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**Report on intersessional activities for 2012–2013, recommendations and
workplan for 2013–2014 related to fisheries issues**

Draft

INTRODUCTION

1. This document provides a summary of the work by the Scientific Advisory Committee (SAC) and its subsidiary bodies during the intersessional period. It also gathers the main conclusions and management advice and the 2013-2014 work plan emanating from the fifteenth session of SAC, as included in the session's report (document GFCM:XXXVII/2013/Inf.6). Moreover, this document takes stock of main outcomes of the various technical meetings held on the basis of recommendations made by SAC at its fourteenth session.

2. The activities set out below have been undertaken by GFCM Members at national level, within SAC subsidiary bodies or within the remit of the GFCM Framework Programme (FWP). A similar approach has been adopted with respect to the 2013–2014 work plan, whose budgetary implications are duly taken into consideration by document GFCM:XXXVII/2013/8.

ACTIVITIES OF THE SCIENTIFIC ADVISORY COMMITTEE (SAC)

3. The fifteenth session of SAC was held at the FAO HQ, Italy, from 8 to 11 April 2013. The session was attended by delegates from 20 Contracting Parties, 12 observers, representatives of FAO Regional Projects and GFCM Secretariat.

4. The intersessional activities were carried out in accordance with the programme of work agreed upon by the thirty-sixth session of the Commission (Morocco, May 2012). All approved meetings were convened, as listed below:

- Working Group on the Black Sea (WGBS) (Bulgaria, April 2013)
- Thirteenth session of the subcommittee on Marine Environment and Ecosystems (SCMEE) (FAO HQ, February 2013)
- Thirteenth session of the subcommittee on Statistics and Information (SCSI) (FAO HQ, February 2013)
- Thirteenth session of the subcommittee on Economic and Social Sciences (CESS) (FAO HQ, February 2013)

- Fourteenth session of the subcommittee on Stock Assessment (SCSA) (FAO HQ, February 2013)
- Working Group on Stock Assessment of Demersal Species (Croatia, November 2012)
- Working Group on Stock Assessment of Small Pelagic Species (Croatia, November 2012)
- GFCM-CopeMed Workshop on Mediterranean gears, fishing technology and selectivity (Morocco, November 2012)
- Workshop on age determination of elasmobranchs in the GFCM area (Turkey, October 2012)

5. The following meetings were held within the first phase of the GFCM Framework Programme:

- Concerted actions for Lebanon (GFCM HQ, December 2012)
- Sub-regional workshop on data collection in the Black Sea (Bulgaria, April 2013)
- Sub-regional workshop on data collection for Western, Central and Eastern Mediterranean (Italy, March 2013)
- Sub-regional workshop on data collection and to test the feasibility of implementing multiannual management plans in the Adriatic Sea (Croatia, March 2013)
- Workshop on IUU, including MCS and fleet, in the Black Sea (Turkey, February 2013)

Main activities and outcomes of SAC subsidiary bodies

6. The main outcomes of technical workshops and meetings listed above can be summarized as follows:

7. The *Workshop on age determination of elasmobranchs in GFCM area* consisted in a practical course on age reading with an important training component. A technical manual on age determination of Elasmobranchs, suited to both novice and experienced age readers, was prepared and is going to be published by the end of 2013.

8. The *Workshop on Mediterranean gears, fishing technology and selectivity* comprised theoretical and practical sessions carried out to train participants on selectivity assessment methods and on biological and socio-economic considerations related to gear design and construction;

9. The *two Working Groups on Stock Assessment on demersal and small pelagic species* validated 29 technical papers on demersal species and 12 technical papers on small pelagics. Overall, 16 GSAs for the demersal species and 9 GSAs for small pelagics were covered, with the novelty of 5 stocks of the Black Sea being discussed in the Groups. The results and management advice can be consulted in Tables 1 and 2 of Appendix A to this document.

10. The *Subcommittee on Marine Environment and Ecosystems* (SCMEE) reviewed the outcomes of its related inter-sessional activities focusing on the analysis of the first draft of the Regional Adaptive Management Plan for red coral (RMP-RC), on the outcomes of the workshops on age determination of elasmobranchs and on progress on technology and selectivity of fishing gears.

11. The *Subcommittee on Statistics and Information* (SCSI) reviewed the progress made on the data collection, submission status and information systems with particular attention on the fishing vessels-related data and the reporting problems in submitting data on vessel records and Task 1. The advances made on the enhancement of GFCM IT SharePoint/Azure cloud infrastructure and systems supporting Members data compliance and cooperative tasks, VMS and cooperation activities and collaboration with FAO on the global record were also tackled by SCSI.

12. The *Subcommittee on Economic and Social Sciences* (CESS) focused on the review of selected case studies on socio-economic aspects by FAO Regional Projects as well as on socio-economic analysis of fisheries, on the organization of the first “Regional Symposium on Sustainable Artisanal Fisheries in

the Mediterranean and the Black Sea” (Malta, October/November 2013) on recreational fisheries and on socio-economic variables, including within the framework of Task 1.3.

13. The *Subcommittee on Stock Assessment* (SCSA) examined and validated the status of small pelagic and demersal stocks in the Mediterranean and Black Sea as prepared by the Working Groups on assessment of these two groups of species. Also the Subcommittee reviewed the reporting process on the status of the stocks, including the stock assessment forms and the definition of reference points.

14. The *Working Group on the Black Sea* met for its second session in Varna, Bulgaria, 24–26 April 2013. Its outcomes are presented in document GFCM:XXXVII/2013/Inf.9.

Main activities and outcomes under the FWP

15. Several activities carried out under the FWP were of direct relevance to SAC. Their main outcomes, emanating from a number of meetings, are summarized as follows:

16. *Concerted actions for Lebanon* (GFCM HQ, December 2012) (document GFCM:XXXVII/2013/Inf.14): Priorities for the fisheries and aquaculture sectors in Lebanon were addressed and discussed, thanks also to the participation of representatives of the Lebanese government and universities. A multiannual roadmap was proposed in order to lay the ground for future action to be taken and a follow-up meeting has been envisaged in the second half of May in Lebanon to adopt a finalized roadmap.

17. *GFCM/Black Sea Commission Joint Workshop on IUU, including MCS and fleet, in the Black Sea* (Turkey, February 2013) (document GFCM:XXXVII/2013/Inf.13): The nature and extent of IUU fishing in the Black Sea was examined, and a multiannual roadmap was proposed in order to lay the ground for future action to be taken altogether by the six riparian countries. The roadmap was further reviewed at the second meeting of the GFCM Working Group of the Black Sea and should be considered by the Commission for possible action.

18. The *Sub-regional workshop on data collection and to test the feasibility of implementing multiannual management plans in the Adriatic Sea* (Croatia, March 2013) (document GFCM:XXXVII/2013/Inf.13): The workshop reviewed the status of national data collection plans and the compliance with GFCM requirements, and produced an outline for a *Background Technical Document in support of a management plan for small pelagics in the Adriatic Sea*. Priorities, gaps and issues in relation to data collection in the Adriatic Sea were identified, and together with those identified by other sub-regional workshops detailed below, will serve to improve the future GFCM Data Collection Regulation Framework (DCRF), a draft of which is submitted to the Commission for comments (GFCM:XXXVII/2013/Inf.19). The background technical document referred above was completed by the countries and submitted to the Second validation meeting of the Task Force (Task Force Meeting is reported in GFCM:XXXVII/2013/Inf.8).

19. The *Sub-regional workshop on data collection for Western, Central and Eastern Mediterranean* (Italy, March 2013) further identified priorities, gaps and recommendations on data collection and submission emanating from these regions of the Mediterranean, including *inter alia* the required feedback for the development of the GFCM DCRF.

20. The *Sub-regional workshop on data collection for the Black Sea* (Bulgaria, April 2013) further identified priorities, gaps and recommendations on data collection and submission in the Black Sea (GFCM:XXXVII/2013/Inf.10).

SUGGESTIONS AND ADVICE OF THE SCIENTIFIC ADVISORY COMMITTEE (SAC)

21. On the basis of the main conclusions and suggestions of its subsidiary bodies, the SAC approved the following conclusions and/or advice for fisheries management relating to the topics below:

Marine environment and ecosystems issues

- **Advice on elasmobranchs**
 - Continue working on elasmobranchs management in relation to fisheries in order to promote and guarantee the conservation of this group of marine animals (under the FWP).
- **Advice on by-catch**
 - Analyze mitigation options to reduce by-catch of sea turtles and seabirds, (Recommendations GFCM/35/2011/3 and GFCM/35/2011/4) and to facilitate the adoption of mitigation measures by Member countries.
- **Advice on the red coral management plan (RMP-RC)**
 - The draft document of the Management plan for red coral (GFCM:XXXVII/2013/Inf.17) was revised by SAC. The two operational objectives proposed in the document are: a) to control that the actual legal size limit (7 mm) for harvesting red coral colonies is enforced at regional level and b) to maintain the same catch level of three previous years (supposing it to be sustainable). Target, limit and precautionary reference points were provided for both objectives and management and control measures were also included. The SAC recommended to include considerations on socio-economic impacts and stakeholders views in the current RMP-RC proposal and to extend the document with: i) components related to the adaptive character of the plan (regular revision according to new data and adjustment if needed); ii) a new section on post-landing actions which would include a traceability mechanism to monitor potential exports of raw colonies outside the GFCM Area; iii) time schedule and roadmap to assist members in the progressive implementation of the Plan previous consultations at national level with all concerned stakeholders.
- **Advice on deep sea habitats and protected areas**
 - Launch a specific action for the collection of relevant data and information on MPAs at national level, including on effort and strategies for their management by circulating a questionnaire in cooperation with relevant partners (Oceana, MedPAN, UNEP-MAP, etc.) that could facilitate progress on the issue.
 - Organize trainings on biological, social and economic data collection to be included in studies for the establishment protected areas.
- **Advice on alien species**
 - Monitor alien species through the current data submission protocols (Task 1) to assess their impact on fisheries in the Mediterranean and Black Sea.
 - Explore alternative markets for the toxic alien species (pharmacology, aquarists, cosmetics, etc.).

Stock assessment issues

- **Advice on demersal and small pelagic fisheries**
 - 22 out of the 23 demersal stocks validated were found to be in overfishing status and 1 was considered uncertain. 2 of the 7 small pelagic stocks validated were considered in overfishing, and the other 5 as sustainable or fully exploited.
 - Advice on specific fish stocks (demersal and small pelagics) with a validated assessment is provided in the Tables 1 and 2 of Appendix A to this document.
 - **Reduce** fishing mortality and improve selectivity patterns, especially for demersal stocks.

- **Continue** efforts to establish multiannual sub-regional management plans.
- **Develop** adequate management plans for exploited and toxic alien species.
- **Prepare** a biannual report on the status of Mediterranean and Black Sea fisheries (a proposal for a table of contents of the report will be submitted to the Commission for comments).

Statistics and information issues

- Establish vessel data transmission for EU Members from EU fleet register system to the GFCM Secretariat.
- **Adopt and test** the first GFCM data collection reference framework (DCRF), the periodicity of socio-economic data currently collected under Task 1.3 and review the optional/mandatory criteria of fleet data requirements.
- Identify national focal points for data collection issues, both in connection with the participation to meeting under the FWP and to data submission to GFCM Secretariat.

Economic and social sciences issues

- Review current methodologies on 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.
- **Convene** the “Symposium on Sustainable Artisanal Fisheries in the Mediterranean and the Black Sea”.
- **Establish** three working groups (i.e. on small scale/artisanal fisheries, on recreational fisheries, on common methodology for socio-economic analysis).

Research Activities by Member Countries

- Adopt the new format of national report as included in Appendix C.

WORK PROGRAMME OF THE SCIENTIFIC ADVISORY COMMITTEE (SAC)

22. The proposed lists of activities for the 2013–2014 intersessional period, as identified by the four Subcommittees, reviewed and adopted by SAC at its fifteenth session, are set out below. The list of meetings foreseen under the FWP for the 2013–2014 intersession, as also duly noted and endorsed by SAC, is reproduced under a separate heading. Draft Terms of Reference (ToRs) for certain activities are provided in Appendix B to this document.

Sub-Committee on Marine Environment and Ecosystems (SCMEE)

- **Finalize** the Regional Management Plan for red coral and follow up its implementation;
- Analyze the options to mitigate by-catch of sea turtles and seabirds (Recommendations GFCM/35/2011/3 and GFCM/35/2011/4);
- Assess the impact of alien species on fisheries, establish a proper framework for the collection of data on their landings and explore alternative markets for the toxic alien species (pharmacology, aquarists, cosmetics, etc.);

- Develop a second three-year research programme on elasmobranchs (under the FWP);
- Elaborate a catalogue on fishing gears and technology in GFCM Area based on information gathered by TechnoMed network;
- Encourage and support research programmes on climate change, marine litter, and underwater noise;
- **Organize** a one-day workshop on artificial reefs (ARs) within the framework of the 10th International Conference on Artificial Reefs and Related Aquatic Habitats (September 2013 Izmir, Turkey) in collaboration with EastMed Project;
- Develop mid-term research programmes to identify conservation measures and to promote sustainable use of deep-sea habitats (seamounts, canyons and deep coral populations) and related fishing stocks.

Sub-Committee on Statistics and Information (SCSI)

- Facilitate the fleet data submission from EU members to the Secretariat by looking for feasible interactions with the EU fleet register system;
- Review, in line with the first GFCM data collection reference framework (DCRF), 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; organize a workshop on the new data and reporting frameworks as defined in the first DCRF;
- **Facilitate** end-users with documentation (leaflet, manual) to exploit the full potentialities of the SharePoint facilities newly established by the Secretariat.
- **Organize** the relevant meetings and activities foreseen in the first framework programme.

Sub-Committee on Economic and Social Sciences (SCESS)

- **Organize** the first Regional Symposium on Sustainable Artisanal Fisheries;
- **Organize** a regional workshop on recreational fisheries, possibly back-to-back with the symposium on Sustainable Artisanal Fisheries ;
- Collect data on the impacts of *Lagocephalus sceleratus* (puffer fish) in the Eastern Mediterranean;
- Prepare a review of socio and economic variables in the Task 1.3 to be validated by a group of experts through a dedicated SharePoint platform;
- **Establish** three Working Groups on methodologies for socio-economic analysis, on small scale/artisanal fisheries and on recreational fisheries;
- Organize a SCMEE/SCESS transversal session on the impacts of climate change, with special emphasis on socio-economic aspects of invasive species.

Sub-Committee on Stock Assessment (SCSA)

- **Organize** the meetings of the Working Groups on Small Pelagic and Demersal Species back-to-back with the Subcommittee meetings;
- **Organize** a workshop on the definition and estimation of reference points for small pelagics and demersal stocks, in line with the GFCM guidelines for multi-annual management plans;
- Produce a biennial publication on the status of fisheries in the Mediterranean and Black Sea fisheries;

- Develop methods and undertake studies on stock unit identification, migration patterns and exchange rates between meta-populations;
- Investigate those stocks of lessepsian species that compete with, or have even replaced as main targets of the fishery, the autochthonous stocks, being able to endure conditions of high fishing pressure;

Potential activities to be jointly developed in collaboration with party organizations

23. Several activities mentioned above could be carried out together with party organizations that entered into a memorandum of understanding with GFCM at the thirty-sixth session of the Commission or within the framework of future cooperative efforts, as explained in document GFCM:XXXVII/2013/Inf.5.

Issues related to the ongoing amendment of the GFCM legal and institutional framework of relevance to SAC

24. The SAC at its fifteenth session reviewed selected provisions in the draft amended GFCM Agreement and associated rules (document GFCM:XXXVII/2013/10) which would be of direct relevance to its future work.

25. With particular reference to the potential establishment of sub-regional working groups instead of existing subsidiary bodies of SAC and the review mechanism proposed to facilitate the transposition of scientific advice emanating from SAC in the decision-making process by the Commission, the Committee endorsed the work done so far within the remit of the amendment process. It also expressed satisfaction for the proposed inclusion of multiannual management plans in the amended agreement.

Scheduled meetings for the 2012-2013 intersessional period

26. The below list of meetings is submitted for the consideration of the Commission:

Meeting	Place/Date
(SCMEE) Workshop on artificial reefs (ARs) in the Mediterranean and Black Sea (in collaboration with EastMed)	Izmir, Turkey 27 September 2013
(SCSA) Working Group on stock assessment (WGSA) of Demersal Species (5 days)	TBD
(SCSA) Working Group on stock assessment (WGSA) of Small Pelagic Species (5 days)	TBD
(SCSA) Workshop on the definition and estimation of reference points for Mediterranean and Black Sea fisheries (3 days)	TBD
(SCESS) Working Group on Common methodology to carry out socio-economic analysis (3 days)	Tunisia TBD
14 th Session of the SCSA (2 days, back to back with WGSA)	TBD
13 th Session of the SCMEE (3 days)	TBD
13 th Session of the SCSA (3 days)	TBD
13 th Session of the SCESS (3 days)	TBD
16 th session of the Scientific Advisory Committee (4 days)	TBD

27. The list of meetings foreseen under the FWP for the rest of 2013 is provided below:

Meeting	Place/Date
Kick off meeting for the “A Mediterranean Cooperation for the Sustainable Use of the Marine Biological Resources” project	June 2013, GFCM HQs, Rome
Sub-regional workshop to test the feasibility of implementing multiannual management plans (Western, Central and Eastern Med.)	June 2013; TBD
First Regional Symposium on Sustainable Artisanal Fisheries in the Mediterranean and the Black Sea	October/November 2013; Malta
Workshop to test the feasibility of implementing multiannual management plans in the Black Sea	October 2013; TBD
(SCSI/SCSA/SCSS) Transversal Workshop on the new data and reporting frameworks, including the GFCM Data Collection Reference Framework (DCRF)	TBD
Workshop on IUU, including MCS and fleet (Mediterranean Sea)	TBD

SUGGESTED ACTION BY THE COMMISSION

28. The Commission is invited to review the activities carried out by its subsidiary bodies during the intersessional period and to provide guidance on any follow-up that may be required as well as on the working strategies to be adopted. It is also invited to examine and, as appropriate, endorse the conclusions and advice for fisheries management by SAC.

29. The Commission is also invited to review the activities proposed by SAC as detailed in this report, including those within the remit of the FWP. The Commission may wish to highlight its priorities and to consider budgetary implications in finalising the programme of work.

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

GSA	Species	Methodology used	Stock status	Management advice	WG comments	SC comments	SAC 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 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	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	SAC highlights that the current state of the stock is believed to be related to ecological and/or environmental reasons. Therefore concludes that the word collapse does not fully apply. SAC advice is

GSA	Species	Methodology used	Stock status	Management advice	WG comments	SC comments	SAC comments
					advice on stock status.	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.	that the Stock is under some environmental stress and that human exploitation should be kept to minimum to maximize potential for stock recovery
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.	The SAC endorses the advice.
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.	The SAC endorses the advice.
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.	The SAC endorses the advice.
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	The SAC endorses the advice.

GSA	Species	Methodology used	Stock status	Management advice	WG comments	SC comments	SAC comments
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	The SAC endorses the advice.
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.	The SAC endorses the advice. The fact that the assessment is done with 2 years lag is highlighted
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.	--

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

GSA	Species	Data type	Years data	Methodology used	Stock status	Management advice	WG comments	SC comments	SAC 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 (Fcurr/F0.1=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.	The SAC endorses the advice.
GSA 05	European hake (<i>Merluccius merluccius</i>)	Catch, effort, Lfreq catch & trawl surveys	2000-2011	XSA and Y/R analysis	Overfishing (Fcurr/F0.1=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.	The SAC endorses the advice.
GSA 06	European hake (<i>Merluccius merluccius</i>)	Catch, effort, Lfreq catch, trawl surveys	1999-2011	XSA, Y/R analysis, FLR predictions	Overfishing (Fcurr/F0.1=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.	The SAC endorses the advice.

GSA	Species	Data type	Years data	Methodology used	Stock status	Management advice	WG comments	SC comments	SAC 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 (Fcurr/F0.1=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.	The SAC endorses the advice.
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. (Fcurr/F0.1=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	Management advice	WG comments	SC comments	SAC 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 (Fcurr/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%, 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.	The SAC endorses the advice.
GSA 01-03	Blackspot seabream, <i>Pagellus bogaraveo</i>	Lfreq catch	2009-2011	LCA and Y/R analysis	Stock is in overfishing status (F _c =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). (Fcurr/F0.1=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.	The SAC endorses the advice.

GSA	Species	Data type	Years data	Methodology used	Stock status	Management advice	WG comments	SC comments	SAC 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. (Fcurr/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.	The SAC endorses the advice.

GSA	Species	Data type	Years data	Methodology used	Stock status	Management advice	WG comments	SC comments	SAC comments
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 ($F_{0.1} = 0.26$ as a proxy of FMSY). ($F_{curr}/F_{0.1}=5.5$)	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.	The SAC endorses the advice.
GSA 05	Striped red mullet, <i>Mullus surmuletus</i>	Catch & trawl surveys	2000-2011	XSA and Y/R analysis	Overfishing ($F_{curr}/F_{0.1}=3.1$)	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.	The SAC endorses the advice.
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) ($F_{curr}/F_{0.1}=2.5$)	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 advice as follows: "reduce fishing mortality by means of effort and catch limitations".	The SAC endorses the advice.

GSA	Species	Data type	Years data	Methodology used	Stock status	Management advice	WG comments	SC comments	SAC 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 $F_{0.1} = 0.45$ 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 F_{0-4} is around 1.3), the stock is considered in overfishing. ($F_{curr}/F_{0.1}=2.9$)	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.	The SAC 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 $F_{0.1}=0.292$ and $F_{2-4}=0.972$, the stock seems to be in an overexploitation status, but this assessment was considered preliminary. ($F_{curr}/F_{0.1}=3.3$)	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	Management advice	WG comments	SC comments	SAC 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. (Fcurr/F0.1=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.	The SAC 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. (Fcurr/F0.1=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	Management advice	WG comments	SC comments	SAC 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. ($F_{curr}/F_{0.1}=3.9$)	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.	The SAC endorses the advice.

GSA	Species	Data type	Years data	Methodology used	Stock status	Management advice	WG comments	SC comments	SAC comments
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 (Fc) above the reference point F0.1. (Fcurr/F0.1=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 F0,1 level (this percentage was calculated using the average value of Fc and F0.1 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. Fmax as reference point should be avoided and the use of F0.1 is recommended. As Fc>F0.1, 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.	The SAC considers the assessment as preliminar in agreement with the SC comments

GSA	Species	Data type	Years data	Methodology used	Stock status	Management advice	WG comments	SC comments	SAC 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). (Fcurr/F0.1=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.	The SAC endorses the advice.

GSA	Species	Data type	Years data	Methodology used	Stock status	Management advice	WG comments	SC comments	SAC 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.	<p>The stock is in overfishing status. From the first model, the actual level of fishing mortality ($F_{bar}=1.135$) is higher than the values calculated for the FMSY proxy ($F_{0.1}=0.48$). 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.</p> <p>($F_{curr}/F_{0.1}=2.4$)</p>	<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 $F_{0.1}$ 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. 	<p>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.</p>	<p>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.</p>	<p>The SAC endorses the advice.</p>

GSA	Species	Data type	Years data	Methodology used	Stock status	Management advice	WG comments	SC comments	SAC comments
GSA 06	Deep-water pink shrimp, <i>Parapenaeus longirostris</i>	Catch, trawl surveys & Lfreq catch	2001-2011	Based on LCA and YpR.	Overfishing. ($F_{curr}/F_{0.1}=3.2$)	From a precautionary approach and taking into account the estimated reference point FMSY proxy $F_{0.1}$, a reduction of fishing mortality about 70% to reach $F_{0.1}$ 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.	The SAC endorses the 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 $F_{0.1} = 1.22$ 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 $F_{0.3}$ was around 1.5-1.6 in 2010 and 2011), the stock is considered in overfishing. ($F_{curr}/F_{0.1}=1.3$)	Maintaining the current exploitation pattern, characterized by high catches of undersized shrimps from small trawlers, and considering $F_{0.1}$ 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.	The SAC endorses the advice.

GSA	Species	Data type	Years data	Methodology used	Stock status	Management advice	WG comments	SC comments	SAC 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. ($F_{curr}/F_{0.1}=2.1$)	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.	The SAC endorses the advice.
GSA 05	Norway lobster, <i>Nephrops norvegicus</i>	Catch & Trawl surveys	2001-2011	XSA and YpR.	Overfishing. ($F_{curr}/F_{0.1}=3.2$)	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.	The SAC endorses the advice.

GSA	Species	Data type	Years data	Methodology used	Stock status	Management advice	WG comments	SC comments	SAC comments
GSA 17	Mantis shrimp, <i>Squilla mantis</i>	Catch, trawl surveys & Lfreq catch	2007-2011	VPA, Y/R	<p>Overfishing. Current F (2011) estimates with VIT model and separable VPA respectively of 0.93 and 1.00, higher than reference point ($F_{0.1} = 0.50$ 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.</p> <p>($F_{curr}/F_{0.1}=1.9$)</p>	<p>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 ($F_{0.1}$), 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.</p>	<p>No specific comments. Assessment and recommendations endorsed</p>	<p>The SC endorses the advice.</p>	<p>The SAC endorses the advice.</p>

GSA	Species	Data type	Years data	Methodology used	Stock status	Management advice	WG comments	SC comments	SAC comments
GSA 29	Spiny dogfish, <i>Squalus acanthias</i>	Catch, Lfreq catch & trawl surveys	1989-2011	VIT and YpR from NOAA.	<p>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 (Overfishing?). ($F_{curr}/F_{0.1}=1.2$)</p>	<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 	<p>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</p>	<p>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.</p>	<p>The SAC endorses the advice.</p>

GSA	Species	Data type	Years data	Methodology used	Stock status	Management advice	WG comments	SC comments	SAC comments
GSA 29	Whiting, <i>Merlangius merlangus euxinus</i>	Catch, Lfreq catch & trawl surveys	2000-2011	YPR-LEN	<p>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 $F_c(2000-20011) = 0.479$ 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.</p> <p>($F_{curr}/F_{0.1} = 1.1$)</p>	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 SC-SA-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	The SAC endorses the advice.

GSA	Species	Data type	Years data	Methodology used	Stock status	Management advice	WG comments	SC comments	SAC comments
GSA 29	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. (F _{curr} /F _{0.1} =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.	The SAC endorses the advice. The fact that the assessment is done with 2 years lag is highlighted

GSA	Species	Data type	Years data	Methodology used	Stock status	Management advice	WG comments	SC comments	SAC 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. (Fcurr/F0.1=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 <i>Mullus barbatus</i> 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	Management advice	WG comments	SC comments	SAC comments
GSA 01, 02, 03, 04	European hake, <i>Merluccius merluccius</i>	Catch, length frequency (catch data, survey data)		For lengthly 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.	---

Appendix B

**DRAFT TERMS OF REFERENCE FOR SELECTED ACTIVITIES AS AGREED
BY THE SAC AT ITS 15th SESSION****1. (SCSA) 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 and small pelagic species (incorporating information on environmental issues);
- Revise the terminology for providing advice on stock status in relation to reference points to be used in the GFCM assessment WGs;
- Perform hand-on data analysis with existing software (FLR, a4a, VIT, XSA, SURBA, time series analysis) to estimate reference points to fisheries for which required data for the selected model is available;
- Propose limit and target conceptual reference points and its associated estimates for biomass and fishing mortality for selected fisheries;
- Review the use of reference point to provide advice for sustainable fisheries (management strategies and harvest control rules).

2. (SCMEE) Three-year extension of the medium-term research programme on Elasmobranchs in the Mediterranean and Black Sea:

- Prepare a study on practical options for mitigating by-catch of the most impacting gear;
- Produce and disseminate guidelines on good practices to reduce the mortality of sharks and rays in artisanal fisheries;
- Carry out studies on biology, 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;
- Prepare factsheets for selected commercial species presenting identification problems;
- Assess the impact of anthropogenic activities other than fisheries on the observed decline of certain sharks and rays populations;
- Carry out a pilot tagging programme for pelagic sharks aimed at identifying the spatial/temporal use of the habitat.

3. (SCMEE) Improvement of TECHNOMED database:

- Create a link between the TECHNOMED and the GFCM web sites to inform about the actions carried out by GFCM in the field of fishing technology;
- Create a dedicated SharePoint to facilitate exchange of information among scientists;
- Update databases on trawl selectivity, trawl characteristics and national legislation, and make this information easily accessible through the internet;
- Organize training courses on fishing technology in collaboration with FAO Regional Projects, NGOs and partners;
- Create multilingual catalogue(s) of Mediterranean and Black Sea fishing gears and of good practices for sustainable techniques for fishermen and stakeholders;

- Regularly include a report of the actions and works of TECHNOMED in the annual meeting of SCMEE.

4. (SCMEE) Supporting actions to comply with Recommendation GFCM/35/2011/4 to provide useful information to fishermen to release sea turtles alive:

- Produce multilingual waterproof factsheets for fishermen with information on sea turtles by-catch mitigation and to release them alive;
- Carry out a practical course with relevant stakeholders aimed at:
 - a. advising about the importance of sea turtles for the marine ecosystems and the effects of by-catch on their populations
 - b. identifying and reporting sea turtle specimens by-catch in the logbook (also from a taxonomic point of view)
 - c. promoting a correct use of existing devices to mitigate/eliminate sea turtle by-catch and of kits for de-hooking;
 - d. any other relevant matter for the mentioned purposes

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 their contents should be adapted to the Mediterranean and Black Sea fisheries (if necessary).

5. (SCESS) Terms of Reference for the Working Group on Small-Scale/Artisanal fisheries:

- 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 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;
- Identify and develop priority case studies at country level to assist in the finalization of the above mentioned tasks.

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

- Explore the possibility to define a common policy framework for recreational fisheries in the GFCM Area;
- Identify specific issues to be specially taken in account when implementing the FAO TGRF in the GFCM area. Should they become the common basic management framework?
- Analyse existing cases of regulation of recreational fisheries within MPAs. Identify major achievements, gaps, impacts and groundings;
- Define the qualitative and quantitative variables 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 region and indentify possible solutions;
- Discuss existing and/or adopt a code of conduct for recreational fisheries in the GFCM Area;

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- Identify the main reasons that hinder a multilateral relationship between managers, scientists and recreational fishers;
 - Describe valuable data source outputs of recreational fisheries;
 - Identify main conflicts between recreational fishers and other users of the sea;
 - 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.

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

- Review the main Mediterranean studies carried out on methodology on socioeconomic data analysis;
- Present and discuss studies undertaken in the context of the FAO Regional Projects;
- Review the application of a common methodology: data availability; technical problems; availability of staff, etc.;
- Set up a program for the follow-up of the application of this common methodology;
- Draw up a practical guide;
- Prepare a reference document for the elaboration of guidelines for the use of a common methodology to analyse socio-economic data in fisheries management.

8. (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:

- Provide an explanation of the data collection reference framework (DCRF) details to countries to approach 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.

New standard format for national reports / nouveau format standard pour rapports nationaux

**FORMAT FOR THE PREPARATION OF NATIONAL REPORTS/
FORMAT POUR LA PRÉPARATION DES RAPPORTS NATIONAUX**

Description of the fisheries

Provide the following information (use tables provided where appropriate):

Description of the fishing grounds and GSA.

Total landings by group of targeted species.

Total landings by species (estimated if needed)

Fleet:

- number of vessels by fleet segment (Tables will be provided). Indicate updates from last year.
- LOA (range and average)
- Total KW (or HP) + GT (or GRT)

Status of stocks of priority species

Indicate the species evaluated during the intersessional period expressing the exploitation status for each stock. The report should also indicate the geographical sub-areas covered by the assessment and whether those have been presented to the GFCM Working Groups or to any other instances.

Status of the statistics and information system

Description of the national system of fishery statistics and/or any improvement/change occurred. Indicate whether or not progress in activities related to the collection and processing of fishery statistics have been done with the assistance of FAO regional projects. Type of data collected, transmission to GFCM Secretariat and other international bodies. Inventory of existing databases. Synergies with other applications.

Status of research in progress

Description of the results of the continuing and in progress research projects of interest to GFCM Sub-Committees and Working Groups, with particular emphasis on management oriented assessment and GFCM priority species.

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

Description of the achievement and/or progress in activities related to the national research on the socio-economic aspects of the fishing communities and fishing sector.

Marine environmental studies in progress

Description of the main results from actions and studies carried out during the intersessional period which are relevant to the impact of the marine environment changes on the priority stocks and on the ecosystem alteration originated by the fisheries activities.

Involvement in activities of FAO Regional Projects

Description of activities carried out during the intersessional period by Regional Projects, level of involvement, results obtained and assistance received.

Management measures

Description of the management measures (legislation, regulations, etc) taken in direct response to GFCM recommendations during intersessional period **including the assessment of their effects**

Environment protection measures

Description of recent activities in establishing reserve areas during the intersession; and, whenever relevant scientific information do exist, highlighting the roles of existing marine protected areas in securing better opportunity for the sustainability of fish stocks.

With regard to: *Recommendation GFCM/35/2011/2 on the exploitation of red coral in the GFCM Competence Area*

If derogation of Paragraph 4 “*CPCs shall ensure the prohibition of the exploitation of red coral populations at depth less than 50 m until scientific studies, as validated by GFCM-SAC, indicate otherwise*” is applicable, provide detailed information on the national management framework and the studies carried out at national level to apply this derogation.

With regard to: *Recommendation GFCM/36/2012/2 on mitigation of incidental catches of cetaceans in the GFCM area*

Provide information on by-catch rates of cetaceans taking into account, amongst other relevant information: fisheries concerned, characteristics of gear type, times, locations (either by GSA or statistical rectangles) and affected cetacean species.

With regard to: *Recommendation GFCM/36/2012/3 on fisheries management measures for conservation of sharks and rays in the GFCM area*

Provide information on fishing activities, catch data, incidental taking, release and/or discarding events for sharks species listed either in Annex II or III of the SPA/BD Protocol.

Other Recommendations will be added (eventually) when they request specific information to be transmitted through National Reports to SAC.

Proposals for future research programmes