



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



**GENERAL FISHERIES COMMISSION FOR THE MEDITERRANEAN**

**Thirtieth Session**

**Istanbul, Turkey, 24-27 January 2006**

**MANAGEMENT OF MEDITERRANEAN FISHERIES**

**I. INTRODUCTION**

1. For fisheries management, the General Fisheries Commission for the Mediterranean (GFCM) relies basically on analysis of the scientific and technical knowledge, management advice and recommendations of its Scientific Advisory Committee (SAC) and its Committee on Aquaculture (CAQ). The CAQ did not meet in 2005; the proposals from the annual meeting of the Information System for the Promotion of Aquaculture in the Mediterranean (SIPAM) and from the meeting of experts for the re-establishment of the Network on Environment and Aquaculture in the Mediterranean (EAM) are therefore summarized in document GFCM/XXX/2006/2, on the basis of their respective meeting reports (documents GFCM/XXX/2006/Inf.13 and Inf.14).

2. This document reproduces, for GFCM consideration, the conclusions and recommendations of the transversal working groups, specialized workshops and sub-committees of the SAC, as endorsed in the report of its eighth session (document GFCM/XXX/2006/Inf.5). It also refers to the four draft recommendations on illegal, unreported and unregulated (IUU) fishing that were before Members during the intersessional period<sup>1</sup> and to the recommendations of relevance to the Mediterranean adopted in 2005 by the International Commission for the Conservation of Atlantic Tunas (ICCAT), which are covered respectively in documents GFCM/XXX/2006/Inf.9 and Inf.10.

**II. CONCLUSIONS AND ADVICE OF THE SCIENTIFIC ADVISORY COMMITTEE**

**Selectivity in trawling**

3. The SAC recognized that deployment of methodologies and tools of statistical analysis for fishing gear selectivity was not an easy matter, especially as implementation of selectivity

<sup>1</sup> Paragraph 81 of the Report of the 29<sup>th</sup> Session.

measures by operators presented practical difficulties. The Committee felt that trawl square meshes were more selective than diamond meshes. It also noted the need to assess selectivity from the economic view point. The Committee endorsed the following main recommendations from the workshop on the standardization of trawl selectivity in the Mediterranean organized under the aegis of the Sub-Committee on Stock Assessment (SCSA):

- establish a selectivity database, with bibliographical and technical information, according to the format reproduced in Annex 1 of this document;
- establish practical guidelines on selectivity studies, including a description of the main stages to be followed for standardizing selectivity studies in Mediterranean trawls;
- establish a Mediterranean network of fishery technologists;
- encourage the dissemination of results and involve industry representatives in the network of technologists in order to enhance the feasibility and effectiveness of selectivity arrangements.

### **Ecosystem approach to fisheries**

4. The SAC noted that the workshop on the ecosystem approach to fisheries organized under the aegis of the Sub-Committee on Marine Environment and Ecosystems (SCMEE) had discussed the main principles and instruments of this approach and had looked closely at geographical limits, chronological scales and classification of ecosystems and habitats, modelling, ecosystem indicators for the spatial and temporal monitoring of fishing effort, selectivity and the by-catch of vulnerable and protected species. The Committee endorsed the following workshop recommendations:

- launch pilot studies by homogeneous sub-areas to apply the ecosystem approach, taking into account the specific characteristics of Mediterranean ecosystems and organize consultative and awareness-raising meetings with stakeholders;
- analyse the impact of fishing operations and other human activity on ecosystems and the impact of environmental changes on fisheries;
- take environmental parameters into account in the management of resources in order to facilitate the integrated formulation of fisheries management advice.

### **Databases, compilation of statistics and processing of information**

5. The SAC endorsed the conclusions of its sub-committees regarding databases and the compilation of statistics and information. It looked closely at the conclusions of the Transversal Working Group on Operational Units organized by the Sub-Committee on Statistics and Information (SCSI), as well as the results of the five-year pilot study carried out under the CopeMed Project and aimed at applying this approach to the Dolphin fish (*Coryphaena hippurus*) fisheries using fish aggregating devices (FADs). It drew the Commission's attention to the priority that needed to be given to the development of operational units in all the geographical sub-areas (map of GSAs in Annex 3) of the GFCM and to the standardized measurement of fishing effort.

6. The Committee asked the Commission in particular to invite its Members to:
- provide data on fishing fleets and their activities, using the tables on operational units reproduced in Annex 2, and determine a trial period for comments to be sent to the SCSI;
  - provide the Secretariat with data on the vessel register and define related confidentiality criteria;
  - consider establishing a second non-mandatory list of fishing vessels of less than 15 metres LOA to provide aggregated regional information on corresponding fleet segments and feed the database on operational units;
  - provide information on national laws and regulations (or amendments to existing texts) to complete the GFCM database on fisheries legislation and update GFCM Studies and Reviews N° 75 *Fisheries laws and regulations in the Mediterranean: a comparative study*;
  - inform the Secretariat of any socio-economic data available in their country for the updating of 1997 FAO Fisheries Circular N° 927 *Economic status of capture fisheries and aquaculture in the Mediterranean*;
  - send their national reports to the Secretariat at least one month before the SAC's annual session so that it can prepare a brief synthesis of the information received.
7. The Committee also invited the MedFisis project to identify and process data of regional interest available in the databases of FAO subregional projects and to promote an inventory of relevant information existing in national databases.
8. The Committee suggested that the Secretariat recruit a database programmer/manager to ensure implementation and maintenance of GFCM databases, together with a systems expert to develop the framework for the Commission's statistics and information system, in cooperation with the MedFisis project.
9. The Committee called for a better insight into sports fisheries and their impact on fisheries management.

### **Fisheries management measures**

10. The SAC examined the results of stock assessments based on scientific works involving 22 assessments of 20 stocks (nine demersal and eleven small pelagic species) including six shared stocks. The assessments covered seven geographical sub-areas, mostly in the western Mediterranean. With regard to work methodologies, particularly for stock assessment and the formulation of management advice, the Committee suggested:
- ensuring the integrated coverage of the Mediterranean through direct surveys and a more exhaustive exploitation of the data obtained through MEDITS and using MEDITS abundance indices for the most important stocks;
  - identifying suitable criteria proposals for priority species;
  - updating assessments, especially of small pelagics, using acoustic techniques and harmonizing direct assessment methodologies used in the Mediterranean;
  - undertaking an annual assessment of anchovy stocks through echo surveys;

- Spain and France undertaking joint anchovy assessments twice a year (spring and autumn) and including the Ebro delta in the spawning areas. The biological and CPUE data of the Spanish purse seine fleet should be updated;
- undertaking, with the assistance of regional projects, multidisciplinary case studies on fisheries for which a reduction of the fishing effort has been suggested in order to formulate integrated management advice.

11. The management measures suggested for different species are reproduced in their entirety in paragraphs 77 and 78 of document GFCM/XXX/2006/Inf.5 and are summarized below as follows:

*Demersal species:*

12. **Blue and red shrimp** (*Aristeus antennatus*) in GSA **05** (Balearic Islands) and **06** (Northern Spain):

Advice: - the fishing effort should not be increased.

13. **Red mullet** (*Mullus barbatus*) in GSA **06**:

Advice: - the 40 mm square mesh at codend should improve selectivity;  
 - the exploitation pattern should be enhanced by imposing strict observance of the 50 m depth ban to protect the stock from growth overfishing;  
 - the fishing effort should be reduced.

14. **Striped mullet** (*Mullus surmuletus*) in GSA **05**:

Advice: - the fishing effort should not be increased.

15. **Hake** (*Merluccius merluccius*) in GSAs **05** and **06**:

Advice: - selectivity should be improved. The 40 mm square mesh is considered more effective than the 40 mm diamond mesh and its use should therefore be promoted.

16. **Hake** in GSA **07** (Gulf of Lions):

Advice: - the 40 mm square mesh could enhance selectivity;  
 - the existing regulation on minimum landing size (20 cm) should be enforced.

17. **Hake** in GSA **22** (Aegean Sea):

Advice: - the fishing effort should not be increased;  
 - selectivity should be improved.

*Pelagic species*

18. **Anchovy** (*Engraulis encrasicolus*) in GSAs **01** and **06**:

Advice: - the fishing effort should not be increased.

19. **Anchovy** in GSA **22**:

Advice: - the current closed period (December to February) should be moved to autumn (recruitment of anchovy) and spring (recruitment of sardine).

20. **Sardine** (*Sardina pilchardus*) in GSA **01**:

Advice: - the fishing effort should not be increased.

21. **Sardine** in GSA 03 (Morocco):

Advice: - the fishing effort should be maintained at its current level;  
 - juveniles should be protected by introducing a seasonal closure of coastal fishing in spring.

22. **Sardine** in GSA 06:

Advice: - the fishing effort should not be increased;  
 - the minimum legal size should be adjusted to the size at first maturity (13 cm).

23. **Anchovy** (*Engraulis encrasicolus*), **Sardine** (*Sardina pilchardus*) and **Sprat** (*Spratus sprattus*) in GSA 17 (Northern Adriatic Sea):

Advice: - Two different opinions, based on two different methods of assessment, have produced different estimates of biomass level. The SAC was unable to reach a consensus. The following opinions are submitted to the Commission:

Opinion 1: The fishing effort should not be increased.

Opinion 2: A moderate increase in fishing effort is possible.

24. The Committee also noted the following updated lengths of anchovy at first maturity:

- Catalan coast and south of Sicily : between 11 and 12 cm
- Ionian Sea and Aegean Sea : between 10 and 11 cm
- Tunisian coast and Adriatic Sea : between 7.5 and 8.2 cm

25. **Dolphin fish** (*Coryphaena hippurus*) in all GSAs:

Advice: - fisheries in all GSAs using fish aggregating devices (FADs) and targeting *Coryphaena hippurus* can only operate between 15 August and 31 December of each year;  
 - Members should identify fleets participating in this fishery.

26. The SAC also suggested that all available data on the fishing and biology of **swordfish** (*Xiphias gladius*) should be gathered in order to determine technical measures for their management, with special regard to: stock structure, the ecosystems approach applied to swordfish fisheries, the socio-economic aspects of the fishery and fleet statistics including, if possible, a presentation by operational unit.

27. The SCA noted that the technical guidelines for the sustainable farming of **bluefin tuna** (*Thunnus thynnus*) drawn up by the Joint GFCM/ICCAT working group needed to be followed up, especially for aspects relating to aquaculture. It invited the Commission to ask the Committee on Aquaculture (CAQ) to see to this.

### **Protection of selected marine ecosystems and vulnerable habitats**

28. The SAC examined the conclusions of works on the environment and marine ecosystems and their interaction with fishery activities. It endorsed the following advice on selected marine habitats and ecosystems:

29. *Alboran Sea seamounts:*

Advice: - the collection of information on the diversity and particularities of these seamounts should be encouraged in order to identify conservation measures;

30. *Lophelia Reef off Capo Santa Maria di Leuca* (coordinates: 39°27.72'N ; 18°10.74'E ; 39°27.80'N ; 18°26.68'E ; 39°11.16'N ; 18°04.28'E; 39°11.16'N/18°32.58'E.):

Advice: - bottom trawling in the deep-water coral reefs should be banned.

31. *The Nile Delta cold hydrocarbon seepage area* (coordinates : 31°30'-31°50' N ; 33°10'-34°00'E):

Advice: - this area should be given full protection status with the prevention of demersal fishing activity.

32. *Eratosthenes Mount* (coordinates : 33°-34°N; 32°-33°E):

Advice: - trawling should be banned.

33. The SAC also suggested that a holistic approach should be adopted to reduce the fishing mortality of turtles, to protect their breeding grounds and to introduce measures to reduce their incidental catch. It invited the Commission to encourage its Members to provide information on their national plans of action for the protection of turtles.

### III. PROPOSED RECOMMENDATIONS ON IUU FISHING

34. At its 29<sup>th</sup> session, the Commission recommended that its Members take note of the four recommendations proposed by the European Community so that their national authorities could analyse them in detail and the GFCM examine them at its next session. These recommendations, which are reproduced in full in document GFCM/XXX/2006/Inf.10, are as follows:

- Establishment of an IUU vessels list (black list);
- Criteria for obtaining the status of cooperating non-contracting party;
- Terms of reference for the creation of a GFCM Compliance committee;
- Data confidentiality policy and procedures.

### IV. ICCAT RECOMMENDATIONS ON MEDITERRANEAN FISHERIES

35. At its 19<sup>th</sup> session in Seville, Spain, in October 2005, the International Commission for the Conservation of Atlantic Tunas (ICCAT) adopted a number of recommendations, including those below (reproduced in full in document GFCM/XXX/2006/Inf.10) concerning fisheries in the Mediterranean:

- Recommendation 05-04 to amend the recommendation [04-06] on bluefin tuna farming ;
- Recommendation 05-05 to amend the recommendation [04-10] concerning the incidental catch of sharks in the fishing of large pelagics;
- Recommendation 05-06 establishing a programme for transshipment by large-scale longline fishing vessels.

**V. MEASURES SUGGESTED TO THE COMMISSION**

36. The Commission is invited to examine the conclusions, recommendations and opinions of its Scientific Advisory Committee and to approve those it considers appropriate. It might also wish to issue guidance on the possible need for the SAC to ensure scientific follow-up of certain measures.

37. The Commission is also invited to examine the draft recommendations on IUU fishing and the ICCAT's 2005 recommendations on the Mediterranean.



## APPENDIX 2

## Fleet data requirement for Operational Units

Table 1 - Fleet and area variables

- **GSA:** GFCM Geographical Sub-Area
- **Country**
- **SAC Fleet segment:**
- **Vessel Number:** Number of fishing vessels belonging to the fleet segment.
- **Capacity** Gross Tonnage (GT) or Gross Registered Tonnage (GRT)
- **Operational Activity:** Open a code for each activity developed around the year. Code composed as follows:
  - First three characters indicate the United Nations country abbreviation
  - Followed by two-digit number identifying the GSA
  - Followed by the letter of the SAC fleet segment
  - Last 2-digit number indicates the specific Operational Unit number
- **Base ports:** port/s of operation of the given Operational Unit.

Table 2 - Main resource and activity components variables per OU

- **Operational Unit code:** as above. For each the next data on the fishing activity practiced around the year
- **Activity:** Days at sea or hours fishing
- **Fishing gear:** abbreviated (two or three characters) according to the International Standard Classification of Fishing Gear (ISSCFG).
- **Target species (FAO Code):** scientific name of the bio-economically most important target species (up to a maximum of five species).
- **FAO species code:** The FAO three-letter code based on the English common name as from the International Standard Statistical Classification of Aquatic Animals and Plants (ISSCAAP).
- **Main associated exploited resources:** the species, species group or assemblage exploited in association with the target species previously indicated.
- **Fishing period:** self-explanatory (e.g. annual, June to September)
- **Relative Weight:** Percentage of total vessels included in the fleet segment that practiced this activity
- **Areas** where this activity is practiced: expressed in descriptive way

Table 3 - Economic components variables

- **Gross Tonnage:** Total gross tonnage of fishing vessels belonging to the given Fleet Segment.
- **Horse Power:** Total engine power of fishing vessels belonging to the given Fleet Segment.
- **Employment:** Total number of people employed on fishing vessels belonging to the given Fleet Segment. The number of crew members can be estimated on a full time equivalent (FTE) basis.
- **Salary Share %:** Percentage of the revenues after discounting commercial costs, daily costs and fuel costs that pertain to the crew. It will be distributed among the crew as salary.
- **Landing weight:** Total landings in weight.
- **Landing value:** The volume of landed fish valued against actual market prices. It equals to quantities landed multiplied by the landing average price.

- **Vessel value of total Fleet:** This is defined as total invested capital – value of hull, engine, gear and equipment. The replacement-value method can be used to estimate this parameter.
- **Fishing days/year per vessel:** Number of fishing days per year.
- **Fishing hours/day per vessel:** Number of fishing hours per day.
- **Cost of fishing/day per vessel:** These include daily expenses incurred in fishing activity, such as fuel, lubricants, etc. They are variable costs that depend on the time spent in fishing.
- **Yearly Fixed costs per vessel:** These comprise costs not directly connected with operational activity, such as non-routine maintenance, vessel insurance, taxes and dues, etc. The fixed costs are all the costs that are inevitable to pay yearly, independently from the time spent to fish.

**Table 4 – Effort variables**

**Landing weight** = as above

**Effort measure** = Capacity \* Fishing Activity

**LPUE** = Landings per Unit of Effort

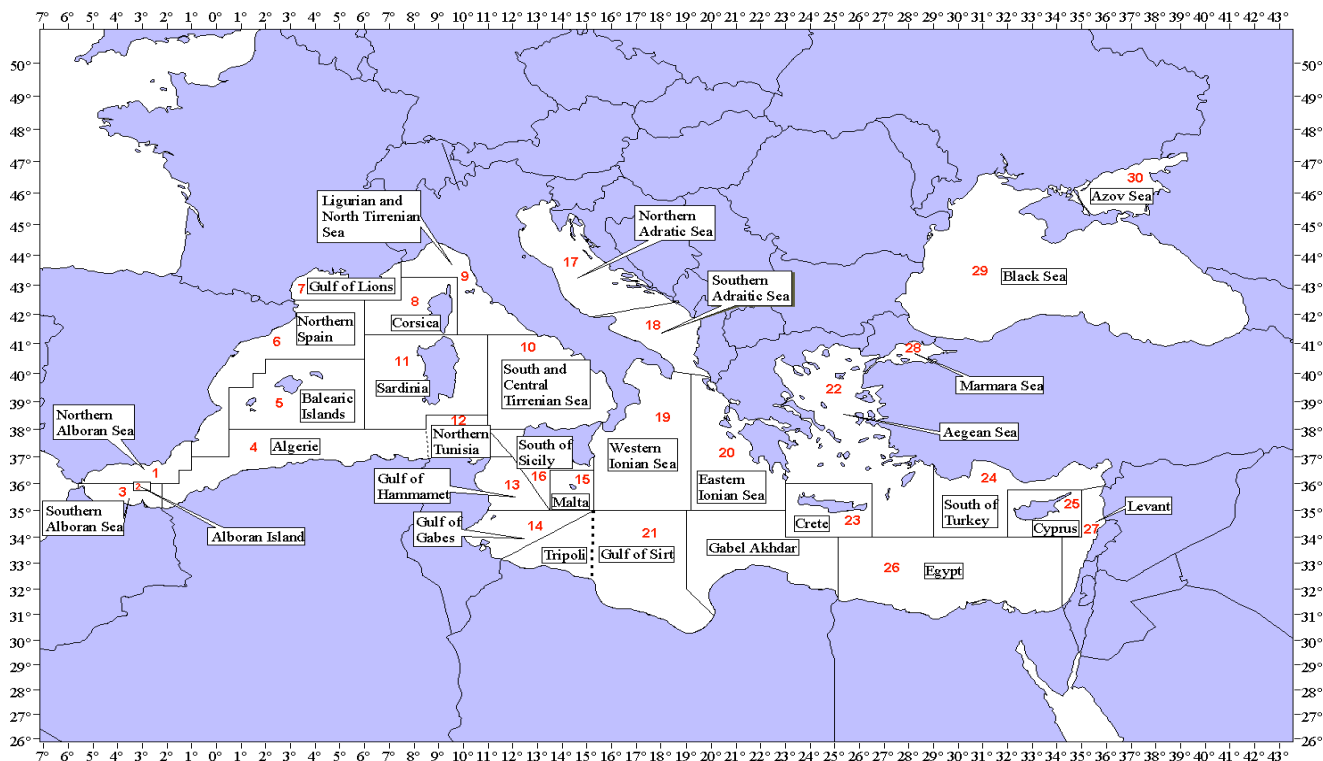
Note:

**Effort** is to be expressed as a product of the Capacity and Fishing Activity for each Operational Unit, even if the landings data are available only at level of fleet segments. This information allows for the estimation of **LPUE/CPUE**: Landings/Catch per Unit of Effort.

**Standardization coefficient** could be applied for each fleet segment and activity to obtain a measure of equivalence between the fishing effort of one group of vessels (fleet segment or OU) and another.

## APPENDIX 3

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



- |                                     |                           |
|-------------------------------------|---------------------------|
| 1. Northern Alboran Sea             | 16. South of Sicily       |
| 2. Alboran Island                   | 17. Northern Adriatic     |
| 3. Southern Alboran Sea             | 18. Southern Adriatic Sea |
| 4. Algeria                          | 19. Western Ionian Sea    |
| 5. Balearic Islands                 | 20. Eastern Ionian Sea    |
| 6. Northern Spain                   | 21. Libya                 |
| 7. Gulf of Lions                    | 22. Aegean Sea            |
| 8. Corsica Island                   | 23. Crete Island          |
| 9. Ligurian and North Tirrenian Sea | 24. South of Turkey       |
| 10. South Tiffenian Sean            | 25. Cyprus Island         |
| 11. Sardinia                        | 26. Egypt                 |
| 12. Northern Tunisia                | 27. Levant                |
| 13. Gulf of Hammamet                | 28. Marmara Sea           |
| 14. Gulf of Gabes                   | 29. Black Sea             |
| 15. Malta Island                    | 30. Azov Sea              |