



**GENERAL FISHERIES COMMISSION FOR  
THE MEDITERRANEAN**

**COMMISSION GÉNÉRALE DES PÊCHES  
POUR LA MÉDITERRANÉE**



**SCIENTIFIC ADVISORY COMMITTEE (SAC)**

**Fourteenth Session**

**Sofia, Bulgaria, 20-24 February 2012**

**EXECUTIVE REPORT FOR THE SAC INTERSESSIONAL  
ACTIVITIES**

## INTRODUCTION

1. This report aims to review the intersessional activities carried out by the Scientific Advisory Committee (SAC) of the General Fisheries Commission for the Mediterranean (GFCM) in 2011-2012. It reproduces the main conclusions and recommendations of the four Sub-Committees of SAC which are reflected in their respective reports referenced as GFCM:SAC14/2012/Inf.5, 6, 7 and 8 and introduces the preliminary workplan relating to the intersessional activities of SAC envisaged for 2012-2013. This is hence a consolidated report which is meant to recapitulate the outcome relating to the Sub-Committees and other relevant meetings held during the intersessional period.

## I. INTERSESSIONAL ACTIVITIES OF SAC IN 2011-2012

2. At its Thirty-Fifth Session (9-14 May 2011, Rome, Italy) the Commission endorsed the “Programme of work for the intersessional period 2011-2012” proposed by SAC<sup>1</sup>. Consistent with the decisions by the Commission, SAC had seven months at its disposal for the implementation of this programme of work and consequently held all the meetings approved at the Thirty-Fifth Session between October 2011 and February 2012 (see list below).

- Second Transversal Workshop on **Red Coral**; Ajaccio, France, 5-7 October 2011
- Expert Meeting on **Fisheries legislation** in the Mediterranean and Black Sea: Beirut, Lebanon, 26-28 October 2011.
- SCSA Working Group on stock assessment of **Demersal** species; Chania, Greece, 24-29 October 2011
- SCSA Working Group on Stock Assessment of **Small Pelagic** Species, Greece, 24-29 October 2011.

<sup>1</sup> Report of the Thirty-Fifth Session of the Commission, paragraphs 69-70.

- Workshop on the establishment of a Vessel Monitoring System (VMS) in the Mediterranean and the Black Sea; Zagreb, Croatia, 28-30 November 2011.
- Second meeting of the Working group on by-catch (In collaboration with ACCOBAMS); Antalya, Turkey, 7-9 December 2011.
- Working Group on Stock Assessment of selected species of **Elasmobranchs** in the Mediterranean and Black Sea; Brussels, Belgium, 12-16 December 2011.
- First *ad hoc* Working Group on the **Black Sea**; Constanta, Romania, 16-18 January 2012).
- 13<sup>th</sup> Session of the **SCSA**; Rome, Italy, 23-26 January 2012.
- 12<sup>th</sup> Session of the **SCSS**; Rome, Italy, 23-26 January 2012.
- 12<sup>th</sup> Session of the **SCSI**; Rome, Italy, 23-26 January 2012.
- 12<sup>th</sup> Session of the **SCMEE**; Rome, Italy, 23-26 January 2012.
- SCMEE workshop on **Artificial Reefs** (back-to-back with the SCMEE meeting); Rome, Italy, 24 January 2012.
- Transversal Workshop on **Spatial Based Fishery Management**, Rome, Italy 6-8 February 2012.

3. Moreover, and in the framework of the Task Force, an Expert Meeting was held at the GFCM HQ, Rome, on 15 and 16 December 2011 to discuss SAC related issues

### **Sub-Committees, Working Groups and Workshops**

4. The reports of the Working Groups and Workshops held throughout the intersessional period are reproduced in documents GFCM:SAC14/2011/Inf.10 to Inf.18. The outcomes of these meetings were then reviewed by the Sub-Committee concerned and, as appropriate, by the Transversal Session of the Sub-Committees.

5. The reports of the meetings of the Sub-Committees, including their Transversal Session, are reproduced in documents GFCM:SAC14/2012/Inf. 5, 6, 7 and 8; a brief summary of the most relevant outcomes is provided below:

- **Sub-Committee on Marine Environment and Ecosystems (SCMEE)**. The meeting reviewed the activities and outcomes of its related Workshops and Working Groups, namely the 2<sup>nd</sup> Transversal Workshop on Red Coral, where a proposal for data collection forms to be filled by Contracting Parties and Cooperating non-Contracting Parties (CPCs) to comply with recommendation GFCM 35/2011/2 was approved. The importance to use ROVs for prospection, conservation, control, monitoring activities and for human security was also recognized. The 2<sup>nd</sup> Transversal Working Group on by-catch (organized in collaboration with ACCOBAMS) stressed the need for improving data collection schemes through observers on board and recalled that in order to facilitate data submission a tool was developed by GFCM Secretariat within the current Task 1 protocol. However, the degree of compliance by CPCs is still marginal. The main outcomes of those workshops were then discussed by SCMEE which endorsed the recommendations that they proposed, which can be consulted in documents GFCM:SAC14/2012/Inf.10 and 15 respectively.  
During the meeting of the Sub-Committee, a special session was devoted to “Artificial Reefs of the Mediterranean and Black Sea”. The SCMEE recognized that there are positive outcomes in the region in the use of artificial reefs (ARs) as a tool to avoid illegal trawling, to reduce conflicts between fisheries, and to increase productivity. ARs may be appropriate also for the management and diversification of small-scale

fisheries activities. One of major constraints for the non-effectiveness of ARs was identified in the lack of adequate management and surveillance/control measures. In this regard, the Sub-Committee suggested drafting updated guidelines for AR monitoring in the Mediterranean and Black Sea, as well as organising and international conference on the subject.

The Transversal Workshop on Spatial Based Approach to Fishery Management was held in Rome (Italy) from 6 to 8 February 2012. The meeting recognized the positive effects of marine protected areas *sensu lato* on demersal fish populations. As reported in the literature, protected areas may enhance the recovery of exploited populations *in situ* and may contribute to replenish a wider area through eggs and larvae dispersion. It was underlined that the outcomes of marine protected areas are strictly linked to the respect of regulations. Socio-economical aspects need to be taken into consideration in the design phase and during the management process, and the involvement of stakeholders is considered an important step in the achievement of expected results and of a good level of compliance

- **Sub-committee on Statistics and Information (SCSI)**. The twelfth Session of the SCSI reviewed the outcomes of the workshop on the “Implementation of Vessel Monitoring System (VMS) in the Mediterranean and the Black Sea”, recognizing the role of GFCM as the forum to launch several targeted actions, including through the support of FAO regional projects. Furthermore, SCSI focused on the current situation of data submission, the status of development and management of GFCM databases and information systems, data confidentiality and data access policy, the follow-up of the GSA compatible STATLANT 37A reporting scheme, the review of the updates of data transmission exchange protocols (XML-based and CSV-based) and the related documentation for the communication of Task 1 data; the GFCM Secretariat made further progress in the development and management of GFCM databases and information systems together with dynamic representations of the data. Furthermore the meeting stressed the lack of compliance as an issue which undermines the use of regional information as basis for sound fisheries advice. In addition, the GFCM Secretariat recalled the need of finalising the Regional Plan of Action for the Management of Fishing Capacity (RPOA-Capacity) for the GFCM Area, drafted in September 2010. At the transversal session of SCSI/SCESS, the processing and data analysis of Task 1.3 were discussed. In order to ensure a focused discussion on Task 1.3 data, the Coordinator arranged discussions in a manner that allowed every participant to express their views. An analysis of the strength, weaknesses, threats and opportunities of Task 1 data collection framework was undertaken accordingly. At the transversal session SCSI/SCSA on the other hand, it was proposed to have a Task 2 data collection schema concerning the biological structure of yearly catch instead of Task 1.5. The two SCs also agreed upon the idea to give the mandate to a group of experts/a consultant on the basis of the elements emerged during the transversal session with a view to elaborate a design of the Task 2 module.

- **Sub-Committee on Economic and Social Sciences (SCESS)**. The meeting reviewed the outcomes of the “Expert meeting on fisheries legislation in the Mediterranean and the Black Sea” held under the umbrella of the LaMed Project (Component 1). Focus was directed on the recommendations which were formulated on this occasion and to the way forward in connection with the finalization of said project. SCESS recalled the existing bio-economic models used for fisheries management strategy evaluation and stressed the importance of supporting bio-economic modeling capacity-building. The SCESS reiterated the need to develop a common and harmonized scientific monitoring protocol for these fisheries, to identify a preliminary set of data parameters required for the estimation of indicators for their different segments and modalities, and to elaborate a Code of Practice/Technical Guidelines for the sector. SCESS reviewed the progress of pilot studies related to the economic impacts of the implementation of the 40 mm square mesh in trawl fishery as carried out under FAO-COPEMED II Project in close collaboration with the fisheries administrations of Morocco and Algeria and their respective fisheries research institutions (INRH and CNRDPA). The outcomes of the PESCAMED Project, with regard to the national legislation and practice concerning labour standards in the fishing sector, the existing national associations of boat owners, cooperative organizations and trade unions were discussed. The processing and data analysis of Task 1.3 was examined in occasion of the transversal session of SCS/SCCESS and an analysis of the strengths, weaknesses, threats and opportunities of Task 1 data collection framework was undertaken accordingly. SCESS acknowledged the importance of ecolabelling and agreed on the need to further evaluate its applicability to small-scale fisheries in the Mediterranean.
- **Sub-committee on stock assessment (SCSA)**. The meeting reviewed the activities and outcomes of the three Working Groups on stock assessment (demersal, small pelagic and elasmobranchs). During its 13<sup>th</sup> Session, SCSA examined and validated 30 technical papers on demersal species and 11 technical papers on small pelagics. Overall, 14 GSAs for the demersal species were covered and 11 GSAs for small pelagic species. Eight assessments were undertaken on elasmobranchs species, covering six GSA. The species studied were: *Merluccius merluccius*, *Mullus barbatus*, *Mullus surmuletus*, *Nephrops norvegicus*, *Parapenaeus longirostris*, *Boops boops*, *Solea solea*, *Sphyrna sphyraena*, *Galeus melastomus*, *Spicara smaris*, *Aristeus antennatus*, *Aristaomorpha foliacea*, *Engraulis encrasicolus*, *Sardina pilchardus*, *Raja asterias*, *Raja clavata*, *Scyliorhinus canicula*, *Galeus melastomus*, *Glaucostegus cemiculus* and *Squalus acanthias*. SCSA contributed considerably to other three Transversal Workshops held during October-December 2011 dealing respectively with “Red coral”, “by-catch” and “Spatial Based Fisheries Management”. The “Training workshop on Age reading on elasmobranchs” was postponed to the month of June 2012. The main outcomes of the workshops held were discussed during the sessions of the meeting and agreements were reached that can be consulted in the documents GFCM:SAC14/2012/Infs.10, 12, 13, 15 and 16. Furthermore, SCSA reviewed and approved a series of modifications that should be done in the current Stock Assessment Forms (SAFs) which are focused on better organizing the data on these files in order to allow revision of analysis whenever deemed necessary. In the transversal session of SCS/SCSA the transformation of current task 1.5 in a new Task 2 for the description of the biological structure of yearly catches was approved. The two SCs also agreed upon the idea of giving the mandate to a group of experts/a consultant on the basis of the elements emerged during the transversal session with a

view to elaborate a design of the Task 2 module. The follow up on the work done on European Eel and on the Elasmobranchs Medium-Term Working Program was also addressed and relevant information was consequently updated.

### **Working Group on Black Sea (WGBS)**

6. The report of the “First *ad hoc* Working Group on the Black Sea (Constanta, Romania, 16-18 January 2012)” is reproduced in document GFCM:SAC14/2011/Inf.17.

7. This first meeting on Black Sea pointed out the lack of cooperative and regulatory frameworks involving all six riparian countries. Availability of updated and reliable fisheries information and data was identified as the main requirements in terms of decision-making based on scientific advice. With this aim, the need to develop common activities to strengthen data collection, standardize methodologies for data analysis and reporting were identified as priorities. The importance of avoiding duplication of activities and enhancing further regional cooperation for an improved governance of fisheries at a regional level was stressed. The need to contrast the IUU fishing was clearly raised and the reliability of statistics and fisheries data to support sustainable fisheries management was discussed.

8. In this regard, a special importance was placed on the development of effective and harmonized controlling mechanisms to increase compliance with, *inter alia*, the enforced regulations on a national and regional base. The rapid development and progress made during recent years both in terms of technologies applied and of new species rearing and the need to develop similar trends in other part of the region, taking into account the environmental and economic peculiarity of each area was acknowledged. The necessity to identify actions and procedures to allow an environmental sustainable development of aquaculture practices was also agreed. Finally, the nomination of National focal points was identified as an important requirement to make the future collaboration between the Coordinators and the GFCM Secretariat more effective.

## **II. CONCLUSIONS AND RECOMMENDATIONS**

9. The following conclusions and recommendations are consistent with the work of the Task Force to improve and modernize GFCM institutional and legal framework, whose relevance for SAC was stressed during the meetings.

### **SCMEE RECOMMENDATIONS**

- SCMEE endorsed the Conclusions and Recommendations as provided in the Report of the 2<sup>nd</sup> Transversal Workshop on Red Coral with the only exception of the Recommendation h) To National Administrations (p.12). SCMEE expressed agreement on the first part of the recommendation regarding the minimum size of 7 mm, but it also took note of the concern expressed by some participants about the tolerance of 5% that should be further discussed during next SAC and GFCM Commission meetings.
- SCMEE also adopted the four Data Collection Forms to be compiled by CPCs as presented in Appendix C of the Report of the 2<sup>nd</sup> Transversal Workshop on Red Coral (5-7 October 2011, Ajaccio, Corsica).
- SCMEE strongly recommended SAC to propose the GFCM Commission to provide a mandate to the Secretariat for consultancies in order to draft the Regional Management Plan for red coral under the Terms of References provided in the SCMEE Workplan

2012.

- SCMEE entirely endorsed the Conclusions and Recommendations as provided in the Report of the 2<sup>nd</sup> Transversal Working Group on By-catch (7-9 December 2011, Antalya Turkey) quoted GFCM:SAC14/2012/Inf.15
- SCMEE strongly recommends SAC to urge CPCs to submit data on by-catch through Task 1 so to start evaluating the extent and the impact of by-catch on species of conservation concern.
- To encourage the exchange of information and cooperation among scientists through the development of a common database for Artificial Reefs (ARs) in the Mediterranean Sea and Black Sea.
- To draft updated guidelines for ARs monitoring in the Mediterranean and Black Sea.
- To promote application of new methodologies (otolith readings, studies on food chains, microchemistry, stable isotope analysis, etc.) to undertake studies aimed at collecting proof of positive/adverse effects on fisheries activities (e.g. CPUE, conflicts, spatial effect on effort, import/export of energy to/from ARs, etc.).
- To address the problem of control and management of the ARs. The lack of surveillance can affect strongly the achievement of the objectives of the ARs.
- To develop a manual on the application of ARs in fisheries management to be used by stakeholders (e.g. policy makers). This could be implemented inside the framework of FAO regional projects (e.g. EASTMED).
- To start collecting data on fisheries and biodiversity on Mediterranean seamounts, towards further conservation and correct management of sensitive habitats found in these marine features.
- To follow-up with the activities of the TECHNOMED network in the field of the fishing technology and provide the appropriate means to consolidate this network.
- To develop selectivity studies with the aim of reducing by-catches of vulnerable species.
- To organize regional training courses in fishing technology with the collaboration of CIHEAM and FAO projects.
- To report separately the total amount of landings/discards of alien species from native ones in order to create a data series that will show the trends on the presence/abundance of alien species and will allow to assess their impact on fisheries in the Mediterranean and Black Sea.
- To include in the FRAs Proposal Forms specific quantitative information on the *status quo* of the fishery/ies (i.e. Operational Units, by-catch, discards) operating in the proposed FRA. If there are no fisheries activities in the area, it has to be investigated by an experimental approach the presence and the boundaries of sensitive habitats of commercial species in particular. In this view, SCMEE recommends national fishery/ies agencies to provide potential FRA proponents with fishery/ies data (i.e. VMS) in conformity with the FRA Form hereby proposed.
- On amendments for the GFCM e-glossary
  - To discuss the definition of *Associated species* to be included in the GFCM Glossary in a further step jointly with the other GFCM Sub-Committees: SCSI, SCSA and SCESS.
  - To amend the definitions of *By-catch* and *Discards* to find a coherent way to link the concepts of *By-catch*, *Discards* and *Associated species*. This should be discussed jointly by the four GFCM Sub-Committees: SCMEE, SCSI, SCSA and SCESS.

**WS on Spatial Based Approach to Fishery Management (6-8 February 2012)**

- During the design stage of a fishery restricted area, socio-economic studies as well as options for co-management and/or territorial user rights should be considered in order to assess the consequences and to enhance social acceptability of implementing fishery restrictions. The inputs of the stakeholders should be taken into account in the process.
- To ensure the effectiveness of any fishery restricted areas: i) the scientific monitoring (based on a robust sampling design) ii) the enforcement and surveillance on a routine basis, iii) the dissemination of results of these activities to all stakeholders, as well as adequate funding should be provided.
- When limited fishing activities are allowed within a restricted area, fishing effort should be monitored on a regular basis;
- To develop a Geographic Information System (GIS) as an essential tool for spatial based approach to fisheries management. With this aim a group of experts with specific ToRs should be identified by the GFCM Secretariat;
- VMS data are a powerful tool and their use is recommended as a mean for investigating the spatial distribution of trawl fishing effort;
- To protect at least 10% of demersal fishing grounds from bottom-towed fishing gear in order to contribute to the Target 11 of the Strategic Plan for Biodiversity (2011-2020) of the Convention on Biological Diversity<sup>2</sup> which urges the protection of 10% of coastal and marine areas by 2020;
- Parties involved in the rejection of FRA proposals, which importance has been recognized by the SAC, shall report on the eventual progress of the initiatives through the Annual National Reports;

**SCSI RECOMMENDATIONS**

- Reiteration on the need to strengthen the GFCM Secretariat to manage the data received and provide assistance to Member countries.
- Reminder that Member countries may apply a lower or no threshold for their national implementation of the Recommendation GFCM/35/2011/1 on logbooks.
- Suggestion to explore all alternative monitoring systems in complement of the VMS to comply with recommendation GFCM/33/2009/7. Proposal that a centralized VMS system could be established so that the GFCM Secretariat could make up for constraints existing at national level.
- Agreement to continue using the STATLANT 37A reporting form until the completion of Task 1 which is not fully in place yet. Upon completion of Task 1, it is foreseen that an automatic export of data from Task 1 to the FAO database of Capture Production should be feasible.
- Suggestion that GFCM Secretariat should display vessel-related information using GIS means and begin initiating basic capacity indicators to monitor historic trends.
- Consider the time frame in which the data must be collected and submitted in order to serve the purposes identified supra.
- Proposal of a roadmap to finalize Task 1 and 2, including a round of consultation with national experts and test cases in different countries after the consultation process, followed by a workshop whose Terms of Reference are presented in the Section Workplan of this document.
- Agreement on charging a consultant to finalize the RPOA on fishing capacity.

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<sup>2</sup> Convention on Biological Diversity, target 11: <http://www.cbd.int/sp/targets>

### **SCESS RECOMMENDATIONS**

- SCESS recommended the GFCM Secretariat circulate a summary of the information thus far collected from the GFCM Members with regards to the fisheries legislation in order to ensure the proper finalization of the LaMed Project. SCESS also envisaged to set up a legal Working Group to be attended by legal focal points from each GFCM Members in order to enable further review and analysis of legislative issues related to the fisheries management.
- SCESS acknowledged that a capacity building programme would be beneficial to expand the use of bio-economic models in the GFCM Area and recommended the future development of such a programme in the region with the assistance of FAO Regional Projects. The possible use of bio-economic modeling in specific fisheries should be evaluated on a case-by-case basis.
- SCESS recalled the requirements for data from countries and technical guidelines from the GFCM Secretariat regarding the management of the recreational fisheries<sup>3</sup>.
- SCESS recommended that the economic impacts of eco-labelling in marine capture fishery in the GFCM Area should be taken into account in SCESS future work plans.
- SCESS recommended focus on the socio-economic analysis of small-scale and recreational fisheries in the GFCM Area.
- SCESS proposed that issues referred to in the PESCAMED Project should be considered by SAC for further development.
- SCESS encouraged FAO Regional Projects to continue supporting SCESS, including through providing information on the relevant outcomes of their activities.
- SCESS recommended an overall improvement of its functioning and its annual work plan. In particular, two or three priority topics should be only addressed per year, each of them being supervised by an expert from SCESS. The meeting documentation should also be made available without any delay in order to meet the expected outputs.

### **SCSA RECOMMENDATIONS**

The recommendations on management advice based on the assessment performed are presented as a tables in Appendix B of this document.

#### **On methods**

- In the case of assessment based on pseudo-cohorts analysis, SCSA recommended to specify how the pseudo cohort is analysed (keeping the years separate or averaging years) and justify the compliance of steady state assumption.
- When long-time series of information on catch structure and commercial/scientific catch rates is available, SCSA recommends using XSA or VPA approaches.
- SCSA discussed the proposal to use of 40% BMSY as a limit reference point for small pelagic stocks, suggesting testing this biomass RP during the next WG of Small Pelagic.
- In absence of any formal assessment, SCSA agreed on including analyses of SSB and recruitment time series (SSB vs recruitment plots or quartile approach) as suitable tools to identify a biomass-based technical limit reference point that would allow the assessment of the renewability of stocks.
- Incorporating environmental parameters in assessment models of stock clearly affected by environmental change in cases when this type of data is available and models allow to incorporate them directly.

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<sup>3</sup> See GFCM:SAC10/2007/Inf.7; GFCM:SAC11/2008/Inf.7; GFCM: SAC13/2011/Inf18; GFCM:SAC13/2011/Inf.7.



**On data to be provided**

- For better management of effort, data should be provided at the most aggregated level (i.e. métier, operational unit) in order to have a better insight of the effort distribution, when métier and/or operational unit are stable enough through time. In this case again, the use of VMS and logbook data is put forward as a potential solution for a better understanding of effort distribution.
- Gear characteristics such as the mesh size for trawlers and other nets, hook types, in order to guess the size range affected by the gears.
- In case of advice on fishing closure of nursery and spawning areas, SCSA recommended the inclusion of maps showing the distribution of juveniles or spawners.
- SCSA suggested the substitution of the existing SAF with a more descriptive tool, similar to the template adopted by the Sub Group on the MEDiterranean (SGMED) of the STECF, based on a Word document with the data inserted as tables and graphs.
- Creation of Task 2 module within the Data Collection Scheme of GFCM to gather information on biological structure of yearly catches is to be replaced by current task 1.5. The design and contents would be the work for a designated group of experts. The outcomes of these consultations should be the inputs for the proposed workshop within the roadmap to finalise task 1 and task 2. (See workplan of SCSA for 2012).

**On GSA boundaries**

- The distribution of a stock can partially or totally cover a GSA, or in some cases the stock can be distributed over the boundaries of several GSAs. In order to improve the understanding of the stock distribution, the sub-committee recommended that the assessments should indicate, when possible, their biological boundaries. SCSA recommended the use of the statistical grid defined for the use of logbooks in the Recommendation GFCM 35/2011/1. Additional tools could be provided by the information coming eventually from VMS.

**On the provision of management advice**

- Give advice in terms of fishing mortality or catch proposing a set of measures by which the variation of fishing mortality can be obtained, allowing managers to identify how and in what time the management objective could be achieved. Simulations with different management scenarios can be further added upon request.
- SCSA discussed and agreed that in some cases the relationship between fishing mortalities and fishing effort may not be linear and would need to be better investigated on a stock and fishery basis.

**WGBS RECOMMENDATIONS**

- Organize a series of activities aimed to the implementation of a standardized data collection in the region.
- Strengthen the capacity to Black Sea fisheries scientists to carry out jointly assessments.
- Identify actions to contrast IUU fishing.
- Improve the knowledge on the scientific components.

### III. PRELIMINARY WORKPLAN RELATING TO THE INTERSESSIONAL ACTIVITIES OF SAC ENVISAGED FOR 2012

10. The activities listed below have been proposed by the Sub-Committees and Working Groups (see documents GFCM:SAC14/2011/Inf.5, Inf.6, Inf.7, Inf.8 and Inf.17) within their respective remit.

#### SCMEE WORKPLAN

SCMEE made an overview of the research and development activities to be carried out during the inter-sessions period of 2012 as reporter hereunder:

- On artificial reefs:
  - To develop and/or implement the already existing databases (e.g. [www.habitatartificiali.it](http://www.habitatartificiali.it)) under the GFCM umbrella.
- On gear selectivity:
  - To complete the different database of TECHNOMED network and to re-activate the TECHNOMED website by providing the appropriate means
- On the implementation of the medium-term **elasmobranchs** programme:
  - To produce factsheets to facilitate the identification of the most commonly landed species
  - To publish the updated version of the Draft GFCM publication on: Status of Elasmobranchs in the Mediterranean and the Black Sea
  - Training Workshop on elasmobranch age reading methodologies to be held in June 2012 in Turkey
- To develop the Regional Management plan for **red coral** with the Terms of References provided below:
  - Collect and organize all scientific literature on the Red Coral in the Mediterranean covering points II and III of Appendix E of the Report of the 2nd Transversal Workshop on red coral held in Ajaccio in October 2011.
  - Collect information differentiating the use of ROVs for surveying and security and for scientific purposes, and also on the present research programmes performed on the use of ROVs following REC. GFCM/35/2011/2.
  - Collect information on the socio-economic aspects of red coral harvesting both from the fishermen and from the artisanal industry.
  - Propose management measures and related issues as indicated in point IV of Appendix E of the Report of the 2nd Transversal Workshop on red coral, held in Ajaccio in October 2011.

#### SCSI WORKPLAN

- Launch a consultation phase for reviewing Task 1 data submission framework with the following proposed Terms of Reference:
  - Proceed to a comparative analysis of Data Collection systems in other Regional Fisheries Management Organisations;
  - Analyse the relevant subcommittee and SAC reports, the GFCM performance review, documents and work done by FAO sub-regional projects in relation to data collection and data submission to Task 1;

- Revise the purpose of Task 1 and possible extension towards a Task 2, including the need to standardise the methodologies for the collection and reporting of data;
  - Taking into consideration (i) the SCSI/SCESS analysis of the strengths, weaknesses, threats and opportunities, (ii) the SCSI/SCESS discussion of a possible new Task 2, (iii) the national potentialities, (iv) the need to keep memory of the data already submitted and (v) the need to build a cost effective system, define the structure of a refined Task 1 and a possibly a new Task 2 to hold all the information.
- Organize a workshop for finalizing the new Task 1 & 2 data submission framework and define a plan of action for improving member countries capacity to collect and submit relevant data. Proposed Terms of Reference are showed in Appendix I of this document.
  - The GFCM secretariat should display information on fishing capacity using GIS and other user friendly interface on the GFCM website.

### **SCCESS WORKPLAN**

- Organize a specific Working Group on bio-economic analysis-models used in the GFCM Area
  - Review the existing bio-economic studies and/or models in the GFCM Area
  - Simulation of the potential effects of management measures
- Promote regional case studies related to the socio-economic analysis of:
  - Recreational fisheries
  - Small-scale fisheries
- Hold a specific Working Group back-to-back to the forthcoming SCESS meeting on the review of the variables list of Task 1.3 and their according definitions

### **SCSA WORKPLAN**

- Two Working Groups on Demersal and on Small Pelagic species including some species of elasmobranchs, to be held back-to-back in Split, Croatia 22-26 October 2012.
- Expert consultation to elaborate the design and contents of the new module for Task 2.
- Joint ICES/ EIFAAC/GFCM Working Group on European Eel.
- Meeting of Permanent Working Group on Stock Assessment Methodology on: *Time Series Analysis*. The working group should be training orientated and the results of case studies that participants would provide, and that would be addressed by the WG within practical sessions, should be published.

### **WGBS WORKPLAN**

- Organize a workshop on data collection and information systems on fisheries in the Black Sea with the aim of:
  - assessing the existing fisheries data and information systems;

- drawing up an inventory of existing tools and methods for data collection and analysis;
- producing standard criteria for establishing a harmonized data collection system in the region taking in consideration the requirement for various users (GFCM, EU, BSC...).
- Organize a training course on direct and indirect stock assessment methodologies.
- Organize sub-regional stock assessments on small pelagic and demersal stocks (possibly in collaboration with STECF).
- Organize a workshop to assess IUU fishing and its impact in the region.
- Gather all relevant information on the fisheries and aquaculture related legislation in force in the area, with a view to creating a regional database.
- Create, through the GFCM website, a common regional database of experts and research institutions working in the Black Sea area.
- Elaborate a publication on the most recent status of fisheries and aquaculture, as a result of the collaboration between the GFCM Secretariat and national experts from all riparian countries.
- Elaborate a technical publication on the main fishing gear and fleets typology.
- Revitalize the joint GFCM/EIFAAC Working Group on Sturgeon.
- Organize a workshop on new aquaculture species to be developed in the region.
- Organize training on site selection procedures, Allocated Zones for Aquaculture and monitoring for aquaculture activities.
- Data inventory of marine and brackish aquaculture farms and production centres.

#### **IV. SUGGESTED ACTION FOR THE SAC**

11. The Committee is invited to consider the activities proposed by its subsidiary bodies in the period 2012-2013 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 budget implications.

## V. MEETINGS

12. A list of meetings is set out below for SAC's consideration:

<b>Meeting</b>	<b>Place/Date</b>
GFCM/ICES/EIFAAC Working Group on EEL	TBD 26-28 June 2012
Working Group on stock assessment of Demersal Species (SCSA) (5 days)	Split, Croatia, 22-26 October 2012
Working Group on stock assessment of Small Pelagic Species (SCSA) (5 days)	Split, Croatia, 22-26 October 2012
Meeting of Permanent Working Group on Stock Assessment Methodology on: Time Series Analysis	TBD
14th Session of the SCSA (4 days)	TBD
13th Session of the SCMEP (4 days)	TBD
13th Session of the SCSA (4 days)	TBD
13th Session of the SCESS (4 days)	TBD
Working Group on the review of the variables list of Task 1.3 and their according definitions (back-to-back with the SCESS Session) (SCESS)	TBD
Working Group on bio-economic analysis-models used in the GFCM Area (SCESS)	TBD
Workshop for finalising the new Task 1 & 2 data submission framework (SCSA)	TBD
15th Session of the SAC (5 days)	TBD
Workshop on data collection and information systems on fisheries in the Black Sea	TBD September 2012
Training on direct and indirect stock assessment methodologies (Possibly with the STECF)	Bucharest, Romania October 2012
Sub-regional stock assessments on small pelagic and demersal stocks (possibly in collaboration with STECF)	Bucharest, Romania October 2012
Workshop to assess IUU fishing and its impact	TBD

13. Pending activities:

Training course on age reading and growth parameters of the main elasmobranch species (SCMEP/SCSA); Antalya, Turkey; 18-22 June 2012

## Appendix A

**DRAFT TERMS OF REFERENCE FOR SELECTED MEETINGS**

1. (SCSI/SCSA/SCESS) 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.
  - Review the work done by the consultants and agree upon the final structure and definitions of Task 1 & 2;
  - Propose actions to address, if needed, the remaining work to be done in order to have all variables included in Task 1 & 2 fully described and relevant agreed protocols for data collection and submission;
  - Propose actions within the GFCM Framework Programme to address the gaps and deficiencies in national fisheries information systems, together with FAO regional projects.
  
2. Working Group on the review of the variables list of Task 1.3 and their relevant definitions (back-to-back with the SCESS Session)
  - Review the economic components variables of the Task 1. 3;
  - Enrich, revise and/or fine tune the definitions provided for each of these variables.
  
3. GFCM/ICES/EIFAAC Workshop on EEL  
Previous to the meeting, a consultant should be identified to chair the meeting and to do the needed preparatory work which includes *inter alia*:
  - Consideration of data requirements for the assessment of the local stocks, and identification of data and knowledge gaps, focusing on the data reporting requirements of the EU and CITES
  - Launch of a data call for the participants ensuring that the objectives of the meeting can be achieved. (i.e. eel production, yield and escapement, including physical habitat data (e.g. wetted area, productivity);ToRs of the Workshop on EEL:
  - Identification of available data, summary of published documentation, creation of a data inventory, analysis of gaps and identification of any management plans implemented;
  - Assessment of local stocks;
  - Estimation of aquaculture production in the GFCM area;
  - Assessment of the anthropogenic impacts on the stock and its relation to the targets/limits of the (national) Eel Management Plans (if present) and the (international) EU Recovery Plan and the need for non-detriment findings under CITES.
  
4. 3rd Meeting of the SCSA Working Group on Assessment Methodology WGAM on: Time Series Analysis as proposed by the SCSA:
  - (ToRs to be defined) A training style approach should be implemented and practical sessions to develop case studies with data provided by participants should be included. The outcomes may be published in a handbook as a special issue of GFCM Studies and Reviews.

5. Workshop on data collection and information systems on fisheries in the Black Sea:
  - ToRs to be defined.
6. Training on direct and indirect stock assessment methodologies (possibly with the STECF):
  - ToRs to be defined.
7. Sub-regional stock assessments on small pelagic and demersal stocks (possibly in collaboration with STECF):
  - ToRs to be defined.
8. Workshop to assess IUU fishing and its impact:
  - ToRs to be defined.

Table 1

GSA	Species	Data type	Years data	Methodology used	Stock status	Management opinion	WG comments	SC comments
<b>GSA 1</b> Northern Alboran Sea	<i>Merluccius merluccius</i>	Size composition of commercial landings tuned by MEDITS and commercial CPUE	2002-2010	VPA, XSA, Y/R	In overfishing with intermediate abundance F <sub>c</sub> (1.33) higher than F <sub>0.1</sub> (0.20)	To reach F <sub>0.1</sub> a reduction of 80% of the F <sub>C</sub> is advisable; Improve the fishing pattern of the trawl fleets Especial surveillance in the use of 40mm square/50 diamond mesh size in the cod end in trawl gears.	The WG endorsed the assessment and recommendations.	The SC commented that the low contribution of long-liners and gillnetter to fishery not necessarily implies the absence of recruitment overexploitation risks. Endorsed
<b>GSA 05</b> Balearic islands	<i>Merluccius merluccius</i>	Catch, effort, Lfreq catch, Trawl surveys	Size structure of commercial trawl catches and official landings (1980-2010), CPUE from the commercial fleet (2000-2010) and bottom trawl surveys (2001-2010)	Extended Survivor Analysis (XSA) & Y/R analysis.	Over-exploited; current F (1.21) higher than F <sub>0.1</sub> (0.16) and F <sub>max</sub> (0.24)	Reduce fishing mortality by reducing the effort activity and improving the selection pattern of the fishery. The use of the information from the vessel monitoring system will help to improve the knowledge about the spatial distribution of the fishing effort.	The WG endorses the assessment and the related recommendations.	No further comments. Endorsed.



GSA	Species	Data type	Years data	Methodology used	Stock status	Management opinion	WG comments	SC comments
	<i>Mullus surmuletus</i>	Catch, effort, Lfreq catch, Trawl surveys	Size structure of commercial landing of trawlers and artisanal fisheries (2000-2010), CPUE from commercial trawl fleet (2000-2010) and bottom trawl surveys (2001-2010)	Extended Survivor Analysis (XSA) & Y/R analysis.	In overfishing; current F (0.55) higher than F0.1 (0.55) and lower than Fmax (1.10)	Reduce fishing mortalities by reducing the effort activity and improving the selection pattern of the fishery.	The WG endorses the assessment and the related recommendations.	No further comments. Endorsed

GSA	Species	Data type	Years data	Methodology used	Stock status	Management opinion	WG comments	SC comments
	<i>Aristeus antennatus</i>	Catch, effort, Lfreq catch, Trawl surveys.	Size structure of commercial landings of trawlers (1992-2010) CPUE from commercial trawlers (1978-2010).	Extended Survivor Analysis (XSA) & Y/R analysis.	In overfishing; current F (0.59) higher than F <sub>0.1</sub> (0.15) and lower than F <sub>max</sub> (0.23).	A decrease in F could be provided using complementary management measures like temporal fishing time reduction for some periods like at the beginning of the reproduction or spawning period and during the recruitment period at the beginning of autumn period.	The WG endorses the assessment and the related recommendations.	No further comments. Endorsed.

GSA	Species	Data type	Years data	Methodology used	Stock status	Management opinion	WG comments	SC comments
GSA 06 Northern Spain	<i>Mullus barbatus</i>	Catch, effort, Lfreq catch, trawl surveys	Size structure of commercial landing of trawlers (1995-2010) CPUE from commercial trawlers and Medits	Extended Survivor Analysis (XSA) & Y/R analysis.	In overfishing; current F (0.72) higher than F0.1 (0.20) and Fmax (0.35)	Decrease the fishing mortality of about 70%. More effective control in shelf areas above 50 m depth to reduce the catch of small individuals under the minimum legal size. The use of the 40 mm square mesh in the cod-end should improve trawl exploitation pattern and Y/R by 24%, but a close supervision of the observance of this measure is needed.	Co-occurrence of SSB increasing and recruitment decreasing. The WG endorses the assessment and the related recommendations.	No further comments. Endorsed
	<i>Aristeus antennatus</i>	Catch, effort, Lfreq catch, trawl surveys	Size structure of commercial landing of trawlers (1996-2010) CPUE from commercial trawlers and Medits	Extended Survivor Analysis (XSA) & Y/R analysis.	In overfishing; current F (1.33) higher than F0.1 (0.28) and Fmax (0.49)	Reduce F by 72% through a reduction in effort capacity and improving the selection pattern. Implementing areas closed to fishing in the nursery areas during the recruitment period.	Check the influence of using biological parameter in combined sex assessment. The WG endorses the assessment and the related recommendations.	No further comments. Endorsed

GSA	Species	Data type	Years data	Methodology used	Stock status	Management opinion	WG comments	SC comments
	<i>Parapenaeus longirostris</i>	Catch, effort, Lfreq catch, trawl surveys	Size structure of commercial landings of trawlers (2001-2010) CPUE from commercial trawlers and Medits.	VPA, Extended Survivor Analysis (XSA) & Y/R analysis.	In overfishing and low level of abundance; current F (1.14) higher than $F_{0.1}(0.30)$ and lower than $F_{max}(2.73)$ .	Reduce growth overfishing: - Reduce the fishing mortality by 70%. - Improve the fishing pattern of the trawl.	The oscillation found for this species is in agreement with other areas of the Mediterranean. It is assumed that environmental and ecological factors (e.g. water temperature, predatory release effect) can affect the stock in addition to the fishing mortality and difficult to evaluate the status of the stock. The WG endorses the assessment and the related recommendations.	No further comments. Endorsed

GSA	Species	Data type	Years data	Methodology used	Stock status	Management opinion	WG comments	SC comments
GSA 07 Gulf of Lion	<i>Merluccius merluccius</i>	Catch, effort, Lfreq catch, trawl surveys.	Size structure of commercial landing (French and Spanish data from trawlers, gillnetters and longliners) 1998-2010 CPUE from commercial trawlers and Medit.	Extended Survivor Analysis (XSA) & Y/R analysis.	In overfishing and low abundance; current F (1.43) higher than F0.1(0.19) and Fmax (0.29).	To reduce growth overfishing: - Improve the fishing pattern of the trawl to rise the minimum length of catches equal to the minimum legal landing size - close nursery areas at least temporally (- 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 longline and gillnets in order to increase (or at least maintain) the SSB. - Establish temporal closures for longline and gillnet during the period of maximum spawning (end of autumn and beginning of winter, main peak of spawning period) - Freezing of the effort in the Fishery Restricted Area.	The WG endorses the assessment and the related recommendations.	No further comments. Endorsed.

GSA	Species	Data type	Years data	Methodology used	Stock status	Management opinion	WG comments	SC comments
	<i>Mullus barbatus</i>	Catch & Lfreq of catch	Size structure of commercial landing (French and Spanish data from trawlers,) 2004-2010 CPUE from Medits.	VPA, Extended Survivor Analysis (XSA) & Y/R analysis for 2004-2010	In overfishing and intermediate level of abundance current F (0.85) higher than F0.1 (0.45) and lower than Fmax (1.68).	Current F has to be reduced to reach F0.1.	The SSB was found to increase, so there was some doubt about the XSA results. The MEDITS trend was the same with that of SSB. It is rather odd that with so high overexploitation the trend of SSB is increasing. The WG endorsed the assessment and recommendations.	

GSA	Species	Data type	Years data	Methodology used	Stock status	Management opinion	WG comments	SC comments
GSA 09 Ligurian and North Tyrrhenian Sea	<i>Merluccius merluccius</i>	Lfreq Catch Surveys data	Size structure of commercial landing 2005-2010 CPUE from commercial trawlers and Medits 1994-2010	XSA for 2004-2010 LCA – Pseudocohort analysis (VIT) Y/R ; SURBA (1994-2010)	In overfishing; current F (1.5-2) higher than F0.1 (0.22) and Fmax (0.35)	A reduction of F is recommended	The WG endorses the assessment and the related recommendations.	No further comments. Endorsed
	<i>Mullus barbatus</i>	Catch , effort & trawl surveys	1994-2010	Non-equilibrium production model and LCA	In overfishing and overexploited; current F (0.54) higher than FMSY (0.47) B2010/Bmsy=0.60	A reduction of F is recommended.	The WG endorsed the assessment and recommendations	No further comments. Endorsed

GSA	Species	Data type	Years data	Methodology used	Stock status	Management opinion	WG comments	SC comments
	<i>Mullus surmuletus</i>	Lfreq Catch Surveys data	Size structure of commercial landing 2009-2010	LCA – Pseudocohort analysis (VIT) Y/R ;	In overfishing; current F (056_0.71) higher than F0.1 (0.35) and lower than Fmax (1.00)	A reduction of F is recommended	The WG endorsed the assessment and recommendations	No further comments. Endorsed
	<i>Galeus melastomus</i>	Length frequency distribution of catch	2009-2010	LCA and Y/R	In overfishing current F (0.35) lower than F0.1 (0.10)	A reduction of F is recommended. Reduce the catch in areas where juveniles are concentrated	The WG endorsed the assessment and recommendations	The SC endorses the assessment and the related recommendations of the WG. The Advice to reduce the catch in areas where juveniles concentrate should be supported by a map with the spatial distribution of juveniles.



GSA	Species	Data type	Years data	Methodology used	Stock status	Management opinion	WG comments	SC comments
	<i>Aristeus antennatus</i>	Length frequency distribution of catch	2009-2010	LCA and Y/R	In overfishing current F (0.62) lower than F0.1 (0.32)	A reduction of F is recommended.	The WG endorsed the assessment and recommendations	The SCSA endorsed the assessment presented at the WG. In the WG report, in the diagnosis of stock status. Exploitation rate should be substituted by “fishing mortality rate”.
	<i>Nephrops norvegicus</i>	Length frequency distribution of catch & trawl surveys	LFD of catch 2006-2010; LFD of trawl surveys 1994-2010	LCA – Pseudocohort analysis (VIT) Y/R ; SURBA	In overfishing current F =0.35 higher than F0.1 (0.21)	A reduction of F is recommended.	The WG endorsed the assessment and recommendations	The SC recommended for sedentary species to assess stock status using a spatial scale lower than that of GSA. Endorsed

GSA	Species	Data type	Years data	Methodology used	Stock status	Management opinion	WG comments	SC comments
	<i>Parapenaeus longirostris</i>	Length frequency distribution of catch & trawl surveys	LFD of catch 2006-2010; LFD of trawl surveys 1994-2010	XSA, LCA – Pseudocohort analysis (VIT) Y/R ; SURBA	Under-exploited current F =0.40 in 2009 and 0.29 in 2010 lower than F0.1 (0.78)	The current F is considered low and appears to ensure good yields and a safe situation. In any case, it is advisable, within the precautionary framework, to keep the fishing pressure on this stock at the current level.	The WG endorses the assessment and the related recommendations.	The SC recommend to substitute in the stock status “underexploited” with “sustainable exploitation”

GSA	Species	Data type	Years data	Methodology used	Stock status	Management opinion	WG comments	SC comments
<b>GSA 12/13</b> Northern and Eastern Tunisia	<i>Shpyraean sphyraena</i>	Length frequency distribution of catch	LFD of catch 2006-2008	LCA and Y/R	In overfishing	A reduction of F is recommended (40% in northern and 60% in eastern sector).	The WG endorsed the assessment and recommendations	The SC endorses the assessment and the related recommendations of the WG. The use of $F_{max}$ as RP should be however replaced by $F_{01}$ .
<b>GSA 12/13/14/15/16</b> Strait of Sicily	<i>Parapenaeus longirostris</i>	Length frequency distribution of catch & trawl surveys	2007-2010	LCA – Pseudocohort analysis (VIT and ANALEN) & Y/R	In overfishing; current F (1.21) higher than $F_{0.1}$ (0.95)	A reduction of about 20% is considered necessary in order to reach the $F_{0.1}$ level. In addition the exploitation pattern of the fishery should be improved. A protection of the stable nurseries on the Adventure and Malta Banks in the Strait of Sicily is advised	Trawl survey based approach should be used in the future to make the assessment more robust. The WG endorses the assessment and the related recommendations	No further comments. Endorsed

GSA	Species	Data type	Years data	Methodology used	Stock status	Management opinion	WG comments	SC comments
GSA 15/16 Strait of Sicily	<i>Mullus barbatus</i>	Length Frequency Distribution of catch & SSB and Recruit indices from trawl surveys	LFD of catch 2006-2010; trawl surveys 1994-2010	LCA – Pseudocohort analysis (VIT) & Y/R ;	In overfishing current F =0.78 (mean 2006-2010) higher than F0.1 (0.45) Increasing trend of SSB and recruitment in the last years was higher than that in the nineties.	A reduction of F is recommended.	The WG endorses the assessment and the related recommendations.	No further comments. Endorsed
	<i>Pagellus erythrinus</i>	Length Frequency Distribution of catch & SSB and Recruit indices from trawl surveys	LFD of catch 2006-2010; trawl surveys 1994-2010	LCA – Pseudocohort analysis (VIT) & Y/R ;	In overfishing current F =0.60 (mean 2006-2010) higher than F0.1 (0.30) No signs of decrease in SSB and recruitment in the last years.	A reduction of F is recommended.	The WG endorses the assessment and the related recommendations.	No further comments. Endorsed

GSA	Species	Data type	Years data	Methodology used	Stock status	Management opinion	WG comments	SC comments
	<i>Aristaeomorpha foliacea</i>	Length frequency distribution of catch & trawl surveys	LFD of catch 2006-2010; LFD of trawl surveys 1994-2010	LCA – Pseudocohort analysis (VIT) Y/R ; SURBA	In overfishing current F =1.00 (2010 value) higher than F0.1 (0.40) SSB and recruitment at low level from 2002 to 2010.	A reduction of F is recommended.	The WG endorses the assessment and the related recommendations.	No further comments. Endorsed
<b>GSA 17</b> Northern Adriatic	<i>Solea solea</i>	Length frequency distribution of catch & trawl surveys	2005-2010	XSA, LCA – Pseudocohort analysis (VIT) Y/R ; SURBA	In overfishing; current F (1.34-1.20) higher than F0.1 (0.24-0.26) and Fmax (0.38-0.46).	A reduction of F, especially by rapido trawling, is recommended. A two-months closure for rapido trawling inside 11 km off-shore along the Italian coast, after the biological fishing ban, would be advisable to reduce the portion of juvenile in the catches.	The WG highlights the use of data from the eastern side of the basin. Moreover, the group underlines the need to extend the rapido trawl survey inside the 12 nm from the Croatian coast, as was performed in 2005 and 2006.	No further comments. Endorsed

GSA	Species	Data type	Years data	Methodology used	Stock status	Management opinion	WG comments	SC comments
GSA 18 Southern Adriatic Sea	<i>Merluccius merluccius</i>	Length frequency distribution of catch & trawl surveys		SURBA software, ALADYM model, VIT software and the R-routine developed at SGMED working group.	In overfishing; current F (0.87) higher than F0.1 (0.21) and Fmax (0.27). ALADYM simulations show that after a decrease of the catches in the short terms the yield trend is increasing and reach levels higher than the values in the beginning of the time series with an improvement of stock productivity SSB.	Reduce fishing mortality through fishing activity limitations and possibly fishing capacity decreasing. Most of the F is derived from the Italian bottom trawlers, that represent about 85% of the total F in the GSA, and from the Italian longliners, accounting for about 7-8% (overall 92-93% of F). Montenegrin trawlers account for about 1% of the F and Albanian trawlers for about 6.5%.	The assessment provides a wide range of analysis useful to managers for assisting the decision process. The WG endorses the assessment and the related recommendations.	Since the fleets of three countries (Albania, Italy and Montenegro) are involved in hake fishery in GSA18, the advice for management should consider the different situations of the three countries. Endorsed

GSA	Species	Data type	Years data	Methodology used	Stock status	Management opinion	WG comments	SC comments
GSA 25 Cyprus island	<i>Mullus barbatus</i>	Length frequency distribution of catch	2005-2010	Separable VPA for the period 2005-2010, VPA-pseudocohort and Y/R analysis for 2009 and 2010	In overfishing; current F (0.43-0.46) higher than F0.1 (0.33) and lower than Fmax (0.51).	The stock is in overfishing state, considering that the current F should be reduced by 24% (based on 2010 Y/R analysis) or by 28% (based on 2009 Y/R analysis) for reaching the F0.1 reference point.	The WG endorses the assessment and the related recommendations	
	<i>Mullus surmuletus</i>	Length frequency distribution of catch	2009-2010	VPA-pseudocohort and Y/R analysis for 2009 and 2010	In overfishing; current F (0.42-0.49) higher than F0.1 (0.22-0.23) and lower than Fmax (0.32-0.34).	Current F should be reduced by 53% (2010 results) or 48% (2009 results) for reaching the F0.1 reference point.	The WG endorses the assessment and the related recommendations	

GSA	Species	Data type	Years data	Methodology used	Stock status	Management opinion	WG comments	SC comments
	<i>Spicara smaris</i>	Length frequency distribution of catch	2005-2010	VPA-pseudocohort and Y/R analysis for 2005-2007 and 2008-2010	Fully exploitation in 2005-2007 being $F_{cur}=0.19$ , $F_{max}=0.38$ and $F_{0.1}=0.19$ . In overfishing in 2008-2010 being $F_{cur}=0.37$ , $F_{max}=0.40$ and $F_{0.1}=0.24$ .	According to transition analysis, an approximate reduction of 15% (10-20%) of the current F could lead to $F_{0.1}$ . This could be achieved with the reduction of licensed fishing vessels LOA 6-12m and trawlers LOA 12-24m. The increase of selectivity is also important.	The WG recommends to improve the analyses by using approach out steady state (VPA or XSA). The WG endorsed the assessment and recommendations.	The SC endorses this assessment as preliminary due to some inconsistencies in the results of the analyses on the two sets of data. It would advisable to carry out the VIT analysis for each year separately to better evaluate the consistency of the steady state assumption for the stock.
	<i>Boops boops</i>	Length frequency distribution of catch	2005-2010	VPA-pseudocohort and Y/R analysis for 2005-2007 and 2008-2010	In overfishing in 2005-2007 being $F_{cur}=0.57$ , $F_{max}=0.38$ and $F_{0.1}=0.24$ . In overfishing in 2008-2010 being $F_{cur}=0.37$ , $F_{max}=0.39$ and $F_{0.1}=0.24$	F must be reduced in the case of artisanal fishery. According to transition analysis, an approximate reduction of 15% (10-20%) of the current F could lead to $F_{0.1}$ . This could be achieved with the reduction of licensed fishing vessels OAL 6-12m and increasing the selectivity.	The WG recommends to improve the analyses by using approach out steady state (VPA or XSA). The WG endorsed the assessment and recommendations.	



GSA	Species	Data type	Years data	Methodology used	Stock status	Management opinion	WG comments	SC comments
GSA 26 South levant	<i>Pagellus erythrinus</i>	LFD of catch & trawl surveys	2006-2007	Z by the length converted catch curve and M was estimated by the Pauly equation. Beverton and Holt Y/R model and relative Y/R analysis (knife edge selection)	In overfishing; current F (0.55-0.72) higher than F0.1 (0.27-0.30) and Fmax (0.54-0.57)	Reduce the fishing mortality by 45% (entire Egyptian coast) and 60% (Port Said area). Improve the exploitation pattern	The WG endorsed the assessment and recommendations.	The SC recommend to enhance data collection to improve the quality of the assessment. The Eastmed Project Coordinator highlighted that the present assessment has been guided by the project staff during the WG and although the data concern previous years it was tried the best use of them.

Table 2

GSA	Species	Data type	Years data	Methodology used	Stock status	Management opinion	WG comments	SC comments
GSA 03 Southern Alboran sea	<i>Sardina pilchardus</i>	Catch, effort, Lfreq catch,	2003-2010	Pseudocohort (LCA, VIT), Y/R	Exploitation rate: Moderate in East, high in west; Biomass level: lower than previous year; Fully exploited	<ul style="list-style-type: none"> <li>- Maintain the current fishing mortality;</li> <li>- Reduce the mortality of fishing on the spawning fish</li> <li>- Introduce seasonal closure during January which coincides with the peak of the spawning;</li> <li>- Prohibit fishing during May near Short-nap close Kibdana to preserve the young fish.</li> </ul>	The WG endorses the assessment and the related recommendations.	No further comments. Endorsed

GSA	Species	Data type	Years data	Methodology used	Stock status	Management opinion	WG comments	SC comments
GSA 06 Northern Spain	<i>Engraulis encrasicolus</i>	Catch, effort, Lfreq catch, Echo-surveys	2002-2009	Extended Survivor Analysis (XSA), tuned with acoustic.	The stock abundance is considered as low, while the exploitation rate is uncertain.  Fully exploited	Not to increase the fishing effort. Despite F resulted quite stable there are fluctuations in biomass	The WG endorses the advice and recommendation for this stock. The WG encourages improving the quality of data used for the analysis in terms of the length of the time series and the biological data used (age – length keys).	The SC support the recommendation of the WG to improve the ageing problem by obtaining more reliable age-length-keys in the area. The lack of reference point to support the diagnosis of the stock status (fully exploited) was discussed.

GSA	Species	Data type	Years data	Methodology used	Stock status	Management opinion	WG comments	SC comments
	<i>Sardina pilchardus</i>	Catch, effort, Lfreq catch, Echo-surveys	2002-2009	Extended Survivor Analysis (XSA), tuned with acoustic.	Exploitation rate: high; Biomass level: the lowest value in time series  Over-exploited	Reduce the fishing effort until the recruitment increase	The WG detected a danger of recruitment overexploitation due to the decreasing trend in recruitment and very low levels of the spawning stock. The WG also recommend that a series of test are carried out for future assessment of the assessment robustness. The WG endorsed the assessment and recommendations the related recommendations.	The SC noted the decreasing trend in landing, SSB and recruitment recognizing the risk of stock collapse. The advice was found not in line with the assessments results and stock diagnosis (overexploited) which clearly indicated the need to reduce the fishing mortality to the lowest value possible.

GSA	Species	Data type	Years data	Methodology used	Stock status	Management opinion	WG comments	SC comments
GSA 07 Gulf of Lion	<i>Engraulis encrasicolus</i>	Echosurveys and catch	1998-2010	Biomass at sea and harvest ratio Catch/Biomass	Exploitation rate: Moderate; Biomass level: low;  Fully exploited	Not to increase fishing effort	The WG endorses the assessment and the related recommendations. The WG also acknowledges that there is evidences on changes in the pelagic ecosystem of this area, and suggest that further ecological studies are conducted to clarify the ecosystem status.	The SC endorsed the assessment but proposes to change the status to “recovering” instead of fully exploited.

GSA	Species	Data type	Years data	Methodology used	Stock status	Management opinion	WG comments	SC comments
	<i>Sardina pilchardus</i>	Echosurveys and catch	1998-2010	Biomass at sea and harvest ratio Catch/Biomass	Exploitation rate: very low; Biomass level: very low with decreasing trend. Close to collapse;  Fully exploited	Fishing effort cannot be increased until the system stabilise or show signals of recovery.	The WG endorsed the assessment and recommendations The WG also acknowledges that there is evidences on changes in the pelagic ecosystem of this area, and suggest that further ecological studies are conducted to clarify the ecosystem status.	The SC endorsed the assessment, recommending anyhow to change the stock status from “fully exploited” to “depleted” as showed by the drastic reduction of the catch and biomass and consequently of the fishing activity.

GSA	Species	Data type	Years data	Methodology used	Stock status	Management opinion	WG comments	SC comments
GSA 16 Strait of Sicily	<i>Engraulis encrasicolus</i>	Echosurveys and catch	1998-2010	Surplus production (SPM) including environmental anomalies and harvest ratio Catch/ Biomass	Exploitation rate (ratio between total landings and biomass estimates): high fishing mortality.  FCur/FMSY = 1.76  Stock abundance (acoustic biomass estimate): intermediate abundance  BCur/BMSY = 0.85  Over-exploited	- fishing effort should not be allowed to increase and consistent catches should be determined;  - prevent a possible further shift of effort back from anchovy to sardine.	The WG endorses the advice and recommendation given for this stock. No specific limit or precautionary reference point have been yet endorsed for small pelagic fish species in the framework of GFCM. The fitting of the SPM is poor.	The SC endorses the assessment and the related recommendations of the WG, and proposed to amend the last sentence that has an apparent contradiction. In the advice provided in the assessment report of the WG the term "anchovy" should be read as "sardine"

GSA	Species	Data type	Years data	Methodology used	Stock status	Management opinion	WG comments	SC comments
	<i>Sardina pilchardus</i>	Echosurveys and catch	1998-2010	Surplus production model including environmental anomalies and harvest ratio Catch/Biomass	Exploitation rate (ratio between total landings and biomass estimates): moderate fishing mortality.  Fc/FMSY(2010)=0.22  Stock abundance (acoustic biomass estimate): low/intermediate abundance.  Bc/BMSY(2010)=0.48  Fully exploited.	- Fishing effort should not be allowed to increase and consistent catches should be determined;  - Prevent a possible further shift of effort back from anchovy to sardine.	The WG endorses the advice and recommendation. The WG appreciated the use of surplus production model with the inclusion of the environmental factor improves the fitting of the production model. The WG also recommend trying to estimate a B-Lim reference point, as it will facilitate taking advise in relation to the current stock status.	The SC endorsed the assessment and the related recommendations. The SC also discussed the use of 40% Bmsy as technical limit reference point for small pelagic stocks, recommending to test this biomass RP during the next WG of Small Pelagic.



GSA	Species	Data type	Years data	Methodology used	Stock status	Management opinion	WG comments	SC comments
GSA 17 Northern Adriatic	<i>Sardina pilchardus</i>	Catch, effort, LFD, ALK, echo-surveys	1975-2010 (Catch data) 2004-2010 (echo-survey)	VPA with Laurec-Shepherd tuning; Integrated Catch Analysys (ICA)	Exploitation rate (ratio between total landings and biomass estimates): moderate.  Stock abundance (VPA and acoustic biomass estimate): low abundance.  Fully exploited.	- Not increase the fishing effort.  - Consider the interactions with anchovy fisheries.	The WG endorses the advice and recommendation. The WG suggests that future assessments take into account combined data from 17 and 18 GSAs. The WG also suggests continuing to explore the relationships between recruitment and environment	The SC endorses the assessment and the related recommendations of the WG. Advice should be related to fishing mortality and not directly to fishing effort, or eventually both fishing effort and catches should be mentioned.  Endorsed

GSA	Species	Data type	Years data	Methodology used	Stock status	Management opinion	WG comments	SC comments
	<i>Engraulis encrasicolus</i>	Catch, effort, LFD, ALK, echo-surveys	1975-2010 (Catch data) 2004-2010 (echo-survey)	VPA with Laurec-Shepherd tuning; Integrated Catch Analysis (ICA)	Exploitation rate (ratio between total landings and biomass estimates): moderate Stock abundance (VPA and acoustic biomass estimate): intermediate abundance.  Fully exploited	- Not increase the fishing effort.  - Consider the interactions with sardine fisheries.	The WG endorses the advice and recommendation. The WG suggests that future assessments take into account combined data from 17 and 18 GSAs. The WG also suggests continuing to explore the relationships between recruitment and environment.	The SC endorses the assessment and the related recommendations of the WG. Advice should be related to fishing mortality and not directly to fishing effort, or eventually both fishing effort and catches should be mentioned. Endorsed.

GSA	Species	Data type	Years data	Methodology used	Stock status	Management opinion	WG comments	SC comments
GSA 18 Southern Adriatic Sea	<i>Sardina pilchardus</i>	Echo-surveys and DEPM	Western part 1987-2010 (catch data) 1987-2010 (echo-surveys) Eastern part 2002-2011 (echo-surveys)	Biomass & Catch estimates	Exploitation rate (ratio between total landings and biomass estimates): moderate Stock abundance (acoustic biomass estimate): low abundance. Moderately exploited with uncertain in exploitation rate	- Not increase the fishing effort in the western part	The WG endorses the conclusions and recommendations for this stock. Nevertheless, the assessment is considered uncertain, as it is difficult to assess the relation between current stock levels and catches in the area. An effort should be made to improve the quality and availability of landings data. Exploitation rate should be calculated each year on the base of survey and landings data. The WG suggests that future assessments take into account combined data from 17 and 18 GSAs.	The SC found not clear the stock identification in the GSA 18. The participants agreed on the need to provide SSB estimates on a stock basis and not at the country level. The SC evidenced the uncertainty of the evaluation and the poor knowledge of the status of the stock and considered the assessment as preliminary. Anyway on the base of the precautionary approach the advice should be: not increase the fishing mortality. The need to merge the GSA 17 and 18 was also stressed by the SC.

GSA	Species	Data type	Years data	Methodology used	Stock status	Management opinion	WG comments	SC comments
	<i>Engraulis encrasicolus</i>	Echo-surveys and DEPM	Western part 1987-2010 (catch data) 1987-2010 (echo-surveys)  Eastern part 2002, 2004, 2005, 2008, 2010 (echo-surveys)  DEPM (2005, 2008, 2010)	Biomass & Catch estimates	Exploitation rate (ratio between total landings and biomass estimates): moderate  Stock abundance (DEPM and acoustic biomass estimate): Moderately exploited with uncertain in exploitation rate.	- Not increase the fishing effort in the western part low abundance.	The WG endorses the conclusions and recommendations. It is necessary to improve data collection of catches. The WG recommends to continue with the two direct assessments of anchovy biomass, checking the reliability of spawning frequency for anchovy obtained through eggs and larvae surveys and cross-comparing the final estimates from the two methods. Also the WG recommends obtaining yearly estimates of the harvest rate.	The SC found not clear the stock identification in the GSA 18. The participants agreed on the need to provide SSB estimates on a stock basis and not at the country level. The SC evidenced the uncertainty of the evaluation and the poor knowledge of the status of the stock and considered the assessment as preliminary. Anyway on the base of the precautionary approach the advice should be: not increase the fishing mortality. The need to merge the GSA 17 and 18 was also stressed by the SC.