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



SCIENTIFIC ADVISORY COMMITTEE (SAC)

Fifteenth Session

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EXECUTIVE REPORT FOR THE SAC INTERSESSIONAL ACTIVITIES

Draft

INTRODUCTION

1. This report is a summary of the intersessional activities carried out by the Scientific Advisory Committee (SAC) of the General Fisheries Commission for the Mediterranean (GFCM) in 2012-2013 through its four subcommittees and working groups as well as within the first phase of the First GFCM strategic Framework Programme (FWP) to support Task Force actions for which activities started in December 2012. It summarizes the main outcomes and proposes the preliminary work plan for 2013-2014. The complete reports for the subcommittees are included as documents GFCM:SAC15/2013/Inf.6, 7, 8 and 9 and detailed reports of the FWP activities are available under documents GFCM:SAC15/2013/Inf.17, 18, 19 and 20.

I. INTERSESSIONAL ACTIVITIES OF SAC IN 2012–2013

2. At its thirty-sixth session (Morocco, May 2012), the Commission endorsed the Programme of work for the intersessional period 2012–2013 proposed by SAC¹. Consistent with the decisions by the Commission and according to funds availability, SAC worked to implement this programme of work and all the below meetings – as approved at the thirty-sixth session – were held or are already scheduled to be held:

- Thirteenth session of the subcommittee on Marine Environment and Ecosystems (SCMEE) (FAO HQs, Rome, February 2013)
- Thirteenth session of the subcommittee on Statistics and Information (SCSI) (FAO HQs, Rome, February 2013)
- Thirteenth session of the subcommittee on Economic and Social Sciences (SCSS) (FAO HQs, Rome, February 2013)
- Fourteenth session of the subcommittee on Stock Assessment (SCSA) (FAO HQs, Rome, February 2013)

¹ Report of the thirty-sixth session of the Commission, paragraphs 118-119.

- Working Group on Stock Assessment of Demersal Species (Croatia, November 2012)
 - Working Group on Stock Assessment of Small Pelagic Species (Croatia, November 2012)
 - Workshop on Mediterranean gears, fishing technology and selectivity – in collaboration with CopeMed (Morocco, November 2012)
 - Workshop on age determination of elasmobranchs in GFCM area (Turkey, October 2012)
3. The second session of the GFCM Working Group on the Black Sea (WGBS) is scheduled to take place in Varna, Bulgaria, from 24 to 26 April 2013.
4. The following meetings were held within the first phase of the GFCM Framework Programme:
- Workshop on IUU, including MCS and fleet, in the Black Sea (Turkey, February 2013)
 - Sub-regional workshop on data collection and to test the feasibility of implementing multiannual management plans in the Adriatic Sea (Croatia, March 2013)
 - Sub-regional workshop on data collection for Western, Central and Eastern Mediterranean (Italy, March 2013)

Subcommittees, Working Groups and Workshops

5. The reports of the working groups and workshops held throughout the intersessional period are reproduced in documents GFCM:SAC15/2013/Inf.11, 12, 13 and 14. The outcomes of these meetings were then reviewed by each concerned subcommittee and, as appropriate, by the transversal session of the subcommittees (FAO HQ, Rome, Italy, February 2013).
6. A summary of the most relevant outcomes of the meetings of the subcommittees, including their transversal session, is provided below:

- **Subcommittee on Marine Environment and Ecosystems (SCMEE)**

The subcommittee reviewed the outcomes of its related inter-sessional activities focusing on:

- i) the medium-term Research Programme on Elasmobranchs: a workshop was organized in December 2011 concerning assessment of stocks (eight stocks of elasmobranchs species were assessed resulting in seven being in overexploitation status whilst one was uncertain) and a hands-on training course on age determination of Elasmobranchs was held in October 2012. During the latter, participants learnt how to assess the age of cartilaginous fish based on vertebrae and spines readings. The Programme produced two final documents published as GFCM Studies and Reviews as reproduced in GFCM:SAC15/2013/Dma.1 and GFCM:SAC15/2013/Dma.3;
- ii) the training Workshop on Mediterranean gears, fishing technology and selectivity, held in November 2012 during which theoretical and practical sessions were carried out to train participants on selectivity assessment methods and biological and socio-economical considerations related to gear design and construction;
- iii) the preparation and preliminary review of a Draft proposal of the Regional Management Plan for Red Coral: this initiative was launched as an answer to the Commission's request and on the basis of Recommendations GFCM/35/2011/2 and GFCM/35/2012/1 on the exploitation of red coral. The core elements of this management plan are reproduced in document GFCM:SAC15/2013/Inf.22. The SCMEE underlined the need for a wide concertation process among concerned stakeholders at national level

before its consideration by the Commission at its 37th session (May, 2013), following necessary comments on technicalities to be discussed during the 15th session of SAC. SCMEE was also informed on the progress of joint activities between the GFCM and selected partner Organizations, namely ACCOBAMS, UNEP/MAP, ICES and MedPAN.

- **Subcommittee on Statistics and Information (SCSI)**

The subcommittee reviewed the current situation of data collection, submission and information systems, analysed the status of compliance regarding data reporting, discussed on the related activities under the First GFCM FWP and was informed about the current status and future development of databases and information systems managed by the GFCM Secretariat. With regards to the current situation of data collection, some participants described their internal technical difficulties in submitting information on fleet and fishing activities, namely Vessel Records (Resolution GFCM/35/2011/1) and Task 1 (Recommendation GFCM/33/2009/3). The SCSI was informed about the ongoing activities aiming at improving the overall data collection and reporting frameworks, as well as the latest developments in terms of GFCM IT Strategy.

An intra-extranet cloud-based system built on Microsoft SharePoint Online and Windows Azure had been set up, delivering a system of tools and thematic portals that will considerably facilitate the follow up on compliance, information and data flow between Members and the Secretariat as well as knowledge management and daily communication activities among Members.

SCSI also focused on the introduction of the new GFCM data collection reference framework (DCRF) as a key action within the effort of GFCM to strengthen data collection and submission frameworks under the GFCM FWP. The initial GFCM DCRF draft document includes: 1) a preliminary review of current GFCM requirements, 2) a comparative review of data collection frameworks implemented in other RFMOs and finally 3) a first proposed structure for the GFCM-DCRF (nominal catches, fishing vessel statistics, catch and effort data, size-frequency and socio-economic data). An advanced draft version of the GFCM-DCRF is available as document GFCM:SAC15/2013/Inf.16.

- **Subcommittee on Economic and Social Sciences (CESS)**

The subcommittee addressed the outcomes of various activities performed during the inter-session as follows:

- i) case studies on socio-economic aspects: main results of case studies by the FAO Regional Projects relating to socio-economic indicators and bio-economic models of selected fisheries were presented and the subcommittee recommended the creation of a specialized working group to promote studies on socio-economic dimension of fisheries;
- ii) small-scale/artisanal fisheries and recreational fisheries: CESS strongly supported the organization of the first GFCM Regional Symposium on Sustainable Artisanal Fisheries, proposed to be organized in October/November 2013 in Malta (TBC) within the context of the FWP (see **Section II.** below). Also, it recommended that specific Working Groups on small-scale/artisanal fisheries and recreational fisheries are created to provide a regular forum to work on these issues. These events will help CESS in building upon recent developments on these very important subjects so to define a reference framework tailored to the GFCM;
- iii) socio-economic variables: the subcommittee advocated the importance of Task 1.3 and suggested that the work done thus far under this latter framework should constitute a basis for future undertakings. Issues such as climate change and IUU fishing were recognized as relevant for the future work of CESS.

- **Subcommittee on stock assessment (SCSA)**

The subcommittee reviewed the activities and outcomes of the two Working Groups on stock assessment (demersal and small pelagic species). The two main demersal fish and crustacean species for which assessments were carried out were *Merluccius merluccius* and *Parapeneus longirostris*, and eight of the 29 demersal stocks assessed spanned more than one GSA area. Twelve stock assessments of small pelagic species were reviewed: 5 for *Sardina pilchardus*, 5 for *Engraulis encrasicolus*, 1 for *Sprattus sprattus* and 1 for *Trachurus mediterraneus ponticus*. Two of the 12 assessments spanned more than one GSA. The SCSA reviewed the work done by the working groups and formulated related management advice as follows (see Appendix C for the complete table of assessments):

i) demersal stocks: all demersal stocks with a validated assessment had reference point(s) for fishing mortality and all of them were considered to be in overfishing status. Only two of the stocks had formal biomass reference points, and both were considered to be overexploited. Four other stocks without formal reference points were considered to have a low or very low biomass.

ii) small pelagic stocks: four stocks had reference points for biomass and fishing mortality, one of the stocks had reference points for fishing mortality only, and 2 stocks had reference points for biomass only. All the reference points for biomass were considered for the first time in this year's working group. *Sardina pilchardus* in GSA07 was considered collapsed, anchovy in GSA 16 overexploited, sardine in GSA17 and anchovy in GSA07 fully exploited, whereas sardine in GSA16, anchovy in GSA17 and sprat in GSA29 sustainably exploited. The subcommittee further discussed on the needs to improve the definition of reference points for fishing mortality and biomass and recommended to improve the terminology and definition of reference points, stock assessments classification and stock assessment forms.

II. ACTIVITIES CARRIED OUT UNDER THE FIRST GFCM STRATEGIC FRAMEWORK PROGRAMME (2013–2018)

7. The First GFCM strategic Framework Programme (FWP), adopted by the Commission during its last session in Morocco (May 2012), has been envisaged as a platform to promote sustainable development and cooperation in the GFCM Area through multi-annual and multi-donor arrangements, in collaboration with FAO Regional Projects and partner organizations. The FWP is expected to provide the GFCM with a comprehensive information system, which will empower the Commission decision-making process, thanks to a stronger scientific basis.

8. Among the five components of the FWP, four are dedicated to fisheries issues: i) *Governance*; ii) *Data Collection*; iii) *Artisanal Fisheries*; and iv) *Sub-Regional Cooperation*. The FWP officially started at the end of 2012 and it is expected to last for five years. The ongoing activities for which funding has been secured during this first phase are summarized below:

- **Strengthening data collection in the Mediterranean and Black Sea**, also by improving national data collection system capabilities to respond to GFCM requirements, and by defining a GFCM Data Collection Regulation Framework (DCRF) and **Testing the feasibility of implementing the GFCM guidelines for multi-annual sub-regional management plans**, adopted by the Commission at its last session in May 2012. Methodology to advance in these two objectives has been

validated during a preparatory meeting held in December 2012. A draft DCRF has been produced (GFCM:SAC15/2013/Inf.16), building upon the data requirements already existing (e.g. Task 1, Vessel Record, etc.) and including some initial comments from the subcommittees. Also, national focal points for Member States have been identified and information on countries priorities and gaps in relation to data and management has been collected through questionnaires and analysed in a series of dedicated sub-regional meetings.

- **Illegal, Unreported and Unregulated (IUU) fishing, Monitoring, Control and Surveillance (MCS) and regional fleet.** Among foreseen activities, a first workshop on IUU fishing in the Black Sea has been held in February (GFCM:SAC15/2013/Inf.19). It resulted in a draft roadmap to fight IUU fishing in this region which will be submitted to the Second meeting of the Working Group on the Black Sea (see **Section I, par 3**). MCS measures available were also examined at this workshop, together with gaps on data on the Black Sea fleet. In parallel, work is ongoing to test alternative control tools to VMS that could be capable of cost-effectively monitoring artisanal fisheries in selected GFCM Member countries.
- **Concerted Action for Lebanon:** acting upon a request from the Lebanese Minister of Agriculture, the GFCM convened a meeting in December 2012 at the GFCM HQs to bring about concerted actions in support to fisheries and aquaculture in Lebanon (GFCM:SAC15/2013/Inf.20). The preliminary meeting focused on the importance of pooling ongoing efforts at different levels (from States, IGOs, NGOs, private donors, etc.) in order to ensure a coherent strategy over a five years span. The design of a roadmap, on the basis of those elements that were pinpointed in December and consistent with the FWP, is currently under preparation. A follow-up meeting to continue with this action will be arranged during the second quarter of 2013.
- **A Mediterranean Cooperation for the Sustainable Use of the Marine Biological Resources:** as a contribution to ongoing international and regional efforts to achieve a “good environmental status” of the Mediterranean ecosystems and a sustainable use of biological resources, work will be done to: i) harmonize criteria to define environmental targets for exploited populations, ii) determine the status of different Mediterranean exploited marine populations, taking into account relevant socio-economic aspects, and iii) design monitoring requirements to ensure maintenance of good environmental status. Assessments and designs of monitoring requirements will be performed in specific case studies (e.g. Adriatic Sea, Strait of Sicily, etc.). A kick-off meeting aimed at harmonizing the technical criteria and definition of “good environmental status” at different levels (UN Regular Process, EU MSFD, EcAp initiative, GFCM criteria for stock advice) as well as the estimation of indicators and targets in selected Members is expected to be held early in June 2013.
- **Enhancing the development of artisanal fisheries:** a first Regional Symposium on Sustainable Artisanal Fisheries in the Mediterranean and the Black Sea has been tentatively scheduled to take place in October/November 2013 (Malta, TBC) with the objective of providing a real working place where the main recurring issues of artisanal fisheries can be duly examined and relevant stakeholders can bring to the fore the expected changes in the years to come for the sector. The symposium will constitute the building block to steer strategic and programmatic interventions for improving the sustainability of local communities engaged in artisanal fisheries in the

GFCM Area (See draft conceptual note as reproduced in document GFCM:SAC15/2013/Inf.20).

9. Furthermore, a number of joint initiatives between the GFCM and several organizations have been carried out within the seven Memoranda of Understanding (MoU) adopted by the Commission at its 36th Session. Several activities of the FWP are expected to be reinforced through the implementation of these MoU, as follows: i) activities related to data collection, management plans and IUU in the Black Sea are expected to be underpinned by the MoU with the Black Sea Commission, ii) activities related to the definition of good environmental status are expected to be underpinned through the MoU with UNEP-MAP and ICES, iii) activities related to the development of artisanal fisheries are expected to be underpinned through the MoU with MedPAN and RAC-MED, and iv) common research on by-catch mitigation measures for cetaceans, sea turtles and seabirds will be done in collaboration with ACCOBAMS.

10. A number of other potential partners with whom further activities related to the FWP could be jointly developed have also been identified, as indicated in the same document.

III. CONCLUSIONS AND RECOMMENDATIONS

11. The subcommittees made the following general conclusions and recommendations:

MARINE ENVIRONMENT AND ECOSYSTEMS ISSUES

- Perform a comparative analysis of management measures to protect monk seals (*Monachus monachus*) to facilitate the implementation of Recommendation GFCM/35/2011/5.
- Analyse the options to mitigate by-catch of sea turtles and seabirds (Recommendations GFCM/35/2011/3 and GFCM/35/2011/4) and facilitate the adoption of mitigation measures by Member countries.
- Collect data on landings of all alien species and report through the current submission protocols (Task 1) to assess their impact on fisheries in the Mediterranean and Black Sea. To explore alternative markets for the toxic alien species (pharmacology, aquarists, cosmetics, etc.) and to raise awareness about their toxicity to prevent accidental human diseases/death were agreed as potential actions to be fostered in the future.
- Continue working on elasmobranchs management in relation to fisheries in order to promote and guarantee the conservation of this group of marine animals.
- Establish a strategy to facilitate the exchange and dissemination of information on fishing gears and technology.
- Support research/initiatives on: climate change, marine litter, underwater-noise and inclusion of environmental variables within the stock assessment forms.

- Consider the development of mid-term research programmes with the aim of identifying conservation measures and promote sustainable use of deep-sea habitats (seamounts and deep corals) and related fishing stocks.

Management advice:

The proposed Draft Regional Management Plan for the red coral (RMP) as introduced in document GFCM:SAC15/2013/Inf.22 is coherent with the GFCM guidelines on multiannual management plans and with the binding measures already in force. A summary is provided here below.

Operational Objectives of the RMP are:

1. To control that the actual legal size limit (7 mm) for harvesting red coral colonies is enforced at regional level
 - a. Target Reference Point: 10% in live weight for undersized colonies. As stated in the current recommendation.
 - b. Limit reference Point: of 20% of undersized coral colonies is considered as the limit situation to be avoided
 - c. Precautionary (threshold) Reference Point: 15% of undersized colonies. This provides a threshold at which initial actions should be taken to reduce the risk that the limit is broken
2. To maintain the same catch level of three previous years (supposing it to be sustainable)
 - a. Target Reference Point: Current catches are the same than average of last three years.
 - b. Limit reference Point: The increasing of 20% of total catches at the GFCM level is considered as the limit undesirable situation to be avoided
 - c. Precautionary (threshold) Reference Point: The increasing of 10% of total catches. This provides a threshold at which initial actions should be taken to reduce the risk that the limit is broken

These two objectives are considered as temporary while waiting for the availability of data once Members start reporting through the new data submission tool starting in 2014 what will allow to assess the actual status of the exploited populations and readjust if necessary the two Operational Objectives proposed.

With regards to the **management measures**, it is believed that those measures already foreseen by the GFCM Recommendations GFCM/35/2011/2 and GFCM/36/2012/1 if well implemented constitute a considerable step to achieve the RMP objectives:

- gear type (manual hammer)
- depth below 50 m
- use of ROV only for exploratory purposes
- designated landing ports
- licenses
- logbook
- post landing actions

In addition measures such as validation of logbook data through on board and in ports observer programs, and increase enforcement against poaching, reported to be widespread and in alarming increase, are proposed in the RMP.

Socio-economic impacts and stakeholders involvement in implementing the RMP will be fully developed at a further stage in order to improve the RMP effectiveness with the least negative effects possible for the industry while keeping red coral populations at safe limits.

The SCMEE recommended to open a consultation phase to review the RMP before the 37th session of the Commission in May 2013.

STATISTICS AND INFORMATION ISSUES

- Facilitate the fleet data submission from EU members to the Secretariat by looking for feasible interactions with the EU fleet register system.
- Promote the continuation of bilateral discussions between the countries' representatives and the Secretariat, in order to address specificities preventing the submission of fleet information as well as topics related to artisanal fisheries and not addressed through the ongoing "actions to strengthen data collection and submission frameworks".
- In line with the new data collection reference framework (DCRF) being formulated within the GFCM, to review the periodicity of socio-economic data currently collected under Task 1.3 as well as identification of those fields in the GFCM vessel records defined as mandatory.
- Facilitate end-users with documentation (leaflet, manual) to exploit the full potentialities of the SharePoint facilities newly established by the Secretariat.

ECONOMIC AND SOCIAL SCIENCES ISSUES

- Review current methodologies to carry out socio-economic analysis in order to develop a common methodology for improving fisheries management.
- Implement, in close collaboration with the FAO Fisheries and Aquaculture Department, the FAO Small Scale Fisheries Guidelines in the GFCM Area.
- Involve artisanal fishermen in fisheries management through co-management schemes. The exchange of experiences on co-management among Mediterranean fishermen should increase the understanding on the potential of artisanal fisheries in the region.
- Collect data on the impacts of *Lagocephalus sceleratus* (puffer fish) in the Eastern Mediterranean, in order to prevent, reduce and compensate for the losses caused by this species.

STOCK ASSESSMENT AND FISHERIES ISSUES

- Continue to increase the number of stocks with defined reference points as well as the number of conceptual reference points available for those stocks (i.e. in addition to a reference point on exploitation rate, it would be desirable to have also reference points for F and biomass).
- Integrate all scientific information from a single stock into a unique stock advice. The utility of genetic/genomic/other methods to assist in stock unit identification, migration patterns and exchange rates between meta-populations in the Mediterranean context should be further investigated.
- Improve the terminology and definition of the advice provided by the working groups on stock assessment (WGSAs), especially in relation to:
 - Improvement of the definition of reference points for pelagic and small pelagic species, following a series of recommendations provided by the working groups and the subcommittee, and in agreement with the 2012 GFCM Guidelines for multiannual management plans.
 - Improvement and standardization of the classification of assessment in relation to their reliability, precision and usefulness for advice.
 - Improvement of the Stock Assessment Forms, especially in relation to the advice summary, also incorporating an improved standardized individual stock status report format.
 - Improvement of the language, structure and contents of the report.
- Investigate, transversally with SCME and in collaboration with Member countries, those stocks of lessepsian species that, in many areas of the Mediterranean, compete with, or have even replaced as main targets of the fishery, the autochthonous stocks, being able to endure conditions of high fishing pressure. Management issues regarding lessepsian species should also be addressed by SAC.
- Prepare a regular biannual report on the status of Mediterranean and Black Sea fisheries, based on information from the WGSAs together with the information on Mediterranean and Black Sea fisheries available in the GFCM databases.

Management advice:

- Reduce fishing mortality on those stocks that have been assessed as being in overfishing and/or overexploited status, following the principles of the 2012 GFCM Guidelines on multiannual management plans. In particular, this affects all demersal stocks in the Mediterranean and the Black Sea for which a validated stock assessment exists, and a number of small pelagic stocks.
- For some stocks of small pelagics which are considered to be fully exploited, it is recommended to keep fishing mortality within its current levels.
- The stock of sardine in the Gulf of Lions is considered collapsed, and therefore a recommendation to close the fishery has been formulated by the SCSA.
- Specific measures for each individual assessed stock are proposed in Appendix D.

IV. PRELIMINARY WORKPLAN RELATING TO THE INTERSESSIONAL ACTIVITIES OF SAC ENVISAGED FOR 2013–2014

12. The activities listed below have been proposed by the subcommittees and Working Groups within their respective remit.

SCMEE WORKPLAN

1. Develop a three-year extension of the GFCM medium-term Elasmobranchs Programme (See ToRs for the draft extension in Appendix B).
2. Organize consultancies to; i) update TECHNOMED databases on fishing gears and fishing technology, ii) reduce and mitigate by-catch effects on turtles, and iii) evaluate management measures to have close to zero risk of monk seals incidental taking and mortality related to fishing activities/operations, in agreement with Recommendations GFCM/35/2011/4 and GFCM/35/2011/5 (See ToRs for the consultancies in Appendix B).
3. Organize a one day Workshop on artificial reefs (ARs) in the Mediterranean and Black Sea within the framework of the 10th International Conference on Artificial Reefs and Related Aquatic Habitats (23-27 September 2013 Izmir, Turkey) (ToRs for the Workshop reproduced in Appendix A)

SCSI WORKPLAN

4. Organise a workshop on the new data and reporting frameworks, including the GFCM Data Collection Reference Framework (DCRF) (ToRs for the Workshop in Appendix A).

SCESS WORKPLAN

5. Prepare the following documents during the inter-sessional period:
 - Conceptual note on recreational fisheries;
 - Paper concerning the review of socio and economic variables in the Task 1.3 to be validated by a small group of experts through a dedicated SharePoint platform;
 - Two papers concerning socio-economic impacts of selected invasive species in the GFCM Area;
 - Study on reviewing methodologies for economic valuation of recreational fisheries in general;
 - Study on the connection between IUU fishing and decent work;
 - Paper concerning the creation of the Co-management Committee on the sandeel fishery in Catalonia and the work being currently carried out by such Committee.
6. Establish the following working groups (WGs) (see Appendix A for the proposed ToRs):
 - WG on small scale/artisanal fisheries;
 - WG on recreational fisheries;
 - WG on common methodology for socio-economic analysis for improving fisheries management.

7. Organize and carry out the following meetings:
 - The GFCM Regional Symposium on Sustainable Artisanal Fisheries;
 - A regional workshop on recreational fisheries, possibly back-to-back with the GFCM Regional Symposium on Sustainable Artisanal Fisheries – if a thematic session dedicated to recreational fisheries cannot be added to this symposium;
 - A transversal session between SCMEE and SCESS on the impacts of climate change, with special emphasis on socio-economic aspects of invasive species in the GFCM Area.

SCSA WORKPLAN

8. Organise a workshop on the definition and estimation of reference points for small pelagics and demersal stocks, in agreement with the GFCM guidelines for multi-annual management plans (see Appendix A for the proposed ToRs).
9. Revise the stock assessment forms to incorporate the recommendations from the above mentioned workshop in its section on advice on stock status
10. Promote the establishment of an online Review Group to produce a consolidated report of the working groups to be analysed by the subcommittee. The Review Group should include the coordinators of the two WGSAs, the SCSA Coordinator and the representatives of the Secretariat, incorporating external reviewers as needed. The Review Group should review the report and draft advice as provided by the WGSAs and produce a consolidated report of the WGSAs to be presented and discussed at the SCSA.

V. SUGGESTED ACTION FOR THE SAC

13. The Committee is invited to consider the activities proposed by its subsidiary bodies in the period 2013-2014 and may wish, as appropriate, to identify necessary inputs to support activities as well as to specify, where relevant, the expected timeframe and outputs. The Committee is also invited to review the priorities outlined in this document, and related budgetary implications.

VI. MEETINGS

14. The below list of meetings is for consideration of the SAC:

Meeting	Place/Date
(SCMEE) Workshop on artificial reefs (ARs) in the Mediterranean and Black Sea (in collaboration with EastMed)	Izmir, Turkey 27 September 2013
(SCSI/SCSA/SCESS) Transversal Workshop on the new data and reporting frameworks, including the GFCM Data Collection Reference Framework (DCRF)	TBC
(SCSA) Working Group on stock assessment (WGSA) of Demersal Species (5 days)	September/October 2013
(SCSA) Working Group on stock assessment (WGSA) of Small Pelagic Species (5 days)	September/October 2013
(SCSA) Workshop on the definition and estimation of reference points for Mediterranean and Black Sea fisheries	TBD (possibly subsequent to the WGSAs)
(SCESS) Working Group on Artisanal fisheries	TBD
(SCESS) Working Group on Recreational fisheries	TBD
(SCESS) Working Group on Common methodology to carry out socio-economic analysis	TBD
14 th Session of the SCSA (4 days)	TBD
13 th Session of the SCMEE (4 days)	TBD
13 th Session of the SCSI (4 days)	TBD
13 th Session of the SCESS (4 days)	TBD
16 th session of the Scientific and Advisory Committee (4 days)	TBD

15. List of meetings scheduled under the FWP for 2013:

Meeting	Place/Date
Sub-regional workshop on data collection, information systems on fisheries in the Black Sea	22-24 April 2013; Varna, Bulgaria
Follow up meeting to “Concerted Action for Lebanon”	End of May 2013; Beirut, Lebanon
Kick off meeting for the “A Mediterranean Cooperation for the Sustainable Use of the Marine Biological Resources” project	Beginning of June 2013, GFCM HQs, Rome
Sub-regional workshop to test the feasibility of implementing Multiannual management plans (Western, Central and Eastern Med.)	24-27 June 2013; Tunisia
First Regional Symposium on Sustainable Artisanal Fisheries in the Mediterranean and the Black Sea	October/November 2013; Malta (TBC)
Workshop to test the feasibility of implementing Multiannual management plans in the Black Sea	8-10 October 2013; TBC
Workshop on IUU, including MCS and fleet (Mediterranean Sea)	TBC

Appendix A

DRAFT TERMS OF REFERENCE FOR SELECTED MEETINGS

1. (SCMEE) Terms of Reference of the **Special Session on Artificial Reefs (ARs) in the Mediterranean and Black Sea (in collaboration with EastMed Project)** organized within the framework of the 10th International Conference on Artificial Reefs and Related Aquatic Habitats (23-27 September 2013 Izmir, Turkey):

- Review the status of Artificial Reefs the Mediterranean and Black Sea. Contributions (posters/presentations) are expected to deal with:
 - Objectives of the ARs
 - Evidences of increased productivity and functional diversity
 - Evidences of effectiveness of ARs in enhancing fisheries and reducing conflicts in coastal areas
 - Monitoring strategies and statistical approaches
- Round Table to discuss the Draft Guidelines for AR applications in the context of an Integrated Maritime Approach in the Mediterranean and Black Sea. The Guidelines should address the following topics:
 - Objectives of the ARs: habitat protection, habitat restoration, ARs as potential network of MPAs (understanding the connectivity and the recruitment subsidy), enhancement of professional and recreational fisheries, management of activities in coastal areas, aquaculture
 - Dimensions and scales appropriate for the different objectives
 - Methodologies to assess effectiveness of ARs and standardized monitoring procedures
 - Plans for the creation and management of new ARs

2. (SCSI/SCSA/SCCESS) **Transversal Workshop on the new Task 1 & 2 data submission framework to define a Plan of Action to improve member countries' capacity to collect and submit relevant data:**

- Provide an explanation of the data collection reference framework (DCRF) details to all the countries to approach the new concepts;
- Identify actions to address, if needed, the remaining work to be done in order to comply with the DCRF;
- Develop agreed protocols for data collection and submission of data within the DCRF;

3. (SCCESS) Terms of Reference for the **Working Group on Small-Scale/Artisanal fisheries:**

Small scale/artisanal fisheries provide support for thousands of lives and contribute to food security and poverty reduction in many Mediterranean countries. The important role of small scale/artisanal fisheries in the socio-economic development and the challenges that hinder its proper organization and operation have received increasing attention in recent years by both coastal countries, regional commissions and international organizations involved directly or indirectly in the fishing sector. With the same aim, the

GFCM has scheduled its first Regional Workshop on Sustainable Artisanal Fisheries to be held in Malta (September - October 2013).

SCESS participants agreed on the organisation of an ad hoc working group to discuss minimum agreed criteria to be recommended to define small scale/artisanal fisheries, the definition of a framework for the collection of social and economic data and the development of standard methodology to analyse the socio-economic dimension of small-scale/artisanal fisheries in GFCM Members with a view of making proposals for the consideration of the abovementioned regional workshop.

The main tasks and objectives to be achieved by the Working Group will focus on:

- Characterize common social, economic and technical criteria to be considered in the definition of small scale/artisanal fisheries at sub-regional and/or regional level.
- Review the status of small scale/artisanal fisheries in GFCM Members with focus on the available socio-economic data, the existing monitoring systems, and the integration of artisanal communities in the management plans
- Define a standard framework for the collection and analysis of socio-economic data for use in small scale/artisanal fisheries management; and
- Identify and develop priority case studies at the country level to assist in the finalization of the above mentioned tasks.

The elaboration of reports and/or presentations by each invited national researcher describing and analysing the present status of small scale/artisanal fisheries (social, economic, governance and environmental dimensions) in their countries will be very helpful. The FAO Regional Projects are invited to present their experiences in the analysis and the development of small scale/artisanal fisheries in their relevant sub-regions. The pre-Working Group elaboration of national case studies will assure the existence and availability of the relevant data to be analysed by the Working Group participants with the aim of developing concrete recommendations to the forthcoming GFCM Regional Workshop on Sustainable Artisanal Fisheries.

4. (SCESS) Terms of Reference for the **Working Group on Recreational fisheries**:

Recreational fisheries are becoming more and more important around the world. In fact, recent studies describe a very important growth of interest in recreational fisheries in economies while commercial ones face important declines. Although this may be also the case for the GFCM Area, the truth is that in the region, contrary to commercial fisheries, recreational fisheries suffer from a lack of data, studies, effective managing, control and monitoring. On the other hand, it is obvious that these fisheries share the same zones and in many cases resources and problems of commercial fisheries. Consequently, in some cases conflicts between them arise. On 2010 the GFCM organized a transversal workshop on the monitoring of recreational fisheries in the GFCM Area. On 2012 recreational fisheries were included in GFCM Framework Programme (WP IV). On the same year, FAO has published Chapter 13 on *Technical Guidelines for Responsible Fisheries*, dedicated entirely to recreational fisheries (TGRF). Taking all this into account, and in the context of the thirteenth session of the SCESS, participants agreed on the need to establish an ad hoc working group on recreational fisheries. The purpose of this working group is to gather existing information about recreational fisheries in the Mediterranean and Black Sea, find gaps, identify common problems, potential conflicts and propose solutions. Similarly, the working group should deepen on the adequacy and need to implement and

adapt the TGRF in the GFCM Area and cooperate with other recreational fisheries working groups in the region.

The working group should focus on achieving some of the following topics:

- Define whether or not a common policy framework for recreational fisheries in the GFCM Area is possible. If so, clarify which issues should be included in this regional scope and which should not.
- The Mediterranean and Black Sea are very particular ecosystems, with biological, ecological and other aspects distinguished between them. In addition, both regions are socially speaking very heterogeneous. In this context, identify which specific issues should be specially taken in account when implementing the FAO TGRF in the region. Should they become the common basic management framework?
- Analyse existing cases of regulation of recreational fisheries within Mediterranean and Black Sea MPAs. Identify major achievements, gaps, impacts and groundings.
- Define the main variables (qualitative and quantitative) to evaluate the socio-economic impact of recreational fisheries. Study whether or not they could be integrated into bio-economic models.
- Find the main patterns that characterize IUU recreational fishing in the Mediterranean (reasons, species, bio-economic impact, modalities, black market, social needs...). Propose solutions.
- Discuss existing and/or adopt a code of conduct for recreational fisheries in the GFCM Area.
- Identify the main reasons that hinder a multilateral relationship between managers, scientists and recreational fishers. Find solutions.
- Describe valuable data source outputs of recreational fisheries.
- Identify main conflicts between recreational fishers and other users of the sea. Find causes and search possible solutions.
- Define the positive and negative impacts (biological and socio-economical) of recreational fisheries contests.
- Cooperate with other regional recreational fisheries working groups (e.g. RACMED) in order to approach/converge in similar goals.

This working group should focus on recreational fisheries issues related to the objectives previously defined and in the context of the GFCM Area. Any other issue related to other world regions should only be presented or used as examples that may contribute to achieve the scope of the working group. On the other hand, activities like pesca-turismo are out of the scope of this working group, because they are considered commercial activities.

5. (SCESS) Terms of Reference for the **Working Group on Common methodology to carry out socio-economic analysis:**

There exist, in the GFCM Area, several methodologies to collect and to analyze socio-economic data for fisheries management. The purpose of the working group is to develop a common methodology to analyze and to compare results.

The working group will focus on the following subjects:

- Review of main Mediterranean studies carried out on methodology on socioeconomic data analysis;
- Presentation and discussion on studies undertaken in the context of the GFCM regional projects (CopeMed; AdriaMed and EastMed);

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- Review of application on a common methodology: data availability; technical problems; availability of staff, etc.;
 - Setting of a program for the follow-up of the application on this common methodology;
 - Drawing up of a practical guide;
 - Prepare a reference document for the elaboration of a guideline on the use of a common methodology to analyse socio-economic data in fisheries management.

Country experts are required to present the situation of available data in order to establish a particular analysis of each situation. To test some situations, it can be proposed a computer work on databases provided by the participants during the workshop. Examples of the results will be provided.

6. (SCSA) Terms of reference for a **Workshop on the definition and estimation of reference points for Mediterranean and Black Sea fisheries**

- Revise the definition of limit and target reference point for biomass and fishing mortality for demersal species in the Mediterranean and Black Sea
- Revise the definition of limit and target reference point for biomass and fishing mortality for small pelagic species in the Mediterranean and Black Sea
- Revise the terminology for providing advice on stock status in relation to reference points to be used in the GFCM assessment WG.
- Hand-on data analysis with existing software (FLR, a4a, VIT, XSA, SURBA, time series analysis) to estimate reference points to selected Mediterranean and Black Sea demersal and small pelagic fisheries for which required data for the selected model is available.
- Proposal for limit and target conceptual reference points and its associated estimates for biomass and fishing mortality for selected Mediterranean and Black Sea demersal and small pelagic fisheries.
- Review the use of reference point to provide advice for sustainable fisheries (Management strategies and harvest control rules)

Appendix B**TERMS OF REFERENCE FOR SELECTED ACTIVITIES AND CONSULTANCIES
PROPOSED BY THE SUBCOMMITTEES**

- 1. (SCMEE) Terms of reference for a three-year extension of the GFCM medium-term Elasmobranchs Programme:**
 - Preparation of a draft proposal on practical options for mitigating by-catch for the most impacting gears in the Mediterranean and Black Sea.
 - Production and dissemination of guidelines on good practices to reduce the mortality of sharks and rays caught incidentally by artisanal fisheries.
 - Carrying out studies on growth, reproduction, population genetic structure and post-released mortality and identification of critical areas (nurseries) at national or regional level. A list of priority species should be selected.
 - Preparation of factsheets and executive summaries for some commercial species presenting identification problems.
 - Assessment of the impact of anthropogenic activities other than fisheries on the observed decline of certain sharks and rays populations.
 - Carrying out of a pilot tagging programme for pelagic sharks.

- 2. (SCMEE) The Terms of reference for the improvement of TECHNOMED databases and dissemination:**
 - Activate the link to the TECHNOMED page in the GFCM web site to assure the presentation of information, documentation and reports among Mediterranean scientists. This page will be also for scientific community a window of the actions carried out by GFCM in fishing technology.
 - Create a dedicate Share point to facilitate exchange of information among scientists.
 - Update databases on trawl selectivity, trawl characteristics and national legislation, currently in Excel format and make the information easily accessible through the web page.
 - Organize training courses on fishing technology and prepare a guide of good practices on sustainable techniques for fishers and stakeholders in collaboration with FAO Regional Projects, NGOs and partners organizations.
 - Keep track on permanent technology progress by collecting information and relevant documents to be provided to the experts through the TECHNOMED webpage.
 - Create multilingual catalogue(s) of Mediterranean and Black Sea fishing gears.
 - Provide advice to SCMEE and SAC on the design and coordination of selected pilot studies on the impact and benefits on the use of different fishing techniques.
 - The actions and works of TECHNOMED should be regularly reported in the annual meeting of SCMEE.

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3. (SCMEE) Terms of Reference for **supporting actions to comply with Recommendation GFCM/35/2011/4** which requires the SAC to provide useful information to fishermen to release sea turtles alive:
- Gather updated information on the characteristics of devices, fishing gears and fishing operations or other approaches to mitigate/eliminate sea turtles by-catch and to release them alive.
 - Produce waterproof factsheets with practical information to mitigate/eliminate sea turtles by-catch and to release them alive to be distributed through the fisheries considered most impacting on sea turtles.
 - Carry out a practical course with fishermen to inform them about:
 - a. *the importance of sea turtles for the marine ecosystems*
 - b. *the effects of by-catch on sea turtle populations*
 - c. *the existing devices to mitigate/eliminate sea turtle by-catch*
 - d. *any other relevant matter for the mentioned purposes*
 - and train them to:
 - e. *correctly identify and report sea turtle specimens by-catch in the logbook (also from a taxonomic point of view)*
 - f. *correctly use existing kits for de-hooking turtles*
 - In the implementation of the above activities the FAO Guidelines to reduce sea turtle mortality in fishing operations (FAO Fisheries and Aquaculture Department. Rome, FAO. 2010. 128pp.) should be taken into consideration and its contents should be adapted to the Mediterranean and Black Sea region (if necessary).
4. (SCMEE) Terms of Reference for supporting actions to comply with the Recommendation GFCM/35/2011/5, to study the feasibility of management measures to have very low and close-to-0-risk of monk seals incidental taking and mortality in fishing activities/operations:
- Produce a comprehensive cartography of the current spatial distribution of monk seal populations in the Mediterranean.
 - Draft a comprehensive document with all relevant data available and different experiences from all involved countries.
 - Analyze and define practical measures which could be implemented to mitigate the negative consequences of monk seal/fisheries interactions.
 - Design scientifically sound monitoring schemes to successfully examine mitigation measures effectiveness in the areas where they are implemented.

Appendix C

Table 1 - ASSESSMENTS FOR DEMERSAL SPECIES, as validated by the WGSA and the SCSA

GSA	Species	Data type	Years data	Methodology used	Stock status	Fcurr /F0.1	Management advice	WG comments	SC comments
GSA 01	European hake (<i>Merluccius merluccius</i>)	Catch, Lfreq catch & trawl surveys	2003-2011	XSA tuned with CPUE from commercial fleet and MEDITS data.	Overfishing	5.4	From a precautionary approach and taking into account the estimated reference points MSY proxies (F0.1, F40%SSB and F30%SSB), a reduction of the current fishing mortality is recommended by reducing the effort activity and improving the selection pattern of the fishery.	The statement "low abundance" is very vague. A quantitative way should be found to support it. Time series are often short and do not provide the appropriate basis to set up a baseline for sound comparison. Assessment and recommendations endorsed	The SC endorses the advice. The SC recommends to improve the exploitation pattern reducing juvenile catches.
GSA 05	European hake (<i>Merluccius merluccius</i>)	Catch, effort, Lfreq catch & trawl surveys	2000-2011	XSA and Y/R analysis	Overfishing	9.2	To reduce fishing mortality. The use of the information from the vessel monitoring system will help improve the knowledge about the spatial distribution of the fishing effort.	It was suggested to include a plot of the spawning stock biomass against recruitment. Assessment and recommendations endorsed	The SC endorses the advice. An extra effort to understand SSB/R relationship is recommended.
GSA 06	European hake (<i>Merluccius merluccius</i>)	Catch, effort, Lfreq catch, trawl surveys	1999-2011	XSA, Y/R analysis, FLR predictions	Overfishing	10.0	A reduction in trawling fishing effort, along with a reduction of gillnet and long lining effort, in the context of a multi-annual management plan taking into account the multi-species landings of the trawl is recommended.	The assessment was found to contain contradictions, as the SSB increased while the recruitment decreased over the studied time period. An explanation to this pattern should be provided. Several checks have been proposed: analyse changes occurring in the fisheries (effort over time for each gear), compare recruitment data to the age 0 MEDITS index, compare commercial CPUEs with MEDITS index and compare the outputs of separable VPA to a classical VPA run. In that context, the statement "low level of SSB" would need further clarifications. Assessment and recommendations endorsed	The SC endorses the advice. The discrepancy between biomass and recruitment, as well as possible confounding signals between the catch by age and the survey at age data should be further investigated.

GSA	Species	Data type	Years data	Methodology used	Stock status	Fcurr /F0.1	Management advice	WG comments	SC comments
GSA 07	European hake (<i>Merluccius merluccius</i>)	Catch, effort, Lfreq catch, trawl surveys	1998-2011	XSA, Y/R analysis	Overfishing characterized by growth overexploitation with periodically higher recruitments (1998, 2001-2002 and 2007). Since 2007, the recruitment has reached the lowest level of the historical series 1998-2011	11.2	To reduce growth overfishing: - Improve the fishing pattern of the trawl to arise the minimum length of catches equal to the minimum legal landing size; - close nursery areas at least temporarily; - Reduce the effort of trawl, from reducing time at sea, number of fishing boats, engine power, Bollard pull and/or trawl size; To avoid recruitment overfishing: - Reduce the effort of longliners and gillnetters in order to increase (or at least maintain) the SSB; - Establish temporal closures for longliners and gillnetters during the period of maximum spawning (end of autumn and beginning of winter, main peak of spawning period); Freeze of the effort in the Fishery Restricted Area.	Comments such as the one about management measures currently in force (destruction of boats, temporary closures for trawlers, etc.) should be included in the stock assessment forms as well as in the report. It was also suggested to show a plot of the size distributions at least for the last three years, which could help to identify trends as well as a plot of the spawning stock biomass against recruitment. The WG endorsed the assessment and recommendations	The SC endorses the advice. Same problems on the SSB and R relationships as in other hake stocks exist.
GSA 12, 13, 14, 15, 16	European hake (<i>Merluccius merluccius</i>)	Catch & Lfreq catch	2010-2011	LCA, Y/R analysis	Stock is in overfishing status and low abundance. The stock is characterized by growth overexploitation.	3.6	To reach F0.1, current fishing mortality should be reduced by more than 80% in optimistic scenario. - The fishing pattern is essentially oriented to the juvenile fraction, so to reduce growth overfishing, management of this species should be oriented towards increasing direct and indirect selectivity pattern of the trawl in order to increase the minimum length of catches up to the minimum legal landing size. - Reduce the effort of trawlers targeting especially the juvenile fraction of the stock, from reducing time at sea, number of fishing boats, engine power. - It is not excluded that the stock is shared with adjacent subareas so it is recommended to proceed to joint assessment integrating CopeMed Area.	Since two growth hypotheses are presented, the choice between both is not clear. It was suggested that the hypothesis with a higher L could be favored. The WG considered this assessment preliminary because of the shortness of the time series considered. Two years of data were available.	SC does not comment the advice since the assessment is considered preliminary. The SC appreciated the effort to develop a joint international assessment under the MedSudMed project framework.

GSA	Species	Data type	Years data	Methodology used	Stock status	Fcurr /F0.1	Management advice	WG comments	SC comments
GSA 18	European hake (<i>Merluccius merluccius</i>)	Catch, effort, Lfreq catch, trawl surveys	1996-2011	SURBA, Y/R, LCA	The stock is in overfishing and thus it is necessary to consider a considerable reduction of the fishing mortality to allow the achievement of F0.1	4.4	Consider a remarkable reduction of the fishing mortality. The reference point F0.1 can be gradually achieved by multiannual management plans that foresee a reduction of fishing mortality through fishing limitations. As observed in 2011, the fishing mortality from the Italian bottom trawlers represents about 80% of the total F in the GSA and that of the Italian longlines is accounting for about 9.5%, with an overall percentage of about 90%, while Montenegrin trawlers account only for about 1% of the F exerted on hake in the GSA and Albanian trawlers of about 9.7%. Moreover, the production of hake in GSA 18 is split in 12.5% caught by Italian longlines, 77.2% by Italian trawlers, about 1% by Montenegrin trawlers and about 9.4% by Albania trawlers.	The WG endorsed the assessment and recommendations	The SC endorses the advice. The SC appreciated the effort to develop a joint international assessment under the AdriaMed project framework.
GSA 01-03	Blackspot seabream, <i>Pagellus bogaraveo</i>	Lfreq catch	2009-2011	LCA and Y/R analysis	Stock is in overfishing status (Fc=0,194 higher than F0.1=0.113 and F40%MSY=0.120) and overexploited (MSY=331 t lower than Y at F0.1=473 t and Y at 40%=481 t).	1.7	Reduce the effort level to set the fishing mortality level to a more sustainable value. Rationalize the management of this resource by establishing similar management measures in both countries (Morocco and Spain).	Three scenarios on Fterminal were presented for the VIT analysis. The rationale behind the choice of the retained Fterminal could be stated more clearly, even though results were qualitatively similar. It was also recommended to compare the reference points obtained by the Yield per recruit approach with those obtained from the three scenarios using VIT. Finally, it was noted that overexploitation should be assessed based on biomass. The WG endorsed the assessment and recommendations.	The SC endorses the advice. In order to assess if the stock is overexploited the SC recommends to estimate BMSY instead of catch at MSY to be compared with the current stock biomass. Clarification on the methods applied (i.e. DCAC model), terminology and data used for the assessment is required. The SC appreciated the effort to develop a joint international assessment under the Copemed project framework.

GSA	Species	Data type	Years data	Methodology used	Stock status	Fcurr /F0.1	Management advice	WG comments	SC comments
GSA 15-16	Common Pandora, <i>Pagellus erythrinus</i>	Trawls surveys, catch & Lfreq catch	2006-2011	LCA, XSA and Y/R analysis	Overfishing. As a consequence F needs consistent reduction from the current F towards the candidate limit reference point for long term sustainability based on F0.1.	2.4	Based on the results of the XSA performed, a reduction of about ~60% of the fishing mortality is needed to reach the technical target reference point F0.1; at present both SSB and recruitment show clear decreasing trends. A progressive reduction of current F through consistent effort reduction and an improvement in current exploitation patterns are recommended. In this context a multi-annual management plan to be implemented at GSA 15 and 16 taking into account the effects of the different gears targeting different life stages of common Pandora is advisable.	The VIT analysis showed an anomaly in 2009. The origin of this anomaly should be explained, and also why this anomaly has not been observed when running the XSA analysis. In addition, the XSA analysis was applied on 6 years data while the maximum age was 7 years, which does not allow the analysis to cover a complete cohort. At least 7 years should be needed to an adequate XSA run. The VIT analysis has been applied on single years, while the GFCM recommendations specify that years should be lumped together when using this approach. This remark was also addressed at the end of the sessions and a general recommendation is done in the last section of this report. The sensitivity of the results to the use of yearly or lumped data should be tested	The SC endorses the advice. The SC recommends to better explain the approach used to estimate Reference Points for the stock. Some of the parameters included in the individual report and the Stock Assessment Form need to be checked.
GSA 17	Common sole, <i>Solea solea</i>	Trawls surveys, catch, Afreq catch & Lfreq catch	2004-2011	XSA, Surba, SS3, VIT	Overfishing. Current F (2011) estimated with different model comprised between 0.73 and 1.43 and higher than the proposed reference point (F0.1 = 0.26 as a proxy of FMSY).	5.5	A reduction of fishing pressure would be recommended, also taking into account that the exploitation is mainly orientated towards juveniles and the success of recruitment seems to be strictly related to environmental conditions. This could be achieved by a two-months closure for rapido trawling inside 11 km (6 nm) offshore along the Italian coast, after the fishing ban. Moreover, information provided by VMS will be useful in order to quantify the fishing effort of rapido trawlers in such area and period. Finally, specific studies on rapido trawl selectivity are necessary. In fact, it is not sure that the adoption of a larger mesh size would correspond to a decrease of juvenile catches. The same uncertainty regards the adoption of square mesh.	The group considered the use of the SS3 method as a good initiative. Comparisons of outputs with classical approaches should be done.	The SC endorses the advice on stock status. The purposes of the associated management recommendations from the WG are however not completely explained in the text, therefore the SC recommends to incorporate all information that leads to the recommendation in future reports.

GSA	Species	Data type	Years data	Methodology used	Stock status	Fcurr /F0.1	Management advice	WG comments	SC comments
GSA 05	Striped red mullet, <i>Mullus surmuletus</i>	Catch & trawl surveys	2000-2011	XSA and Y/R analysis	Overfishing	3.1	To reduce fishing mortality. The use of the information from the vessel monitoring system will help to improve the knowledge about the spatial distribution of the fishing effort.	No particular comment. Assessment and recommendation endorsed	The SC endorses the advice. The recommendation to use VMS for the assessment/management of the stock is not sustained in the assessment sheet presented to the WG. The SC recommends to incorporate all information and discussion that lead to the recommendation given in future reports.
GSA 07	Red mullet, <i>Mullus barbatus</i>	Trawl surveys	2004-2011	XSA, Y/R	Overfishing (high fishing mortality and intermediate abundance) with periodically higher recruitments (2006 and 2010)	2.5	Reduce effort of trawl, by reducing the time at sea, the number of fishing boats, the engine power, the Bollard pull and/or trawl size.	No particular comment. Assessment and recommendation endorsed	The SC endorses the advice on stock status. The SC recommends to modify the management advice as follows: "reduce fishing mortality by means of effort and catch limitations".

GSA	Species	Data type	Years data	Methodology used	Stock status	Fcurr /F0.1	Management advice	WG comments	SC comments
GSA 15-16	Red mullet, <i>Mullus barbatus</i>	Trawls surveys, catch, Afreq catch & Lfreq catch	2006-2011	VIT XSA tuned by MEDITS SURBA	The WG proposed F0.1 = 0.45 as proxy of FMSY and as the exploitation reference point consistent with high long term yields. Taking into account the results obtained by the XSA analysis (current F0.4 is around 1.3), the stock is considered in overfishing.	2.9	Reduce the relevant fleets' effort and/or catches until fishing mortality is below or at the proposed FMSY level, in order to avoid future loss in stock productivity and landings. This should be achieved by means of a multi-annual management plan taking into account mixed-fisheries considerations. The current high discarding rate of juveniles of the 0 group needs to be reduced by improving the trawl net selectivity (i.e. adoption of sorting grids) and through the reduction of fishing effort on the continental shelf in autumn.	The discussion was focused on the identification of stock units in the Strait of Sicily. Red mullet is a typical coastal resources, the peculiarity of the Strait of Sicily (two shelves - the European and the African ones-separated by narrow deep bottoms) supports the hypothesis of the existence of different subpopulations in the area and thus the occurrence of a stock unit confined in GSAs 15 and 16. The WG discussed the recent change in the exploitation pattern of the trawl fleet of the 12-24 m LOA which can justify the observed decline in fishing mortality in recent years. SURBA displayed an increase in biomass, but the analysis showed a general decrease in the stock. It was noted that the survey data has a longer time extent that allowed to display a long-term increase, whereas the analysis captured a short-term decrease. It was suggested to consider the reference in time-scale. The WG endorsed the assessment and recommendations.	The SC endorses the advice.
GSA 07	Black-bellied anglerfish, <i>Lophius budegassa</i>	Trawls surveys, catch, Afreq catch & Lfreq catch	2009-2011	LCA/XSA	Following the Y/R methodology, in 2011 F0.1=0.292 and F2-4=0.972, the stock seems to be in an overexploitation status, but this assessment was considered preliminary.	3.3	The assessment is considered preliminary. Hence, no management advice can be given	The authors wanted to keep this assessment as preliminary although 3 years of VIT analysis was considered enough to accept the assessment. However, because of the lack of information on biological parameters and fisheries independent data, this assessment was kept preliminary	The SC does not comment the advice since the assessment is considered preliminary.

GSA	Species	Data type	Years data	Methodology used	Stock status	Fcurr /F0.1	Management advice	WG comments	SC comments
GSA 15-16	Black-bellied anglerfish, <i>Lophius budegassa</i>	Trawl surveys & Lfreq catch	2002-2011	LCA, VIT, Surba	F0.1 = 0.16 was proposed as proxy of FMSY and as the exploitation reference point consistent with high long term yields. Taking into account the results obtained by the VIT analysis (current F1-7 is around 0.30), the stock is considered in overfishing.	1.9	Based on the results of the VIT, the WG recommends the relevant fleets' effort or catches to be reduced until fishing mortality is below or at the proposed FMSY level, in order to avoid future loss in stock productivity and landings. This should be achieved by means of a multi-annual management plan taking into account mixed fisheries considerations	A good consistency was noted between the F estimated by VIT and those by Beverton and Holt mortality estimator. It was also noted that Fmax is not a very reliable reference point as it is hard to estimate. The SURBA run was not found satisfactory, as a large uncertainty was observed. The WG endorsed the assessment and recommendations.	The SC endorses the advice.
GSA 26	Brush tooth lizard fish, <i>Saurida undosquamis</i>	Lfreq catch	2002-2012	LCA, Y/R	The results (the current fishing level of the lizard fish is higher than the biological reference points (F0.1 and Fmax)) indicating that the stock is overexploited.	2.0	Reduce the fishing mortality to F0.1 by limiting fishing activities. Improve the selection pattern of the trawl fishery.	Two different methods were used to estimate natural mortality. It was noted a small difference between the natural mortality for age 1 and the last age. Since this assessment is new, it was suggested to use a broad range of methods to test how M estimates vary. It was also suggested to look into separating the artisanal fisheries. The WG endorsed the assessment and recommendations.	Given that only one year of data is available the SC considers this assessment as preliminary.

GSA	Species	Data type	Years data	Methodology used	Stock status	Fcurr /F0.1	Management advice	WG comments	SC comments
GSA 05	Red shrimp, <i>Aristeus antennatus</i>	Catch, trawl surveys, Afreq catch & Lfreq catch	1992-2011	LCA, XSA, VPA, Y/R	The stock is subjected to overfishing.	3.9	To reduce fishing mortality. A possible management measure would be protecting the recruitment, by reducing temporarily fishing time during the recruitment period at the beginning of autumn.	From the time series the stock seems to be in a low abundance period. As $F > F_{0.1}$, the management recommendations should be reducing the fishing mortality. The WG endorsed the assessment and recommendations.	The SC endorses the advice. The effect of differences between males and females in biological parameters and catchability should be further evaluated and discussed in the report. Also potential issues on stock unit between GSA05 and 06 should be investigated.
GSA 06 (partial : Catalonia only)	Red shrimp, <i>Aristeus antennatus</i>	Catch & Lfreq catch	2008-2010	VIT year by year	The stock appeared to be subject to overfishing in all the years assessed, with current values of F (F_c) above the reference point $F_{0.1}$.	2.4	Basing advice on the evaluation of females, which made up for 81% of the catches, decrease the fishing mortality of 59% in order to reach the reference point $F_{0.1}$ level (this percentage was calculated using the average value of F_c and $F_{0.1}$ for the three years assessed).	The WG questioned the reasons of performing two different assessments for the same area. The differences between both assessments are: (i) CSIC assessment covered 2008- 2010, and length sampling and landings only from Catalonia (GSA 06 North) and (ii) IEO assessment covered 1992-2011, length sampling from the South of the GSA, landings and surveys abundance indices from all the GSA (both North and South). Although IEO also has length sampling information from the North, it only covered recent years (from 2007), so these data were not included in this assessment, although they would be included in the future. It should be important to compare the information from the north and the south: growth parameters, size composition and landing patterns. If they are very different, it would make sense to perform two assessments separately. If not, a single assessment for the entire GSA 06 should be presented. For nursery areas: It is assumed that a great part of the recruitment is in inaccessible areas for the fleet, so it is not necessary to suggest protecting them. F_{max} as reference point should be avoided and the use of $F_{0.1}$ is recommended. As $F_c > F_{0.1}$, the stock is in overfishing situation. Thus, a reduction of F should be proposed. The WG endorsed the assessment and recommendations.	The SC endorses the recommendation to combine all data for this stock in GSA 06 in a single assessment. Also potential issues on stock unit between GSA05 and 06 should be investigated. Reference points should be provided for the stock, and not separated by years, sex and geographical locations.

GSA	Species	Data type	Years data	Methodology used	Stock status	Fcurr /F0.1	Management advice	WG comments	SC comments
GSA 06	Red shrimp, <i>Aristeus antennatus</i>	Catch, trawl surveys & Lfreq catch	1996-2011	LCA, YpR and XSA	The stock is in overfishing status. Exploitation rate shows a high F and the stock abundance is considered intermediate (but no reference point for biomass)	2.1	According to Yield per Recruit a reduction of about a 51% in current fishing mortality is needed to reach the level of F0.1.	The WG questioned the reasons of performing two different assessments for the same area. The differences between both assessments are: (i) CSIC assessment covered 2008- 2010, and length sampling and landings only from Catalonia (GSA 06 North) and (ii) IEO assessment covered 1992-2011, length sampling from the South of the GSA, landings and surveys abundance indices from all the GSA (both North and South). Although IEO also has length sampling information from the North, it only covered recent years (from 2007), so these data were not included in this assessment, although they would be included in the future. It should be important to compare the information from the north and the south: growth parameters, size composition and landing patterns. If they are very different, it would make sense to perform two assessments separately. If not, a single assessment for the entire GSA 06 should be presented. For nursery areas: It is assumed that a great part of the recruitment is in inaccessible areas for the fleet, so it is not necessary to suggest protecting them. The WG endorsed the assessment and recommendations	The SC endorses the advice. The SC recommends to combine all data for this stock in GSA 06 in a single assessment. Also potential issues on stock unit between GSA05 and 06 should be investigated.

GSA	Species	Data type	Years data	Methodology used	Stock status	Fcurr /F0.1	Management advice	WG comments	SC comments
GSA 01, 03, 04	Deep-water pink shrimp, <i>Parapenaeus longirostris</i>	Trawl surveys & Lfreq catch	2003-2011	Based on LCA, YpR and Schaeffer model.	The stock is in overfishing status. From the first model, the actual level of fishing mortality (Fbar= 1.135) is higher than the values calculated for the FMSY proxy (F0.1 = 0.48). The obtained results from the global model indicate that the deepwater pink shrimp stock is overexploited. Current biomass represents only 11% of the target biomass and the fishing mortality exceeds 2.6 times the target mortality.	2.4	<p>In order to allow for the recovery of the stock, a reduction of 50% of the current fishing mortality in the trawl fisheries targeting <i>P. longirostris</i> is recommended.</p> <ul style="list-style-type: none"> - The effort level in the trawl fisheries should be reduced to adjust the current fishing mortality to levels more in agreement with the sustainability values, with F0.1 as reference point (Schaeffer model). - According to the projection coming from the production model, the reduction of the fishing mortality (F) at the mentioned level could enable the recovery of the <i>P. longirostris</i> stock in 4-5 years. - Data from Algeria and Morocco on length-frequency distribution at landing are necessary and should be provided for the next year to improve the joint database used in the analyses carried out by the SG, with partial support of CopeMed II if necessary. 	Production model has been applied to a very short data series, which does not reflect the oscillations characteristic of a longer period. However, as the landings are not very flat, the results could be considered quite reliable. The WG endorsed the assessment and recommendations. Discussion about the production model.	The SC endorses the advice. Further research on differences in exploitation pattern, biological characteristics and migration rates between the different GSA areas is recommended. The SC appreciated the effort to develop a joint international assessment under the Copemed project framework.

GSA	Species	Data type	Years data	Methodology used	Stock status	Fcurr /F0.1	Management advice	WG comments	SC comments
GSA 06	Deep-water pink shrimp, <i>Parapenaeus longirostris</i>	Catch, trawl surveys & Lfreq catch	2001-2011	Based on LCA and YpR.	Overfishing.	3.2	From a precautionary approach and taking into account the estimated reference point FMSY proxy F0.1, a reduction of fishing mortality about 70% to reach F0.1 is recommended. The deep-water pink shrimp fluctuations found in the GSA 06 are in agreement with that observed in other areas of the Mediterranean and it is assumed that environmental conditions can affect the stock in addition to fishing mortality.	No particular comment, assessment and recommendations endorsed	The SC endorses the advice. The SC recommends to improve the terminology used in the assessment and advice.
GSA 12-16	Deep-water pink shrimp, <i>Parapenaeus longirostris</i>	Catch, trawl surveys & Lfreq catch	2007-2011	LCA and preliminary XSA with 5 years of data. Landing of 3 countries involved in the assessment. Comparison of VIT year by year.	The WG proposed F0.1 = 1.22 as proxy of FMSY and as the exploitation reference point consistent with high long term yields. Taking into account the results obtained by the LCA analysis (current F0-3 was around 1.5-1.6 in 2010 and 2011), the stock is considered in overfishing	1.3	Maintaining the current exploitation pattern, characterized by high catches of undersized shrimps from small trawlers, and considering F0.1 as target reference points, a reduction between 20 and 28% was recommended. An improvement of exploitation pattern of Italian small trawlers is needed. To contribute to this objective the protection of nurseries areas from towed gears was recommended	The sensitivity analysis for different shrinkages showed great differences for FBAR. Low shrinkage values constrain a lot the data to the tuning data series. Also, the shrinkage years are too large (5), so this should be improved. A longer time series of data is needed to improve the performance of XSA. The opportunity to use the standardized abundance indices from trawl surveys to make more robust the conclusion of the assessment was outlined. The results of intercalibration experiment, carried out in July 2011 in the Strait of Sicily within the framework of the MedSudMed project, to standardize the catch rates of Tunisian vessel with that used in Italian and Maltese trawl surveys, make possible to assess stock dynamics including spatial aspects over the whole area of distribution of the stock. The WG endorsed the assessment and recommendations.	The SC endorses the advice. Since the F _{0.1} value seems higher than in other GSAs, the SC recommends to investigate the effect of the method applied (i.e combining LCA and Y/R estimates obtained for each sex separately) on the F _{0.1} calculation. The SC appreciated the effort to develop a joint international assessment under the Copemed project framework.

GSA	Species	Data type	Years data	Methodology used	Stock status	Fcurr /F0.1	Management advice	WG comments	SC comments
GSA 18	Deep-water pink shrimp, <i>Parapenaeus longirostris</i>	Trawl surveys, catch & Lfreq catch	2008-2011	VIT and R-routine for medium term	Overfishing	2.1	The BRPs can be gradually achieved by multiannual management plans requiring a more sharp reduction in the short term than in the medium term. However, a more gradual reduction will very likely imply lower social and economic costs, without hampering the sustainability objective. The objectives of a more sustainable harvest strategy could be achieved with a multiannual plan based on a reduction of fishing mortality through fishing activity limitations and possibly fishing capacity decreasing. It is however necessary to consider that most part (71%) of the total F in the GSA is exerted by the Italian fleet, while Montenegrin trawlers account only for about 1.7% of the F exerted on the GSA and Albanian trawlers of about 27.1%. Contribute of each country to the total production in the GSA 18 is: Italy 71%; Albania 26%; Montenegro 3%.	The discussion highlights that when the time series of landings is short and tools as VIT are used the application of the model year by year, as performed in this assessment, is preferable. The effects on catches of the reduction scenario in the medium terms would improve if also the beneficial effect on the spawning stock biomass was incorporated. It is important to receive by the relevant Committee and experts also economic considerations on the forecasts performed under different management scenarios. The WG endorsed the assessment and recommendations.	The SC endorses the advice.
GSA 05	Norway lobster, <i>Nephrops norvegicus</i>	Catch & Trawl surveys	2001-2011	XSA and YpR.	Overfishing	3.2	To reduce fishing mortality. The use of the information from the vessel monitoring system will help to improve the knowledge about the spatial distribution of the fishing effort.	Current value of F has been pointed out as intermediate when compared with last year, in which it showed a maximum. However, last year F is a very unstable estimation; there is some uncertainty, so it was proposed to use last 2-3 years to make the comparison. Results from the retrospective analysis show that F estimations are not very stable. For this reason, the WG proposed to take the results of this assessment with caution. The WG endorsed the assessment and recommendations	The SC endorses the advice.

GSA	Species	Data type	Years data	Methodology used	Stock status	Fcurr /F0.1	Management advice	WG comments	SC comments
GSA 17	Mantis shrimp, <i>Squilla mantis</i>	Catch, trawl surveys & Lfreq catch	2007-2011	VPA, Y/R	Overfishing. Current F (2011) estimates with VIT model and separable VPA respectively of 0.93 and 1.00, higher than reference point (F0.1 = 0.50 as a proxy of FMSY). Moreover the decreasing trends observed for recruitment and SSB in the VPA results and for relative abundance and biomass in MEDITS survey, have to be taken into consideration as a state of stress of the stock.	1.9	A reduction of fishing pressure would be recommended. The relevant fleets' effort or catches (demersal otter trawl fishing fleet) should be reduced until fishing mortality is below or at the proposed reference level (F0.1), in order to avoid future loss in stock productivity and landings. This should be achieved by means of a multi-annual management plan taking into account mixed-fisheries considerations.	No specific comments. Assessment and recommendations endorsed	The SC endorses the advice.

GSA	Species	Data type	Years data	Methodology used	Stock status	Fcurr /F0.1	Management advice	WG comments	SC comments
GSA 29	Spiny/Picked Dogfish, <i>Squalus acanthias</i>	Catch, Lfreq catch & trawl surveys	1989-2011	VIT and YpR from NOAA.	In the last 20 years the stock biomass has shown a decrease of an order of magnitude, but the exact amount is uncertain. We estimated $F_{0.1} = 0.227$ (FMSY proxy) as a limit reference point consistent with high long term yields and low risk of fishery collapse for dogfish in the Black Sea. Taking into account that the current $F = 0.262$ the stock is considered to be overexploited	1.2	<p>Gaps that need to be addressed in the near future include:</p> <ul style="list-style-type: none"> - Low quality of the input data for assessments (in terms age and size composition, fishing effort, CPUE and research surveys); - The lack of quality survey information deteriorates the estimates of the current population parameters (abundance and mortality) in stock assessments and decreases the reliability of the short term predictions and management advice; - Insufficient knowledge of stock units; - Lack of knowledge, evaluations and monitoring programs for assessing the IUU and discards;Lack of reliable frameworks of assessing and standardizing of the commercial fleets fishing effort and CPUE <p>Management advice and recommendations</p> <ul style="list-style-type: none"> - Reducing fishing mortality; - Improve selection pattern; - Close spawning seasons in spring and autumn; - Obligation for pregnant females to be discarded; - Regional management measures 	It is noted that enough data seems to be available to carry out a run using VPA, or at least to run VIT on a yearly basis. It was also noted that this species seems to undergo a sharp decrease that does not translate very clearly on the yield per recruit diagram. The problem of the estimation of age has been raised as well as the difference in methodology with neighbouring countries, which makes difficult the use of data. The WG endorsed the assessment and recommendations	The correct terminology for the conclusion related to higher $F_{current}$ than the F reference point is that the stock is under overexploitation. However, the SC also endorses that the stock is overexploited, based on a clear decreasing trend in abundance. Notwithstanding the endorsement, the SC recommends to revise the assessment method avoiding to use VIT for this stock. Virtual population methods (e.g. VPA, XSA) appear more appropriate since a long time series of catch data is available for this stock. The SC recommends also to improve standardization of aging procedures in the region. In terms of management considerations, the SC advises to adopt the GFCM2012/3 recommendation on the protection of coastal sharks.

GSA	Species	Data type	Years data	Methodology used	Stock status	Fcurr /F0.1	Management advice	WG comments	SC comments
GSA 29	Whiting, <i>Merlangius merlangus euxinus</i>	Catch, Lfreq catch & trawl surveys	2000-2011	YPR-LEN	Overfishing: estimated $F = 0.375$ exceeds $FMSY = 0.352$. Given that this is not a highly migratory species we may conclude that the resident population is more exploited in the southern part (Turkish waters) than in the rest of the Black Sea. If we consider the recommendation of the EWG 12-16 as $FMSY = 0.4$, the two results obtained by us, $F_c(2011) = 0.375$ and $F_c(2000-2011) = 0.479$ oscillate around of the value of $FMSY = 0.4$. In this case, we can consider that the stock is fully exploited. Terminology not consistent but overfishing is identified.	1.1	Reduce fishing mortality; Improve selection pattern; Regional management measures; Organize workshop(s) for inter-calibration of age readings between scientists in the region, and harmonize the frameworks and methods of sampling of commercial fisheries and scientific surveys	It was noticed that the discards for this species were very high. The WG endorsed the assessment and recommendations	The SC acknowledges uncertainties in the stock advice in relation to exploitation rate for this stock, in agreement with the WG comments. The SC advises on the necessity to adopt a unique $FMSY$ value to be used to assess the stock in assessment groups from different Organizations (e.g. STECF EWG versus GFCM SCSA-WG demersals). The SC endorses the recommendation on harmonization of management and data regulations among countries. The SC recommends also to adopt management measures aimed at minimize discards

GSA	Species	Data type	Years data	Methodology used	Stock status	Fcurr /F0.1	Management advice	WG comments	SC comments
GSA29	Turbot, <i>Psetta maxima</i>	Catch & Afreq catch	1970-2010	Extended Survivors Analysis (XSA) under FLR and the technique “shrinkage to the mean” was applied for 1970-2010. Yield per Recruit method was applied for long term predictions	Stock is in overfishing and considered to be overexploited (but not formal biomass reference point). Relative stock size indices from surveys and two XSA estimations indicate that the stock is at a historic low which significantly increases the risk of fisheries collapse. Uncertainties regarding the actual landings impose to interpret the XSA assessment results only in relative terms, i.e. they are considered indicative of trends only. Recruitment has increased since 2003 but this has not yet materialized in a significant increase in SSB.	3.5	Reduction of catches to the lowest possible level; Harmonization of management regulations and technical measures between all Black Sea countries in terms of fisheries closures; Harmonize the methodologies and approaches for data collection between coastal states; Estimation of IUU fisheries.	The assessment presented showed many improvements that lead to an in-depth analysis of the state of the stock with long-term historical data. There is some uncertainty on the earlier part of the data, but effort has been invested in gathering the best available data. It has been suggested to include a stock recruitment curve. The choice of biological parameters could be explained in more details. The WG endorsed the assessment and recommendations although it has to be noted that data are up to 2010. 2011 assessment was, according to author, under revision and could not be presented to the WG on time	The SC endorses the advice, given the strong signals from the assessment. The SC recommends that problems in model performance are further investigated in order to improve the quality of the assessment.

GSA	Species	Data type	Years data	Methodology used	Stock status	Fcurr /F0.1	Management advice	WG comments	SC comments
GSA 17	Red mullet, <i>Mullus barbatus</i>	Trawl surveys, catch, Afreq catch & Lfreq catch	2006-2011	Length cohort analysis (LCA) and Extended Survivor Analysis (XSA).	F0.1 and Fmax were estimated by the means of a Yield per recruit analysis (YPR) and are equal respectively to 0.234 and 0.408. The Fc is equal to 0.864. The exploitation rate (age 0-4) from the XSA analysis for 2011 is lower than 0.5	3.5	LCA analysis evidenced the different fishing patterns of the two fleets, which is also determined by the behavior of the species. The Italian fleet is clearly targeting recruitment; besides, the Fc for the Croatian fleet is between F0.1 and Fmax while the Fc for the Italian fleet is above both reference points, showing a possible situation of growth overfishing. Nevertheless, an exploitation rate (F/Z) of 0.4-0.5 is on the safer side for a demersal stock. The fishing mortality is high on part of the stock and the biomass trends are rather stable. Taking into account the different exploitation pattern, it could be wise to reduce the fishing mortality on the recruitment and this could be obtained by a prolongation of the closed season for trawling along the Western Adriatic coast where in autumn age 0 recruits born in summer are concentrated.	High fluctuations with exceptional year with very strong recruitment are an established feature of the Mullus barbatus stock in the Adriatic Sea. There is a discrepancy of trends between the XSA results and the MEDITS data on the total biomass estimates and on the SSB estimates: the spawning stock biomass and the stock biomass are decreasing in the last year in XSA, and the recruitment sees an increase in the last couple of years, whilst the signals coming from the MEDITS survey are all positive, with a stable biomass and a really high recruitment estimated for the 2012. Nevertheless, due to the discrepancy between the XSA results and the signals from the MEDITS survey, and due to the uncertainty in the model settings the WG is not able to give advice and this should be considered as a preliminary assessment	Advice is not commented as the stock assessment is considered preliminary. The SC recommends to investigate suitable techniques to improve the knowledge on stock unit. The SC appreciated the effort to develop a joint international assessment under the Adriamed project.

GSA	Species	Data type	Years data	Methodology used	Stock status	Fcurr /F0.1	Management advice	WG comments	SC comments
GSA: 01, 02, 03 and 04	European hake, <i>Merluccius merluccius</i>	Catch, length frequency (catch data, survey data)		For lengthy frequencies (GSA 01+03, period 2007-2010), the methodology applied was the software VIT.	The actual level of fishing mortality ($F_c = 1.148$) is higher than $F_{0.1} = 0.48$ which indicates that the stock is in overfishing status.		<ul style="list-style-type: none"> • To reduce by 50% the fishing mortality in the current trawl fishery.. • To perform joint genetic analysis and research on <i>M. merluccius</i> in Algeria, Morocco and Spain (GSAs 01, 02, 03 and 04) to identify if there is a single common <i>M. merluccius</i> shared stock. • To complete the information on <i>M. merluccius</i> stock in Algerian GSA 04 to join Algerian data to the GSAs 01 and 03 to cover all the study area. • To improve the national database it was stressed that monthly biological data from Algeria and Morocco on length-frequency distribution at landing are necessary for the assessment and should be provided for the next meeting of the SG. If necessary, partial support of CopeMed II could be provide to complete some series. • The organization of a meeting with the Sicily Strait area (CopeMed and MedSudMed SG) to analyze the possibility in comparing the biological and fisheries data and performing a joint evaluation on the <i>M. merluccius</i> stock if possible. • The SG agreed that biological and fisheries data in each country used for the assessment (biological parameters, demographic structure, etc.) should be uploaded to the CopeMed web (Regional Networks and databases). • The next assessment should be based on VPA (not in equilibrium) tuned by effort data from commercial fleets and independent indices from surveys. • To continue working in improving the data to carry out a <i>M. merluccius</i> joint stock assessment before the 2013 meeting of the WG of Demersal Species of the SCSA. 	It has been noticed that growth parameter from Morocco was very low. The WG acknowledged the effort of this joint assessment and endorsed all the research recommendations.	Advice is not commented as the stock assessment is considered preliminary. The SC recommends to investigate suitable techniques to improve the knowledge on stock unit. The SC appreciated the effort to develop a joint international assessment under the Copemed project.

Table 2 - ASSESSMENTS FOR SMALL PELAGIC SPECIES, as validated by the WGSA and SCSA

GSA	Species	Methodology used	Stock status	Management advice	WG comments	SC comments
Combined GSA 01, GSA 02, GSA 03 and partially GSA 04 - Alboran Sea	Anchovy, <i>Engraulis encrasicolus</i>			This stock is not considered to be formally assessed	This assessment exercise was carried out by a COPEMED II Study Group. The WG endorsed the SG recommendations to improve data collection and to test bioeconomic models in this fishery.	SC does not comment the advice as the stock is considered not to be formally assessed. The SC appreciated the effort to develop a joint international assessment under the COPEMED II project framework.
Combined GSA 01, GSA02 and GSA 03 - Alboran Sea	Sardine, <i>Sardina pilchardus</i>	VIT	High exploitation rate: average operating E is estimated at 0.43 (slightly higher than the threshold value $F/Z = 0.4$ as suggested biological reference point for small pelagic (Patterson, 1992)). Stock is in overfishing	Preliminary assessment: no advice can be provided.	The WG informally propose to reduce the level of fishing mortality by 30%. However, the assessment is considered preliminary so no formal advice is provided. The WG endorsed the COPEMED SG recommendations on continue standardization of the methods used in the different countries.	SC does not comment the advice as assessment is considered preliminary. Some clarification on the methodology and the reference points used is required for future assessment. The SC appreciated the effort to develop a joint international assessment under the COPEMED II project framework
GSA 04 – (only Alboran Sea area)	Sardine, <i>Sardina pilchardus</i>	Shaefer model and a preliminary length cohort analysis with VIT.	Fully exploited.	Preliminary assessment: no advice can be provided.	The WG recommends continuing with this exercise and combining the data of the Alborán Sea into a joint assessment.	SC does not comment the advice as assessment is considered preliminary. An updated assessment using only VIT was presented to the SC. The SC regards this assessment as preliminary and suggests continuing efforts to improve data and methods used.

GSA	Species	Methodology used	Stock status	Management advice	WG comments	SC comments
GSA 07 - Gulf of Lion	Sardine, <i>Sardina pilchardus</i>	Direct method by acoustics and CPE	Very Low exploitation rate. Fully exploited with no room for further expansion.	Fishing mortality is already low and shouldn't increase until the stock recovers	The WG acknowledge that recruitments since 2008 are the highest of the 2001-2012 available time series, while the adult biomasses between 2008-2011 are the lowest ones in the same time series, indicating that recruitment is not incorporated into adult population. The WG recognised that 2012 show a larger biomass than that observed since 2008, and. However, the WG recommends that this trend has to be confirmed in next years before it can be considered into the advice on stock status.	The SC understands the difficulties in applying the stock status advice terminology for this stock (very low fishing pressure and abundance possible related to ecological reasons). However the SC recommends to use the word Collapsed to describe this stock. The advice should therefore be to reduce or close the fishery until recovery. Clarification on the biomass used to obtain Harvest rates is required for future assessments. A recommendation to test the feasibility to use analytical methods to facilitate the advice is made.
GSA 07 - Gulf of Lion	Anchovy, <i>Engraulis encrasicolus</i>	Direct method by acoustics and CPUE	Low exploitation rate and fully exploited, low commercial-sized anchovy abundance	Fishing mortality should not be allowed to increase	Although biomass is more or less stable in this stock since 2005, with a slight increasing trend, anchovy sizes remains low in comparison with years previous to 2005.	The SC endorses the advice on stock status. The SC understands the difficulties in applying the stock status advice terminology for this stock (very low fishing pressure and abundance possible related to ecological reasons). A recommendation to test the feasibility to use analytical methods to facilitate the advice is made.
GSA 16 – Southern Sicily	Sardine, <i>Sardina pilchardus</i>	Harvest Rate and Surplus production model (BioDyn)	Low to moderate exploitation rate (harvest rate = 11.9%). Sustainable exploited with a low abundance, slightly increasing in the last years	Fishing mortality should not be allowed to increase	The WG informs that there are market constraints that control the main target of the pelagic species fishery, but also due to the multispecies characteristics of the fishery, a common management may be needed.	The SC endorses the advice. The SC recommends to use the analytically derived reference points (MSY related reference points) to provide advice on the status of this stock until further research on empirical precautionary reference points is conducted.
GSA 16 – Southern Sicily	Anchovy, <i>Engraulis encrasicolus</i>	Harvest Rate and Surplus production model (BioDyn)	High exploitation rate. Overexploited status.	Fishing mortality should be reduced by means of a multi-annual management plan until there is evidence for stock recovery	The WG informs that there are market constraints that control the main target of the pelagic species fishery, but also due to the multispecies characteristics of the fishery, a common management may be needed.	The SC endorses the advice. The SC recommends to use the analytically derived reference points (MSY related reference points) to provide advice on the status of this stock until further research on empirical precautionary reference points is conducted.

GSA	Species	Methodology used	Stock status	Management advice	WG comments	SC comments
GSA 17 – Northern Adriatic Sea	Sardine, <i>Sardina pilchardus</i>	VPA, ICA and acoustic survey	Exploitation rate is higher than the Patterson's reference point (E=0.52). Fully exploited with no room for further expansion	Fishing mortality should not be allowed to increase	WG recognised that spatial distribution of shared stock of sardine is not limited to GSA17 area only, but it is extended in GSA18 area also. Therefore, WG suggest that future assessments try to take into account combined data from these two GSAs.	The SC endorses the advice. The SC highlights that there has been a strong increase in F against previous recommendations from the SAC. The SC recommends that biomass reference points should be revised. As this is a multispecies fishery, advice should be done together with anchovy in GSA 17
GSA 17 – Northern Adriatic Sea	Anchovy, <i>Engraulis encrasicolus</i>	VPA, ICA and acoustic survey	Moderate exploitation rate (E = 0.4). Sustainably exploited.	Fishing mortality should not be allowed to increase	WG recognised that spatial distribution of shared stock of anchovy is not limited to GSA17 area only, but it is extended in GSA18 area also. Therefore, WG suggest that future assessments try to take into account combined data from these two GSAs.	The SC endorses the advice. The SC highlights that there has been a strong increase in F against previous recommendations from the SAC. The SC recommends that biomass reference points should be revised. As this is a multispecies fishery, advice should be done together with sardine in GSA 17
GSA 18 – Southern Adriatic Sea	Anchovy, <i>Engraulis encrasicolus</i>	DEPM	Since this is just a preliminary estimation it is not possible to diagnose the status of the anchovy stock in GSA 18 based on the DEPM investigation.	This stock is not considered to be formally assessed	Low fishing pressure in eastern GSA 18, specially in Montenegro. Higher fishing pressure in the western GSA18, although part of the fleet also operates in GSA17. The WG recommends to continue with both Acoustic and DEPM direct estimation methods, while improving the quality of the landings data in order to estimate an exploitation rate	SC does not comment the advice as the stock is considered not to be formally assessed.
GSA 29 – Black Sea	Sprat, <i>Sprattus sprattus</i>	ICA	Moderate exploitation rate. Sustainably exploited	Status quo exploitation for 2012 which implies catches of 100000 tons not to be exceeded	This assessment has previously being presented to an STECF EG.	The SC endorses the advice.

GSA	Species	Methodology used	Stock status	Management advice	WG comments	SC comments
GSA 29 – Black Sea	Horse mackerel, <i>Trachurus mediterraneus ponticus</i>	Separable VPA	Uncertain exploitation rate. High fishing mortality, but exploitation rate is uncertain	Preliminary assessment: no advice can be provided.	The WG recommends to continue efforts to develop joint surveys, regional coordination in the sampling process and development of a fishery information system	SC does not comment the advice as assessment is considered preliminary. The SC endorses the WG recommendations to improve data collection for this stock.