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

GENERAL FISHERIES COMMISSION FOR THE MEDITERRANEAN
SCIENTIFIC ADVISORY COMMITTEE (SAC)
Twelfth Session
Budva, Montenegro, 25-29 January 2010
REPORT OF THE 10TH MEETING OF THE SUB-COMMITTEE ON MARINE ENVIRONMENT AND ECOSYSTEMS (SCMEE) Malaga, Spain, 30 November-3 December 2009

*** Available only in English**

OPENING, ARRANGEMENT OF THE SUB-COMMITTEE MEETINGS

1. The joint Sub-Committees meeting of the Scientific Advisory Committee (SAC/GFCM) including the transversal session was held in the office of the Spanish Government in Malaga, Spain, from 30 November to 3 December 2009.

2. During the general opening, Mr Baro, Director of the "Instituto Espanol de Oceanografia" in Malaga welcomed the participants and thanked them for attending this important meeting.

3. Mr Sebatian Fraile Arévalo of the "Secretaria general del Mare" welcomed the participants to the beautiful city of Malaga and highlighted the relevance to improve the knowledge on the Mediterranean fisheries. He commended the importance of GFCM as regional Fisheries management Organization and drowns attention to the fact that the conclusions obtained in the meeting will help to the governments to adopt the best management measures to maintain in the future these valuable fisheries.

4. Mr Srour, Executive Secretary a.i of the General Fisheries Commission for the Mediterranean (GFCM), welcomed the participants and thanked the Sub-delegation of the Spanish Government in Malaga and the IEO for their kindness in hosting and arranging the meeting. Mr Srour recalled that GFCM has recently lost his Executive Secretary Dr Alain

Bonzon who was always keeping in mind the interests of the Organization and its members. He invited to keep a minute of silence in his memory. Mr Srour further drawn the attention of the participants on some important issues to be addressed by the Sub-Committees and thanked the FAO regional projects for their support to this meeting.

5. Mr Henri Farrugio, Chaiperson of the SAC thanked also the hosting country and the participants for attending the meeting and introduced the transversal session.

TRANSVERSAL SESSION: REVIEW OF TRANSVERSAL ISSUES

6. The outcome of transversal session is introduced in Annex III

INTRODUCTION OF THE SCMEE MEETING AND ADOPTION OF THE AGENDA

7. The Tenth meeting of the Sub-Committee on Marine Environment and Ecosystems (SCMEE) of the Scientific Advisory Committee (SAC) was held in Malaga, Spain from 30th of November to 3rd of December 2009. It was attended by experts from eight (8) Members as well as by representatives from the Agreement on the Conservation of Cetaceans in the Black Sea, Mediterranean Sea and contiguous Atlantic area (ACCOBAMS), the Regional Activity Centre for Specially Protected Areas (UNEP-MAP-RAC/SPA), the World Wide Fund for Nature (WWF) and the IUCN Centre for Mediterranean Cooperation. The list of participants is provided in Annex II

8. The meeting was opened by Mr Mohamed Nejmeddine Bradai (Chair of the SCMEE) who welcomed the participants and introduced the agenda.

9. The meting unanimously elected Ms Eszter Hidas and Mr Chedly Raïs as Rapporteurs for the session.

10. The draft agenda was reviewed and adopted. It appears as Annex I to this report.

PROGRESS ON THE IMPLEMENTATION OF THE ECOSYSTEM APPROACH TO FISHERIES (EAF)

11. Mr. Pedro Barros, presented the objectives, features and main activities of the fisheries component of the GEF-co-funded project “strategic Partnership for the Mediterranean Large Marine Ecosystem”. The linkages of this project with the work already being undertaken or planed by the different SAC sub-committees were underlined. The Sub-Committee stressed that execution of the project and the achievement of the targets will require intensive collaboration with GFCM Secretariat and scientists collaborating in SCMEE. The co-operation with the relevant partner organisations was also raised.

12. Considering that there was still room to make changes to the outputs and the list of partners of the project, the meeting recommended that the existing initiatives on bycatch monitoring and mitigation be taken into account. In this context, the representative of the

Secretariat of ACCOBAMS offered the collaboration of his organisation in particular through the projects being promoted by ACCOBAMS on cetacean bycatch in several countries.)

13. Mr Ali Gemal Gucu made a presentation on the behaviour of hake on the continental shelf of GSA24 in association with environmental parameters. He emphasised that hake had not been a significant commercial fish in GSA-24 until 1990's when a sudden increase in the landing was experienced. Following a series of good years, the landings sharply declined. Undoubtedly the intensity of trawl fishery in the area had a role in the decline, however as the decline occurred shortly after a sudden increase, the event can hardly be explained within the fisheries context only. In the study, the behavior of hake on the continental shelf in association with environmental parameters was analyzed. The results indicated that formation and movements of different water masses and especially the presence of modified Atlantic water in the area has primary importance on the occurrence of hake on the continental shelf. The growth pattern incurred from the modal shift in monthly length-frequency distributions showed that the species undergoes fast growth phase on the continental shelf which is most likely associated with intense feeding. As results the most likely conclusion to the appearance/disappearance event in the GSA-24 was that the change in the hydrology of the region which was probably linked to the cold period prevailed at the same time, has transported the hake into GSA 24. The dominance of Atlantic water was temporarily altered the clupeid composition and distribution on the continental shelf. The change in the small pelagics along with the changes in the hydrology favored the hake which ascends to the coastal waters in the region to feed mainly on clupeids.

14. As a response to the presentation, Mr Alberto Garcia stated that the modified Atlantic water has a similar impact on Atlantic bluefin tuna and since GSA-24 is an important spawning area for this species. It was suggested to investigate catch of other exploited species, including bluefin tuna, in GSA-24 and the presence of modified Atlantic water in the area.

FOLLOW UP ON DEEP SEA, SENSITIVE HABITATS AND MARINE PROTECTED AREAS (MPAS)

15. Under this agenda item, 6 presentations were made, as summarized below.

16. The representative of WWF presented a working paper on the GFCM Recommendation GFCM/33/2009/1 related to the Fisheries Restricted Area (FRA) in the Eastern Gulf of Lions. She expressed WWF's concern that the management measure adopted for this FRA, of freezing the demersal fishing capacity to the level applied in 2008, was not sufficient to ensure the sustainability of the demersal fisheries in the region in the long term. WWF proposed to a) ask the GFCM Secretariat to provide the SCMEE with the lists of vessels operating in the area of the FRA in 2008, for analysis and consultation, and b) urged the SCMEE to ask the SAC to strongly recommend to the Commission again this year the adoption and urgent implementation of the original management measure

proposed for this FRA, namely: to prohibit any kind of demersal fishing, towed or not, including trawl, bottom longline, bottom nets (gillnets, trammelnets) and traps.

17. The meeting discussed the suggestions of WWF without reaching any consensus on that. However, the SCMEE stressed the lack of information on the fishing activity within the FRA and its vicinity. It was proposed to the SAC to ask relevant member states to provide information, including from Vessel Monitoring System on the number of vessels fishing, and their respective number of fishing days, in 2008 in the zone delineated by the FRA in the Gulf of Lions. This information on fishing activity is very important to map the spatial distribution of the fishing effort within the FRA - to formulate further management advices.

18. The representative of UNDP Turkey presented the GEF funded project **"**Strengthening Protected Area Network of Turkey: Catalyzing Sustainability of Marine and Coastal Protected Areas". The project aimed to facilitate expansion of the national system of marine and coastal protected areas (MCPAs) and improve its management effectiveness. It will be carried out along the Turkish Aegean coasts in 6 MCPAs including Foça, Gökova, Datça-Bozburun, Köycegiz-Dalyan and Fethiye-Göcek Special Environmental Protected Areas (SEPAs) and Ayvalik Islands Nature Park from May 2009 to October 2013. The Environmental Protection Agency for Special Areas (EPASA) as the executing agency working together with its partners the General Directorate for Nature Conservation and National Parks, the Ministry of Agriculture and Rural Affairs, and UNDP-Turkey in a coordinated manner, the project will achieve the expected three outcomes. He presented three main outcomes of the project and emphasised that by the end of the project, the country's system of MCPAs will have been expanded by approximately 100,000 ha, or 44 % compared with baseline levels.

19. Mr Mark Dimech introduced a study on the effect of Fisheries Restricted Areas on the deep water red shrimp resources of the Mediterranean**.** The aim of the study was to quantify the protection effect of the Maltese Fisheries Restricted Area (FRA) on the deep-sea slope (500-800 m) ecosystem by examining responses in population and community structure. Overall, the populations analysed indicate very positive effects on relatively sedentary species like *Nephrops norvegicus* and *Helicolenus dactylopterus dactylopterus,* while fast growing decapod species (*Plesionika martia* and *Aristaeomorpha foliacea*) were lightly affected since they have a high resilience to fishing pressure. The FRA also protects community structure and biodiversity in the depth range studied with chondrichthye having the largest benefit for protection. The study also proves that fishing in specific areas can still be allowed in a FRA with no overall negative impacts on populations and communities. Trawling lanes within a FRA could be established to enable harvesting of resources in a sustainable way since the impact of the trawling activities is limited to the ecosystem within the trawling lanes, thus minimising the impacts on the ecosystem. This also ensures high catches of target species as the non-trawled areas surrounding the trawling lanes act as refugia which supply the trawling lanes with a constant influx of individuals, which may then be harvested. The authorities noted that fisheries managers should examine the possibility of introducing trawling lanes

and no trawling zones in such a manner and quantity as not to affect the ecosystem and fishery negatively. This will also ensure that trawling activities are not conducted everywhere on the seabed and thus minimising the impacts of trawling to the trawling lanes.

20. During the discussions which followed the presentation, some participants suggested that it may be better to reverse the trawling management approach by creating specific areas for trawling, and have areas closed to trawlers. This approach would allow to concentrate the effect of trawling on areas of the marine environment with more resilience capacity. The need to better clarify this idea was underlined by the Sub-Committee.

21. Mr Chedly Rais presented the document criteria for the identification of sensitive habitats of relevance for the management of priority species. He emphasised that the document was prepared as a follow up of the suggestion made by the Sub-Committee on Marine Environment and Ecosystems (SCMEE) during its last meeting (Antalya, October 2008) to submit a proposal regarding the selection of criteria for the identification of sensitive habitats of relevance for the management of priority species by GSA, for consideration by the SAC. A draft document was prepared and circulated to the SCMEE experts for comments. Suggestions for which a consensus was not reached were highlighted in italic and put between brackets in the working document.

22. Following the debate about sensitive habitats, the meeting adopted the following definition:
A sensitive Habitat of relevance for the management of a given priority species can be defined as the part of the species habitat that is:
- Essential to the ecological and biological requirements of at least one of the life stages
of the species;
- Crucial for the recovery and/or the long term sustainability of the marine biological resources and the assemblages to which the priority species belongs;
- Any other habitat of high biodiversity importance potentially impacted by fisheries activities.

23. Concerning the list of habitats, the meeting decided to give further consideration to the list of criteria for selecting sensitive habitats, especially through the identification for each GFCM priority species the corresponding sensitive habitats as a first step. A new version of the document will be submitted to the next SCMEE meeting.

24. The representative of RAC/SPA presented the project for "Developing a network of specially protected areas of Mediterranean importance in the Mediterranean open seas including deep seas". It was a Joint Management Action of the European Community with the United Nations Environment Programme/Mediterranean Action Plan (UNEP MAP) aimed at promoting the establishment of a representative network of protected areas in the Mediterranean. The action, entitled 'Identification of possible SPAMIs in the Mediterranean areas beyond national jurisdiction' was implemented by the UNEP MAP

Regional Activity Centre for Specially Protected Areas (RAC/SPA) and was made of two phases. The first phase of the initiative was foreseen to be concluded in December 2009, and included an assessment to identify a possible network of SPAMIs in the Mediterranean open seas, including deep seas, on the basis of available scientific knowledge. The authorities informed that this action will be followed by a second phase during 2010-11, that will consist in promoting the establishment of SPAMIs on some of the selected sites. He stressed the importance of ensuring the synergy between this initiative and the relevant ones undertaken within the framework of GFCM.

25. During the debates that followed this presentation, several participants stressed the need to involve GFCM experts in the process of designating SPAMIs that include measures for fisheries management. The SCMEE pointed out the urgent need to identify a clear procedure for collaborating on this issue in the framework of the existing collaboration between GFCM and RAC-SPA.

26. Mr Henri Farrugio presented the results of a survey undertaken by the French Agency for the Marine Protected Areas in November 2008, whose objective was to establish a reference status of the ecosystems situated between 100 and 700 m depth in the canyons of the continental slope off the French Mediterranean coast. The survey used various underwater exploration devices. Several French and Spanish laboratories participated in this programme which was also aimed at surveying the rocky banks situated at depths comprised between 50 and 200 m on the continental shelf of the Gulf of Lions. The results of these observations should increase the knowledge on these ecosystems, help in their management, and will also be useful for future projects for the establishment of marine protected areas in the region.

FOLLOW UP ON SELECTIVITY IMPROVEMENT AND BYCATCH REDUCTION

27. Mr Mohamed Nejmedine Bradai, referred to the presentation made during the transversal session, and recalled the main conclusions and recommendations of the workshop on selectivity and bycatch, held in Tunis from 23 to 25 of September 2009

28. Mr Matthew Camilleri (GFCM Secretariat) presented the new version of the software for GFCM's Task 1 on data collection. He pointed out that the required information for bycatch and discards was feasible, in fact, some information on bycatch and discards is already provided in the Task 1 framework. However, the SCMEE could propose a further elaborated scheme to report about bycatch of endangered species affected by fisheries activities.

29. The participants stressed that the collection of data on endangered species bycatch should be species-specific. To this end, it was suggested to prepare in 2010 a detailed form for data collection on endangered species bycatch to add to the Task 1 system, taking into account the ranking of priority proposed by the Tunis workshop on selectivity (23-25 September 2009). The process of collecting data is yet to be identified by the SCMEE.

FOLLOW UP ON SELECTED ISSUES

Follow up on contribution to improving and updating the GFCM glossary

30. The meeting agreed to establish a small working team to review the glossary, in particular the terms that are relevant to the Sub-Committee. The working team will be lead by Mr Mohamed Nejmeddine Bradai and composed of Mr Jacques Sacchi, Mr Chedly Rais, and Mr Federico Alvarez. It should deliver its input (new proposals and possible amendments) directly to Mr Jordi Lleonart by the 29th of December 2009.

Follow up on studies related to status of artificial reefs

31. Mr Othman Jarboui presented a case study about the use of the artificial reefs as a tool to protect and to manage fish stocks and marine ecosystems in Tunisia. He emphasised that artificial reefs are among the tools used for the fisheries management and site protection. In Tunisia, this tool was initially used in the early nineties by an initiative of Greenpeace (Tunisia Office) and the National Institute of Scientific, Oceanographic and Fisheries (INSTOP). During this first experience, 12 cube-shaped artificial reefs (8 m^3) were put in the coastal zone of Djerba Island in the depths of approximately 9 m. Furthermore, 8 old and neglected fishing boats were dumped as artificial reefs near Kerkennah Island and near Skhira. A third experiment was conducted in the scope of a Tunisian-Japanese Project (2005-2010): "sustainable management of marine resources in the coasts of the Gulf of Gabes (Tunisia)". In this context, and in order to protect the seagrass beds from illegal trawling vessels, the Tunisian Ministry of Agriculture with the collaboration of the Japanese technical cooperation (Japan International Cooperation Agency (JICA)), placed 2000 small concrete blocks of 200 kg each, around *Posidonia oceanica* meadow at 5 to 20 m depth at four sites (Kerkennah, Mahares, Zarrat and Ajim). So far, the obtained results were, in general, very satisfactory. In fact, the artificial reefs contributed to protect the study areas against illegal trawling activities and enhanced fishery resources by maintaining fish habitats. This experience seems to be well accepted by local fishermen, particularly in Zarrat where the fishermen themselves are interested to extend the area protected by the artificial reefs by dumping other kinds of concrete structures.

32. Mr Jacques Sacchi presented a review of the use of artificial reefs in the Mediterranean coasts of France. He informed the meeting that in the Mediterranean French waters most of the artificial reefs were installed in the Gulf of Lions, under local or regional initiatives beginning from the end of the 1960s. The initiatives included scientific follow up and participation of fishermen and other users, such as divers. He emphasised that different types of artificial reefs were tested and set essentially in coastal waters between 10 to 35 m, covering a total surface of 60 km^2. Using different material types and shapes, they were used to either protect sensitive areas against towing gears, to enhance the fishery exploitation or for recreational reasons. Considering the scarcity of valuable data, there is unfortunately no scientific evidence of cost effectiveness to develop new artificial reefs in French waters. Because they provided a good protection system against illegal trawling, they are considered by the scientific community and the managers as efficient tools to

help the rehabilitation of coastal ecosystems, but some important questions remain to be answered, such as the effectiveness of the protection of juveniles and adults of exploited species, their impacts on fishery activity patterns and the ecosystem. From a management point of view, their setting should be included in a framework of general management plan concepts including all the surrounding anthropogenic activities and should benefit of standardized scientific follow up.

33. Following the debate on this agenda item, the meeting recommended that a comprehensive review of the literature dealing with this topic should be carried out, to assess the effects of artificial reefs on fisheries and ecosystems, and to identify the possible technical and economical conditions to improve their effectiveness. The meeting also decided to ask the SAC to give guidance on the follow-up to be given to this activity.

Follow up on alien species issue

34. Mr Bayram Ozturk, referred to his presentation during the transversal session, made a proposal to establish an experts working group on alien species in relation to fisheries. He emphasised that some groups who already work on this issue already existed, such as the groups under CIESM, IUCN, RAC-SPA, and others. The proposed working group should then focus on the impact of alien species on fisheries, including the positive impacts.

35. The participants stressed the importance of addressing the alien species issue in relation to fisheries, highlighting that, although all SAC sub-committees should be involved in the issue of alien species, the SCMEE should lead the SAC's activities on this issue. The meeting agreed to propose a one-day workshop to be held in 2010, and to keep alien species in relation to fisheries as a permanent agenda item of the SCMEE in order to ensure continuous watch over this issue and where necessary, make recommendations to the SAC. The workshop could be organised back-to-back with the next SCMEE meeting.

Follow up on the activities of TechnoMed

36. Mr Jacques Sacchi informed the meeting about the main actions carried out during the inter-session by the Technomed network, as follows:

a) Preliminary review on artificial reefs in the Mediterranean sea: This review showed that several projects on the use of artificial reefs have been carried out all around the Mediterranean Sea. The literature on artificial reefs in the Mediterranean is abundant and diverse, concerning both technical issues and surveys on species assemblages.

b) A review of main technical characteristics of fleets working in deep waters (more than 200 m): This was started on the basis of information already provided at the Atselmed 2 meeting (Barcelona 2008) and updated by the TechnoMed network. The results of this survey will be presented during the next inter-session.

c) Follow up of the implementation of the 40 mm square mesh codend: This action is based on the realization of a pilot-study which should be carried out in Morocco by an international team, including the INRH, with the financial support of CopeMed II. The objectives will be to obtain the basic data on selectivity and analyse the biological and economic effects of the implementation of the 40 mm square codend mesh size in trawl fleets. Selectivity trials will be carried out on board commercial vessels between 20 and 500 m and using the cover-codend selectivity method. The main difficulties will be to adapt the selectivity device (covered codend) to the Moroccan trawl, which will be used during the campaign and the evaluation of the economical loss from the landings of the vessel. Available outcomes of this pilot-project are expected to be presented to the next SCMEE meeting.

37. The meeting proposed to convene in 2010 a three-day workshop on selectivity improvement, bycatch reduction and alternative gears. The terms of reference of the proposed workshop will be made available for the SAC session.

GENERAL CONCLUSIONS AND RECOMMENDATIONS

38. The SCMEE made the following conclusions and recommendations:

- Project on EAF under the GEF project for the Mediterranean LME: Considering that there was still room to make changes to the outputs and the list of partners of the project, the meeting recommended that the existing initiatives on bycatch monitoring and mitigation be taken into account.
- WWF proposal concerning the FRA in the Eastern Gulf of Lions: The SCMEE proposed to the SAC to ask relevant member states to provide information, including from Vessel Monitoring System on the number of vessels fishing, and their respective number of fishing days, in 2008 in the zone delineated by the FRA in the Gulf of Lions. This information on fishing activity is very important to map the spatial distribution of the fishing effort within the FRA - to formulate further management advices.
- Management of trawling zones: To investigate whether it may be better to reverse the trawling management approach, by creating in trawling grounds specific delimitated areas for trawling, and have areas closed to trawlers. This approach would allow to concentrate the effect of trawling on areas of the marine environment with more resilience capacity.
- Sensitive habitat definition: Adopt the following definition:
  A sensitive Habitat of relevance for the management of a given priority species can be defined as the part of the species habitat that is:
  - Essential to the ecological and biological requirements of at least one of the life stages of the species;
  - Crucial for the recovery and/or the long term sustainability of the marine biological resources and the assemblages to which the priority species belongs;

- Any other habitat of high biodiversity importance potentially impacted by fisheries activities

- Sensitive habitat criteria: To give further consideration to the list of criteria for selecting sensitive habitats, especially through the identification for each GFCM priority species the corresponding sensitive habitats as a first step. A new version of the document will be submitted to the next SCMEE meeting.
- Creating SPAMIs: To identify a clear procedure for collaboration between GFCM and RAC-SPA, with regards to SPAMIs that could also have potential implications for fisheries management.
- Collection of data on bycatch: To prepare in 2010 a detailed form for data collection on endangered species bycatch to add to the Task 1 system, the ranking of priority as suggested by the Tunis workshop on selectivity improvement and bycatch reduction. The process of collecting data is yet to be identified by the SCMEE.
- Glossary: A small working team was established to review the glossary, in particular the terms that are relevant to the Sub-Committee. The working team will be lead by Mr Mohamed Nejmeddine Bradai and composed of Mr Jacques Sacchi, Mr Chedly Rais, and Mr Federico Alvarez. It should deliver its input directly to Mr Jordi Lleonart at latest by the 29th of December 2009.
- Artificial reefs 1: A comprehensive review of the literature dealing with this topic should be carried out, to assess the effects of artificial reefs on fisheries and ecosystems, and to identify the possible technical and economical conditions to improve their effectiveness.
- Artificial reefs 2: To ask the SAC to give guidance on the follow-up to be given to this activity. It was suggested to envisage the possibility for a half-day session during the next Sub-Committee meeting to be dedicated to address this issue.
- Alien species: To organise a workshop in 2010, and to keep alien species in relation to fisheries as a permanent agenda item of the SCMEE in order to ensure continuous watch over this issue and where necessary, make recommendations to the SAC. (Although all SAC sub-committees should be involved in the issue of alien species, the SCMEE should lead the SAC's activities on this issue).
- Selectivity: To convene in 2010 a three-day workshop on selectivity improvement, bycatch reduction and alternative gears. The terms of reference of the proposed workshop are annexed to this report.
- Elasmobranches program: The meeting adopted a draft project on elasmobranch species (the full text of the draft is annexed to this report). The Sub-Committee suggested to the SAC to identify requirements, in particular sources of funding, to implement this programme as soon as possible.

2010 SCMEE WORKPLAN

39. The Sub-Committee agreed on the following activities for 2010:

- Sensitive habitat criteria: To give further consideration to the list of criteria for selecting sensitive habitats, especially through the identification for each GFCM

priority species the corresponding sensitive habitats as a first step. A new version of the document will be submitted to the next SCMEE meeting (for the SCMEE).

- Collection of data on bycatch: To prepare a detailed form for data collection on endangered species bycatch to add to the Task 1 system, the ranking of priority as suggested by the Tunis workshop on selectivity improvement and bycatch reduction. The process of collecting data is yet to be identified by the SCMEE (for the SCMEE).
- Artificial reefs: Elaborate a comprehensive review of the literature dealing with this topic, to assess the effects of artificial reefs on fisheries and ecosystems, and to identify the possible technical and economical conditions to improve their effectiveness (for the SAC).
- Alien species: One-day workshop on alien species in relation to fisheries back-to-back with the SCMEE meeting (for the SAC).
- Selectivity: A three-day workshop on selectivity improvement, bycatch reduction and alternative gears (for the SAC).
- Elasmobranch species: Implement the program on elasmobranch species including an expert meeting and training course (for the SAC) (see detailed program in Annex IV).

ANY OTHER MATTERS

40. Mr Bayram Ozturk suggested that the SCMEE initiate an activity on sponge fisheries in the Mediterranean in order to assess the state of the stocks, since there are some indications of recovery after the decline recorded at the end of the last century.

NOMINATION OF THE SCMEE COORDINATOR

41. The meeting unanimously proposed Federico Alvarez (Spain) to be the chair of the SCMEE for the next intersession.

42. The Sub-Committee commanded the work done by Mr Bradai during the last four years and invited him to continue actively working in the framework of SCMEE.

THE DATE AND VENUE OF NEXT MEETING

43. The date and the venue of the next SCMEE meeting will be set up by the SAC.

ADOPTION OF THE REPORT

44. The report was adopted by the meeting on Thursday 3 December 2009.

Annex I

Agenda

1. **Opening and arrangement of the Sub-Committee meetings**
2. **Transversal session: outcome of transversal issues**
3. **Introduction of the SCMEE meeting and adoption of agenda**
4. **Progress on the implementation of the Ecosystem Approach to Fisheries (EAF)**
5. **Follow up on deep Sea, sensitive habitat and Marine Protected Areas (MPAs)**
6. **Follow up on selectivity improvement and bycatch reduction**
7. **Follow-up on selected issues:**
   - 8.1. Contribution to improving and updating the GFCM glossary
   - 8.2. Studies related to the status of artificial reefs
   - 8.3.Alien species issue
   - 8.4. Activities of TechnoMed
8. **General conclusions and recommendations**
9. **2010 SCMEE workplan**
10. **Any other matters**
11. **Nomination of the SCMEE coordinator**
12. **Date and venue of the next meeting**
13. **Adoption of the report and closure of the meeting**

Annex II

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Annex III

OUTCOME OF THE TRANSVERSAL SESSION OF THE SAC-SUB-COMMITTEES
Malaga, Spain, 30 November 2009

This session was attended by 73 experts from 15 Member countries and 4 partner organisations. It was agreed that general discussion on the topics will take place during this session and that further reflections could be undertaken during the sub-committees meetings. The following subjects were reviewed:

Transversal workshop on Regional Logbook (J. Vigneau)

Abstract. In response to a demand by SAC (GFCM Scientific Advisory Committee), endorsed by the 2009 session of the GFCM, a workshop was held in July, in the premises of FAO (Roma), on the setting up of a Regional logbook for the Mediterranean and Black Sea. The terms of references of this workshop included a review of the current situation regarding the collection of effort and landings data in the different Member Countries, the identification of the objectives and scope of a GFCM logbook, the agreement of the parameters and format, and the proposition of a roadmap for the implementation of the GFCM logbook. Alternative means of collection of effort and landings per fishing activity and area for the vessels not covered by the GFCM logbook, were also to be considered. The objective and scope of a regional GFCM logbook were clearly defined as being a tool to serve the needs for MCS (Monitoring, Control and Surveillance) of the fisheries in the Mediterranean and Black Sea, and a primary source of data for the GFCM data collection framework, and in particular the Task 1. Building on existing formats among GFCM Member Countries and adapting the parameters to the needs for Task 1 obligations, a proposal was made during the meeting (see document in annex XX). Concerning the roadmap for implementation, it was recommended that

- The GFCM logbook should be implemented as a minimum for vessels more than 15 metres in length overall.
- The implementation of the GFCM logbook should be effective for Member Countries as from 1st January 2012.
- A transitional period should be considered for some countries having little or no logistic resources to handle a LB system.
- The EU should check whether there is a need to change the ERS (Electronic Recording System) Regulation to reflect the proposed GFCM Logbook
- GFCM, FAO regional projects and the EU should offer assistance to Member Countries having little experience in setting up a logbook system.

Finally, it was also stated that the use of the GFCM Logbook will not cover all the requirements to complete the GFCM Task 1, and the information collected should be cross-checked with other sources for quality issues. Alternative means for collecting effort and landings information presented to the workshop were harbour surveys, fishing calendar surveys, monthly, daily or simplified forms.

Comments. The transversal session endorsed the outputs of the workshop on the regional logbook. Experts discussed the size of the vessels to be covered by the logbook and some highlighted the need to include vessels below 15m since the fishing efficiency of such vessels has increased with technology innovations. Nevertheless, it was agreed that it was up to the Commission to decide on this matter. Many experts did not agree on the proposal to limit reporting to only the GFCM priority species and suggested that all the species caught, including species of conservation concern, should be reported.

Experts acknowledged the fact that there may be some difficulties in bringing fishermen to complete logbooks for a variety of reasons, including problems of illiteracy. However, there was general agreement that a logbook scheme is a vital instrument for fisheries control and management, as well as for scientific monitoring and assessment. A proposal to introduce a simplified logbook for the artisanal fleet was also put forward by some experts.

Transversal Working Group on Selectivity improvement and bycatch reduction
(M.N. Bradai)

Abstract
The meeting addressed various issues and made the main following conclusions:

- The large variability in bycatch between different areas and gears in the Mediterranean;
- The need to develop and adapt mitigation measures have been developed outside the Mediterranean
- The lack of aggregated knowledge on the biology and fishery of elasmobranches in many parts of the Mediterranean;
- The need of a common strategy to reduce the effect of fisheries on sea turtles, marine mammals and seabird bycatch;

The SCMEE further made the following main recommendations to SAC:

- More studies should be conducted on the characterisation of bycatch of species of conservation concern in areas of the Mediterranean;
- The importance of testing of mitigation measures and technologies that have been developed outside the Mediterranean and by some Regional Fisheries Management Organisations;
- More information, education campaigns and training workshops should be conducted to inform the fishing industry on regulations on species of conservation concern and current practices to reduce the mortality of such species;
- Develop and initiate a regional strategy to reduce sea turtles, marine mammals and seabird bycatch;
- Setup a medium term year work plan to improve knowledge and assess the status of elasmobranches in the Mediterranean and the black sea was elaborated.

Comments. The participants acknowledged the extensive work carried out by the workshop on reduction of bycatch and discards. The session highlighted the need to further implement a strategy to improve the selectivity of fishing gears operated in the GFCM area. The participants agreed on the proposal to step-up assessments on elasmobranches and stressed on the importance to continue collaborating with other relevant organizations involved in elasmobranches monitoring activities. The MedSudMed coordinator informed the participants that extensive work and training activities have been carried out by MedSudMed on the biology and age reading of these species and suggested to consider all of these as a foundation for the work of SAC. Finally the session proposed that the definition of by-catch should be drawn up and that a data collection framework for species of conservation concern caught during fishing operations should be established.

Progress on improvement and updating of SAC glossary (J. Lleonart)

Abstract. The GFCM Glossary has remained untouched since 2003. It contains 693 words and 841 definitions. This unbalance is due to the presence of 115 words with more than one (actually 2 to 7) definition. A number of words correspond to the ordinary language, the jargon of some other specialized discipline not directly related to Mediterranean fisheries (i.e. statistics, general ecology or economy, etc.), not relevant to GFCM, or simply obsolete. It is advisable to remove those words that do not belong to the specific tasks of GFCM. On the other hand multiple definitions for a single word usually mislead the reader. Usually they are redundant. They say the same thing (or similar) with different words and level of precision. These problems were identified by the SAC and led it to promote the refinement of the glossary. That means to reduce the GFCM Glossary to the words really significant for the normal scientific work and provide a single clear definition in order to allow the people working on GFCM issues to exactly understand the meaning of the key words in the GFCM context.
A first phase of analysis of the glossary gave the following proposals: to remove: 253 definitions, to modify 359 definitions and to accept as they are 215.
A second phase including consultations with GFCM Secretariat and SCESS coordinator and another analysis (not yet finished at the date of this report) the proposals are the following: 224 definitions to be accepted, 76 new words (with definition) to be added, 36 definitions already modified, 175 definitions to be analyzed and 398 definitions (involving 307 words) proposed for deletion.

Comments. The work carried out so far to revise the GFCM glossary was commended by the experts. It was agreed that further consultation with the SAC sub-committees together with national scientific and academic institutions would be very valuable. 29th December 2009 was set as a deadline for consultations after which the consultant will proceed to finalise the draft revised glossary to be presented at the SAC session in January 2010. The Sub-Committees were invited to identify appropriate means to contribute to the glossary revision process.

Progress on the implementation of the FAO-ArtFiMed Project in Morocco and Tunisia (Caminas and Bernardon)

Abstract. Le projet ArtFiMed s'intègre à la fois (i) aux priorités des pays en matière de lutte contre la pauvreté, d'amélioration des conditions socio-économiques des populations côtières et de réhabilitation des pêches artisanales, (ii) aux préoccupations régionales en matière d'échange d'expériences, d'amélioration de la gestion des stocks partagés et des espèces d'intérêt commun, (iii) aux recommandations et objectifs internationaux énoncés dans le cadre des objectifs pour Millénaire et du Comité des Pêches de la FAO. Dans une première étape, des rapports diagnostics des trois sites sélectionnés pour la mise en œuvre du projet, Dikky au Maroc, et El Akarit et Ghannouch en Tunisie ont été élaborés et seront présentes. Ces rapports ont fait l'objet d'un processus de concertation avec les communautés bénéficiaires pour évaluer précisément le contexte dans les zones d'intervention et permettre ainsi l'identification participative des besoins et des activités qui seront mises en œuvre dans le cadre du projet.

Comments. The achievements of the project during its first phase were acclaimed by the participants. The proposal to also focus on the impact of artisanal fisheries on the state of the stocks and vice-versa was raised by some experts. The transversal session also acknowledged the effort being made by the project to promote the involvement of artisanal fishers in the fisheries management process.

CopeMed pilot study on the implementation of the 40 mm square mesh in the bottom trawls (J. Sacchi and J. Baro)

Abstract. With reference to Resolution GFCM/31/2007/3 on the introduction of the 40mm square mesh in the codend of trawl nets exploiting demersal resources and Recommendation GFCM/33/2009/2 on a minimum mesh size in the codend of demersal trawl nets by 31 January 2012, CopeMed II project supported by the Coordination Committee agreed with the GFCM in supporting a subregional action according the availability of financial resources. The commitment included: a) Preparing a Technical document on the 40 mm mesh selectivity; b) Organising a subregional Workshop to analyse the implementation of such measure; c) to prepare methodologies that could be utilised for the CopeMed countries and d)helping the INRH in carrying out a pilot study as example for the other subregional countries. A technical document was prepared by two international experts to CopeMed II. The document include a protocol on trawling gear selectivity; standard methodologies to evaluate the biological and economic effects of the 40 mm mesh implementation and standard methodologies for the analysis of the biological and socio economic effects of the implementation of the 40 mm Resolution. The document is in its last phase and will be distributed by CopeMed II. A Workshop (Malaga, 10-11 September 2009) was organised by CopeMed II to: promote the cooperation between the CopeMed countries on this issue; discuss the implementation of the GFCM Recommendation and to prepare a pilot study on the gear selectivity, biological and socio-economic impacts of the adoption of this measure to be applied on a first step in Morocco and later to be extended to the other south Project' countries according to the budget availability. Experts from the EU, Tunisia, Algeria, Morocco and the authors of the document from France and Spain participated in the meeting. A draft plan for the pilot survey to be carried out in Nador (Morocco) in collaboration with the INRH was also discussed during the Malaga meeting aimed to prepare the scientific and operational aspects to carry out the pilot survey to: evaluate the yields of the target species using a 40 mm traditional (rhombic) and a codend of 40 mm with a square mesh (experimental); obtain the selectivity parameters for target species and types of mesh; determine the discarded fraction; conduct an economic assessment of the effects of changing the mesh size; compare the experimental results with the obtained by the Moroccan trawl gear, in terms of by-catch of unwanted species, juveniles and discards. As main conclusions of the workshop the operational protocols were adopted, the gear and vessel type selected, the survey equipment and material needs agreed, the on board and data analysis methodologies adopted. The document prepared by CopeMed II was revised, the different responsibilities distributed and a first budget table prepared and the schedule adopted. At the moment of the SCs meeting CopeMed II should contact INRH and GFCM Secretariat to agree on the budget contributions to carry out this activity in Morocco. The cost of the pilot project was calculated as 120.926 $, including the four phases: 1.Elaboration of documents, preparatory meeting and campaign preparation (14.091 $); 2.Experimental campaign of selectivity in Nador (81.104 $); 3. Data analysis (15.898 $) and 4.Final report and Conclusions (9.834 $).

Comments. The session welcomed the pilot study being conducted through COPEMED II assistance in Morocco on the impact of the implementation of the minimum mesh size. Some experts highlighted the importance of taking into consideration the varying behaviours of fishers from one area to another when establishing a sampling design.

Climate change and its impact on fisheries and Ecosystems (M. Camilleri, GFCM Secretariat)

Abstract. The concerns about direct and indirect impacts of climate change on the physical marine environment, marine ecosystems, living marine resources and the livelihoods of people who exploit them are shared globally. Over the last few years, the FAO Fisheries and Aquaculture Department (FI) have been addressing this issue through a specially established internal working group on Climate Change in which the GFCM Secretariat is represented. In April 2008, the FI held an Expert Workshop on Climate Change Implications for Fisheries and Aquaculture (FAO Fisheries Report 870) to respond to the request made by the FAO Committee on Fisheries (COFI) to address the subject and to provide inputs to the FAO High-Level Conference on World Food Security. The Workshop identified and reviewed key issues, from the physical changes, the impacts on aquatic resources and ecosystems and how these ecological impacts translate into human dimensions of coping and adapting within fisheries aquaculture. It also evaluated policy options, mitigation, impact reduction means and the building of adaptive capacity to climate change. Three technical papers formed the basis of the technical discussions and have been recently published by the FAO (FAO Fisheries and Aquaculture Technical Paper 530). In addition, the FAO along with several other international organisations have published a joint policy brief entitled "Fisheries and aquaculture in our changing climate". With a forecasted significant increase in sea surface temperature and sea level rise over the next century, the Mediterranean and Black Sea fisheries and aquaculture industries are also particularly vulnerable to climate change. In this respect and in the light of the outputs of the FAO workshop referred to above, there is a growing need for the GFCM Scientific Advisory Committee to focus on the issue of climate change and to include it in various components of its programme of work.

Comments. The participants welcomed the presentation delivered by the Secretariat and agreed that SAC activities should incorporate climate change issues. The Sub-Committees and the Coordination Meeting of the Sub-Committees were invited to identify concrete activities in this regard.

SAC framework and medium term strategic plan (J.J. Maguire)

Abstract. J.-J. Maguire briefly introduced the terms of reference for his assignment to review the SAC frame of reference. He invited participants to talk to him on their views on the SAC achievements, modes of operations and other aspects they considered important in improving the performance of the SAC.

Introduction and discussion on the issue of Alien species in the Mediterranean and Black Sea (B. Ozturk)

Abstract. Alien species of the Black and Mediterranean Seas were reported. Main vectors were shipping, hull fouling, clinging and sediment tank of the ships. Besides, intentionally and unintentionally introduction was also important both seas for the dispersion of the alien species. Impact of fisheries, human health and biodiversity changes has been examined. Climate change and dispersion of the alien species also considered. Some recommendation and suggestion were listed and submitted to the GFCM Secretariat.

Comments. The presentation was commended by the participants who agreed that the subject of alien species and their impact of fisheries ecosystems and resources deserves

due attention. Nevertheless, experts stressed that not all alien species should be considered invasive and / or established, and that the short, medium and long term impacts on fisheries should be addressed, some of which may be positive and could be exploited. The SCMEE was invited to formulate draft a strategy to focus on the monitoring of alien species and their impact, with immediate effect.

Annex IV

PROPOSAL OF A MEDIUM WORKING PROGRAM TO IMPROVE KNOWLEDGE AND ASSESS THE STATUS OF ELASMOBRANCHES IN THE MEDITERRANEAN AND THE BLACK SEA

Background

Many species of elasmobranches are living in the Mediterranean (about 47 sharks and 38 rays). They are mostly caught as by-catch of commercial fisheries targeting bony fishes; but usually all specimens are marketed. Few fisheries are targeting sharks. The landing of elasmobranches increased from 10,000 to 25,000 tons between 1970 and 1985, and then slowly decreased to 15,000 tons in 2002.

There is evidence that the elasmobranches of the Mediterranean are declining in abundance, diversity and range due to the intense fishing activity. Their biological characteristics (low fecundity, late maturity and slow growth rates) make also elasmobranches vulnerable to fishing pressure. Some species are already threatened. In addition, there is a lack of aggregated knowledge on the biology and fishery of elasmobranches in many parts of the Mediterranean.

Taking into account the vulnerability of elasmobranches fishes and in frame of a protection and stock management strategy of this group, many action plans were elaborated on this issue (FAO IPOA-shark, the Action Plan for the conservation of the cartilaginous fishes in the Mediterranean (UNEP-RAC/SPA, 2003), the EC Action Plan for the Conservation and Management of Sharks). The GFCM addressed the issue by organizing a transversal working group on bycatch/incidental catches (Italy, September 2008) and a transversal workshop on selectivity improvement and by-catch reduction (Tunisia, September 2009) where major concern for elasmobranches were well manifest.

These last meetings concluded that there is a lack of knowledge on the biology and fishery of elasmobranches in many parts of the Mediterranean and strongly encouraged more studies on population dynamics (population size, structure and demographics) on species of conservation concern (also in terms of fishery management) in parallel to mitigation measure in those cases where protected species are involved.

The above mentioned workshop held in Tunisia suggested to setup a medium term working program to identify and fill gaps in the current knowledge that exist in elasmobranches fisheries, in order to assess and manage the Mediterranean stocks. With a view of elaborating this regional program, it is proposed to carry the following activities:

1. Undertake an inventory of elasmobranches including a review of the available information on taxonomy and species distribution in the area as well as on the status of these species in the Mediterranean and the Black Sea. A working document updating this information will be prepared ;

2. Gather and compile data and information on fishing activities targeting elasmobranches including the potential impact on habitat Loss and Degradation as well as on bycatch of elasmobranches species, in particular those of concern. The main Indicative data shown below is needed in relation to the fisheries and the biology of species following a standard protocol:

    - Description of the fisheries
    - Catch estimates/bycatch
    - Catch by unit effort
    - Fishing areas
    - Sex and sizes composition of the catches
    - Reproductive biology
    - Age and growth
    - Feeding habits

3. Update the available information on studies on mitigation measures for bycatch reduction. It is proposed to test mitigation measures and technologies that have been developed outside the Mediterranean and that are currently used and employed by the Regional Fisheries Management Organizations;

4. Gather the available information on critical habitats (nursery grounds) and species distribution, mainly for those at high risk needing special management or protection measures.

5. Organize an expert meeting in 2010 (3-4 days) to assess and analyze the outcome from the above mentioned activities (1 to 4) and identify appropriate methodologies and approaches to assess the stocks of selected commercial species and required action for the following years. This meeting will also consider the possibility to establish a regional network of expert dealing with this issue

6. Organize in 2010 a training course on age reading and growth parameters of the main elasmobranches species. The available guidelines and other tools will also be used as documentation for the training.

7. Organize a meeting in 2011 on stock assessment (5-7 days) of selected elasmobranches species with particular attention to the species listed on annex 2 and 3 of SPA/BD protocol of Barcelona convention

8. Finalize a GFCM publication on the results obtained through this medium term

Scheduling

Actions 1 to 4 : May to October 2010

Action 5 : November-December 2010

Follow up (if any) of the action 5: May- September 2010

Action 6 : 2010 (date to be defined)

Action 7 : September-October 2011

Action 8 : February 2012

Requirements

a. Designation of a general coordinator[1] of the medium term working program with the following terms of reference:

– Coordination of activities aiming to collect data and information as well as preparing working documents for the expert meetings including the elaboration of required terms of reference;
– Organization of the expert meetings (agenda, identification of the key speakers, finalization of the report etc....);
– Organization of the training course
  - elaboration of the program
  - facilitation of the training
  - elaboration of the report of the training course

b. Designation of an expert in the field of stock assessment of sharks to prepare and moderate the relevant expert meeting

Budget estimates

General coordinator and consultancy: 24.000 dollars
Travels/coordinators and experts : 40.000 dollars
Training (5 days, 20 trainees) : 30.000 dollars
Expert in the filed of stock assessment: 12.000 dollars
Reports and publication : 14.000 dollars
Total : **120.000 dollars**

The SC requested the SAC for identifying sources of funding.

[1] Qualifications: Advanced university degree in marine sciences; extensive experience in the field of elasmobranches biology, ecology and population dynamic and familiarity with the GFCM's structures and procedures