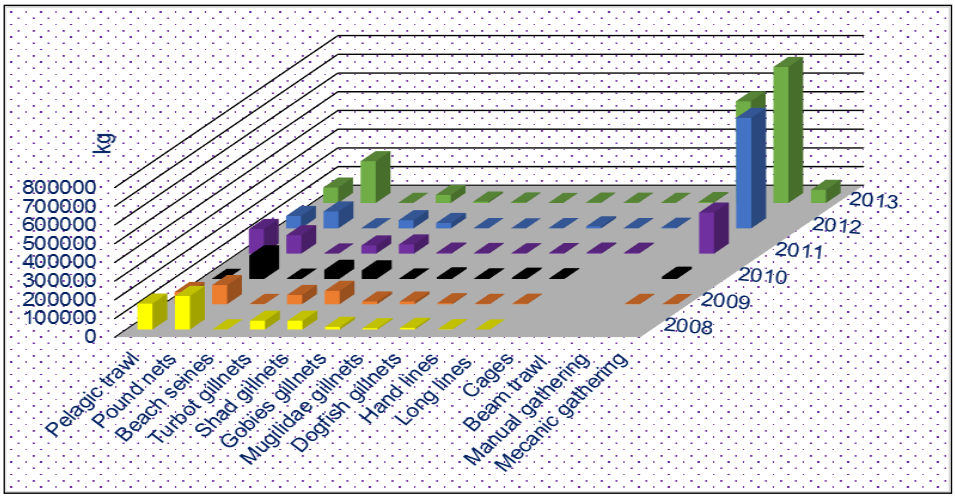



**Fig. 5** Catches per fishing gear in tonnes per year

**Fleets, fishing gears and fishing effort**

Year after year, the activity of fishing vessels gradually decreased. From 20 vessels with LOA between 24 - 40 m registered, in the last years in the Fishing Fleet Register was registered as active only two - three vessel for a very short period of time (Fig. 6, 7, 8, 9).

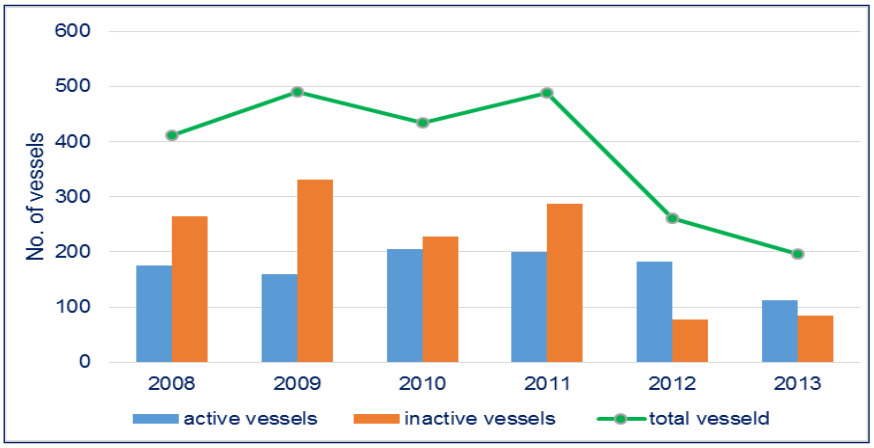



**Fig. 6** Evolution of the number of vessels during 2008 – 2013

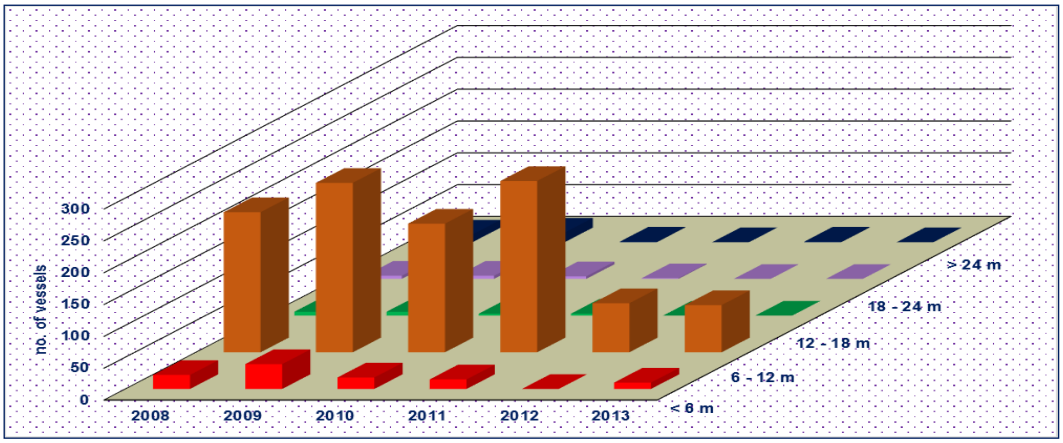



**Fig. 7** Structure of inactive vessels on length classes during 2008 - 2013

In 2013, the total number of boats/vessels registered was 196, from which only 112 have been active, most of them having LOA of 6 - 12 m (81.25%). Gillnets and long lines were mainly used. The fisheries of this small fleet are typically artisanal type as multi-species and multigear fisheries, fishermen switching from one gear to another several times throughout the year.

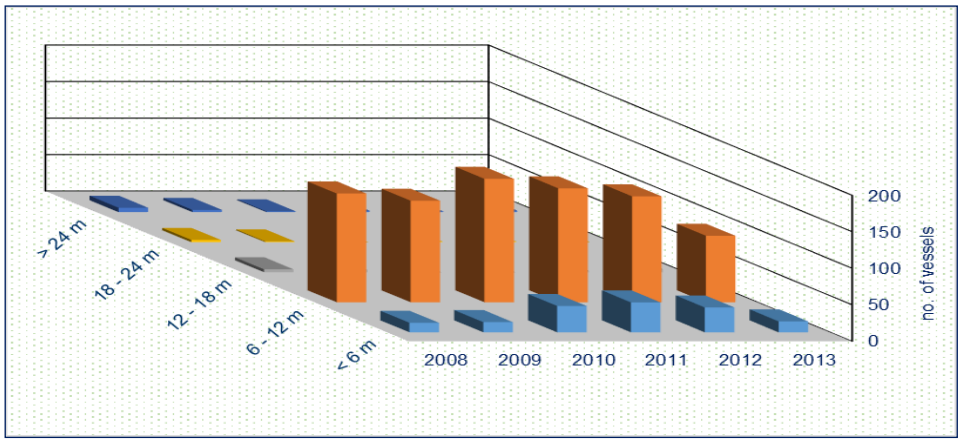



**Fig. 8** Structure of active vessels on length classes during 2008 – 2013

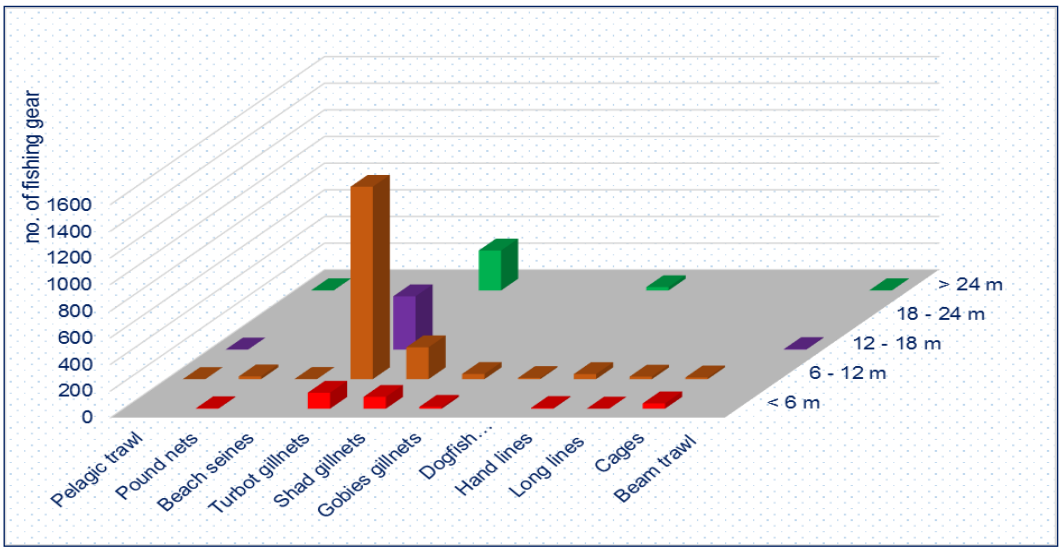



**Fig. 9** Structure of active vessels on length classes and fishing gears, in 2013

**Fishing gears used on 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 mainly the fish migrating for spawning and feeding in shallow waters, namely:

- long lines and bottom lines;
- gillnets for the Danube shad, turbot, mugilidae and gobies;
- sea pound nets.

Another category of fishing equipments used in the Romanian coastal zone includes the active fishing gear: beach seine, beam trawl and pelagic trawl. The number of fishing gears decreased thus: number of trawls from 6 to 2; trap nets from 26 to 15; beach sine from 8 to 3; gill nets from 5,249 to 2,691; hand lines from 386 to 44 and long lines from 262 to 20 (Fig.10). In 2013 the number of pound nets increased (25) as well as the number of the hand lines used mainly in the subsistence fishing.

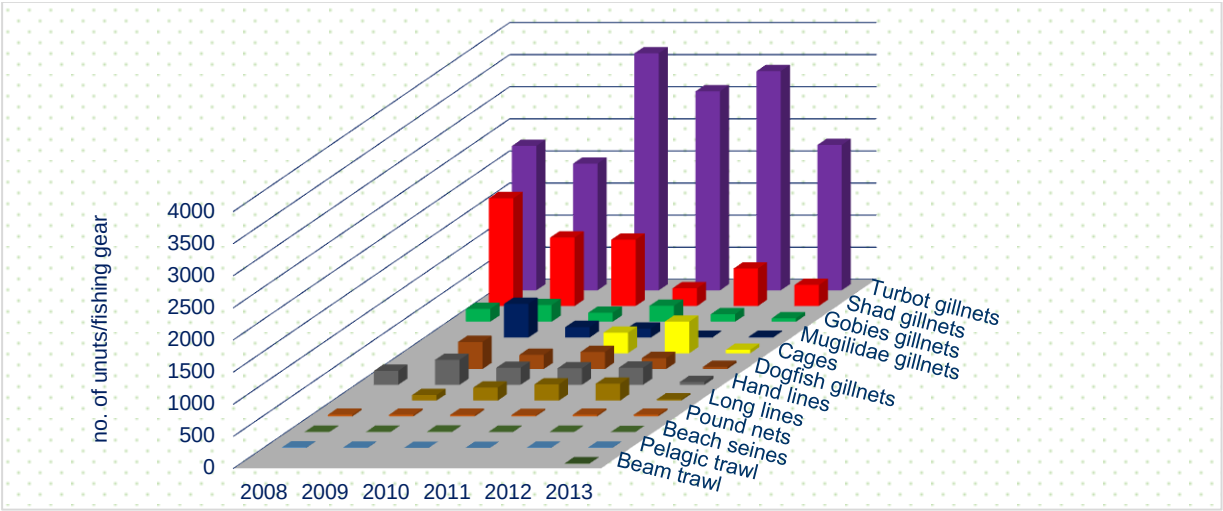



**Fig. 10** Number of units per fishing gear

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 dicreased between 2012 and 2013, while total fishing days remained almost stable during the same period (Fig. 11 and 12).

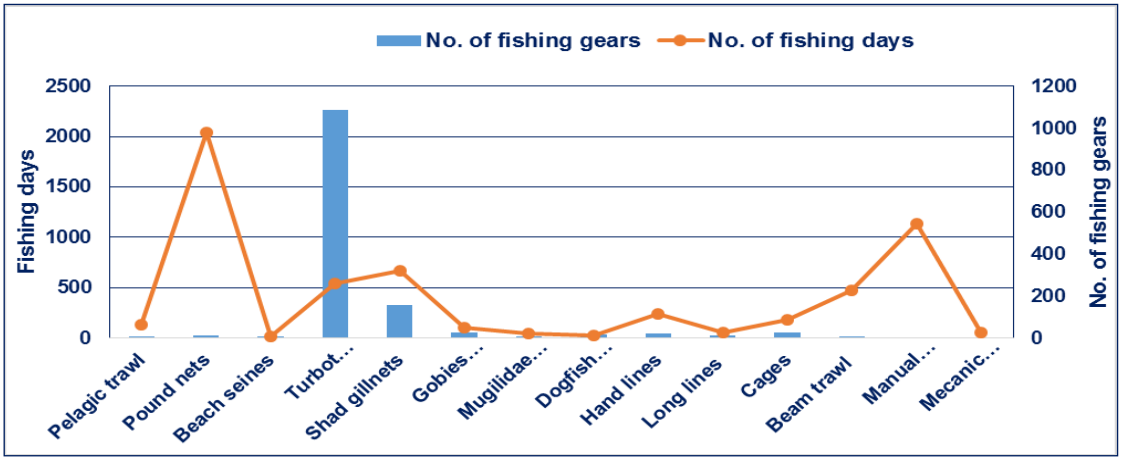



**Fig. 11** Fishing effort on fishing techniques in 2013 at the Romanian littoral

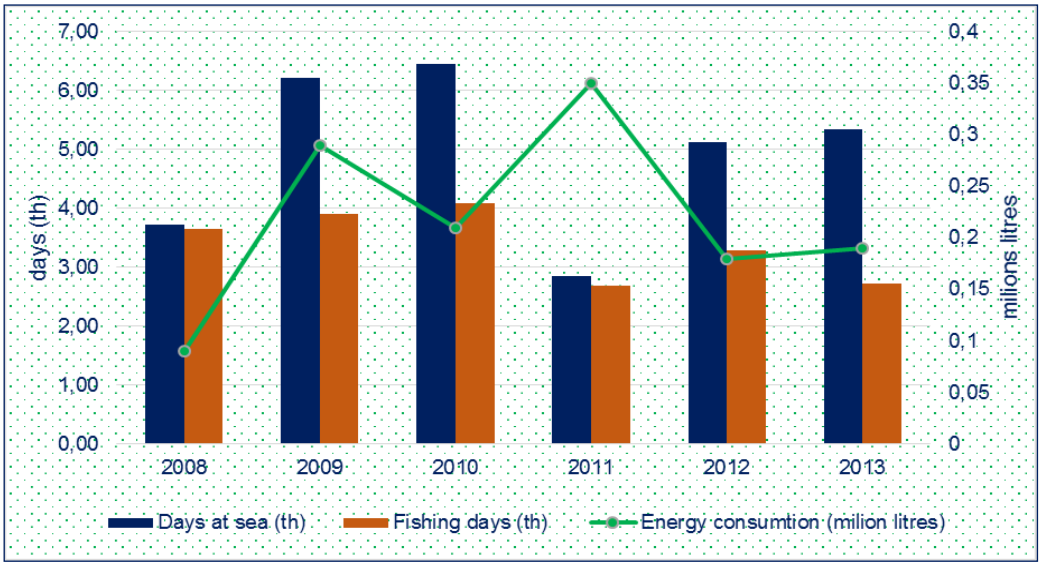



**Fig. 12** Fishing effort and energy consumption during 2008 - 2013

The total number of fishermen in 2011 was 447, in 2012 was 471 and in 2013 was 603. The number of fishermen for vessels with length bigger than 24 m decreased from 180 till two vessel crews (13 persons). Similarly to the situation in the coastal fishing fleet, the stationary fishing on the Romanian littoral has also declined. In 2013 a number of 500 fishermen acted for the small scale fisheries (boats 6-12 m), who served several types of gears 57 persons acted for boats smaller than 6 m.

## Progress on the assessment of status of stocks

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 on the Romanian littoral ranged between: sprat (30,917 tons and 68,887 tons); turbot (627 t and 1,712 t); whiting (6,565 t and 26,171 t) and dogfish (967 t and 5,635 t)(Fig. 13).

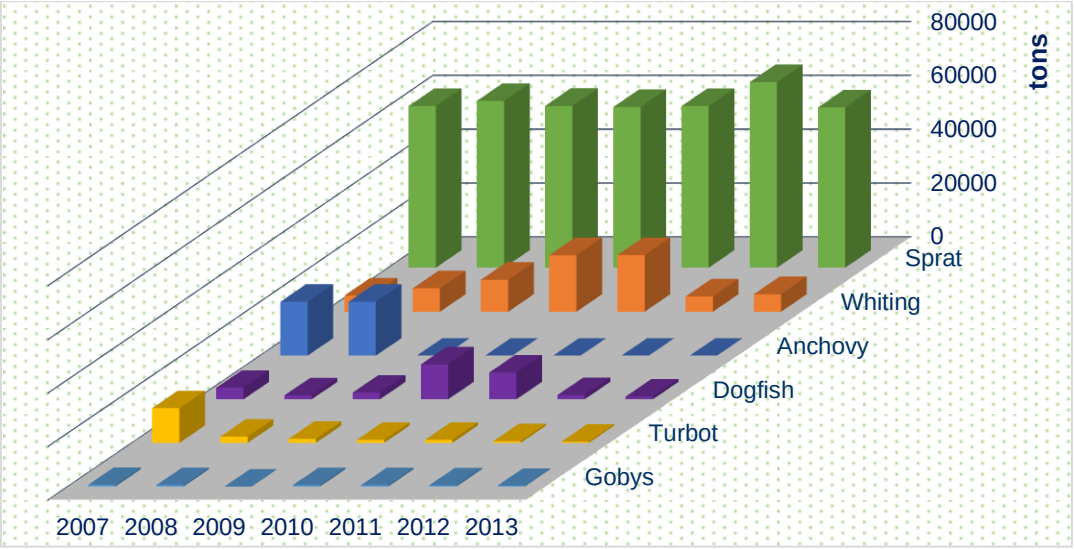



**Fig. 13** The agglomeration biomass of the main species from Romanian littoral (t)

**Progress on the development of the statistics and information system**

Fisheries data obtained in the different projects by NIMRD are incorporated in the database of institute. Reports and data are transmitted to Romanian NAFA in the frame of National Data Collection Programme. In the same Programme, fisheries data are uploaded in JRC database. In parallel, 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, the exhaustive method used ensures the maximum quality level of collected data.

**Status of research in progress of relevance to fisheries, including on stock assessment, socioeconomics and marine environment**

**Status of research in progress**

- National Data Collection Programme. 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 (Bilateral Romania - China);

- PN 09320206 - Reducing the impact of marine bioresources exploitation by developing ecoefficient solutions;

- 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 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

- PN II - 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)

- 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;

- Application for the Western Black Sea (Ocean Colour) / Contract no. 4000102243/10/NL/HE11

- 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 no. 07.020400/2012/616044/SUB/D2;

- 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.

**Involvement in activities of other partner organizations and initiatives, including FAO Regional Projects**

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

**Management and fisheries related environment protection measures at national level**

The current national fisheries regulatory framework and fishing resources management are the following:

- Law on the Constitution of the Biosphere Reserve “Danube Delta” No. 82/20.11.1993;

- Law on Environmental Protection No. 137/1995;

- Emergency Ordinance no. 195/2005 on environmental protection;

- Emergency Ordinance no. 57 of 20 June 2007, on the regime of natural protected areas, the conservation of natural habitats, wild flora and fauna (Official Gazette no. 442 of 29 June 2007), approved by Law no. 49/2011;

- Law no. 6/2011, approving GEO 71/2010, on the marine environment strategy;

- Order no. 1052/2014 approving the methodology for natural protected area custody awarding;

- 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;

- Order no. 342/2008 on minimal size of the aquatic living resources;

- Order no. 344/2008 for approval of the operational and functional manner of fishing vessel and boats file;

- Order no. 449/2008 on technical characteristics and practice conditions for fishing gears used in the commercial fishing.

- Annual Order on the Fishing Prohibition;

**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 in a similar way 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 Forests 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**

This recommendation was observed within the DG Mare project "*Adverse Fisheries Impacts on Cetacean Populations in the Black Sea*". The project was implemented by a consortium of organizations from Bulgaria, Romania, Turkey and Ukraine in coordination with Mac Alistar Elliot & Partners Company. The objective of the project was 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, recommendations on mitigation measures for the fisheries identified to have the highest adverse impacts/by-catch rates were drafted.

The scientific information and advice promoted 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 on the Romanian littoral and established the methods to determine conservation status of the dolphins.

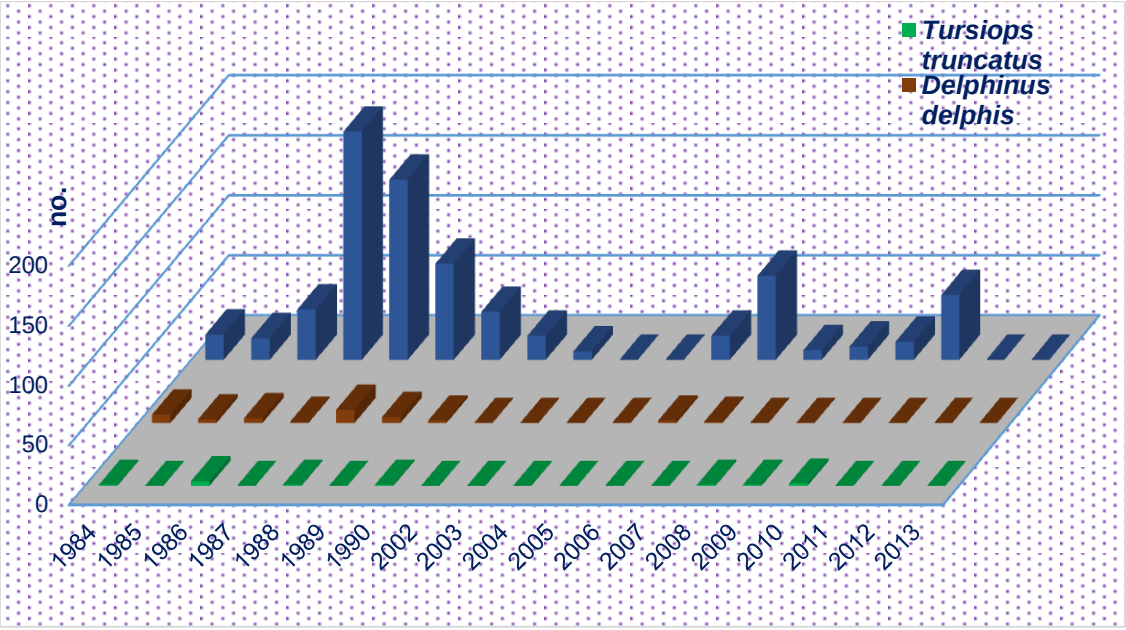



Fig. 14. The accidental cetacean catches situation registered on the Romanian littoral, during 1984 – 2013

**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 socioeconomic value of these species. The main achievement 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 tons). During the 2006–2013 period, catches have reached up to 20 tons in 2012 (Fig. 15).

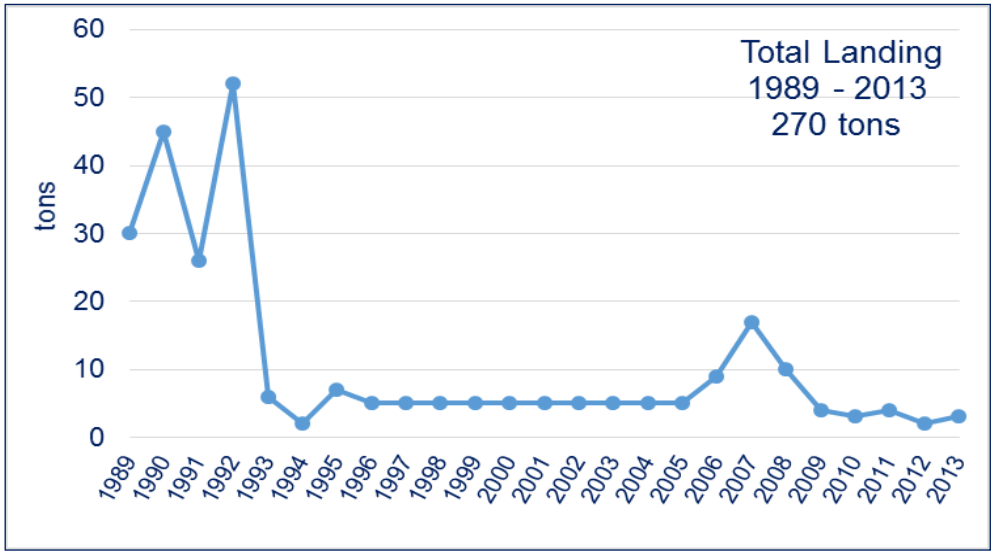



**Fig.15** Spiny dogfish catches on the Romanian littoral

**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 2014)**

| Code | Species | Landing [kg] |
|---|---|---|
| PIL | European pilchard (*Sardina pilchardus*) | 78 426,7 |
| ANE | European anchovy (*Engraulis encrasicolus*) | 33 167,45 |
| SBG | Gilthead seabream (*Sparus aurata*) | 19 358,37 |
| WHG | Whiting (*Merlangius merlangus*) | 18 519,02 |
| EDT | Musky octopus (*Eledone moschata*) | 16 808,85 |
| SOL | Common sole (*Solea solea*) | 14 541,51 |
| SQR | European squid (*Loligo vulgaris*) | 11 636,18 |
| MUL | Mullets nei (*Mugilidae sp.*) | 5 792,78 |
| FLE | European flounder (*Platichthys flesus*) | 5 394,85 |
| Other | | 50 480,66 |
| **TOTAL** | | **254 126,37** |

**Fleet**

| Fishing vessels | Number | LOA [m] (average) | kW (sum) | GT (sum) |
|---|---|---|---|---|
| Minor gear without engine < 6 m | 6 | 4,55 | 0,00 | 4,13 |
| Minor gear with engine < 6 | 74 | 4,79 | 882 | 70,94 |
| Minor gear with engine 6-12 m | 64 | 7,53 | 3109 | 199,44 |
| 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 | 396 | 15,60 |
| Purse seiners 12-24 m | 3 | 14,11 | 311 | 32,60 |
| Other | 4 | 14,48 | 1015 | 66,10 |
| **TOTAL** | **169** | **7,02** | **8 493** | **596,89** |

The data of the Slovenian fishing fleet is referring to the date of 1 January 2015.

## Status of stocks of priority species

In the case of Slovenia, five species can be considered as priority species in the year 2014: European pilchard (*Sardina pilchardus*), European anchovy (*Engraulis encrasicolus*), Gilthead seabream (*Sparus aurata*), Whiting (*Merlangius merlangus*) and Musky octopus (*Eledone moschata*).

The stock status for sardine and anchovy was addressed by the Working Group on Stock Assessment of Small Pelagic Species (WGSASP) at the meeting that was held in Rome in the period 24–27

November 2014. Main findings regarding these two species that were delivered by the WGSASP are presented in the table below.

| Stock | Stock status | WG management advice | SC comments |
|---|---|---|---|
| Sardine *(Sardina pilchardus)* | Biomass above reference point and in overexploitation.<br><br>Exploitation rate is higher than the Patterson's reference point (E(1-4)= 0.53).<br><br>B*current* is above both the limit and the precautionary reference point. The estimated biomass ($B_{curr}$=154,199 tons) is above both $B_{lim}$ (62,505 tons) and $B_{pa}$ (125,010 tons) estimated in 2012. | Reduce fishing mortality | The WG agreed on the improvement of some parameters in the assessment with respect to last year. In particular, the F*bar* was set equal to 1-3, the plus group was set at age 4 and the two series of survey were used separately. These changes did not affect the assessment.<br><br>The reference points remain the same as the ones proposed at the last session of the WG.<br><br>The WG recommends a revision of the basic input 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. |
| Anchovy *(Engraulis encrasicolus)* | Overexploited and in overexploitation.<br><br>Exploitation rate is 0.51, therefore higher than the Patterson's reference point (E=0.4).<br><br>Biomass level is low ($30^{th}$ percentile). | Reduce fishing mortality immediately | The WG agreed on the improvement of some parameters in the assessment with respect to last year. In particular, the F*bar* was set equal to 1-2, the plus group was set at age 4+. The results are consistent with last year's estimations from the SAM model.<br><br>Due to an unclear historical perspective, reference points cannot be updated. Advice is therefore provided on a precautionary basis (exploitation rate and biomass percentiles).<br><br>The WG recommends a revision of the basic input 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. |

**Status of the statistics and information system**

In Slovenia there are five 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, the forth is ERS where all electronic reports and data from the

electronic logbooks are stored and the fifth is biological data base BIOS. Some elements of the systems are already interconnected and in the future the interconnection between the systems will also improve in line with the requirements of the EU and other pertaining legislation in force and thus we will gain better control over fisheries activities.

InfoRib is the centralized information system which contains all the relevant data on fisheries in Slovenia. In the system there are the following modules: Fleet vessel register, Logbooks, Fishing Permits, Socioeconomic 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 the VMS data base and soon it will be interconnected also with ESR data. It enables different crosschecking of the data, validation of the data and queries for end users.

In the future we will improve interconnection with the Aquaspec system and with the central node for fisheries data at the European Commission.

Biological data are stored at the Fisheries Research Institute of Slovenia in BIOS database. In the future also the interconnection between BIOS and InfoRib shall be established.

The yearly maintenance of the systems in place is performed regularly. It includes also all the preparation work for different reports, for national and international end users.

**Status of research in progress**

In the framework of National Programme 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 is elaborated at the 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 the 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 in one day and includes 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 field of economic research Slovenia is implementing three studies on the basis of the 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 completed data for 2013 on fishing sector, processing industry and aquaculture sector. The 2014 data for all three sectors will be available in the first half of 2016.

**Marine environmental studies in progress**

In 2014, we started a pilot study of ichthyoplankton in Slovenian territorial waters targeting sardine and anchovy eggs and juveniles using Daily Egg Production Method (DEPM) protocol. This method is already used in other eastern Adriatic countries for stock assessment in the ADRIAMED project and probably the most suitable for Slovenia, considering the cost and effects. At the moment we sample 10 stations once per month for a period of 12 months. Once a spawning peak of both species is

determined, we plan to start using the DEPM method as it is, by concentrating on spawning peaks only.

**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**

Fisheries management measures in Slovenia are consistent with the provisions of 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.

The objective of the Fisheries Management Plan is to adjust the fishing capacities and fishing opportunities for the fishing vessels which target fish stocks require protection and conservation as their stock status is in undesirable state. Management measures are also required for the groups of fishing vessels which target species 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 require a restriction on the fishing effort of these vessels.

Small pelagic fish species have been predominant in the landings of Slovenian fishermen for many years, with the bulk of these landings being made up of sardine and anchovy. And 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 these two fleet segments within the FMP.

In addition, owing to the fact that Slovenian fishermen operate in the very limited sea fishing area, where additional restrictions exist (navigation lanes, fishing reserves, conflict with other types of fishing gear, etc.) and because of the absence of stock assessments for demersal fish in the Northern Adriatic, measures to adjust the fishing effort have also been drawn up for the fishing 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 introduced in the FMP following management measures to reduce the fishing effort:

- *"Temporary suspension of the granting of commercial fishing licences"*

Moratorium on the issuing of new fishing licenses has been introduced already in 2012 and is still in force. Implementation of this measure bans the issuing of new fishing licences for the following types of fishing gears: purse seines (PS), midwater pair trawls (PTM), set gillnets (GNS) and trammel nets (GTR) and bottom otter trawls (OTB).

- *"Review of commercial fishing licences (authorisations)"*

With the implementation of this measure we plan to address the issue of inactive vessels in the fishing fleet register, but it will require more complex and lengthier approach. For the time being, national legislation in force does not provide a legal base that would allow effective management of inactive vessels in the fishing fleet register.

Under national legislation fishing license/authorization which gives a vessel owner a right to fish, is assigned to a vessel for unlimited period of time and the vessel owners are not obliged to be active with their vessels in order to keep their fishing authorizations. Furthermore, even if the vessel owner

would lose his fishing authorizations due to infringements or because other instances specified in national legislation would occur that would allow abolishment of the fishing authorization, there are still no provisions in the national legislation that would permit authorities to delete those fishing vessels from the national fleet register.

Therefore we plan to address this issue and prepare provisions that would allow legal base to tackle this issue and to incorporate them in the new national Marine Fisheries Act. We are already in the begging stage of preparation of a new Marine Fisheries Act as the existing one needs a number of revisions.

- *"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 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 tons in 2011, down to 328,9 tons in 2012 and to 238 tons in 2013. The decrease of the sardine and anchovy landings was noteworthy: the landings of these two species decreased by 87 %. In 2014 landings of these two species increased up to 111,5 tons, but this is still much lower than landings of sardine and anchovy in 2011 which were 469,3 tons.

Slovenia is included in the implementation of 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")* which was adopted at the GFCM's plenary session that was held in Split in May 2013, which entered into 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". An amended plan was sent at the end of October 2014. In addition, Slovenia also submitted to the GFCM Secretariat a list of the vessels authorized to fish for small pelagic stocks that are registered in harbours located in GSA 17. Under the provisions of this plan it is not possible to fish for small pelagics more than 20 days per month and maximum 180 days per year.

As it was determined in 2014, that the stock of the anchovy in GSA 17 continues to be at undesirable levels "*Recommendation GFCM/38/2014/1 amending Recommendation GFCM/37/2013/1 and on precautionary and emergency measures for 2015 on small pelagic stocks in the GFCM GSA 17"* was adopted at the GFCM plenary session held in Rome in May 2014.

In line with the above mentioned Recommendation, vessels targeting anchovy must not exceed 144 fishing days in 2015. In addition, countries subject to the management plan for small pelagics must apply spatio-temporal closures of no less than 15 continuous days and up to 30 continuous days for vessels fishing small pelagic stocks in GSA 17. Slovenia will apply spatio-temporal closure in the period 1-15 April 2015 to all waters under its jurisdiction.

**Environment protection measures**

In Slovenia we have 2 fisheries protected areas: Portorož and Strunjan. On the basis of the Slovenian Maritime Fisheries Act, it is prohibited to perform any kind of fishing activities in the fisheries

protected areas. The 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 the fact that red coral is not present in the fishing area of Slovenia fishermen.
- *"Rec. GFCM/36/2012/2 on mitigation of incidental catches of cetaceans in the GFCM area"*. It is covered by the European and Slovenian national legislation. It is covered by the provisions of the Slovenian 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"*. It is covered by the 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 (DEPM) 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. In order to attain this goal, Slovenia needs to provide the data from its seas. Hence, Slovenia started to conduct a preliminary survey in 2014 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. Adding this data to the joint stock assessment would further improve the precision of the results.

## SPAIN/ESPAGNE

**Description of the fisheries**

The Spanish fleet operates mainly within four GSAs (excluding GSA 02, 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 **authorised fishing vessels** as for the Mediterranean (excluding auxiliary vessels) included in the Fleet Register at date 31/12/2013 was 2.853, with a mean length of 14.11 m, a total GT of 74 228,52 and a total power of 260 761,84 Kw. Most of the fisheries are multispecific, especially the trawl fishery which catches a great diversity of species of fish, crustaceans and molluscs (Table 2).

| GEAR | | Total |
|---|---|---|
| **Trawl** | nº | 669 |
| | Total Kw | 123.711,97 |
| | Total GT | 39.651,11 |
| | Average LOA | 20,40 |
| | LOA Range (8,82 – 32,53) | |
| **Purse seine** | nº | 236 |
| | Total Kw | 39.121,74 |
| | Total GT | 8.169,02 |
| | Average LOA | 17,64 |
| | 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) | |
| **Surface longline** (out of the total of 150 authorised vessels, only 81 LLD vessels had fishing operations in Mediterranean in 2013) | nº | 150 |
| | Total Kw | 29.521,88 |
| | Total GT | 17.626,41 |
| | Average LOA | 21,82 |
| | LOA Range (9,60 – 37,50) | |
| **Set longlines** | nº | 76 |
| | Total Kw | 5485,78 |
| | Total GT | 644,44 |
| | Average LOA | 10,71 |
| | LOA Range (5,57 – 18,00) | |
| **Artisanal** | nº | 1.716 |
| | Total Kw | 57.077,09 |
| | Total GT | 6.529,54 |
| | Average LOA | 8,32 |
| | LOA Range (3,25 – 27,00) | |

Table 1. Number and technical characteristics of the Spanish Mediterranean fleet by type of gear (authorised fishing vessels in year 2013 – not meaning all of them were active in the year of reference)

| SPECIES | Tm |
|---|---|
| *Engraulis encrasicolus* | 20122 |
| *Aristeus antennatus* | 1108 |
| *Sepia officinalis* | 813 |
| *Merluccius merluccius* | 3651 |
| *Trachurus spp* | 5853 |
| *Scomber spp* | 5645 |
| *Lophius spp* | 1675 |
| *Squilla mantis* | 747 |
| *Mullus spp* | 2034 |
| *Nephrops norvegicus* | 572 |
| *Octopus vulgaris* | 3307 |
| *Sardina pilchardus* | 15293 |
| *Loligo vulgaris* | 542 |
| *Micromesistius poutassou* | 1753 |
| *Thunnus thynnus* | 948.5 |
| *Thunnus alalunga* | 489 |
| *Xiphias gladius* | 1692 |

Table 2. Total landings in 2013 by main target species (in Tons). Data source: sale notes.

**Status of stocks of priority species**

**Demersal fisheries**

GSA01 – Northern Alboran Sea

Red shrimp (*Aristeus antennatus*) is the most important resource of bottom trawling in the GSA 01 (Northern Alboran Sea) and is targeted by the larger vessels of the trawl fleet segment. A total of 49 vessels (average 2011-2013) had fishing activities directed towards the pink shrimp in the GSA 01 fishing ground. This segment fleet, catches about 135 tonnes of red shrimp per year (average 2011-2013).

Spawning Stock Biomass (SSB) and Recruitment (R), declined until 2007 and have been relatively stable over the 2008-2013 period. Fishing mortality ($F_{bar\ 1\text{-}2}$) shows decreasing trend until 2007 with a drastic decline during this years and has been stable over the last six years. Since 2003, when the maximum was observed, the pink shrimp stock in GSA 01 has suffered a fairly strong decrease in landings, spawning biomass and total biomass. Current indicators represent respectively 35% (Y), 46% (SSB) and 49% (B) of the values observed ten years ago. Y/R analysis shows that the $F_{ref} = F_{current}$ (0.82) exceeds the Y/R $F_{0.1}$ reference point (0.41).

The status stock in the GSA 01 is in overexplotation with relative intermediate biomass. A reduction of the current fishing mortality is recommended by progressive reduction of the fishing effort.

GSA 05 – Balearic Islands

Red shrimp (*Aristeus antennatus*) exploited by the Spanish trawl fishery in the geographical sub-area GSA 05 (Balearic Islands) is considered in overexploitation since $F_{current}$(0.42) was higher than $F_{0.1}$(0.24), with relatively high biomass. Recruitment showed oscillations along the entire data series. Spawning stock biomass showed a minimum in 1995 and certain stability since 1998, without any clear trend. It was recommended to reduce the fishing mortality.

Hake (*Merluccius merluccius*) exploited by the trawl fishery of Mallorca (Balearic Islands, GSA 05) was considered in overexploitation since Fcurrent(1.15) was higher than F0.1(0.15), with relative intermediate biomass. The main XSA outputs showed important oscillations along the data series without a clear trend. It was recommended to reduce the fishing mortality.

Striped red mullet (*Mullus surmuletus*) from the Balearic Islands (GSA 05) is a main target species in the shallow shelf, although it is also caught in the deep shelf. It is also one of the target species 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 GSA 05 is in overexploitation ($F_{current}$=0.51, $F_{0.1}$=0.17), with relatively low biomass. Population results showed a clear decreasing trend, especially marked from 2006. The Working Group on Stock Assessment recommended to closely monitor this stock, as it has been consistently in overexploitation and with relative low biomass for a number of years. As in the previous species, it was recommended to reduce fishing mortality.

GSA 06 (Northern Spain)

Assessment of *Merluccius merluccius*

European hake is a target demersal species of the Mediterranean fishing fleets. It is largely exploited in GSA 06, mainly by trawlers on the shelf and slope (91% landings), but also by small-scale fisheries using long lines (6%) and gillnets and trammel nets (3%) (average percents estimated between 2009 and 2013). The trawler fleet is the largest in number of boats and landings (472 trawlers and 2966 tons in 2013).

XSA results show that total biomass (B) fluctuates around 8000 t. Spawning biomass (SSB) and yield (Y) show a decreasing trend from 2006 to 2010. After this decrease, Yeld (Y) has stabilized with slight fluctuations over the last 4 years (2010-2013). Recruitment (R) showed a drastic decline from the maximum observed in 2008 but seems to have stabilized during the last three years (around 120 000 thousands).

Fishing mortality ($F_{bar0-3}$) showed an increasing trend from 2008 to 2012 and decreased slightly last year (1.4). Y/R analysis shows that the $F_{ref}$ = $F_{current}$ (1.4) exceeds the Y/R $F_{0.1}$ reference point (0.18).

The status stock in the GSA 06 is in overexplotation with relative intermediate biomass. A reduction of the current fishing mortality is recommended by progressive reduction of the fishing effort.

Assessment of *Mullus barbatus*

Bottom trawl fishery and MEDITS data for the period 1995-2013 have been used to assess the *Mullus barbatus* stock in the GSA 06. Catch in the number of individuals is based on ages 1 and 2 after the enforcement of the 40mm square mesh in 2010, reflecting an improvement in the fishing pattern with respect to the period before the new mesh regulation, in which catches were based on ages 0 and 1. The assessment has been carried out applying tuned VPA (Extended Survivor Analysis, XSA) and Y/R analysis. Results from VPA indicate that average fishing mortality for ages 1-2 shows a general decreasing trend over the studied period, reflecting the steady reduction observed in fishing effort. Recruitment in the last three years is at a lower level with respect to the previous years, even though the fact that spawning stock biomass has increased in the last years. This suggests a Ricker S/R relationship. The stock is in overexplotation (F0.1 < Fcurrent) with a relative high biomass. It is advised to reduce current fishing mortality by reducing the fishing effort.

Assessment of *Aristeus antennatus*

Bottom trawl fishery and MEDITS data for the period 1996-2013 have been used to assess the *Mullus barbatus* stock in the GSA 06. Results of Extended Survivor Analysis (XSA) indicate a general decreasing trend in the average fishing mortality for ages 1-2 over the studied period. Recruitment shows a slight increasing trend, being in the last two years under the average for the whole period. Total biomass and SSB show a slight increasing trend. Results of Y/R analysis show an increase in Y/R and SSB/R due to the improvement of exploitation pattern.

Red shrimp (*Aristeus antennatus*) exploited by the Spanish trawl fishery in the geographical sub-area GSA 06 is considered in overexplotation status. Fcurrent (0.94) is higher than F0.1 (0.47). It was recommended to reduce the fishing mortality.

GSA 07 – Gulf of Lions

Hake, *M. merluccius*, is one of the most important demersal target species of the commercial fisheries in the Gulf of Lions (GSA 07). In this area, hake is exploited by French trawlers, French gillnetters, Spanish trawlers and Spanish long-liners. The stock was considered in overexploitation (Fcurrent=1.67, F0.1=0.17), with relative low biomass. It shows 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 1998-2013. After reaching very high values in 2010 and 2011, the fishing mortality seems to have initiated a decreasing trend. However, the spawning stock biomass and the recruitment are still at low levels, with little signs of improvement. The current exploitation level is well above the level estimated to be sustainable. The important decrease in the French trawler fleet since 1998, reducing the number of boats by 39%, is likely to start to have a positive effect on the stock. It was recommended to reduce fishing mortality by: i) improving the fishing pattern of the trawlers so that the minimum length of catches is consistent with the minimum legal landing size and ii) freezing of the effort in the Fishery Restricted Area. It is important to notice that some management measures have been taken since 2011 (reduction from 2010 to 2013 by more than 30% of the number of trawlers). This measure was over at the end of 2013.

Red mullet (*M. barbatus*) in the Gulf of Lions (GSA 07) is exploited by both the French and Spanish trawl fleets. The stock is in a high overfishing status (Fcurrent=0.45, F0.1=0.14) with a relative low biomass and punctually higher recruitments (2005, 2006, and 2013). 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. The current fishing mortality is the lowest of the series and the spawning stock biomass currently follows an upward trend. The exploitation mainly concentrates on young individuals (age 0-2), moreover 60% of the recruitment (age 0) is mature. However, computed over a relatively short time-period (2004-2013), the increase in spawning stock biomass and the decrease in fishing mortality have to be noticed. The important decrease in the French trawler fleet since 1998, reducing the number of boats by 39%, is likely to start to have a positive effect on the stock. It was recommended to reduce fishing mortality by: i) improving the fishing pattern of the trawlers so that the minimum length of catches is consistent with the minimum legal landing size and ii) freezing of the effort in the Fishery Restricted Area It is important to notice that some management measures have been taken since 2011 (reduction from 2010 to 2013 by more than 30% of the number of trawlers). This measure was over at the end of 2013.

**Small pelagic fisheries**

GSA 01 – Northern Alboran Sea

Anchovy (*Engraulis encrasicolus*) is the target species of the purse seine fleet working in N. Alborán. The BioDyn (Surplus production Model) was applied to assess the status of the resource. The

assessment was not accepted as there is uncertainty in the assessment and methodological problems; the model only relies on CPUE, which is very similar to the landings. The survey does not cover the coastal areas where most of the catches come from (less than 20 meters depth). The WG suggests to evaluate the trend in effort data and that CPUE is evaluated independently to its performance in the production model. The WG suggests to test also the performances of alternative production or age structured model. The WG highlight that there are differences in the ALK between this stock and those for similar stock in the Mediterranean. Therefore the WG recommends an in-depth analysis of the age reading.

Sardine (*Sardina pilchardus*) is the other small pelagic being targeted by the purse seine fishery working in N. Alboran. The BioDyn (Surplus production Model) was applied to assess the status of the resource. The assessment was not accepted as there is uncertainty in the assessment and methodological problems; the model only relies on CPUE, which is very similar to the landings. The survey does not cover the coastal areas where most of the catches come from (less than 20 meters depth). The WG suggests to evaluate the trend in effort data and that CPUE is evaluated independently to its performance in the production model The WG highlight that there are differences in the ALK between these stock and those for similar stock in the Mediterranean. Therefore the WG recommends an in-depth analysis of the age reading. The WG suggests to test also the performances of alternative production or age structured model. Due to the decrease trend in landings, the advice is to reduce the fishing mortality.

GSA 06 – Northern Spain

Anchovy (*Engraulis encrasicolus*) is the target species of the purse seine fleet working in GSA 06 (Northern Spain). The BioDyn (Surplus production Model) was applied to assess the status of the resource. The diagnosis of the assessment was considered Biomass above reference point and in overexploitation. Increasing trend in landings and biomass from acoustic. F current (0.7) is higher than Fmsy reference point (0.46). Current biomass is above BMSY. The WG highlight that there are differences in the ALK between this stock and those for similar stock in the Mediterranean Sea. Therefore the WG recommends an in-depth analysis of the age reading. The WG recommends also to try other models, such as two stage biomass model. The management advice is to reduce fishing mortality.

Sardine (*Sardina pilchardus*) is the other small pelagic being targeted by the purse seine fishery working in GSA 06 (Northern Spain). The BioDyn (Surplus production Model) was applied to assess the status of the resource. The status of the resource is considered depleted with low fishing mortality. Both landings and acoustic are decreasing. Fcurrent is lower than FMSY. Bcurrent is half BMSY (Bcurr/BMSY=0.51). The WG highlights that there are differences in the ALK between this stock and those for similar stock in the Mediterranean Sea. Therefore the WG recommends an in-depth analysis of the age reading. Although the model has been optimistic in recent years, the biomass is still low compared to the reference points, therefore management actions to allow the biomass to recover should still be adopted. The management advice is to reduce fishing mortality and implement a recovery plan.

**Tuna fisheries assessments**

948.5 tons (RW) of Bluefin tuna (*Thunnus thynnus*) were caught in the Mediterranean Sea during 2013 by the Spanish fleet, most of which (96.7%) were caught by Purse seine. The rest (2.5%) correspond to long-liners (24 t) and sport fisheries (6.19 t). The main fishing grounds were Balearic Islands and Alboran Sea.

Albacore (Thunnus alalunga) was caught in the Mediterranean during 2013 using mainly surface long-lines (96.7%), but also with other surface gears (3.3%). In 2013, 489 tons (RW) were landed in the Spanish Mediterranean.

Swordfish (*Xiphias gladius*) landings in 2013 were 1.692 t. (RW) in the Spanish Mediterranean. The main catches (99.9%) correspond to long-line fisheries. Other minor catches were obtained by traps and other surface fisheries.

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 2013 were 3770.75 t (RW); these landings were similar to those taken in 2012. The specific composition of these catches was: 881.5 t (23.37%) of Atlantic Bonito (*Sarda sarda*), 2.654 t (70.4%) of bullet tuna (*Auxis rochei*), and 235.1 t (6.23%) of Atlantic little tunny (*Euthynnus alletteratus*).

**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 Programme 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.

To appropriately manage this information, the General Secretariat for the Fisheries is developing a global tool to compile the different sources of information in a common database. The main purpose is to store and to export the data in the suitable format required by International bodies.

**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.

FAO and IEO, signed a Letter of Agreement on August 2014 aiming to obtain "Technical assistance on support fisheries management in the western and central Mediterranean during 2014". Both parties agreed that the IEO will provide certain services defined in the LoA in support of the FAO-CopeMed Project.

Demersal and small pelagic species

The project REMALA of the Oceanographic Center of Málaga is actually processing the data collected from the small scale fisheries activities and the monthly surveys undertaken during 2014. 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 area of reproduction, spawning, nursery and

growth of several commercial species. The project aims at establishing the management measures for the sustainability of fishery resources.

Within the same context as the previous project, the REMARAN project was also launched in GSA 01 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. The management plan was presented to the Commission and positively valued and approved.

In 2014, three tender projects regarding the assessment of discards were carried out and finalized. Three IEO oceanographic centers (Málaga, Murcia and Baleares) were involved in the projects PARLE, LANDMED and VADEAR. The assessments were carried out and final reporting was done.

Concurrent sampling of the 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, has been carried out in summer since 2009. Both surveys are activities carried out on a yearly basis under the framework of the National Programme 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 programme 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 2013, bluefin tuna was sampled in the Mediterranean from Spanish BFT fisheries (mainly long-line).

There were tagging programmes in course during 2013 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 status of the Eastern and Mediterranean stock of bluefin tuna was developed in 2014 (ICCAT), showing a stock rebuilding and better perspectives than the previous assessment.

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 2013 are on-going and results from this study are reported to ICCAT and other specialized groups. In July, 2011 the ICCAT assessment session of Mediterranean albacore took place. The result of this assessment shows a relatively stable pattern of the population size during the recent years. The next assessment probably will take place in 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 in 2013 in the Spanish swordfish fisheries (mainly long-line). Swordfish were tagged using Conventional tags in 2013. These activities were developed in collaboration with commercial fisheries. In 2014 an assessment on Mediterranean stock of swordfish took place in ICCAT. As a

summary, the Mediterranean population of swordfish showed a stable situation. Nevertheless, the recruitment is mainly based in a few age classes. This situation added a certain risk to the stability of the fisheries.

**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 on the Ministry´s web page. It is based on requirements from National Plan for Statistics and EUROSTAT (the 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 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 to carry out the series of quarterly surveys monitoring oceanographic conditions of Málaga (GSA 01), Murcia (GSA 06) and Mallorca (GSA 05) under the framework of the activities developed to study climatic changes in the Mediterranean.

Research activities related to the effects of Marine Protected Areas (MPAs) on exploited communities, species and artisanal fisheries have continued, quantifying benefits of spillover to adjacent fisheries and increased reproductive potential at regional level as a result of the MPA protection. The research on red lobster as an indicator of the "marine reserve effect" has been continued by the Instituto Español de Oceanografía (IEO), while the research on global change has continued yearly, in 2013 and 2014 on behalf of the SSF in order to keep the historic series going on for more than 12 years. In this way, it witnesses the important function of this MPA as anindicator of climate change in the Mediterranean.

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, patterns 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 collected.

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 international projects such as MMMPA (Monitoring Mediterranean MPAs and Medblue from IUCN) have been getting information from the 7 Mediterranean Spanish marine reserves.

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 risks in order to prevent catastrophic disasters along the sea side. Oceanographic multidisciplinary surveys with SGP vessels have continued.

Project **INDEMARES** (www.indemares.es) is foreseen to finish in 2015. 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 ten marine areas, five of them within the Mediterranean (Creus Canyon, Menorca Channel, Columbretes, Seco de los Olivos Bank and Volcanic Cones around Alborán Island).

Furthermore, in each of the seven Spanish Mediterranean marine reserves, managed by the General Secretariat for Fisheries, studies conducted within the Spanish marine reserves network teams, some in collaboration with the IEO and others with Universities, have been shortened due to the financial constraints. Nevertheless some works 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 turned to be emblematic sites to investigate biodiversity and global change effects as 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.

**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 10% stated in the previous MP was reached, the current one establishes an additional 20% reduction of global fishing effort for 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, modified by Ministerial Order AAA/339/2014. Both EU and national rules emerge from ICCAT regulations, which for BFT it is stated by Recommendation 13/07, that establishes a Multi-annual Recovery Plan for Bluefin tuna within the East Atlantic and Mediterranean, amended by Recommendation 14/03. TACs, seasonal closures, fishing gears and authorised vessels are established, among other measures.

- Ministerial Order AAA/658/2014, 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 European eel, there is a National Management Plan in force according to EU Regulation 1100/2007 (including 12 specific management plans of the Autonomous Regions, 6 of which are located in the Mediterranean basin). More info:

http://www.magrama.gob.es/es/pesca/temas/planes-de-gestion-y-recuperacion-de-especies/planes-gestion-anguila-europea/default.aspx

Regarding 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 existing Spanish Mediterranean marine reserves, with enforcement through guards on the spot, follow up, awareness programmes, 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.

Following the recommendations of experts and SAC advice, there is a need to implement scientific measures in defining stocks in shared stock areas.

# TURKEY/TURQUIE

## Description of the fisheries

Turkish fishery can be described as a multitype 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 (Table 1).

Total fish production of Turkey in 2013 (latest official), including inland fishery and aquaculture was 607.515 tones (inland catch 35.074 tones, aquaculture production 233.394 tones and marine catch 339.047 tones). The total fishery production of Turkey between 2008 and 2013 is given in Table 2.

Major landings come from small pelagic fisheries, mostly anchovy, sprat, sardine, horse mackerel and Atlantic bonito of industrial fishery.

Shellfish fishery is also an important export product of Turkish fisheries. From 2012 to 2013, the volume and value of landings of shellfish species and crustaceans decreased by 54 per cent. In 2013, shellfish species and crustaceans landings accounted for almost 13% of the total by weight but 10% by value.

The quantities in total production of the inland capture fisheries have remained stable in 2013. The most important species in inland capture are common carps, pearl mullets, sand smelts, gibel carps, mullets and snails that account for about 85% of the inland capture production.

**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<br>22 | Tuna<br>Swordfish |
| Artisanal fisheries (gillnet, trammelnet, longline, traps) | Black Sea, Marmara, Mediterranean and Aegean | 29,28,24,22 | Mixed (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 snails |
| Clams fisheries (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 (2008-2013)**

| Year | Capture | | | | Aquaculture | | Total |
|---|---|---|---|---|---|---|---|
| | Marine | % | Inland | % | Amount | % | |
| **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** |
| **2013** | 339.047 | 55.8 | 35.074 | 5.8 | 233.394 | 38.4 | **607.515** |

**Table 3. Marine fish landings(tonnes)**

| Species/Year | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|---|
| **Anchovy** | 251.675 | 204.699 | 229.023 | 228.491 | 163.982 | 179.615 |
| **Sprat** | 39.303 | 53.385 | 57.023 | 87.141 | 12.091 | 9.764 |
| **Horse mackerel** | 32.177 | 28.268 | 20.447 | 25.010 | 30.945 | 28.423 |
| **Sardine** | 17.531 | 30.091 | 27.639 | 34.709 | 28.248 | 23.919 |
| **Whiting** | 12.231 | 11.146 | 13.558 | 9.455 | 7.367 | 9.396 |
| **Atlantic bonito** | 6.448 | 7.036 | 9.401 | 10.019 | 35.764 | 13.157 |
| **Grey mullet** | 3.345 | 2.987 | 3.119 | 2.514 | 4.010 | 2.504 |
| **Blue fish** | 4.048 | 5.999 | 4.744 | 3.122 | 7.389 | 5.225 |
| **Turbot** | 528 | 383 | 295 | 166 | 202 | 209 |

**Fleet Structure**

There are 16.437 vessels with a total tonnage of 175.269 GT registered in the Fisheries Information System (FIS). The size range of fishing vessels is given in Table 4. The majority of the 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 the large vessels operate in the Marmara Sea 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 decommissioning scheme for 2013 and 2014. 364 fishing vessels 12 meters and above in length were bought back in 2013 and 456 fishing vessels 10 meters and above in length were bought back in 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** | 750 | 10.103 | 3.072 | 1.002 | 492 | 303 | 481 | 228 | 6 | **16.437** |
| **Inland** | 308 | 2.575 | 240 | 33 | 61 | 15 | 0 | 0 | 0 | **3.232** |
| **Total** | **1.058** | **12.678** | **3.312** | **1.035** | **553** | **318** | **481** | **228** | **6** | **19.669** |

**Status of stocks for priority species**

Largest fisheries yield in Turkey is obtained from the Black Sea and the Black Sea catch is dominated by pelagic fishes, mainly by anchovy. The fleet targeting anchovy also exploits the other important fishes like horse mackerel, Atlantic bonito, blue fish etc. Therefore fishery displays a multispecies nature not only in the Black Sea but also in the other seas surrounding the country. In order to monitor the status of the fish stocks in the country, the ***"Black Sea Anchovy Stock Assessment Project"*** has been launched in 2011.

The goals of the project are to complete the existing data collection system with fisheries independent data; to develop a stock assessment methodology to be used first in the assessment of the anchovy stock; and to further expand the species coverage to the other stocks in the jurisdictional waters of Turkey in the near future. The assessment results which rely on extensive market sampling and acoustic surveys, indicated that current fishing mortality for the anchovy stock is above the precautionary $F_{MSY}$ (E=0.4). However it is also shown that climatic conditions prevailing in the region have a very strong impact on the fishes, particularly on the recruitment. A series of measures enforced to reduce the current fishering mortality rate to the safe biological limits, such as day time fishing prohibition, bathymetric limit, fishing vessel by back programme, yielded positively right after they were implemented.

**Status of the statistics and information system**

Over the last years, significant progresses have been made to develop the fisheries data collection system in Turkey. Fisheries Informatiom System (FIS), an integrated web database, has been developed. The FIS, which is being subject to routine updates, includes a combination of resources 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. The scope and functionality of the Fisheries Information System has been further increased with new modules and programmes, monthly survey data on aquaculture and inland water fishing, fishing data collection, inspection and control forms. A Fisheries Geographical Information System was established.

Vessels over 15 meters have to record and keep a 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 the development of an integrated system for electronic logbook is underway. The application of VMS 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 are have to be equipped with the Automated Identification System (AIS).

To increase marine research and MCS capacity, especially in the Mediterranean, a vessel named ARAMA-1 in length 32 m was launched in 2014 by MoFAL.

**Status of research in progress**

***The Estimation of Demersal Fish Stocks In West Black Sea***

Beginning of the project activities: 01.01.2011

Project completion: 31.12.2015

The aim of the project: estimating the size of demersal stocks in the region and the main population parameters regarding the stock.

***The Monitoring of the Status of Deep Sea Pink Shrimp (Parapenaeus longirostris) Stock in Marmara Sea***

Beginning of the project activities: 01.01.2011

Project completion: 31.12.2014

The aim of the project: identifying the main population parameters (the distribution of size-frequency, size-weight-sex etc.) and the properties of the catch landed (the amount of the stock, CPUE, by-catch and discards etc.) for deep sea pink shrimp.

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

***The Effects of Gillnets in Black Sea Fisheries***

Beginning of the project activities: 01.01.2015

Project completion: 31.12.2017

The aim of the project:

-Drawing up the inventory of gillnets

-Conducting a socioeconomic analysis

-Determining the selectivity of gillnets

-Monitoring commercial fishing

**Marine environmental studies in progress**

***The Investigation of Some Physical and Chemical Characteristics in Water Column of Trabzon***

With this project, by examining monthly and seasonal variations of some physical and chemical parameters (temperature, salinity, sigma-t, electrical conductivity, pH, dissolved oxygen, chlorophyll-a, the light transmission, bench disc) in the water column, creation of a data base based on long-term data used for different objectives, has been targeted. Measurement of these parameters will be made using the SBA-25 models CTD system.

***Determination of Terrestrial Pollution Effect to Coastal and Marine Ecosystem in Eastern Black Sea***

The aim of the project is to determine the effects of land-based pollutants in coastal and marine ecosystem. Water, plankton and sediment samples will be collected at stations which will determine area of Artvin-Samsun.

The project will be obtained as a result of the natural ecosystem levels of pollutants are determined by the data, investigated the effects of land-based inputs. The possible effects of pollution in the food chain and ultimately will be fishing.

***Determination of Ecological Quality in the Eastern Black Sea Coast and Species Diversity of Benthic Invertebrate Organisms***

Studying area in Hopa- Samsun coastal structures and habitats, considering the depth along the line of 4 different depths(≤5-15 m, 15-25 m, 25-35 m, 35-40≥m), throughout the year, planned to be seasonal. Sediment sampling as a means of sampling area 0.1 $m^2$ Van Veen Grab sampling tool will be used with. Sample 1mm-500µ sieve eliminating the distinction between benthic species will be made. Sediment grain size, organic carbon, water temperature, salinity and pH are measured.

Benthic invertebrate species in the region as a result of the research catalog, the diversity of species diversity index (H ') (Shannon and Weaever, 1949), (J) (Pielou, 1975) will disclose. In addition, the European Union Water Framework Directive ecological quality under the AMBI values (AZTI Marine

Biotic Index) and M-AMBI (Multivariate-Marine Biotic Index) will determinate. Possible aquaculture areas will be a pre-determined the ecological quality status of benthic.

**Involvement in activities of FAO regional projects**

-

**Management measures**

In addition to the Notification 3/1 Regulating Commercial Fishing (2012-2016), new technical measures have been implemented. These are:

- No fishing activity for turbot is permitted from 15 April to 15 June.
- The minimum legal mesh size for bottom-set nets used to catch turbot is 400 mm.
- The minimum landing size for turbot is 45 cm total length.
- It is prohibited to catch sword fish from 1 October to 30 November and from 15 February to 15 March.
- No fishing activity for common sole is permitted from 1 January to 1 February.
- The minimum landing size of Sea bass has been increased from 18 cm to 25 cm and for Dentex from 20 to 35 cm.

To enhance accuracy of the anchovy landing statistics, the transportation of anchovy from the landing site to the market are permitted through "transport forms" filled for each vessel and issued by the local fisheries authorities or fishing cooperatives. The regulation was first enforced in 2008 only for anchovy, and expanded to all species landed in a quantity larger than 50 kg in 2012.

As of 2012 the minimum depth limit allowed for purse seine and for pelagic trawls has been increased from 18 to 24 meters.

**Environment protection measures**

**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/35/2011/3 on reducing incidental by-catch of seabirds in fisheries in the GFCM Competence Area**

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/35/2011/4 on the incidental by-catch of sea turtles in fisheries in the GFCM Competence Area**

It is prohibited to take on board, tranship and land sea turtles in accordance with Article 16 and the Provincial Directorates should take necessary measures in the breeding period of sea turtles in accordance with Article 8(a) 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 dolphins, whales and seals 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 seasons, sharks and rays catching is prohibited on all coastal lines of Turkey in accordance with Article 16 of the Notification 3/1 Regulating Commercial Fishing.

**PROPOSALS FOR FUTURE RESEARCH PROGRAMMES**

None

The Scientific Advisory Committee (SAC) of the General Fisheries Commission for the Mediterranean (GFCM) held its seventeenth session at FAO headquarters, Rome, from 24 to 27 March 2015. The session was attended by delegates and representatives of 19 Contracting Parties, 10 observers, FAO (including its regional projects) and the GFCM Secretariat. The Committee reviewed the work carried out during the 2014–15 intersession, including within its subsidiary bodies, and formulated advice in relation to the following aspects: (i) status of the main commercial stocks and proposed management measures for selected fisheries; (ii) measures to mitigate bycatch of elasmobranchs; and (iii) methods to integrate socio-economic information into scientific advice. In addition, the Committee approved its Data Collection Reference Framework (DCRF), due to be submitted to the Commission at its thirty-ninth session for endorsement. Delegates were also informed about the progress made in the elaboration of the first draft of the biennial report on the status of Mediterranean and Black Sea fisheries, prepared upon the request made by the Commission at its thirty-eighth session. In addition, the Committee reviewed and validated the technical contents of a proposal for the establishment of a new fisheries restricted area (FRA) in the northern sector of the Strait of Sicily, to be submitted for the consideration of the Commission at its thirty-ninth session. Against the backdrop of the recent amendment of the GFCM's legal framework, the Committee proposed a new reference framework and formulated suggestions regarding its future functioning and structure; these should be further discussed by the Commission on the occasion of its next session. Finally, the Committee agreed upon its work plan for 2015–16, including a list of proposed activities and meetings.

Le Comité scientifique consultatif (CSC) de la Commission générale des pêches pour la Méditerranée (CGPM) a tenu sa dix-septième session au siège de la FAO, Rome, du 24 au 27 mars 2015. Ont participé à cette session les délégués et représentants de 19 Parties contractantes et 10 observateurs, ainsi que de la FAO (y compris ses projets régionaux) et du Secrétariat de la CGPM. Le Comité a fait le point sur les travaux réalisés pendant la période intersessions 2014-15, y compris au sein de ses organes subsidiaires, et a formulé des avis relatifs aux aspects suivants: (i) état des principaux stocks commerciaux et mesures de gestion proposées pour certaines pêcheries: (ii) mesures visant à réduire les prises accidentelles d'élasmobranches: et (iii) méthodes pour intégrer les informations socioéconomiques aux avis scientifiques. De plus, le Comité a approuvé son cadre de référence pour la collecte de données, qui devra être présenté pour approbation à la Commission lors de sa trente-neuvième session. Les délégués ont également été informés des progrès relatifs à l'élaboration du projet de premier rapport biennal sur l'état des pêches en Méditerranée et en mer Noire, préparé suite à la demande faite par la Commission à sa trente-huitième session. Par ailleurs, le Comité a examiné et validé le contenu technique d'une proposition de création d'une nouvelle zone de pêche à accès reglementé dans le secteur nord du détroit de Sicile, à soumettre à la considération de la Commission lors de sa trente-neuvième session. Dans le cadre de la récente modification du cadre juridique de la CGPM, le Comité a proposé un nouveau cadre de référence et formulé un certain nombre de suggestions concernant sa structure et son fonctionnement futurs; ces éléments devraient être examinés plus en détail par la Commission au cours de sa prochaine session. Enfin, le Comité est convenu de son plan de travail pour 2015-16, y compris la liste des activités et réunions proposées.

ISBN 978-92-5-008769-6 ISSN 2070-6987

9 789250 087696

I4617BI/1/05.15