

January 2010



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



GENERAL FISHERIES COMMISSION FOR THE MEDITERRANEAN

SCIENTIFIC ADVISORY COMMITTEE (SAC)

Thirteenth Session

Marseille, France 7-11 February 2011

**DOCUMENT ON UPDATING THE SAC REFERENCE FRAME AND
ESTABLISHING A MEDIUM-TERM STRATEGIC PLAN FOR THE
FUTURE***

* Available only in English

(By J.J. Maguire)

The designations employed and the presentation of material in this information product do not imply the expression of any opinion whatsoever on the part of the Food and Agriculture Organization of the United Nations (FAO) concerning the legal or development status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. The mention of specific companies or products of manufacturers, whether or not these have been patented, does not imply that these have been endorsed or recommended by FAO in preference to others of a similar nature that are not mentioned.

ISBN 978-92-5-10.....

All rights reserved. Reproduction and dissemination of material in this information product for educational or other non-commercial purposes are authorized without any prior written permission from the copyright holders provided the source is fully acknowledged. Reproduction of material in this information product for resale or other commercial purposes is prohibited without written permission of the copyright holders. Applications for such permission should be addressed to:

Chief
Electronic Publishing Policy and Support Branch
Communication Division
FAO
Viale delle Terme di Caracalla, 00153 Rome, Italy
or by e-mail to:
copyright@fao.org

© FAO 2010

Executive Summary

The review found that SAC has considerable achievements over the period reviewed. Strengths and weaknesses were identified from the point of view of the author. Not surprisingly, there was a close correspondence between strengths and weaknesses, that is, strength and weaknesses are often the two sides of the same coin. A vision is proposed, based on the implementation of an Ecosystem Approach to Fisheries where SAC provides useful, reliable, relevant and implementable advice to make improvements under the four components of sustainability through a process that is based on: 1) Objectivity and integrity, 2) Openness and transparency, 3) Quality assurance, 4) Integrated advice – based on an ecosystem approach, 5) Efficiency and flexibility, and 6) National consensus.

Résumé

La revue conclue que le CSC a de très nombreuses réalisations à son actif depuis sa création. Les forces et les faiblesses, du point de vue de l'auteur, ont été identifiées et c'est sans surprise qu'on constate une étroite correspondance entre les forces et les faiblesses, qui, souvent, sont les deux faces d'une même pièce. Une vision est proposée, fondée sur la mise en œuvre d'une Approche Écosystémique des Pêches (AEP) où le CSC fournit des conseils de gestion qui sont utiles, fiables, pertinents et qu'il est possible de mettre en œuvre afin de faire des progrès sous les quatre composantes de la durabilité grâce à un processus qui est fondé sur : 1) l'objectivité et l'intégrité, 2) l'ouverture et la transparence, 3) le contrôle de la qualité, 4) des conseils intégrés dans le contexte de l'approche écosystémique, 5) sur l'efficacité et la flexibilité, et 6) sur le consensus des pays impliqués.

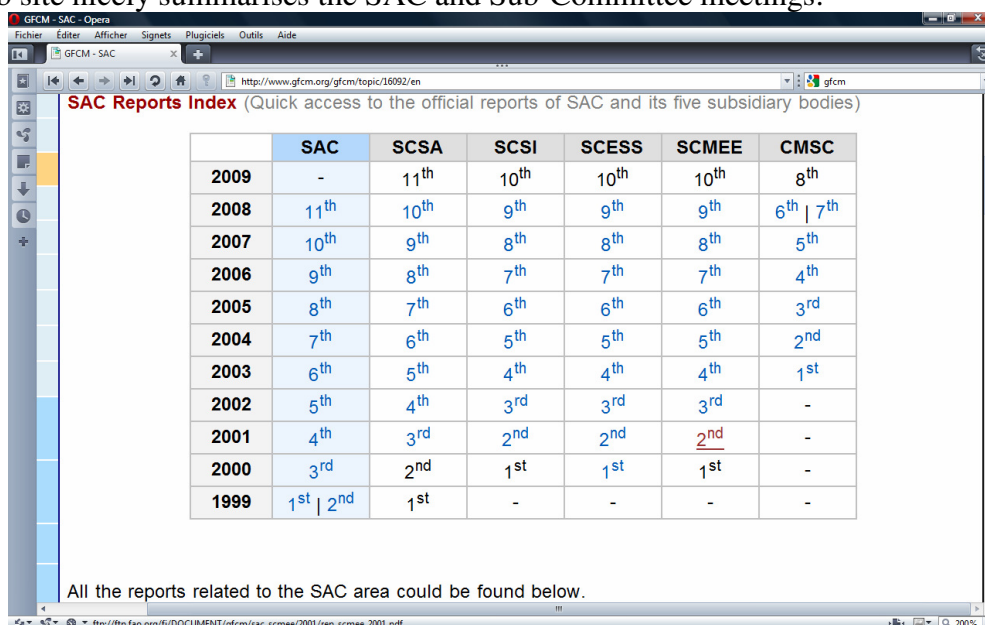
BACKGROUND (SAC CREATION AND FRAME OF REFERENCE – MANDATE – TERMS OF REFERENCE – MODE OF OPERATION (OBJECTIVES, STRUCTURE))

At its 11th session in December 2008, the Scientific Advisory Committee (SAC) of the General Fisheries Commission for the Mediterranean (GFCM) endorsed the proposal made by its Coordination Meeting of the Sub-Committees (CMSC) to develop “a medium term strategic plan for the SAC with possible support of consultants and GFCM task force (coordinators, bureau, etc.)”. This report is the draft a consultant to be presented at the 12th session of the SAC and subsequently improved based on the discussions at that meeting. An updated draft will be prepared after SAC 12 to be presented at GFCM 34 in March 2010. The terms of reference for the consultant are in Appendix I.

The consultant attended the meetings of the Sub-Committees (Stock Assessment (SCSA), Statistics and Information (SCSI), Economics and Social Sciences (SCESS), Marine Environment and Ecosystems (SCMEE)) and the Coordinating Meeting of the Subcommittees (CMSC) held in Malaga, Spain from November 30th to December 4th, 2009 to get a direct experience of the covered topics and the mode of operations of each subsidiary body. The consultant also participated, in a different capacity, in the 2008 meetings of the working groups on the assessment of demersal and pelagic species in September 2008 in Izmir, Turkey and the second meeting of the SAC working group on basic methods and protocols to undertake assessments with direct methods which was held in Tripoli, Libya from June 2nd to 4th, 2008.

This report does not propose a completely new approach to the way SAC does business. Instead, the intent is to raise various issues and questions to help move SAC towards greater efficiency and usefulness.

The first and the second meeting of SAC were held in 1999, and there was also a meeting of the SCSA in the same year. The other Sub-Committees were met for the first time in 2000 and the Coordinating Meeting of the Sub-Committees met first in 2003. The screen shot below from the GFCM web site nicely summarises the SAC and Sub-Committee meetings:



	SAC	SCSA	SCSI	SCESS	SCMEE	CMSC
2009	-	11 th	10 th	10 th	10 th	8 th
2008	11 th	10 th	9 th	9 th	9 th	6 th 7 th
2007	10 th	9 th	8 th	8 th	8 th	5 th
2006	9 th	8 th	7 th	7 th	7 th	4 th
2005	8 th	7 th	6 th	6 th	6 th	3 rd
2004	7 th	6 th	5 th	5 th	5 th	2 nd
2003	6 th	5 th	4 th	4 th	4 th	1 st
2002	5 th	4 th	3 rd	3 rd	3 rd	-
2001	4 th	3 rd	2 nd	2 nd	2 nd	-
2000	3 rd	2 nd	1 st	1 st	1 st	-
1999	1 st 2 nd	1 st	-	-	-	-

All the reports related to the SAC area could be found below.

Figure 1: History of the meetings of SAC and of its subsidiary bodies.

SAC ACHIEVEMENTS

SAC was successful in holding productive meetings every year since its creation. Considerable work has been done by SAC itself and by its subsidiary bodies. SAC has managed to maintain its reports around 100 pages long since SAC 5 (except for SAC 10). Participation¹ (Figure 2) has also been relatively steady with generally around 30 participants from 15 to 20 countries being involved. SAC 1 was the best attended with 42 participants and SAC 8 the least attended with 26 participants. All countries participated in at least one SAC meeting (Table 1): Italy (43), Spain (42), Morocco (37), Greece (25) and Tunisia (23) all sent more than 20 participants in total to the 11 SAC meetings.

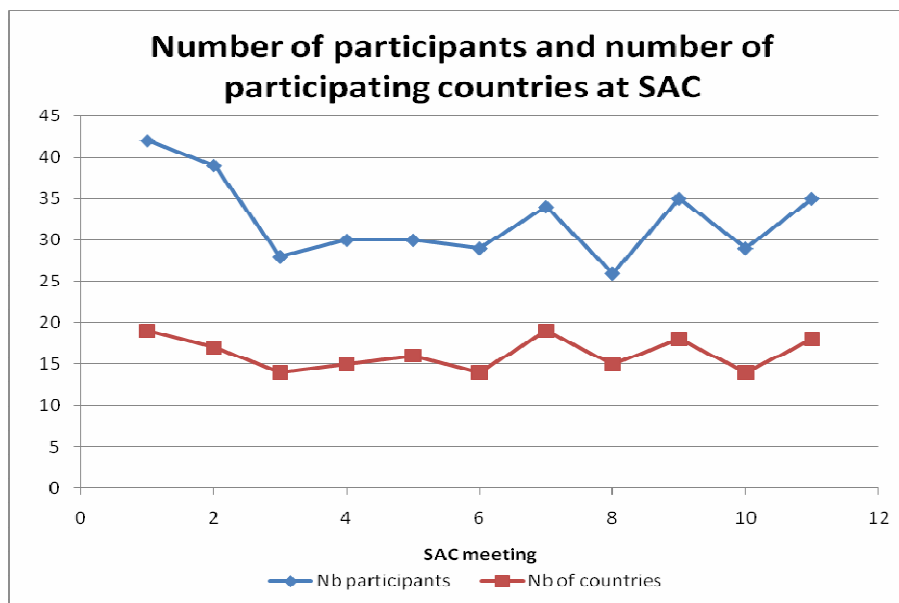


Figure 2: Number of participants and of participating countries in SAC meetings.

Table 1: Number of participants sent by member countries to the 11 SAC meetings.

Albania	15
Algeria	18
Bulgaria	3
Croatia	9
Cyprus	13
EC	18
Egypt	6
France	18
Greece	25
Israel	3
Italy	43
Japan	9
Lebanon	2
Libya	11
Malta	16
Monaco	3
Montenegro	6

¹ Participation is under-estimated by those numbers because participants from regional projects or from countries not member of GFCM are not included. The same rule was applied for counting participants in the meetings of the Subcommittees.

Morocco	37
Romania	6
Slovenia	5
Spain	42
Syria	9
Tunisia	23
Turkey	17

SAC has successfully organised the work of its subsidiary bodies, discussed the results of the work of its subsidiary bodies and either approved or reformulated advice to be forwarded to the Commission. Subsequently, the Commission adopted recommendations e.g. on mesh sizes in demersal fisheries, restricted towed gear fisheries in depth, agreed to manage effort, closed fishing during certain seasons etc. It can therefore be said that SAC has been moderately successful in helping the Commission make appropriate management decisions.

Sub-Committees

The SCSA benefited from the largest number of participants (Figure 3) with up to 50 participants in its 2005 and 2006 meetings while the SCESS has the smallest number of participants. Note that there was no list of participants in the report of the 2003 meeting of the SCSA.

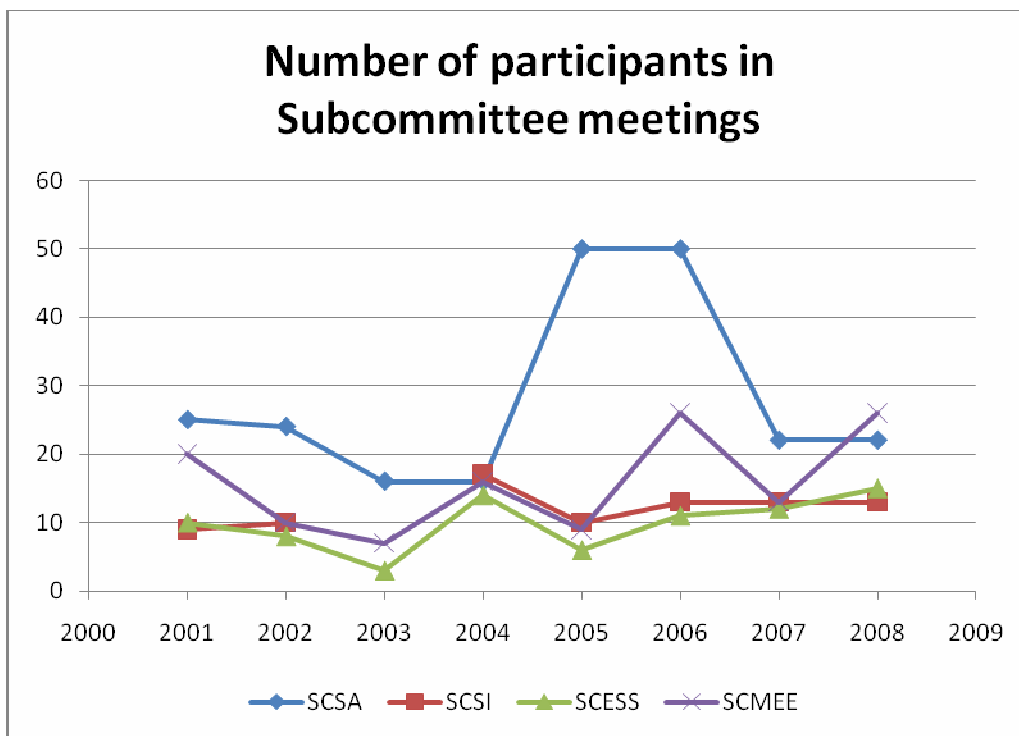


Figure 3: Number of participants in meetings of the Sub-Committees.

The SCSA has also the largest number of participating countries, (Figure 4) except in 2004 when the SCSA had the largest number. The SCESS and the the SCME had very low participation in the mid 2000s but the situation has improved somewhat in recent years.

The persistence of some agenda items over the years (e.g. reference points for the SCSA, socio economic indicators for the SCESS, the ecosystem approach to fisheries for the SCME, Task I data for the SCSA) indicates that some issues have remained difficult to complete.

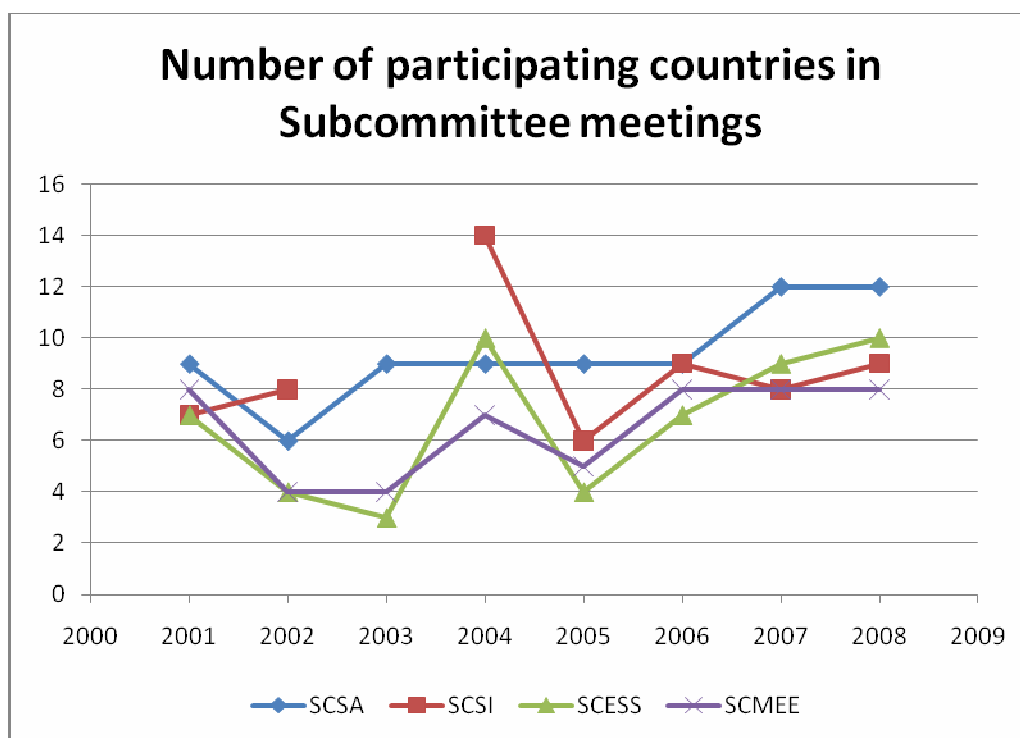


Figure 4: Number of participating countries in Sub-Committee meetings.

SAC STRENGTHS / OPPORTUNITIES

SAC has a well established structure with four standing SSub-Committees (SCSA, SCSi, SCESS, SCMEE) that have the flexibility of establishing working groups, study groups or workshops as required.

- SAC formally approves the work programme of its subsidiary bodies and the Commission approves the work programme of the SAC.
- The GFCM Secretariat is closely involved in the work of the SAC. This ensures that the work of SAC is relevant to the Commission and that the advice can be used.
- SAC can count on a core of very dedicated scientists who have consistently participated in its meetings.
- SAC provides training in stock assessments and associated methods.
- SAC has agreed on a comprehensive set of Geographical Sub-Areas (GSAs).
- SAC has provided stock assessments and management advice for several species in various GSAs.

The creation of a study group on Mediterranean fisheries (SGMED) by the Scientific, Technical, and Economic Committee on Fisheries (STECF) of the European Commission (EC) has made it possible to produce a large number of stock assessments.

Management by Total Allowable Catches (TACs) is generally not applied in the Mediterranean². This means that SAC does not have to produce stock assessments every year to support the TACs setting process. This provides an opportunity for SAC to be more innovative in the analyses it performs and the advice it provides. More specifically, it could make it possible to do multispecies and multidisciplinary fishery assessments and provide advice on how to best improve the sustainability of such fisheries which is not necessarily achieved by limiting catches.

² Except for species like bluefin tuna under joint responsibility between GFCM and ICCAT.

SAC WEAKNESSES / THREATS

Not unexpectedly, weaknesses and threats are often the other side of the strengths and opportunities coins. The list below therefore closely matches that in the section above.

While the SAC, with four standing Sub-Committees (SCSA, SCSII, SCESS, SCMEI) is a relatively flexible structure, the existence of four standing Sub-Committees, each with their own more or less temporary subsidiary bodies, is an impediment to the provision of the multidisciplinary advice that would be most useful to the management system. The absence of integrated multidisciplinary and multispecies advice makes it possible to delay taking necessary management decisions. Transversal groups have been established and the CMSC has been set up, but these have not been able to provide multidisciplinary multispecies advice. Multidisciplinary advice on multispecies fisheries has a higher likelihood to be relevant to fisheries management decision makers.

While it is true that SAC formally approves the work program of its subsidiary bodies and that the Commission approves the work program of the SAC, this appears to be more a bottom up approach than top down (*i.e.* the program of work is first developed by the scientists in working group rather than decided by the Commission). This can be frustrating for both scientists and Commission members. Scientists could become frustrated if the Commission does not act on the results of their work; Commission members could become frustrated if they receive scientific advice that they feel is not relevant or useful.

As indicated above, all countries have participated in at least one SAC meeting. However, the number of countries participating in any single meeting of SAC or of its subsidiary bodies is generally insufficient to be described as representing a widely accepted consensus. This makes it possible for countries that have not participated to question the advice at later steps in the process. There are only a few GFCM scientists fully trained in the whole suite of modern stock assessment and data analysis techniques. This is both a curse and a blessing because most existing stock assessment techniques are for single species assessments which might be of little use for the assessment of demersal fisheries in the Mediterranean. It might be more useful to train scientists in data analysis rather than in stock assessment techniques.

It is not clear that the GSAs do actually correspond to distinct biological units whose dynamics are largely independent from neighbouring units. This may compromise the usefulness of stock assessments conducted on only parts of a larger biological unit.

The links between SGMED and the SCSA seem unclear to many SCSA and SAC members. In addition, scheduling of SGMED seems to have occasionally interfered with the SCSA or its subsidiary bodies. It seems that SGMED has been created to help SCSA and SAC, but it is not clear that it is doing that yet.

The robustness of SAC advice has not been assessed. Some assessments are based on relatively limited data and guidelines have not been established to help decide when data are too few to provide reliable advice. In addition, when only partial data are used, the results may not be reliable as illustrated by the large differences between the 2008 and 2009 stock assessments of pelagic fishes in the Adriatic.

Management by TACs could pose a severe threat to SAC. Given the paucity of data and the possible weak correspondence between GSAs' and biological units, the necessity to provide yearly assessments to support a TAC management process could prove a heavy burden for SAC and could

compromise its credibility if assessment results were variable from one year to the next without corresponding variability in stock size in reality.

Several of the SAC – related meetings I have attended have been held in rooms organised in theatre or classroom style. This is not conducive to open and constructive discussion leading to consensus being reached.

RECOMMENDATIONS

Paragraph 36 of the report of SAC 1 states: *“The Committee believed that the role of the ad hoc working groups would be of high importance to the Scientific Advisory Committee itself. The Committee was in agreement that the Scientific Advisory Committee and its subsidiary bodies should adopt a problem-solving approach and therefore have a flexible structure at the level of the ad hoc working groups. The Committee recommended that some links be established between the Sub-Committees in order to avoid duplication of work. Joint activities between ad hoc working groups should also be envisaged. The Committee agreed that ad hoc working groups should report to the relevant Sub-Committee of competence. Under some circumstances, and according to the nature of the information required, the ad hoc working groups might report direct to the Scientific Advisory Committee.”* As reported above, SAC has implemented a flexible structure for its working groups, but this does not seem to have led to multidisciplinary advice on multispecies fisheries. The Sub-Committees themselves may be an impediment to fruitful exchanges between the different disciplines involved in the formulation of relevant advice.

An alternative to the standing Sub-Committees would be to apply the flexibility one step up, that is standing Sub-Committees would be abolished and *ad hoc* working groups reporting directly to SAC would be created on an *ad hoc* basis in a problem-solving approach. SAC should have a Executive Committee whose composition could be similar to the existing CMSC. The SAC Executive Committee would meet as needed and because of its small size, it could meet through web conferences.

SAC workload is excessive given available resources and the SAC work programme should be developed in a more top down approach by the SAC Executive Committee. Only those items where contributors have been identified and have agreed to prepare analyses would be included in the work programme.

A mechanism should be found such that all countries are participating at SAC meetings where advice is formulated.

The information available to assess stocks in the North Atlantic is considerably more complete and for a much longer time period than is the case for the great majority of stocks in Mediterranean. Yet, most of the age-based stock assessments in the North Atlantic show considerable so-called *retrospective patterns* where biomass estimates for a given year vary substantially depending on the number of years included in the analysis. There is no doubt that if those assessment methods were applied in the Mediterranean on stocks where there is little information available, the results would be highly uncertain. It is therefore this author's strong belief that traditional stock assessment techniques have little chance of being useful to help SAC formulate relevant and useful advice. SAC should instead thrive to expand its own multispecies and multidisciplinary approaches based on the data and information that are currently available.

Related to the point above, a systematic evaluation of the variability of stock assessments made by the SCSA should be undertaken, including retrospective analyses where possible. Management advice should acknowledge and take account of the basic biological units (stocks) involved.

SAC should coordinate with STECF / SGMED to ensure that the benefits from SGMED are maximised for SAC / SCSA.

If meaningful discussions are desired, and if consensus is to be reached, meeting rooms should be arranged so that all members can see each other and feel that they are on equal footing with all other members.

SAC FRAME OF REFERENCE

The most recent frame of reference I have been able to find was from GFCM 27 for the 2003 and 2004 period (reproduced here as Appendix 3). An update, consistent with the recommendations above and the strategic vision below is suggested below:

SAC is requested to establish an Executive Committee, with a composition similar to that of the Coordinating Meeting of the Sub-Committees, with the aim to improve the linkages among the various disciplines active in SAC and National focal points of GFCM Members.

1. Management of fisheries

SAC is requested:

1.1. To identify stock units based on spawning areas, juvenile rearing areas, as well as meristic, morphometric and genetic studies, taking into account the major bathymetric and hydrographic features and to link them to the GSAs well as the operational units involved for the priority species.

1.2. To organise, calling on expertise outside of the GFCM areas if needed, a workshop to identify the best way to implement an ecosystem approach (EAF) to fisheries and identify pilot areas where case studies could be conducted. The EAF as understood by the FAO and as implemented in Australia (<http://www.environment.gov.au/coasts/fisheries/publications/guidelines.html>) uses existing knowledge and expertise, taking into account the bio-ecological, social, economic and institutional components of sustainability. It may be an efficient way of providing multidisciplinary advice for the management of multispecies fisheries based on existing knowledge and expertise. Implementing an EAF is expected to also cover the environmental protection aspects of the SAC mandate, including the collection of information on by-catches of protected species etc.

1.3. To initiate an in-depth reflection on how to make progress under the four component of sustainability (bio-ecological, social, economic and institutional).

1.4. To evaluate, through an external peer review, the variability and reliability of stock assessments made since 1999.

1.5. To participate actively in the Joint GFCM/ICCAT Working Group on tuna farming.

1.6. To participate actively in the Joint EIFAC/GFCM Working Group on management of sturgeon.

STRATEGIC VISION

In the early 2000s, the author attended a Dialogue meeting between the fishing industry, fishery administrators and fishery scientists organised by COPEMED in Madrid. At that meeting, it was clear that fishing industry participants and representative from the southern shores of the Mediterranean held the view that fisheries science and management had the potential to be helpful to them while, generally speaking, those of the northern shores who had been exposed to more extensive traditional fisheries management based on allowable catches considered that fisheries science and management was more likely to hurt rather than help them.

The state of play in the GFCM area is that fisheries science and fisheries management can help the fishing industry if errors made in other areas are avoided. Implementing an ecosystem approach to fisheries as understood by FAO and as implemented in Australia has the potential of avoiding past errors.

The EAF is based on the modern concept of sustainability which is multidimensional with at least four components: 1) bio-ecological, 2) social, 3) economic, 4) institutional. The bio-ecological component includes the conservation of the target species, but also the protection of associated species and ecosystem functions. The social component deals mostly with an equitable distribution of the benefits from the fishery, while the economic component aims at the long term profitability of the fishery. The institutional component is often seen as the key component in achieving sustainability, but it is generally recognised that a balance has to be struck between the four components and that no single component should be given absolute prominence. In this context, it should be noted that achieving a balance in a multispecies context will generally imply that some stocks could be overexploited, some fully exploited and some underexploited.

The proposed vision could therefore be: *SAC provides useful, reliable, relevant and implementable advice to make improvements under the four components of sustainability through a process that is based on: 1) Objectivity and integrity, 2) Openness and transparency, 3) Quality assurance, 4) Integrated advice – based on an ecosystem approach, 5) Efficiency and flexibility, and 6) National consensus.*³

³ Based on <http://www.ices.dk/iceswork/acom.asp>

Appendix 1:**Terms of reference for the consultant**

Ce travail constitue une réponse à la requête du SAC, approuvée par la Commission, qui s'est prononcée en faveur de la formulation d'un plan stratégique à moyen terme pour le CSC avec l'appui possible de consultants et de groupe de soutien (coordonnateurs, bureau du CSC, etc.)⁴.

Sous la supervision générale et technique du Secrétaire Exécutif de la CGPM et en étroite collaboration avec le président du SAC, le consultant effectuera sa mission en deux phases:

a) dans une première phase du 30 novembre au 4 décembre 2009 (réunions des Sous-comités du SAC, Malaga, Espagne), le consultant :

- Passera en revue et analysera la documentation pertinente concernant: la création du SAC et son cadre de référence mis à jour en 2004, son mode opératoire (objectifs, structure, procédures), les activités et résultats scientifiques - y compris les principaux thèmes examinés par ses organes subsidiaires (SCSA, SCESS, SCMEE et SCSi) :évaluation des stocks (méthodologie de l'évaluation et d'aide à la fourniture d'avis scientifique, points de référence, espèces prioritaires et stocks partagés, ...) ; indicateurs sociaux économiques; Statistiques (Informations disponibles, définitions et implémentation progressive des outils de suivi des activités de pêche tels que GSA, Tache 1, ...); approche écosystémique et les différents avis scientifiques émis par le SAC et leurs portées (MPAs, FRAs, contrôle de l'effort de pêche...).

(La documentation sera rendue accessible à travers les liens internet (e.g : GFCM, AdriaMed, Copemed, EastMed web-pages et par l'envoi de documentations complémentaires par le Secrétariat de la CGPM par voie de DHL).

- Produira une ébauche de rapport de synthèse, incluant, (de son point de vue):

i) L'analyse des réalisations du SAC pour la période 1997-2008 y compris en ce qui concerne l'implication des pays membres dans les activités intersession et la participation aux réunions;

ii) l'identification des éléments/paramètres principaux de force et faiblesse du SAC et suggestions pour en améliorer le fonctionnement et la manière de servir en ce qui concerne la formulation d'avis effectifs d'aménagement des pêches à l'intention de la Commission.

iii) une proposition de mise à jour du cadre de référence pour le CSC / SAC et une vision stratégique pour le futur.

b) Deuxième phase, présentation du rapport intérimaire à la 12^{ième} session du CSC du 25 au 29 janvier 2010 et finalisation du rapport (10 mars 2010) en vue de le rendre disponible à la 34^{ième} session de la CGPM.

⁴ Paragraphe 20 du rapport de la 11^{ème} session (Marrakech, décembre 2008)

Appendix 2

Selected extracts from SAC reports related to the programme of work**SAC I:****ORGANISATION OF FUTURE WORK: STRUCTURE, DATA BASES AND FUNCTIONING**

31. This agenda item was introduced by the Secretariat on the basis of document GFCM:SAC/99/3. It contained suggestions concerning the structure and functioning of the Scientific Advisory Committee based on the views of the Twenty-third Session of the Commission.

32. Document GFCM:SAC/99/3 suggested that the Scientific Advisory Committee be assisted in carrying out its mandate by three Sub-Committees (i) a Sub-Committee on Stock Assessment; (ii) a Sub-Committee on Fishery Statistics and Information; and (iii) a Sub-Committee for Economic and Social Sciences. The document also proposed that these Sub-Committees should rely on the work of *ad hoc* working groups on specific matters related to issues of concern to each of the Sub-Committees.

33. The Committee agreed to set up a Sub-Committee to deal with matters related to the marine environment (Sub-Committee for Marine Environment and Ecosystems). One delegation expressed reservations concerning the setting-up of a Sub-Committee on environment, considering that such a Sub-Committee would not facilitate effectively the work of SAC and suggested that, in order to simplify the structure and not overload it with additional subsidiary bodies, the responsibilities of this new Sub-Committee be distributed among the other Sub-Committees as appropriate. A first draft proposal of the terms of reference of this new Sub-Committee is attached in Appendix G.

34. Several delegations and observers put emphasis on the need to strengthen cooperation between the Scientific Advisory Committee and other regional Mediterranean bodies concerned with the environment and living resources.

35. In this respect, the Committee noted that the already existing *ad hoc* joint Working Group GFCM/ICCAT on Large Pelagic Fishes had achieved much progress in research and emphasized the need for the continuation of the work of this Working Group. The observer from ICCAT expressed the willingness of his Organization to continue collaboration with GFCM.

36. The Committee believed that the role of the *ad hoc* working groups would be of high importance to the Scientific Advisory Committee itself. The Committee was in agreement that the Scientific Advisory Committee and its subsidiary bodies should adopt a problem-solving approach and therefore have a flexible structure at the level of the *ad hoc* working groups. The Committee recommended that some links be established between the Sub-Committees in order to avoid duplication of work. Joint activities between *ad hoc* working groups should also be envisaged. The Committee agreed that *ad hoc* working groups should report to the relevant Sub-Committee of competence. Under some circumstances, and according to the nature of the information required, the *ad hoc* working groups might report direct to the Scientific Advisory Committee.

37. The Secretariat drew the attention of the Committee to the financial implications that the new structure might involve and noted that, unless extra-budgetary funds were made available to the Commission, the implementation of the programme of work of the Scientific Advisory Committee

would face constraints. The Committee, while recognizing such constraints, recommended that the Second Session of SAC be held in June 1999.

38. The Committee recognized the necessity to nominate scientists to be in charge of the coordination of the work of each Sub-Committee. The Committee convened a small group to draft terms of reference for the four Sub-Committees. Terms of reference of both a general and specific character were prepared by the group and are attached as Appendix F. It is suggested that the first meeting of the Sub-Committees should concentrate mainly on exploiting existing information relevant to their future work.

39. The Committee noted that these terms of reference were provisional and subject to review at the Second Session of the Scientific Advisory Committee.

SAC 2:

Organisation of future work was not on the agenda of the second meeting of SAC which was also held in 1999 and was a continuation of discussions not completed at SAC 1.

SAC 3:

57. The Chairman reviewed all the recommendations and programmes of work proposed by the four Sub-Committees. He then put forward for consideration by SAC a number of activities to be carried out by the four Sub-Committees during the next intersessional period for discussion, prioritizing and elaborating on their terms of reference.

58. SAC discussed the programmes proposed in the document presented by the Chairman on the programme of activities for the intersessional period and agreed that information on the source of funding and the authors of stock assessment studies should be included in the list of assessments which had been formulated during previous sessions of SAC.

59. Concerning national reports, it was stressed that a standard format should be adopted. Such a format should include a progress report on the research activities and a description of the results. National reports should also be submitted in a standard digital format (black and white) not exceeding two pages in order to be aggregated and incorporated as Annex to the SAC report.

60. Following an in-depth revision of the above proposals, SAC agreed to submit the following list of meetings of the Sub-Committees to the Commission⁵.

RECOMMENDATIONS FOR THE TWENTY-FIFTH SESSION OF GFCM

61. The recommendations by the SAC Sub-Committees agreed upon by the Committee are given below.

Sub-Committee on Economic and Social Sciences

62. SAC endorsed the Sub-Committee proposal concerning the development of a network of social scientists in order to facilitate the work of the Sub-Committee. The Network, using its own Web Page would contribute to the inventory of social experts and studies and to the completion of the glossary.

⁵ The list is not reproduced here, but can be found at http://www.fao.org/docrep/meeting/003/X9757B.htm#_Toc484578694

63. SAC endorsed the results of the Pilot Study (in the Alboran Sea) on socio-economic indicators and recommended to develop the use and interpretation of homogenous socio-economic indicators in each of the GFCM management units.

64. The social and institutional aspects of fisheries activities were as critical for management options as the economic aspects. It was felt necessary to carry out studies considering the relationship between the social, institutional and legal aspects of fisheries management.

Activities

65. The following activities were proposed to the Commission for approval:

(i) complete the set of indicators for the Alboran Sea by including the Algerian part of it as a first step, considering that the study should be extended to other Mediterranean areas whenever possible, with support from COPEMED;

(ii) develop the SCESS Network, with emphasis on:

- developing the data base on experts and studies;
- completing the glossary (activity to be implemented through the Network);

(iii) organize two meetings to review the methodology identified through the pilot study and prepare terms of reference for its application. One meeting to focus on selected areas of the Adriatic Sea would be carried out as part of the ADRIAMED project activities. The other meeting to focus on the Gulf of Gabes, under the framework of the COPEMED project activities. A Working Group to analyze the data collected should also be envisaged;

(iv) hold a training course on bio-economic modelling, and encourage the participation of members of regional Networks (Course to be held at the IOE Center in Fuengirola, Spain, (September 2000); sponsored by CIHEAM and COPEMED).

Sub-Committee for Stock Assessment

66. SAC expressed concerns about the situation as set out under Agenda Item 4 above (para. 23 to 26) and endorsed the SCSA recommendation regarding the need to strictly apply already existing management measures and develop new ones whenever necessary. However, SAC also considered that any new management measure should take into consideration the weakness and uncertainty of some assessments used by SCSA to deliver the advice. Nevertheless, socio-economic impacts of these measures should be considered.

67. It also recommended the following:

- The limits of management units should be defined with precision as soon as possible attaching a map showing the limits of all units. A meeting will be held by COPEMED to address this issue. SAC invited the Commission to define Terms of Reference for such a meeting.
- In order to improve the assessment with updated data as recommended by the SCSA, it was essential that there should be active participation by member countries which should provide the Working Group with all the existing information at their disposal.
- A common effort should be made to increase the number of assessments carried out in the southern and eastern areas.

Sub-Committee on Statistics and Information

68. Within the framework of the terms of reference of the SCSI the following recommendations were being put forward to GFCM for endorsement.

- The SCSI should be entrusted with the collection of capture fisheries statistics for all disciplines related to the industry. It should coordinate activities contributing to a single fisheries statistics database which would be managed by the Secretariat of a future autonomous GFCM.
- The "STATLANT B" questionnaire should be abolished since it did not meet the developing requirements of GFCM. Immediate attention should be paid to the requirements for catch and effort data for analysis of operational units.
- Submit a proposal for a regional project within the Fifth Framework Programme of the EU to improve the quality and coverage of data for the Mediterranean as a whole.
- A multidisciplinary Working Group, under the responsibility of SCSI, should be brought together to design and compile an inventory of Operational Units as well as to define the data structure and fishing effort parameters. This Working Group would, in the first instance, meet under the framework of the ADRIAMED project and focus on the Adriatic region. The outputs obtained by this Working Group would later be applied to the rest of the Mediterranean and Black Sea basins.
- SCSI should be entrusted to collect all the papers and documents related to SAC activities and convert them to digital format (PDF file), which could subsequently be posted on a website.

Sub-Committee on Marine Environment and Ecosystems

69. Within the mandate of the SCME, the following recommendations were being put forward to GFCM for consideration during its Twenty-fifth session.

- To support studies on the spatial and temporal distribution on nursery areas, giving particular attention to the environmental and biotic features of such areas;
- To support studies to analyse the effects of environmental parameters on the recruitment processes for shared resources;
- To support studies on the effect of fishing gear on non-targeted species (bycatch/discards) on the marine ecosystem (benthic communities, alloctone species, incidental catches, etc.); and
- GFCM member countries should coordinate their national sharks plans at a regional (Mediterranean) level within the framework of the FAO IPOA on sharks.

SAC 4:

Scientific advice based on the work of the SCSA was provided in the report of SAC 4 but there was no specific discussion of work procedures or work program in the main body of the report of SAC 4.

FISHERIES STATISTICS AND INFORMATION

75. SAC endorsed the following recommendations proposed by its Sub-Committee on Fishery Statistics and Information.

- To endorse a project proposal to help countries to raise the required common minimum standard in fisheries statistics.
- To extend the mandate to the Sub-Committee on Fishery Statistics and Information to continue developing the database of parameters related to Operational Units and their subsequent identification.
- To collect data with reference to a statistical geographical pattern using units of 30' x 30' or multiples of these units, the largest of which would be the Management Unit in question.

MARINE ENVIRONMENT AND ECOSYSTEMS

76. SAC endorsed the following recommendations of its Sub-Committee on Marine Environment and Ecosystems.

- Given recent and on-going developments concerning the ecosystem-based management concept, it is recommended to create a transversal Working Group that would involve specialists from the four SAC Sub-Committees.
- A one-week meeting in each Mediterranean research institutions devoted to the completion of the three forms concerning environmental information. During this week, researchers in each institution should be available and connected to each other through Internet. The meeting should be held at the same period every year.
- Countries are urged to activate tools for the establishment of national programme of action (POA for sharks), focused on management and conservation of cartilaginous fishes.
- COPEMED is asked to finance the edition of a field guideline for cartilaginous fishes.
- Member countries are urged to give special attention to the implementation of GFCM recommendations related to driftnets and those still using this fishing gear should conduct scientific studies on its impact on the marine ecosystem.
- Countries are invited to collaborate more actively in setting up a comprehensive database on ongoing and finished projects concerned with fisheries and marine environment.

ECONOMIC AND SOCIAL SCIENCES

77. SAC endorsed the following recommendations of its Sub-Committee on Economic and Social Sciences for consideration by the Commission.

- Socio-economic data requirement should be taken into consideration by Members and included in their statistics.
- To organize a workshop for the finalization of the Glossary in Barcelona, November 2001.

- Publication of a pilot study on socio-economic indicators in the Alboran Sea in GFCM "Studies and Reviews" serial.
- Extension of the case studies on socio-economic indicators to other Management Units in the Mediterranean
- Organization of a new meeting of the Working Group on Indicators (Salerno, Italy, February 2002)

SAC 5:

SAC 5 does not include an explicit discussion of the work schedule or working procedure in a separate section.

SAC 6:

REVIEW OF GFCM/SAC WORKPLAN FOR 2003–2004

85. The Committee reviewed the mandate for the intersessional period 2003-2004, on the basis of the Reference Framework given by the Commission at its Twenty-Seventh Session. It agreed to undertake the following activities (the numbering 1.1, 1.2, etc., relates to the numbering in the Reference Framework).

1. Management of fisheries

1.1 The Committee noted that the list of shared stocks had been updated. It would elaborate a table of shared stocks, with fleets and any other information about activity, catch, effort, etc.

1.2 Regarding operational units, SCSI is currently working on this and it is foreseen to continue during the next intersession in close cooperation with the other Sub-Committees.

1.3 SCSA is working in improving assessment methods. A new method, Direct Survival Method (DSM), presented at the last meeting of SCSA would be tested.

Regarding bio-economic modeling, the EC project BEMMFISH, in which Spain, France, Italy and Greece are participating, is aimed at the building of a simulation tool allowing the potential users (scientists, managers and fishers) to simulate the effects of different management measures for the Mediterranean fisheries. This model should integrate the qualitative relationships among the different parameters involved in the fishery, in particular biological stocks, fishing structures, fleets and gears, markets, fishermen economy and technological progress.

During the next meeting of the Working Group for this project to be held before the end of 2003, the first simulation trials of various management scenarios would be applied on some Mediterranean fisheries as case studies. The results of this work will be presented to the next session of the SCSA.

1.4 A workshop is planned to deal with Reference Points as referred to in paragraphs 36 to 42).

1.5 Assessments carried out in the SCSA were presented in other parts of this report. The priority species list has been updated. Studies on management scenarios in a bio-economic context are being developed (see BEMMFISH project above). It is planned to present results in the next SCSA meeting.

1.6 The Joint GFCM/ICCAT Working on Sustainable Tuna Farming/Fatening is working and it is foreseen to finish its task by the first half of 2004 (paragraphs 72 to 76).

1.7 No activity was undertaken by the Joint EIFAC/GFCM Working Group on Sturgeon Management. Efforts will be made to initiate work on this activity.

2. Environmental protection

2.1 SCMEE should present information in tabular form on incidental catches of protected species and large migratory sharks owing to the inadequacy of available information

2.2 SCMEE would complete work on the mapping of essential fish habitats.

2.3 Driftnets data are needed (see paragraph 49). Ongoing research activities and the results obtained would be provided in table format.

2.4 Regarding longline fisheries, SCSA would provide information to SCMEE on this issue.

2.5 Concerning mucilaginous algae blooms, the analysis would be done in relation to fisheries. A training workshop will be held in Tunisia with the support of COPEMED (see paragraph 50).

2.6 SCMEE should complete the description of identified species clusters. MEDSUDMED is working on that issue and should provide support to SCMEE.

86. The Committee proposed the holding of the following meetings in the table below during the intersessional period. The venues, dates, etc., in this table will be completed in due course as Members indicate their willingness to host the meetings.

Meeting	Venue/Date	Financing
Seventh Session of SAC	TBD/June 2004	TBD
Meetings of SAC Sub-Committees	TBD/May 2004	-
Coordinating Group of the Sub-Committees	TBD/ May, 2004	-
Workshop on the Glossary	Rome/October 2003	
2nd Joint SAC/CAQ/ICCAT Working Group on Sustainable Tuna Farming	Izmir, Turkey/ 15-17 December 2003	-
3rd Joint SAC/CAQ/ICCAT Working Group on Sustainable Tuna Farming	TBD/March-May 2004	Italy/France?
SCESS Working Group on Socio-Economic Indicators	TBD/TBD	-
Joint SCSA/SCESS/SCSA Working Group on Operational Units	TBD/TBD	-
SCSA Working Group on Demersal Species	TBD/May 2004	-
SCSA Working Group on Small Pelagic Species	TBD/May 2004	-
Joint GFCM/ICCAT Working Party on Large Pelagics	TBD/TBD	TBD
SCSA Workshop on Biological Reference Points	Italy/early 2004	Italy
SCMEE Working Group on anthropogenic effects and fishing technology	TBD/TBD	-
SCMEE Working Group on ecology and environment	TBD/TBD	-
SCMEE Training Workshop on mucilaginous algae	Tunis/TBD	COPEMED

SAC 7:

REVIEW OF SAC WORKPLAN FOR 2005

86. The Chairperson of SAC introduced this agenda item on the basis of document GFCM:SAC/2004/5 and with reference to document GFCM:SAC7/2004/3, concerning the results of SAC subsidiary bodies. He alluded to the Reference Framework for the mandate of SAC (2003-

2004) as provided by the Commission at its Twenty-seventh session and further updated at its Twenty-eighth session. It was recalled that GFCM requested that the Framework be updated regularly and that the Chairperson of SAC should identify priority activities based on available inputs and achieved results in the intersessional period.

87. The Chairperson further highlighted some of the elements to be addressed by SAC in the Medium-term to complete the sequence of integrated activities to provide the Commission with the necessary scientific and technical elements for adopting sound management measures and for closing the fisheries management cycle. He expressed the view that SAC work programme for 2005 should mainly consist in finalizing, consolidating and extending most of current activities laid down in the Reference Framework for 2003-2004 and further suggested that it would not be advisable to produce a preliminary biennial Reference Framework (2005- 2006), until the Commission confirm its programming mechanisms in relation with its autonomous budget.

88. The Committee agreed to forward to GFCM, a preliminary programme of work for 2005 only, which would comprise the following priorities and related meetings for each of its subsidiaries.

Sub-Committee on Stock Assessment (SCSA)

89. Taking into consideration the relevant general recommendations made at its Sixth session on working arrangements and activities of this Sub-Committee, the Committee agreed on SCSA priorities as follows:

- carrying out the assessment of shared stocks and priority fisheries;
- pursuing activities on the identification of biological indicators, establishing reference points and testing them on selected fisheries or GSAs;
- completing maps on the distribution of juveniles;
- studying the likely biological impact of different fisheries management options;
- undertaking pilot multispecies stock assessments in selected GSAs.

Sub-Committee on Marine Environment and Ecosystems (SCMEE)

90. Noting that in previous year, the mandate of this Sub-Committee had tended to be overambitious, the Committee agreed on the SCMEE priorities as follows:

- supporting activities on mapping of sensitive habitats;
- holding a workshop on fisheries management applying the ecosystem approach to fisheries;
- promoting the development of a research programme on the likely impact of fishing at depths greater than 1 000 metres, including investigating the use of different deep sea gear types;
- extending analyses on the impacts of driftnets on protected or endangered species to the whole Mediterranean;
- establishing a list of projects involved in the monitoring or control of the impact of fishing on protected or endangered species with the view to enhance coordination;
- monitoring the bycatch of large pelagic shark, taking into consideration protocols such as MED-LEM.

Sub-Committee on Statistics and Information (SCSI)

91. The Committee agreed on the SCIS priorities as follows:

- developing studies on Operational Units in all GSAs having shared stocks;
- initiating work for preparing maps on the distribution of fishing operations in selected GSAs;

- preparing and holding a workshop on the standardization of fishing effort measurements by Operational Units;
- preparing and holding a transversal workshop on the statistical framework for storing and processing the GFCM data bank, including format and data characteristics of each data base, responding to SAC and GFCM needs.

Sub-Committee on Economic and Social Sciences (SCESS)

92. The Committee agreed on the SCESS priorities as follows:

- further developing studies on socio-economic indicators to cover all GSAs and establishing reference point values to be tested in selected areas;
- updating and monitoring information on the fisheries management legal framework in GFCM Members;
- establishing the minimum quality standards for socio-economic data and information;
- undertaking market studies in relation to fisheries management in GSAs where indicators are gathered.

Joint GFCM/ICCAT ad hoc Working Party on Large Pelagic

93. The Committee sought for GFCM guidance on working arrangements regarding this subsidiary, as detailed in paragraph 52 above, and therefore refrained suggesting activities for 2005.

Meetings

94. The Committee proposed the holding of the following meetings during the next intersession period. The associated venues and dates of meetings will be completed in due course, as Members indicate their willingness to host meeting.

Meeting	Venue/Date
Eighth session of SAC	TBD/September
Meetings of SAC Sub-Committees	TBD/late June
SCISS transversal Workshop on GFCM Statistical Framework and Data bases	TBD/TBD
3rd Joint GFCM (SAC/CAQ)/ICCAT Working Group on Sustainable Tuna Farming	Rome, Italy/ March
SCIS Workshop on measurement of Fishing effort	TBD/TBD
SCIS transversal Working Group on Operational Units	TBD/TBD
SCSA Workshop on Selectivity	Sète, France/TBD
SCSA Working Group on Demersal Species	TBD/June
SCSA Working Group on Small Pelagic Species	TBD/June
SCSA Workshop on Stock Assessment Methodology in the Black Sea	TBD/TBD
Workshop on Ecosystem Approach to Fisheries	Tunisia/TBD

SAC 8:

REVIEW OF SAC PRELIMINARY WORKPLAN FOR 2006

89. The Chairperson introduced this agenda item on the basis of document GFCM:SAC8/2005/5. He referred to the GFCM rolling Reference Framework for the mandate of SAC and suggested that

it should be reformulated to better reinforce the coherence and integration of activities. He emphasized the need to make further progress in 2006 on the issues of Operational Units, the establishment of the GFCM central database, including the register of vessel, and the strengthening of multidisciplinary activities among Sub-Committees.

90. He also reminded the Sub-Committee Coordinators of the importance of providing necessary information (e.g. terms of reference, dates and location) for any proposed working group or workshop. In addition, he stressed the need to enhance the planning of activities, *inter alia*, to encourage participation at meetings.

91. The Chairperson presented the activities as identified by the Sub-Committees.

92. The Committee agreed to submit to GFCM a programme of work for 2006, which comprised the following priorities and related meetings for each of the subsidiaries.

Sub-Committee on Stock Assessment

93. With reference to the general guidelines provided by SAC to the Sub-Committee in 2003, the Committee agreed on SCSA priorities as follows:

- Testing the biological indicators and reference points on operational units and analysing the results through convening a SCSA/SCSI transversal meeting.
- Pursuing the mapping of the distribution of juveniles for priority species.
- Monitoring stocks assessed in 2004 and 2005 and assessing the state of all other shared stocks, and multispecies fisheries as well as fisheries targeting priority species.
- Conducting pilot tests on the application of non-conventional models of monitoring and assessing multispecies fisheries in selected GSAs, including the Black Sea, with the incorporation of ecosystem considerations (e.g. predator/prey considerations).
- Producing a reference document on the impact of selected fishing gear on the environment in order to promote the implementation of corrective measures.
- Promoting the establishment of a network of Mediterranean technologists, including from industry and collecting information and establishing a databank on gear selectivity, using the agreed format.
- Formulating a practical guide on standardization of methods regarding selectivity studies on Mediterranean trawls.
- Convening a meeting of the PWGAM in line with agreed Terms of reference, in early 2006.

Sub-Committee on Marine Environment and Ecosystems

94. The Committee recalled that during previous sessions, the Sub-Committee was requested to: present tabular information on incidental catches of protected species and bycatches in the fishing of large pelagic sharks; complete work on the mapping of essential fish habitats; report outputs of research on driftnets, including data in tabular form; and complete the description of identified species clusters. On the basis of SCME advice, the Committee confirmed the above-mentioned priorities, and further agreed on new activities as follows:

- Undertaking interdisciplinary pilot studies for identifying and applying the principles of the ecosystem approach on the management of shared stocks at the subregional level, and testing, in doing so, the ecological indicators for the spatiotemporal monitoring of fishing effort.
- Continuing to investigate and formulate a structured programme of research on species living at depths greater than 1 000 metres.
- Extending analyses on the impact of driftnets on protected or endangered species to the whole Mediterranean.

- Pursuing coordination with projects on the monitoring and control of the impact of fishing on protected or endangered species, including with a view to enhancing such coordination.
- Addressing together with ACCOBAMS the issue of the interactions between cetacean species in fishery activities through possibly convening a joint workshop on the subject.

Sub-Committee on Statistics and Information

95. Taking note of the outputs and suggestions of SCSI, the Committee agreed on its priorities as follows:

- Continuing the identification and extension of studies on operational units to all GSAs, with a priority to those having shared stocks and priority species, and holding a transversal SCSI/SCSA workshop on the implementation of Operational Units concept in stock assessment.
- Organizing a workshop dedicated to fishing effort measurement standardization and a workshop on Operational Units.
- Preparing a manual on minimum data collection requirements for fisheries management, using available information and literature.
- Finalizing, with the support of the MedFisis project, the framework of fleet data for the operational units and ensuring the compilation and storage of available relevant national data and their input into the GFCM databank.
- Formatting and storing in the GFCM databank information needed by the Commission, including those available from the FAO regional projects, FAO/FIDI and other programmes.
- Compiling a list of national databases on fisheries.
- Collecting, jointly with MedFisis, data on the registration of vessels longer than 15 metres authorized to fish (white list) as well as relevant data on shorter vessels. Sub-Committee on Economic and Social Sciences

96. Taking into consideration the SCESS outputs and suggestions made in 2005, the Committee agreed on SCESS priorities as follows:

- To organize a technical workshop on the use of socio-economic indicators in fisheries management.
- To apply the “traffic light” approach to analyse socio-economic indicator trends in shared fisheries for which the SCSA had recommended a freeze on fishing effort and at the same time testing reference point values.
- To continue the collection and analysis of data on indicators to cover all the GSAs and to organize a workshop in the use of these indicators in fisheries management.
- To draw up a minimal list of social indicators, taking into account the methodology identified by the AdriaMed project, to analyse their compatibility and to test their use on relevant operational units.
- To further analyse national legislative frameworks to assist in the harmonization of laws relating to access regimes to fisheries resources, management of fishing effort and fishing capacity, and monitoring, control and surveillance.
- To further study the legislative and socio-economic aspects of recreational fisheries.
- To extend analyses of the impact of national and regional market forces (including supply and demand, prices, quality control) on the fishing industry and on the management of the fisheries concerned.

Joint GFCM/ICCAT Working Group on Large Pelagic Species

97. With reference to paragraph 21 above, the Committee suggested the following:

- collect all relevant data and information on the swordfish fishery with the view to identifying technical management measures;

- convene a meeting of the Joint GFCM/ICCAT Working group accordingly.

Meetings

98. In view of the priorities presented above and the desire to limit meetings of its subsidiary bodies, the Committee proposed that the following meetings be convened in 2006. The associated venues and dates of meetings will be completed in due course, as Members indicate their willingness to host meetings.

Meeting	Venue/Date
Ninth session of the SAC	Rome/end October
Session of the SCSA, including: Working Group on Demersal Species; Working Group on Small Pelagic Species	Rome/early September
Session of the SCESS	Rome/early September
Session of the SCSA, including the Transversal Working Group on Operational Units	Rome/early September
Session of the SCMEP including the workshop on interaction between Cetacean and fishing activities	Rome/early September
CMSC	TBD/TBD
SCESS Workshop on the Use of Socio-Economic Indicators for Fisheries Management	TBD/TBD
SCSA/SCSI transversal Workshop on stock assessment and Operational Units	TBD/TBD
SCSI Workshop on fishing effort measurement standardization	TBD/TBD
First SCSA Permanent Working Group on Stock Assessment Methodologies	TBD/early 2006

SAC 9:

REVIEW OF SAC PRELIMINARY WORKPLAN FOR 2007

73. The Chairperson of SAC introduced this agenda item on the basis of document GFCM:SAC9/2006/5. He reminded the relevant suggestions of the CMSC (document GFCM:SAC9/2006/Inf.9), notably the importance of providing necessary information (e.g. terms of reference, dates and location) for any proposed working group or workshop. In addition, he stressed the need to consolidate the Reference Framework for the work of the Committee for the medium-term and to streamline the planning of intersessional activities.

74. The Committee endorsed the following activities as identified by the Sub-Committees for 2007 with the understanding that priority activities defined by GFCM for 2006 that are still pending, especially in relation to Recommendation GFCM/2006/1, would also be implemented.

Sub-Committee on Stock Assessment Stock assessment methodologies and formats:

- update the SAC stock assessment forms (template P1) taking into account Units of nominal fishing effort exerted by fleet segment and OUs and organize a Transversal Workshop (SCSA/SCSI/SCESS) on disaggregated data;
- prepare curricula and identify partner institutions in order to initiate training courses in 2008 on new methodologies for stock assessment based on trawl survey data;
- standardize the different approaches for echo surveys in the Mediterranean;

- promote adaptive approach for small-pelagic assessments through further encouraging the development and execution of recruitment surveys/direct surveys (acoustic and/or egg production) to ensure minimum precautionary levels of spawning stock biomass;
- devise criteria for improving the validation of growth parameters used in stock assessments;
- organize a workshop on the use of trawl survey data, including the outcomes of MEDITS.

Indicators and reference points:

- convene workshops to evaluate the status of relevant stocks exploited in demersal fisheries through the application of composite models, biomass dynamic models (both with scientific surveys and commercial catches estimates) as well as with direct survival analysis;
- promote studies on the identification of environmental parameters and their integration into stock assessment modelling within the framework of the EAF.

Mapping the distribution of juveniles:

- use available information to produce reliable maps of nursery areas and of the distribution of juveniles for priority species.

Priority species and shared stock lists:

- identify criteria to update the SAC priority species and shared stocks lists, for all GSAs, including for the Black Sea.

Improving fishing gear selectivity:

- promote studies on gear selectivity, with special attention to trawls;
- produce a reference document on the impact of selected fishing gear on the environment with emphasis on corrective selectivity measures;
- establish a databank on gear selectivity, using the format agreed at the 8th session of SAC;
- organize a Workshop on gear selectivity.

Sub-Committee on Marine Environment and Ecosystems

Ecosystem Approach to Fisheries (EAF):

- organize a transversal workshop on EAF with emphasis on methodological considerations and identification of indicators.

Protected/threatened species:

- integrate the evaluation of the extent of the interactions between cetacean and fisheries (ByCBAMS project) to the knowledge of the cetacean population status (ACCOBAMS Survey Initiative);
- extend the ACCOBAMS/SCMEE initiative on cetaceans-fisheries interactions to other protected/threatened species; and promote scientific experiments to assess the impact of different types of pingers;
- prepare information for organizing a meeting of a transversal Working Group on bycatch/incidental catches, in 2008.

Sensitive habitats:

- compile an inventory/synthesis of published studies on fisheries and biodiversity of deep sea areas, beyond 1000 meters;
- define a standard procedure to assess the eligibility of new proposals for deep sea fishing reserves or restricted bottom trawl areas; .
- organize a workshop on MPAs.

Sub-Committee on Information and Statistics

- compile a list of national databases on fisheries;
- organize a workshop on the compilation of GFCM Task 1;

- pursue the study of calibration/allocation of fishing effort units with support from the FAO Sub-regional projects.

Sub-Committee on Economic and Social Sciences

- analyse the impact of market forces on fisheries management, with special reference to sardines in GSA 3; striped mullet in GSA 5, hake in GSA 6 and small-pelagics in GSA 17;
- analyse the socio-economic impacts related to the implementation of the Recommendation on the 40 mm square mesh in bottom trawling;
- define a minimum list of sociological indicators to be integrated in the GFCM Task 1, possibly through organizing transversal workshops by subregions;
- update and extend to the whole Mediterranean the FAO Fisheries Circular No. 978 entitled “The fish trade of North African Mediterranean countries: intra-regional and import-export with the European Union”, as well as the FAO Fisheries Circular No. 927, entitled “Les pêches en Méditerranée: éléments d’information sur le contexte halieutique et les enjeux économiques de leur aménagement”;
- analyse the legal framework regarding recreational/sports fisheries and initiate exploratory surveys of the socio-economic status of selected fisheries;
- organize a Workshop on the use of socio-economic indicators in fisheries management, including with reference to recreational and sport fisheries.

75. Preliminary terms of reference of some proposed Working Groups and Workshops are reproduced in Appendix M. The Coordinators of the Sub-Committees were requested to provide detailed terms of references for the remaining proposed meetings before the next plenary Session of GFCM.

Joint GFCM/ICCAT Working Group on Large Pelagic Species

- organize the eighth session of the Joint GFCM/ICCAT Working group to follow-up on the recommendations of its seventh session concerning small tunas, especially the compilation of statistics and the implementation of Joint scientific research programmes;

Meetings

76. The Committee welcomed the proposals made by the delegates from France, Greece, Libyan Arab Jamahiriya, Morocco, Spain and Tunisia to host some of the meetings, subject to confirmation by their respective national authorities.

Meeting	Place/Date*
Tenth session of the SAC	To be defined/to be defined
Session of the SCSA	Kavala (Greece)/early July or early September 2007
Working Group on Demersal Species	? Greece/to be defined
Working Group on Small Pelagic Species	? Greece/to be defined
Workshop on the Use of Trawl Survey Data, including the outcomes of MEDITS	Rome/March 2007
Transversal Workshop on Gear Selectivity	To be defined/to be defined
Second Permanent Working Group on Stock Assessment Methodologies, including training course on selected methodologies	To be defined/2008
Transversal Workshop on disaggregated data methodology analysis	Sete (France)/to be defined
Session of the SCESS	Kavala (Greece)/early July or early September 2007
Workshop on the use of socio-economic indicators in fisheries management, including with reference to recreational and sport fisheries	Libyan Arab Jamahiriya/March-April 2007
Session of the SCSA	Kavala (Greece)/early July or early September 2007
Transversal workshop on the compilation of GFCM Task 1	Morocco/to be defined
Session of the SCMEP	Kavala (Greece)/early July or early September 2007
Transversal workshop on EAF	Tunisia/to be defined
Transversal Working Group on by-catch/ incidental catches	To be defined/2008
Workshop on MPAs management systems	Libyan Arab Jamahiriya/to be defined
Eighth session of the Joint GFCM/ICCAT Working Group on Large Pelagic Species , on data analysis and studies of small tunas	Malaga, Spain/2007 or 2008
CMSC	To be defined/to be defined

SAC 10:

REVIEW OF THE SAC PRELIMINARY WORKPLAN FOR 2008

76. The SAC 2008 workplan was introduced by the Chairperson on the basis of document GFCM:SAC10/2007/4, in which a series of activities were suggested, taking into account the priorities provided by the GFCM and the proposals made by each of the Sub-Committee (document GFCM:SAC10/2007/3). The Chairperson emphasized the GFCM agreed priority for 2006–2007 and pointed out that some of them should continue to be considered in the 2008 programme.

77. The Committee invited the Sub-Committees to be more selective in finalizing their workplan and suggested that, to avoid having an increasing number of meetings, some of those should be held back to back to the relevant Sub-Committee meetings, such as in the case of the proposed Recreational Fisheries Working Group and the Workshop on fleet segmentation.

78. SAC recognized the importance of the development of a regional fleet register and noted the proposal made by SCSI to organize a meeting on this issue (Terms of Reference in Appendix F). However, it decided to obtain further guidance from the Commission to proceed on this matter.

79. The Committee acknowledged current efforts made to strengthen scientific activities in the Black Sea and felt that specific actions should be identified and initiated pending the approval of the sub-regional project being formulated by FAO, as requested by the Commission and the identification of donor(s).

80. The Committee agreed to submit to the GFCM the following programme of work for 2008.

Sub-Committee on Stock Assessment (SCSA)

- pursue and promote the assessment of the stocks of GFCM priority species and for shared stock considering the need for a better coverage of GSAs which have not been sufficiently covered;
- carry out joint stock assessment of hake (*Merluccius merluccius*) and associated species in each GSA or a group of GSA as adequate, using both commercial catches and trawl survey data including sensitivity analysis, the selection of relevant reference points and indicators and new findings on growth parameters for hake, following tagging studies and otoliths new interpretation;
- make full use of the new updated assessment form which contemplated information on the units of fishing effort exerted by fleet segment and OUs, including data, methods used, results, diagnosis and the corresponding management advice, as an essential condition for the assessment to be validated by SCSA;
- collect catch at age data to complete acoustic surveys for the improvement of the assessments;
- launch joint work to process and analyze the information, including data resulting from trawl surveys, such as MEDITS and echo surveys and ichthyoplankton surveys, realized in several countries in the region;
- organize the 2nd meeting of the WGPAM to be focused on the basic methods and protocols to undertake assessments with direct methods (Terms of Reference in Appendix F);
- organize, possibly in collaboration with CIHEAM, Training courses on methodologies for stock assessment covering:
 - + tuning VPA;
 - + Production models
 - + composite and non equilibrium models;
 - + trawl surveys (use of trawl survey in assessment, direct survival analysis and ALADYM).

Priority species and shared stocks

- update the list of priorities species by GSAs and the list of shared stocks on the basis of the criteria agreed by the SAC and with the contribution of the regional projects.

Sub-Committee on Marine Environment and Ecosystems (SCMEE)

- organize the transversal Working Group on bycatch/incidental catches, in collaboration with relevant partners (Terms of Reference in Appendix F);
- pursue the collection of data, in collaboration with the partners, on interactions between fisheries and cetaceans, using questionnaire, and extend this initiative to marine birds, sea turtles and elasmobranchs and consolidate research on the use of pingers;
- ensure follow up of the small-scale projects being implemented or proposed in the framework of BycBAMS (ACCOBAMS) activities in selected Mediterranean countries;

- pursue promoting the implementation of the EAF and undertake case studies where possible and appropriate in coordination with the “GEFMed” project;
- perform analysis of physical impact on the sea bed and sensitive habitat with a particular attention for continental slope bottom and sub-marine meadows;
- devise elements for the identification of sensitive habitats of interest for priority species by GSA;
- initiate studies on the efficiency of fishing restricted area and the conservation of biodiversity;
- elaborate a protocol for the standardization of selectivity studies, including for technological, biological, ecosystem and economic aspects and devise steps for implementing the 40 mm square mesh cod-end. The study should be carried out as appropriate under the framework of regional projects and initiatives;
- develop studies on technical aspects to be considered in selectivity studies such as: i) effect on discards; ii) survival of escapees (estimation of unaccounted mortality); iii) effect of the type of netting material and mounting and iv) effects on the ecosystem.

Sub-Committee on Statistics and Information (SCSI)

GFCM Task 1

- proceed as a matter of urgency with the compilation and transmission of Task 1 data according to Resolution GFCM/2007/31/1, noting that in future and when sufficient data are received the fleet segmentation could be reviewed during a transversal Workshop (Terms of Reference in Appendix F) held back to back with the SCSI;
- produce guidelines on reporting catch data for target species, associated species and bycatch for inclusion in the Task 1 data entry tool;
- standardize the measurement of fishing effort, by fishing operation and set up approach related to the calibration of fishing effort of different gears, taking into account the further compilation through GFCM Task 1.

Other statistical systems

- launch practical testing of the new “GSA compatible” STATLANT 37A form;
- undertake actions to develop the MEDSTAT programme within relevant countries, giving priority to the fleet register.

Sub-Committee on Economic and Social Sciences (SCESS)

Recreational fisheries

- convene a meeting of the ad hoc transversal Working Group on Recreational Fisheries (Terms of Reference in Appendix F) to be held back to back with the SCESS;
- collect socio-economic data on recreational fisheries according to the framework agreed by SCESS and initiate the preparation of a technical guidelines on the management of recreational fisheries.

Studies on indicators and on market

- assess the socio-economic impacts of implementing the 40mm square mesh size in trawl fisheries; and implement selectivity impact analyses in selected countries;
- initiate a study on the role of incentive structures and mechanisms in national fisheries;
- pursue the work on a standard method of using market data to understand changes in fishing effort for use in fisheries management;
- proceed with the practical implementation of the Traffic Light method for integrated indicators (and associated reference values) and trends analyses, to assist in the monitoring and evaluation of fisheries management;
- elaborate a guidebook of the use of indicators in fisheries management.

Joint GFCM/ICCAT Working Group on Large Pelagic Species

- prepare a multidisciplinary study of small tuna fisheries in the Mediterranean and the Black Sea;
- Organize the 8th session of the Working Group accordingly.

Meetings	Place/Date
Eleventh session of the SAC	Morocco/To be defined
Session of the SCSA	Antalya, Turkey/To be defined
Working Group on Demersal Species, including joint stocks assessments	Izmir, Turkey/To be defined
Working Group on Small Pelagic Species, including joint stocks assessments	Izmir, Turkey/To be defined
2nd Working Group on Stock Assessment Methodologies, on basic methods and protocols to undertake assessments with direct methods	Malta/April
Training courses on methodologies for stock assessment	To be defined/To be defined
Session of the SCESS	Antalya, Turkey/To be defined
SCESS Working Group on Recreational Fisheries (back to back to the SCESS session)	Antalya, Turkey/To be defined
Session of the SCSA	Antalya, Turkey/To be defined
SCSA/SCESS Workshop to refine the fleet segmentation (back to back SCSA)	Antalya, Turkey/To be defined
Session of the SCMEP	Antalya, Turkey/To be defined
SCMEP/SCSA transversal Working Group on by catch/incidental catches	To be defined/To be defined
Transversal Working Group on selectivity	Sete/IFREMER
8th session of the Joint GFCM/ICCAT Working Group on large pelagic species	Malaga, Spain/ 5-9 May 2008
CMSC	Antalya, Turkey/To be defined

SAC 11:

REVIEW OF THE SAC PRELIMINARY WORKPLAN FOR 2009

76. The SAC Chairperson introduced the 2009 workplan on the basis of document GFCM:SAC11/2008/4, in which a series of activities were suggested, taking into account the proposals made by each of the sub-committee, as presented to the meeting by their respective coordinators. The suggested activities also followed the guidance of the CMSC.

77. The Committee agreed to submit to the GFCM the following programme of work for 2009.

Sub-Committee on Stock Assessment (SCSA)

- Pursue activities on stock assessment using both commercial data and surveys at sea to be used in stock assessment.
- Pursue the work aimed to develop a GFCM protocol for undertaking surveys at sea.
- Improve knowledge on biology, stock structure and other biological parameters.
- Agreed on a set of biological parameters of growth and natural mortality to be used for assessment purposes.
- Improve biological indicators and further develop reference points with the view to evaluate the status of the stocks and fisheries including also the effects on exploited stocks of FRAs.
- Organize the meeting of the Working Groups on stock assessment of demersal and small pelagic resources, considering the new functioning approach.
- Follow up the priority and shared stock lists.

Sub-Committee on Marine Environment and Ecosystems (SCMEE)

- Finalize a common framework for selectivity studies to support the implementation of the selectivity measures including the implementation of case studies at sub-regional level.
- Pursue the effort of the TechnoMed network to, in particular, develop a GFCM database on gear selectivity and analyse, through the available literature, the different impacts of fishing gears on the environment and the potential mitigation solutions.
- Follow up on partner organizations' proposal for studying population dynamics of protected species of conservation concern, such as basking and great white sharks, marine turtles, mammals and sea birds as well as on the draft protocol for data collection on bycatch of species of conservation concern, merging the draft protocols prepared for ACCOBAMS and MEDLEM.
- Implement the ecosystem approach to fisheries (EAF) through the development of pilot studies and encourage the involvement of stakeholders from the beginning of the process to implement the EAF.
- Initiate the launching of a monitoring programme on the alien species.
- Initiate a review on the status and issues related to artificial reefs (by TechnoMed).
- Continue to collect information on biological and ecological physical parameters with a particular attention to seamounts and canyons, taking into consideration recent guidelines being developed by FAO, and initiate the compilation of information (TechnoMed) on techniques and on fishing activities, in deep sea areas (400–1 000 m).
- Develop monitoring schemes on the implementation of the measure on the prohibition of demersal fisheries activities below 1 000 m.
- Organize a transversal workshop on selectivity improvement and bycatch reduction according to the terms of reference in Appendix J(iii).

Sub-Committee on Statistics and Information (SCSI)

- Update the Task 1 Statistical Bulletin as required and continue with the development of the new software to be used by countries as from 2009 to report 2008 Task 1 data.
- Initiate the implementation of a testing period for reporting data related to the Regional Fleet Register (RFR).
- Continue with the STATLANT 37A working programme as agreed during the 32nd Session of the Commission.
- Organize a transversal workshop on the GFCM logbook according to the terms of reference given in Appendix J(iv) and set up a comprehensive trial period in 2009 following the outcome of the workshop.

Sub-Committee on Economic and Social Sciences (CESS)

- Contribute from the socioeconomic perspective to develop applied analysis on selectivity of fishing gears, using the data collected by the Task 1 of GFCM and biological evaluations of this change.
 - Develop directed studies on the socio-economic impacts of implementing the 40-mm square mesh size in trawl fisheries.
 - Pursue analysis on recreational fisheries.
 - Analyse the economic incentives structures and mechanisms in national fisheries in the different member states, according to the methodology developed by OECD/UNEP.
 - Organize a SCEES/SCSA/SCSI Transversal Workshop on Assessment, Management and Monitoring of Fishing Capacity in the GFCM Area (see terms of reference in the Appendix J(v)).
- Joint GFCM/ICCAT Working Group on Large Pelagic Species
- Ensure follow-up to the recommendations of the eighth session of the Joint Working Group concerning small tunas, especially the compilation of statistics and the preparation of scientific work for the next meeting of the working group scheduled to be held in 2010 in Turkey.

Meetings

78. A list of meetings is provided below.

Meeting	Place/Date
Twelfth session of the SAC	Montenegro/Jan.-Feb.
Session of the SCSA	Rome/Nov.-Dec.
Working Group on Stock assessment of Demersal Species	Ancona /Oct.-Nov.
Working Group on Stock assessment of Small Pelagic Species	Ancona/Oct.-Nov.
Session of the SCESS	Rome/Nov.-Dec.
SCESS/SCSA/SCSI Transversal Workshop on Fishing Capacity	Rome/May-June
Session of the SCSI	Rome/Nov.-Dec.
SCSI/SCSA Transversal Workshop on the GFCM Logbook	Rome/May-June
Session of the SCMEE	Rome/Nov.-Dec.
SCMEE/SCSA/SCESS Transversal Workshop on Selectivity Improvement and Bycatch Reduction	Tunis/Sept.-Oct.
CMSC	Rome/Nov.-Dec.

Appendix 3

Reference Framework for SAC (from GFCM 27 appendix H)

REFERENCE FRAMEWORK FOR THE MANDATE OF THE SCIENTIFIC ADVISORY COMMITTEE (SAC) FOR THE INTERSESSIONAL PERIODS 2003 AND 2004

SAC is requested to strengthen the critical role of Coordinators of Sub-Committees with the aim to improve the linkages among Sub-Committees and National focal points of GFCM Members.

1. Management of fisheries

SAC is requested:

1.1. To update the list of shared stocks identifying also the geographical sub-areas as well as the operational units involved. For this purpose SAC should make use both of the knowledge on stock units and of the spatial distribution of operational unit activities as well as of the mixed nature of some fisheries. Deepening both the knowledge and the list of shared stocks should not necessarily extend the list of priority species, so far agreed, for which scientific assessment and advice has to be provided.

1.2. To update, at sub-regional level and by geographical sub-areas, the inventory of operational units generating catches of shared stocks. To this end, SAC is also requested to monitor and fine tune, as necessary, the fleet segmentation, as adopted in principle (Appendix E of the report of the 5th Session of SAC). Whenever possible, description of Operational units should report the share, by weight and value, of priority species as well as of other important species, their fishing regime, trends in catches and landings, discard estimates.

1.3. To continue its ongoing works of reviewing and debating stock assessment methods with the aim both to widen the use of common agreed standards and methodologies and to continue to improve the scientific quality of submitted assessments. To compare, and comment, as relevant, the outcomes and recommendations arising both from stock assessment methods and from other fisheries assessment tools mainly based on economic and social matters. Evaluations coming from bio-economic models should also be used for comparison. To this end, SAC should implement some case studies where both approaches are applicable.

1.4. To initiate an in-depth reflexion on conservation reference points (safe biological limits, precautionary reference points) that could be routinely used in the Mediterranean to establish a precautionary approach. SAC is also requested to highlight gaps in the current scientific knowledge and research and monitoring needs to set up such a framework.

1.5. To update evaluation for priority demersal and small pelagic species, by using the most recent data sets collected both by direct and indirect methods. SAC is requested to give priority to assessment of stocks in those geographical sub-areas not yet concerned by the 2001 and 2002 SAC assessments.

However, SAC should feel free both to extend the list of priority species and to accept for consideration stock assessments of species not included in the current list of priority species. SAC is requested to explore different outputs consequent to different management scenarios for fisheries where there is evidence of overfishing. In the light of the above outputs SAC is requested to evaluate the appropriateness of present management measures and should propose new or

alternative conservation measures whenever necessary. In this regard, the GFCM invites SAC also to take into account both the knowledge of nursery and reproductive areas (geographic coordinates) and the outcomes of experiments aiming to improve the exploitation pattern. SAC advices should highlight different management options in terms of risk to be avoided, expected improvements and cost/benefit both in biological and socio-economic terms. List of priority species:

Merluccius merluccius, Micromesistius poutassou, Merlangius merlangus, Mullus barbatus, Mullus surmuletus, Pagellus erythrinus, Psetta maxima, Engraulis encrasicolus, Sardina pichardus, Sardinella aurita, Sprattus sprattus, Trachurus trachurus, Trachurus mediterraneus, Thunnus thynnus, Thunnus alalunga, Xiphias gladius, Coryphaena hippurus, Aristeomorpha foliacea, Aristeus antennatus, Parapenaeus longirostris, Nephrops norvegicus, Eledone cirrhos, Prionace glauca, Isurus oxyrinchus, Lamna nasus and Acipenser sturio.

1.6. To participate actively in the Joint GFCM/ICCAT Working Group on tuna farming.

1.7. To participate actively in the Joint EIFAC/GFCM Working Group on management of sturgeon.

2. Environmental protection

(1) Continue updating information on incidental catches of protected species and on by catch of large migratory sharks.

(2) With a view to progressively implement an ecosystem approach to fisheries, update information on mapping essential fish habitats.

(3) Provide an overview of driftnet and surface gillnet fisheries in the Mediterranean, broken down by main basin and geographical sub-areas. Essential points to report on are: fishing effort (Number and size of vessels, size of gears, duration of fishing), technical characteristics (mesh sizes, rigging, marking, control of drift), measures for environmental protection (prevention of gear loss, acoustic alarms) and research programmes in course for this type of fisheries, in particular those aiming to investigate by-catch.

(4) Provide an overview of surface and bottom longline fisheries in the Mediterranean, broken down by main basin. Describe interaction with non-commercial fish, birds and turtles. Report on measures taken to make more efficient use of baits and to prevent bird and turtle mortality.

(5) Report on the geographical occurrence, seasonality, extent and effects of mucilaginous algae blooms.

(6) With a view to progressively implement ecosystem-approach to fisheries, describe a few simple but clear species assemblages where trophic and other biological links are well identified.

Appendix 4:

Terms of Reference for the Coordinating Meeting of the Sub-Committees (from GFCM 29 appendix E).

Terms of reference of the Coordinating Meeting of the Sub-Committees (CMSC) and of the Coordinators of the Sub-Committees

1. Membership and *Modus operandi* of the CMSC

The CMSC will comprise the Chair and the two Vice-Chairpersons of the Scientific Advisory Committee (SAC), the Executive Secretary and the Deputy Executive Secretary of GFCM, the Coordinators of the Sub-Committees (SCSA, SCESS, SCTS and SCMEE) and the Coordinator(s) of cross-sectoral Working Groups⁴.

In addition to the assistance of the GFCM Secretariat, the CMSC will be supported in its work by the relevant FAO technical officers, including the Coordinators/Directors of the FAO Regional projects. Pursuant to Rule X (6) of the Rules of Procedure, the procedures of the CMSC shall be governed *mutatis mutandis* by the Rule of Procedures of the Commission.

2. CMSC Mandate

- Propose and/or update elements of the Reference Framework for the mandate of SAC for the intersessional period and plan the distribution of activities among Sub-Committees;
- promote the organization of and the participation in interdisciplinary or cross-sectional working groups answering directly to SAC;
- examine the reports of the interdisciplinary or cross-sectional working groups and Sub-Committees and prepare proposals for an integrated Programme of Work of SAC;
- collate draft recommendations of subsidiary bodies and formulate, as appropriate, multidisciplinary advice on fisheries management for examination by SAC;
- function as editing committee for the selection of scientific and technical documents to be published in the GFCM *Studies and Reviews* series;
- conduct any other task specifically requested by the Commission or SAC or approved by consensus by the members of the CMSC.

3. Mandate of the Coordinators of the Sub-Committees

- Maintain an updated list of the National Focal Points and experts participating in related networks, providing full contact details, and ensure the distribution of related information;
- encourage the participation of experts in Sub-Committee activities and their scientific and technical contributions;
- organize, in close liaison with the CMSC, the activities of the Sub-Committee in such a way that issues raised by GFCM and/or SAC are addressed;
- coordinate intersessional activities, notably the organization of Sub-Committee meetings and, as appropriate, in collaboration with the facilitator, those of the Working group(s), including preparation of the annotated provisional agenda and/or terms of reference;
- supervise the drafting of meeting reports, including the presentation of attached appendixes/reference documents;
- liaise with scientific and technical bodies of other international/regional organizations dealing with topics of common interest;
- represent the Sub-Committee at meetings of the CMSC, in particular for preparing work and advice for SAC.

⁴ "Cross sectoral" or "Transversal" ad hoc Working Groups are those Working Groups reporting directly to SAC, such as the Joint GFCM/ICCAT Working Group on Large Pelagic Species.