



منظمة الأغذية  
والزراعة  
للأمم المتحدة

联合国  
粮食及  
农业组织

Food  
and  
Agriculture  
Organization  
of  
the  
United  
Nations

Organisation  
des  
Nations  
Unies  
pour  
l'alimentation  
et  
l'agriculture

Organización  
de las  
Naciones  
Unidas  
para la  
Agricultura  
y la  
Alimentación

## GENERAL FISHERIES COMMISSION FOR THE MEDITERRANEAN

### SCIENTIFIC ADVISORY COMMITTEE

#### Sixth Session

Thessaloniki, Greece, 30 June-3 July 2003

### CONCLUSIONS AND RECOMMENDATIONS OF THE FOUR SUB-COMMITTEES

#### INTRODUCTION

1. The four Sub-Committees met simultaneously at the Hotel Holiday Inn in Nicosia, Cyprus, from 3 to 6 June 2003. The coordinating meeting of the Sub-Committees was held at the same venue on 5 June 2003.
2. The Sub-Committees noted with disappointment that the number of experts (and countries represented) who participated at the meetings of the subsidiaries of SAC has slightly decreased compared with recent years. Among the many reasons identified for this state of affair were: severe budget constraints for fisheries research in several countries, an increasing number of meetings related to Mediterranean fisheries and its environment, and reduced intersessional work at country level to sustain inputs by the Working Groups. Although kindly hosted in Cyprus, the limited attendance by scientists from the Eastern Mediterranean and the Black Sea at the Sub-Committees meeting was noted with concern.
3. As a consequence, each of the Sub-Committee added to their agenda a brief reflexion on current modus operandi of SAC subsidiaries, including on the frequency and scheduling of meetings, role and accountability of focal points, coordinators and facilitators, format of recommendations, etc. This was further discussed and summarized in the report of the Sub-Committees Coordinating Meeting, which is being made available at the session. This report also contains proposals made concerning the selection of Coordinators of each Sub-Committee and Facilitators of Working Groups for endorsement by SAC.

4. It was however acknowledged that substantive progress have been made in the implementation of the work programme decided upon by the Twenty-seventh Session of the Commission, particularly as provided in the Reference Framework for the mandate of SAC, for 2003-2004. The Sub-Committee on Statistics and Information (SCISS) and the Sub-Committee on Economic and Social Sciences (SCESS) concentrated on consolidating the work related to the Operational Units. The Sub-Committee on Marine Environment and Ecosystem (SCMEE) reviewed most of the wide range of issues to be addressed by its two newly established Working Groups. Despite few new assessments being presented, the Sub-Committee on Stock Assessments (SCSA) progressed on its working methodologies and tools. However, due to conflicting dates, it did not review the preliminary outputs of on the Mediterranean Swordfish assessment carried out by the Joint GFCM/ICCAT Working Party on Large Pelagics, which are therefore summarized separately in this document.

#### **WORKING PARTY ON LARGE PELAGICS**

5. The 2003 Mediterranean **Swordfish** Assessment was conducted from 26 to 30 May in Madrid, Spain, using production models and Virtual Population Analysis (VPA). Both types of models indicated the presence of a stable situation in terms of recruitment, total biomass, and spawning biomass. These findings suggested that the current exploitation pattern and level of exploitation might be sustainable in the short-term. However, it was noted that the lack of sufficient historical data did not allow the determination of stock status relative to MSY benchmarks.

6. It was also noted that Mediterranean swordfish fisheries have high catch levels (annual reported catches have been estimated on average at about 14,500 t for the period 1984-2001), similar to those of the entire North Atlantic. There are however large catches of small size swordfish and a relatively low number of large individuals in the catches. In addition, genetic studies as well as indirect evidence from fisheries suggested that Mediterranean swordfish form a unique stock that is reproductively isolated from the Atlantic stocks, and which should be managed separately from Atlantic swordfish.

7. The ICCAT's Standing Committee on Research and Statistics (SCRS) will review the results of the assessment at its October 2003 meeting, and formulate management recommendations to be considered at the ICCAT plenary session next November. Considering the assessment results and the uncertainties inherent in the data and the assessment, the SCRS is likely to recommend that the current levels of exploitation not be exceeded, under the current exploitation patterns. In addition, the SCRS is likely to note that a different exploitation pattern that results in lower catches of juveniles would improve the yield and spawning biomass per recruit.

8. A consolidated summary of the draft report of the Working Party is made available as document GFCM:SAC6/2003/Inf.9.

#### **SUB-COMMITTEE ON STOCK ASSESSMENT**

9. The SCSA reviewed 14 assessments carried out in 2003 and submitted by the Working Groups on demersals (8 assessments) and small pelagics (6 assessments). It also revaluted 10 assessments (of which 6 on small-pelagics) presented to SAC in 2002. That resulted in 24 stocks from 13 GFCM Geographical Sub-Areas (GSA) being reviewed.<sup>1</sup> SCSA also updated the list of shared stocks, revised the list of priority species and worked on the identification of biological reference points. The report of SCSA is made available as document GFCM:SAC/6/2003/Inf.8.

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<sup>1</sup> The list of GFCM geographical sub-areas is reproduced for easy reference in Appendix 1.

10. The Sub-Committee provided the following major findings and recommendations for SAC:

Demersal Species

**For hake (*Merluccius merluccius*):**

- **in GSA 9:** the SCSA confirmed the diagnosis of overexploitation and expressed concern for the low level of spawning stock biomass (SSB). It recommended a reduction of 60% of fishing mortality and an improvement of the exploitation pattern. This can be achieved by : i) a drastic reduction of fleet capacity or ii) a reduction of fishing activity. ii) was considered more appropriate to enhance SSB, as a safer value for the %SSBo (of about 30%) which can be obtained as soon as the new equilibrium is reached while an enlargement of the legal mesh size, up to 60mm, if not combined with fishing mortality reduction, was considered to induce only a modest improvement of the SSB although likely to produce a substantial improvement in Yields per recruit. Regarding i), it was acknowledged that the important fleet reduction that has occurred within the last 3 years (up to 30% in some ports) has possibly induced a noticeable reduction of the fishing mortality although not reported in the 2003 assessment. Hence, the need for an updated assessment, discounting this reduction and using new data proceeding from the fisheries which might show a less critical situation regarding the current stock status.
- **in GSA 7:** the SCSA reiterated its advice of 2002<sup>2</sup>, noting however that decreasing effort and increasing length at first capture are independent and complementary management measures necessary to reach the management goal.

**For Red mullet (*Mullus barbatus*) :**

- **in GSA 9:** on the basis of the 2002 assessment, SCSA reiterated the advice provided last year, i.e. reduction of fishing effort especially on the areas and season where and when recently recruited juveniles are concentrated. This could be obtained through the enforcement of a seasonal fishing ban of a period during the late summer and early autumn. This management measure would also produce a shift in the size of first capture.
- **in GSA 10:** on the basis of the 2003 assessment, SCSA recommended a 10-15% reduction of the total mortality, with the view to driving a safer position of SSB/SSB<sub>0</sub>. This could be obtained by enforcing the existing permanent spatial closures, complemented as necessary with temporary closures. Notwithstanding the stable trend of the relative abundance index, the Sub-Committee acknowledged that it did not provide comments on the overall sustainability of the stock.
- **in GSA 3:** on the basis of the 2003 assessment, SCSA recommended a 60% reduction of the fishing effort, particularly in coastal area. This could be achieved by transferring part of the fishing effort to more offshore fishing grounds. However, the Sub-Committee also advised to use in this case a more conservative reference point, such as F<sub>0.1</sub>, together with the F<sub>max</sub>.

**For Red Shrimp (*Aristeus antennatus*) :** on the basis of assessment carried out in 2003:

- **in GSA 1:** SCSA acknowledged a state of full exploitation with current biomass being about 13% of the virgin biomass. It considered that a 25% reduction of fishing effort over a three year period could bring the biomass of the stock up to 35% higher than the current value. The Sub-Committee recommended keeping the current level of effort and if possible to reduce it as per related analysis from the Working Group.

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<sup>2</sup> To avoid recruitment overfishing: reduce the effort of longline and gillnets in order to increase (or at least maintain) the SSB. Reduction of fishing effort could be achieved by establishing temporal closures for longline and gillnet during the period of maximum spawning, or by reducing time at sea, and/or fishing boats or/and engine power. To reduce growth overfishing: improve trawl selectivity . and reduce fishing effort by 20%, notably through establishing temporal closures for longline and gillnet during the period of maximum spawning, or by reducing time at sea, and/or fishing boats or/and engine power.

- **in GSA 5:** SCSA acknowledged a state of full exploitation with current biomass being about 16% of the virgin biomass. It considered that a 25% reduction of the fishing effort could bring the biomass of the stock up to 32% higher than the current value in 3 years. The Sub-Committee therefore recommended keeping the current level of effort and, possibly reducing it as indicated by the analysis of the Working Group.
- **in GSA 6:** SCSA acknowledged a state of full exploitation with current biomass being about 12% of the virgin biomass. It considered that a 25% reduction of the fishing effort could bring the biomass of the stock up to 36% higher than the current value in 3 years. The Sub-Committee recommended keeping the current level of effort and if possible reducing it as indicated by the analysis from the Working Group.

**For Horse mackerel (*Trachurus trachurus*)**

- **in GSA 3:** on the basis of the assessment made in 2003, SCSA requested its Working Group to present the assessment on a species by species basis as well as to use a more conservative reference point, such as F0.1, together with the Fmax.

**For Pink shrimp (*Parapenaeus longirostris*)**

- **in GSA 3:** following the assessment made in 2003, SCSA requested the Working Group to combine assessments for males and females in order to have an assessment of the stock as a whole and provide further advise on it.

**For *Aristeomorpha foliacea***

- **in GSA 11:** based on the assessment of 2002, SCSA reiterated the recommendation of not increasing fishing effort. It requested the Working Group to provide figures on current E.

*Small Pelagics*

**For Anchovy (*Engraulis encrasicolus*)**

- **in GSA 1:** SCSA revaluted the 2002 assessment<sup>3</sup> and recommended maintaining the current level of fishing effort. It further noted however that the image of the stock situation has changed because of the very good last year recruitment and requested its Working Group to up date this assessment while noting that a temporarily fishing ban for purse seiners has been enforced during spring in the last years.
- **in GSA 6:** SCSA revaluted the 2002 assessment and recommended not to increase the fishing effort. It requested its Working Group to up date this assessment, noting that a temporarily fishing ban for purse seiners has been enforced during spring in the last years.
- **in GSA 7:** based on the 2003 assessment<sup>4</sup>, the SCSA recommended not increasing the fishing effort.
- **in GSA 17:** based on the 2003 assessment, SCSA recommended not increasing the effort. It further invited concerned GFCM Members to provide updated figures on size and characteristics of fleets and gear exploiting this stock in order to establish the current level of effort. It noted that a joint analytical assessment covering the whole northern Adriatic and an echosurvey in the northern part were conducted and recommended combining the outcomes of both approaches in the forthcoming assessment.
- **in GSA 22:** based on an assessment from 1999 and submitted in 2002, the SCSA requested the Working Group to extend the study area and to include the whole spawning ground of the stock in order to increase the precision of the estimation. It further recommended a

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<sup>3</sup> Since that fishing effort was already significantly reduced in term of number of vessels (from 185 in 1985 to 120 in 2001), and taking into account the good 2001 recruitment: it was recommended to maintain the current level of fishing effort. However, taking into account the important fluctuations of this stock and the few age classes composing the catches (practically only 0 and 1), it would be necessary to continue the monitoring of this stock.

<sup>4</sup> Made by hydroacoustic methods.

standardisation of the methodology being used on small pelagic in that area to obtain a more accurate evaluation of the SSB and it requested the Working Group to update this assessment.

#### For Sardine

- **in GSA 1:** Since no assessment was submitted in 2003, SCSA requested the Working Group to update last assessment and noted that a temporarily fishing ban for purse seiners has been enforced during spring in the last years.
- **in GSA 3:** SCSA recommended that further analysis be carried out with available data. It acknowledged the decreasing trend of catches despite increased fishing effort on this stock and related statement provided in relation to one concerned country<sup>5</sup> and requested the Working Group to carefully analyse this statement.
- **in GSA 6:** Since no assessment was submitted in 2003, SCSA requested the Working Group to update the 2002 assessment.
- **in GSA 7:** SCSA recommended to continue investigating on biomass and fishing effort estimation.
- **in GSA 16:** taking into account the results of the 2003 assessment, SCSA requested the Working Group to present an assessment form where the data time series on biomass estimates, the fleet characteristics as well as the catch data will be included. In addition, the impact of local fisheries directed to larval or juvenile specimens of this species should be carefully evaluated.
- **in GSA 17:** SCSA expressed concern regarding the continuous decreasing trend of biomass estimates observed during the last 20 years and therefore recommended implementing more cautious management measures, including a reduction of fishing effort, particularly of the Exploitation Rate, below the current level of 0.4. The Sub-Committee noted that anchovy is the target species for the Italian fleet whilst the Slovenian, Albanian and Croatian fleets are targeting on sardine and recommended accordingly the implementation of harmonized management measures for small pelagics in that sub-area. In this context, SCSA invited concerned Members to provide updated figures on the size and characteristics of the fishing fleets and gear exploiting sardines in order to properly establish the current level of fishing effort.
- **in GSA 20 and 22:** SCSA considered that assessments results were preliminary and recommended to design and conduct a long term programme on biomass estimates and present consolidated assessments.

11. More generally, the SCSA also recommended that:

- priority should be given to those assessments dealing with shared stocks and priority species;
- the Working Groups systematically include relevant assessment figures in their advice;
- the work related to the length at first maturity of Mediterranean anchovy be further strengthened taking into account the agreed standardized procedure;
- projects to monitor, year by year, the discarded quantities of small pelagic species, taking into consideration market price fluctuations, be implemented and that market campaigns to increase demand for discarded species be promoted. The Working Group was requested to present available information at its next session and to evaluate the impact of discarded quantities in the stock assessments of these species;

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<sup>5</sup> Reduce the fishing pressure during 3 years; Establish a temporary ban in January; Establish closed areas in the lagune of Nador and Bay of Al Hoceima; Ban fishing in May in the area between Kariat Arkmen and the Chafarinas Islands.

- stock assessment work should not necessarily be limited by GSAs boundaries but should encompass as much as possible the occurrence area of the stock concerned while studied areas should be clearly specified when assessment results are from limited area within a GSA.

12. SCSA further recommended the inclusion of the following **shared stocks** within the GFCM list:

- Sole (*Solea solea*) in the Northern Adriatic, Croatia, Albania, Slovenia and Italy
- Monkfish (*Lophius spp.*) in the Northern Adriatic, Croatia, Albania, Slovenia and Italy
- Black spot seabream (*Pagellus bogaraveo*) in the Alboran Sea and the strait of Gibraltar area, Spain and Morocco
- Sardine and anchovy (*Sardina pilchardus* and *Engraulis encrasicolus*) in the Aegean Sea, Greece and Turkey
- Lobster (*Palinurus elephas*) and red mullets (*Mullus spp*) in Corsica and Sardinia
- Hake (*Merluccius merluccius*) and Micromesistius poutassou and norway lobster North Tyrrhenian and Corsica
- Lobsters (*Palinurus elephas* and *P. mauritanicus*) in the Sicily channel, Tunisia and Italy
- *Eledone cirrhosa* (Albania, Croatia, Italy)
- *Eledone moschata* (Albania, Croatia, Italy, Slovenia)
- *Loligo vulgaris* (Albania, Croatia, Italy, Slovenia)
- *Lophius budegassa* (Albania, Croatia, Italy)
- *Lophius piscatorius* (Albania, Croatia, Italy, Slovenia)
- *Pagellus erythrinus* (Albania, Croatia, Italy, Slovenia)
- *Solea vulgaris* (Albania, Croatia, Italy, Slovenia)
- *Sepia officinalis* (Albania, Croatia, Italy, Slovenia)
- *Parapenaeus longirostris* (Albania, Croatia, Italy)
- *Scomber scomber* (Albania, Croatia, Italy, Slovenia)

13. The Sub-Committee also recommended incorporating the following species in the GFCM **priority species list**:

- European eel (*Anguilla anguilla*)
- Black spot seabream (*Pagellus bogaraveo*)
- All *Acipenser* species as well as those of the genera *Huso*

14. Finally, with regard to the identification of **biological reference points**, the SCSA recognized the importance of developing agreed precautionary framework for some key-stone species such as hake, red-mulletts and Norway lobster. It considered important both to evaluate the appropriateness of limit (LRP) and target reference points (TRP), noting that final acceptance of a TRP fall within the competence of fisheries managers more than the scientists.

15. The Sub-Committee acknowledged that several reference points have been regularly utilised by Mediterranean scientists although, these (e.g: the threshold value E=0.4 for the small pelagic, the

threshold value of about 0.3-0.4 for the SSBc/SSBo for gadiformes) have been used based on scientific work done outside the region, i.e. without a Mediterranean preagreed precautionary framework to highlighting areas of different risk for the sustainability of the resource. It emphasised the need for routine catch/landing assessment survey to estimate time series of SSB, B and F vectors and the use of other valuable sources of information, such as those derived from trawl survey or from variant of production models. SCSA further noted that a suitable data set to apply such an approach is provided for example by the MEDITS and SAMED programmes for the Northern part of the Mediterranean.

16. SCSA therefore recommended to:

- organize a workshop in 2004 to apply composite models to a selected group of species at Mediterranean level for estimating, among other, the precautionary reference point  $Z_{MBP}$ ;
- actively promote the conduct of catch assessment surveys on a routine basis in all GFCM countries in order to collect data needed to estimate B, SSB and the F vectors;
- include in the sheet D of the standard assessment forms, the following points: exploitation rate (E), SSB<sub>o</sub>/SSB<sub>v</sub>,  $Z_{MBP}$ .

#### **SUB-COMMITTEE ON STATISTICS AND INFORMATION**

17. The SCSI noted progress achieved with regard to the harmonization of data collection, through implementing the statistical programme MedStat in various countries supported by COPEMED and ADRIAMED regional projects. This included work on the inventory of artisanal fisheries, the fishing vessel census and catch and effort data collection schemes. It further noted that in developing these statistical programmes, the need of relevant international institutions should be ensured.

18. The difficulties encountered in standardising the measure of fishing effort in data collection schemes were highlighted. In this respect, it was recommended that a thematic Working Group within the SCSI should be established to work specifically on this issue in the immediate future.

19. SCSI acknowledged with satisfaction the current status of the MEDFISIS project and reiterated that the project output will need to be compatible with the requirements of the GFCM capture database and FAO statistical databases, and with FIGIS. The project is expected to focus on the census of fishing vessels and catch and effort data collection schemes along with the development of related information systems and was expected to be instrumental in facilitating the analysis of Operational units.

20. In this regard, SCSI expressed satisfaction on the preliminary conclusions being reached by scientists from different disciplines during the Working Group on Operational Units and endorsed its conclusions and recommendations (see document GFCM:SAC6/2003/Inf.10).

21. With regard to consolidating the GFCM information system, including its website, SCSI recommended that:

- existing databases and information systems, particularly those of FAO-FIDI and GFCM regional support projects, should form the basis of those of the GFCM Webpage.
- the Secretariat coordinate the development of a prototype of the GFCM website, using the example of SIPAM website, through funds which may be granted by the FAO regular programme upon a formal request by SAC.
- the inventory of all databases in the various system (COPEMED, ADRIAMED, ITAFISH, etc.) should be completed and analysed without further delay and it will constitute an initial component of the GFCM website. SCSI agreed that the

incorporation of the COPEMED information system into that of the GFCM after the termination of the project was thereof an important action to be considered

- the MedStat system should be presented for discussion and evaluation in the last quarter of 2003, in order to initiate the implementation process of MEDFISIS through the experience obtained in the former initiative.

22. SCIS further recommended that representatives from the national fishery statistical offices participate actively in the work of SCSI together with the statisticians from research institutes, to avoid possible discrepancies between national official statistics and those prepared by research institutions.

23. The report of SCIS is made available as document GFCM:SAC6/2003/Inf.6.

#### **SUB-COMMITTEE ON ECONOMICS AND SOCIAL SCIENCES**

24. SCESS expressed its appreciation on progress achieved by its Working Group on Economic and Social Indicators and highlighted the increasing number of studies and scientific activities related to its work being implemented in Algeria, Spain, Tunisia, and Morocco (under the COPEMED umbrella) and France as well as in Italy, Slovenia, Croatia, Albania and the Adriatic region (under the ADRIAMED and IREPA umbrellas). It also noted the launching of case studies in a number of countries for implementing the procedures and methodology to derive sociological indicators applicable to the whole Mediterranean and Black Sea.

25. SCESS also :

- endorsed the following sociological indicators: age, number of years of active fishing, capital share, education attainment, household structure, social background, and professional experience and recommended to add them in the existing list of basic economic indicators to be considered part of the GFCM information system being promoted by the SCSI.
- endorsed the final draft of the Manual on Sampling Methodologies for Socio-economic Indicators and favored its expedient publication in the GFCM Studies and Review Series.
- recommended that each national focal point collect and forward to the Coordinator the required information on regional and national projects and activities related to fishery social sciences in the Mediterranean as well as the bibliographical references taking into account the agreed standard format.

26. Furthermore SCESS expressed the need for increased research related to fish markets, including prices, quality control, processing and labelling as an important step to increase scientific knowledge on socio-economics aspects including national and international marketing policies, distribution system and aspects related to the import/export.

27. To streamline the visibility of its activities in the medium-term, SCESS suggested that the priorities for socio-economic research in fisheries be organised into the following four categories that it further detailed in its proposed workplan for 2004 as in document GFCM:SAC6/2003/Inf.7.

- feasibility studies related to the collection of socio-economic indicators of Mediterranean fisheries;
- Training in the realm of fisheries socio-economic analysis and management;
- Case studies relating to the application of the socio-economic indicators to fisheries management and the development of bio-economic models ;
- Research related to fish and fish products markets.

28. SCESS further recommended to:

- endorse the proposed distinctions between "fleets" and "fisheries" and "metiers"
- include specifically in SAC mandate for the intersessional period 2003-2004 the use of bio-economic models, such as BEMMFIS in the analysis of management recommendations;
- extend on-going work on socio-economic indicators to all GFCM Member
- seek support from the Secretariat (FAO/FIPP) for: i) organising a technical meeting on the use of socio-economic indicators in fisheries management and (ii) for updating the FAO Circular N° 927 on Macroeconomic aspects of Mediterranean Fisheries.

#### **SUB-COMMITTEE ON MARINE ENVIRONMENT AND ECOSYSTEMS**

29. SCMEE reviewed and endorsed the conclusions and recommendations, respectively of its Working Group on Anthropogenic Effects and Fishing Technology and its Working Group on Ecology and the Environment. It recommended, in particular:

- on incidental catches, that SAC consider in its workplan addressing the issue of the migration of marine turtles vis-à-vis the interaction with fisheries;
- in relation to the interaction between fisheries and cetaceans, to refrain using acoustic deterrent devices (pingers and passive acoustic reflectors) while stressing the need for carrying out more studies on the effectiveness of the use of dolphin tubes, in the context of the interaction between dolphins and purse seine fishery;
- with reference to the impact of otter trawling on sediments and benthic communities, that multidisciplinary research be initiated to ascertain the effect of trawlers on bottom communities, including pursuing and expanding the studies on impact of otter trawling on sediments, the use of trawl sorting panels and separator grill to protect juveniles;
- with the view to implementing an Ecosystem Approach to Fisheries (EAF), to consider the Mediterranean as a global case study Region where to develop pilot projects, initiating with the organization of a workshop aimed at identifying approaches and tools tailored for the region;
- with regard to elasmobranchs fisheries, that: i) concerned flag countries using driftnet be requested to submit the information required by GFCM at its 27th Session (fishing effort, technical characteristics, by-catch, etc.); ii) the implementation of GFCM Resolution 97/1 banning large-scale driftnet be closely monitored; iii) the possibility for GFCM adopting a more restrictive resolution totally banning driftnet fishing in the Mediterranean (in line with EU Regulation No 1239/98) be envisaged in order to discourage current IUU practices iv) the existing Large Elasmobranch Monitoring (MED LEM) program, especially its extension to the Eastern basin, be promoted with some emphasis being put on Basking sharks;
- that the size and biomass of discards be taken into account in the evaluations since fishing mortality, among other parameters, may be strongly affected by discards which, in the Mediterranean are likely composed of small size commercial specimens, often well below sexual maturity.

30. The SCMEE recognized that the GFCM request concerning the mapping of essential habitats has been somewhat neglected, mainly because of the lack of reliable information on this topic. It recommended to encourage the use of tools such as GIS coupled to diverse sources of information.

31. Finally, SCMEE questioned the usefulness of its form on environmental parameters and invited SAC to reassess maintaining this questionnaire. It further requested SAC to consider including

the topic of “exotic species” into the mandate of the Sub-Committee for the future, to be dealt with in collaboration with other regional institutions, such as RAC/SPA.

32. With regards to geographical occurrence, seasonality, extent and effects of mucilaginous algal blooms in relation to priority shared species, SCSA recommended to hold a workshop on this topic aiming at producing a catalogue of toxic species, a manual of methods and standardised protocols, and to delimitate sensitive periods and areas to be monitored by a network of experts in the future.

33. The report of SCMEE is made available as document GFCM:SAC6/2003/Inf.5.

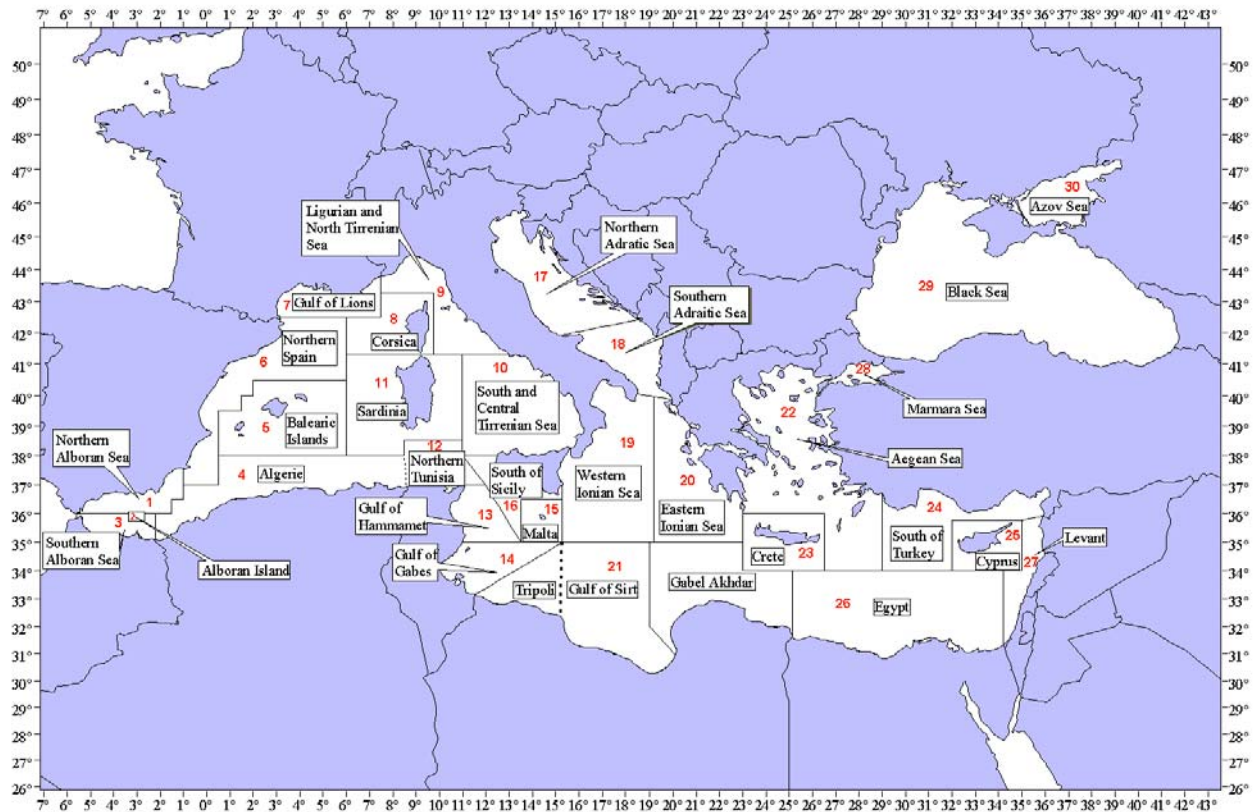
#### **SUGGESTED ACTION BY THE COMMITTEE**

34. The Committee is invited to review the conclusions and recommendations of its Sub-Committees and ad hoc Working Groups. In doing so, it is suggested to pay special attention to issues such as the state of some stocks, biological reference points, Operational Units and socio-economic indicators, MEDFISIS project, EAF, and to provide advice to GFCM for consideration of these recommendations and conclusions.

35. The Committee is also invited to review the activities proposed by the Sub-Committees and decide on the opportunities and priorities concerning their respective programmes of work, eventually taking into consideration comments provided by the Sub-Committee Coordinating meeting, particularly on participation, frequency of Working Group meetings, format of advice.

36. The Committee may also wish to identify those studies produced during the intersessional period which could possibly be published in the GFCM Series “Studies and Reviews”.

## GFCM Geographic Sub-areas (Athens, June 2001)



1. Northern Alboran Sea
2. Alboran Island
3. Southern Alboran Sea
4. Algeria
5. Balearic Islands
6. Northern Spain
7. Gulf of Lions
8. Corsica Island
9. Ligurian and North Tirrenian Sea
10. South of Sicily
11. Sardinia
12. Northern Tunisia
13. Gulf of Hammamet
14. Gulf of Gabes
15. Malta Island

16. South of Sicily

17. Northern Adriatic
18. Southern Adriatic Sea
19. Western Ionian Sea
20. Eastern Ionian Sea
21. Libya
22. Aegean Sea
23. Crete Island
24. South of Turkey
25. Cyprus Island
26. Egypt
27. Levant
28. Marmara Sea
29. Black Sea
30. Azov Sea