GENERAL FISHERIES COMMISSION FOR THE MEDITERRANEAN

Report of the Sub-Committee On Marine Environment and Ecosystems

Barcelona 6-9 May 2002

1. Opening of the Session

1.1. The 3rd Session of the GFCM/SAC Sub-Committee on Marine Environment and Ecosystems was opened by the coordinator, Mr Amor El Abed, who welcomed the participants and wished them a successful meeting, he summarized the conclusions of the previous meeting.

2. Adoption of the Agenda and Arrangements for the Session

2.1. The Working Group adopted the Agenda attached as Annex 1, but decided to shorten the duration to only three days.

2.2. Mr Amor El Abed, Coordinator of the Sub-Committee, chaired the meeting. Ms M. Pilar Olivar (from ICM) was elected reporter.

2.3. The meeting was attended by 12 experts, representing 5 countries. The list of participants is attached as Annex 2.

2.4. The coordinator gave a brief presentation of the history of the Sub-committee, which met for the first time in 2000. He has contacted 400 experts, but he has received only few answers, particularly for the Eastern Mediterranean countries. The participants suggested to organize the next meeting in priority in one of these countries.

2.5. The coordinator summarised the conclusions of the Working Group on Marine Environment and Ecosystems held in Palma de Mallorca (26-28 February 2001) and of the sub-committee of Roma (15-18 May 2001). In that meeting it was suggested to simplify the three forms (eco-biology of priority species, effect of environmental parameters, effect of fishing gears on ecosystems and fisheries). This work has already been done and new forms were sent to experts and Institutes. No responses have been received so far. F. Sarda suggested the creation of working groups in order to stimulate inter-session activities.

2.6. The coordinator emphasised the commitment for the members of the Sub-Committee to fill in all three forms. As in previous occasions, some delegates expressed concern about the lack of response by scientist of the different countries in filling these forms.

2.7. As some of the persons in charge of certain tasks were absent during this meeting, the participants expressed the wish of a better regularity in the attendance of the meetings.

2.8. Regarding the Glossary it was proposed to convene a general meeting for that, because this is important to everybody.

2.9. The coordinator summarised the main conclusions of SAC meeting in Athens (June 2001) and GFCM meeting in Ischia (September 2001) (see Annex 3).

3. Investigation and updating of data on incidental catches of protected species in fishing activities

France. There is no specific program and no regular recording system of the catches of these species. In order to improve our knowledge on these aspects it would be interesting to contact experts from several Universities, as the work of most of our centres or institutions is more related to target species of fisheries. J. Sacchi will prepare a list of experts in France working on different groups.

Spain. There is no specific program and no regular recording system of the catches of these species. IEO will be contacted by P. Hernandez.

Italy. There is a specific program to monitor the presence of large elasmobranch fish conducted by ICRAM and ARPAT with the cooperation of Sea Surveillance Military bodies, such as Coast Guard (see Annex 4) (M. Vacchi and F. Serena).

M. Vacchi stressed the importance of having a common protocol of intervention.

ICRAM is preparing the guidelines for National Plan of Action on cetaceans, monk seals, turtles, marine birds and sharks.

Tunisia. There is a monitoring program on board fishing boats (see Annex 5 by A. El Abed).

The Sub committee listed several issues to clarify or questions to answer:

- List of experts and specialised institutions
- Is there a national plan for monitoring incidental catches of protected species?
- Which are the sources of these data?
- Who is responsible for the intervention?

- Are there observers or a network of experts for monitoring?

- Is there a protocol of intervention?

- Are there scientific studies?

Other species:

COPEMED has promoted the development of a regional project to quantitatively analyse the effect of fisheries on turtle populations. Gathering existing information on the subject to achieve a state-of-art is one of the first objectives of the project. At a second step, it would be desirable to collect data on ports and on board either of incidental catches or to monitoring watches and tags recoveries. At the moment COPEMED is going to analyse proposals by the countries that originally agreed on participating in such a program, but have not started any activity yet.

Malta. They have a very active department for that subject. T. Bahri (MedSudMed) will contact them so that they send us information on their activities.

Egypt, Libya, Tunisia. There is a document on turtle nesting sites along the coast, produced by L. Laurent and N. Bradaï

Eastern Mediterranean countries. This is a very important zone, but there is no representation of experts in our committee. It is recommended to promote the collaboration with these countries.

As a conclusion, it could be said that in most of the countries there are no specific monitoring programs, but there are many experts in the different species.

Beside turtles and mammals there are also other important species. It would be useful to contact experts and to look for bibliography to obtain more information. It was recommended to think of the best way to collect data, for example in relation with the creation of working groups.

The coordinator made reference to the ACCOBAMS documents sent by M.C. Vancklaveren and suggested to discuss it at the point 8.

4. Investigation and updating of data on target and incidental catches of highly migratory shark species in fishing activities

Pelagic sharks are not target species in the Mediterranean fisheries, but they are frequently caught by a variety of fishing gears. They represent a substantial amount of by-catch in some cases.

The Italian team is the most active in this kind of studies. F. Serena presented the results of two papers as an example (see Annex 6 and 7). Italian scientists also participate in several working groups of elasmobranchs experts and are planning to follow with that kind of research in the future. They cooperate in international studies related to DNA and ageing analyses, as well as other biological aspects with several Universities and Institutions. F. Serena will send an abstract of these activities to the coordinator of the Sub committee.

Basking shark is one of the important species, it is quite common during some months of the year, particularly in shallow waters. The incidental catches operate mainly by gillnets.

One of the future actions in Italy will be the study of migratory routes of basking shark, by satellite tag program conducted by ICRAM.

In general it was stressed that there is an important gap of information and that most of the information are anecdotal appearances. It is recommended to follow the same protocol of study for all the Mediterranean. F. Serena and M. Vacchi will prepare a standard monitoring protocol to be included in the report.

5. Investigation and updating of data on estimates of discards by operational units, geographic sub areas or management units and season.

The group stressed the importance of discards linked to the market prices.

F. Andaloro gave information on two projects on that subject. The first one was an Italian project addressing the assessment and use of trawl discards. The second one was an UE project just focused on assessment. Discards range from 20 to 70% of total biomass catches. F. Andaloro will send documents to the coordinator.

F. Sardà informed that there have been several programs carried out by the ICM in collaboration with other institutions and other UE countries to study that. F. Sarda will send to the coordinator the inventory of these projects.

Following SAC indications, during the 10th COPEMED Steering Committee meeting, it was recommended to the member countries to pursue studies to quantitatively assess discards. The countries were called to present proposals to address the issue and were advised to contact the IEO center in Mallorca who offered to provide assistance since they have already carried out

some experience. At the moment two countries, Morocco and Tunisia have showed their interest on the subject. They are going to include this type of studies in the list of activities to be developed within the next year financed by their own governments.

J. Sacchi informed that in France was conducted a project to study hake in which they also analysed discards. They were mainly interested in understanding which are the main causes that imply that a fish specimen was discarded (deterioration during sorting, etc).

F. Sardà informed on the results of a project on survival of discards carried out in the Catalan coast, and it was considered important to impulse this kind of studies.

6. Investigation and mapping of essential fish habitats for littoral and offshore priority species.

This point started with a discussion on what kind of data are relevant to this issue. F. Serena presented a biomass distribution map of small spotted shark (Annex 8).

Distribution charts for recruitment, nursery or spawning areas for several species could be produced using MEDITS and other projects data. Nevertheless, it was considered that the kind of information required should be more related to the characteristic of bottom substrate, location and extension of *Posidonia oceanica*, physical characteristics of water masses near the bottom. Other important issue is the study of human modification of fish habitats (contaminants, etc).

Tunisia. A. El Abed informed that his Institute prepared a national program for the Ministry of Environment, using GIS information on sediments, water quality, biodiversity and fish abundance.

Spain. F. Sardà has information on priority species (distribution and abundance of *A. antennatus*, *A. foliacea*, sharks), biodiversity, physical parameters and infauna for deep sea waters of Western and Central Mediterranean. This will appear in a special volume of Scientia Marina within the next two years.

COPEMED has facilitated the production of a CD with the results of artisanal fisheries regional program which contains some information related to fish habitats (Informes y estudios COPEMED n. 7). This CD is available through the Project.

It was suggested to use the National Coastal Atlases as a source of information.

Italy. F. Andaloro informed that there are many studies on *Posidonia oceanica* in Italy. There are also studies on marine reserves and fish habitats, which are mainly focused on human impacts (A document will be sent by F. Andaloro to the coordinator).

France. They also have several groups studying *Posidonia oceanica*. A. El Abed and J. Sacchi will contact GIS Posidonie to have detailed information.

Spain. *Posidonia oceanica* is being studied by several groups at the Universities of Alicante and Barcelona, and the CEAB-CSIC centre of Blanes .

Malta. Mapping of *Posidonia* beds as priority habitat is one of the objectives of the Environment Department of Malta. The objective is to follow the evolution of the zone. A tender is about to be launched (or recently launched) for the implementation of the study. MedSudMed will ask for more information (T. Bahri).

Algeria. A. El Abed will contact ISMAL (Semroud) to have information on Posidonia in Algeria.

Turkey. *Posidonia oceanica* and Cymodocea are studied at the University of Istanbul (S. Greco will send information to coordinator).

Future Actions:

i) To collect data concerning fish habitat:

MEDITS

Tunisia National data

COPEMED coastal area

Coastal Atlases

Programs of study of *Posidonia oceanica*

ii) To determine parameters that affect fish habitats (alien and invasive species, contaminants).

There is an ecotoxicological program with *Serranus cabrilla* and *Coris julis* as target species in 15 Italian marine protected areas.

In Tunisia and France there is an on-going program in which bivalves are used as pollutants indicators

iii) Question on the consideration of artificial reefs and protected areas as models for restocking and examples on the situation of *Epinephelus* populations were presented.

Information of SAC president J. Camiñas to the Sub-Committee on Marine Environment and Ecosystems

In order to improve working methodology of the commission, a meeting of the coordinators of the different sub committees will be held on 9^{h} of May. It is important to further study the relationships between fishing activity of priority species and environment. SAC president underlined the importance of the results of bio-ecological forms, even though there are still too many gaps. In order to avoid dilution of efforts in many items, the SAC president recommended to concentrate efforts on the main priority species

SAC president also informed on the international project of fisheries effects on marine turtles, which has the objective to implement the recommendations of the Barcelona convention in order to assess and minimise turtle mortality.

7. Following up of specific actions linked to GFCM recommendations and started by S-C since 2000:

7.1. and **7.2.** Forms concerning effect of environmental parameters and effect of fishing gears were not discussed because of absence of responses to these forms and of the persons in charge. Bio-Ecological Forms were summarised by F. Sarda. SAC president and the participants were interested by the contents as a starting result to be strengthened (Annex 9).

It is recommended to send more information coming from new projects.

It was suggested to make available the form on the COPEMED web site.

In relation to last SAC meeting recommendation to organise a working group on the Ecosystem Based Approach, J. Camiñas informed that it was decided to postpone until more detailed information is provided by Reykjavik and RAC/SPA meetings. Our sub committee should be directly involved in the follow up of this approach for the Mediterranean, because it was considered of primordial importance to try to implement new ways of management in the Mediterranean.

7.3. Field identification guide on cartilaginous fish species of the Mediterranean Sea

F. Serena provided a list of species which will be included in the Guide. This list has been reviewed by Dr. Compagno. He acknowledged R. Robles of COPEMED for financing this project. The Guide will be probably ready in July (Annex 10).

J. Sacchi presented the results of a study on ghost fishing, to identify and quantify impact of lost static gears in European waters (Annex 11).

7.4. Glossary

The discussions were postponed because of the absence of the responsibles.

7.5. Setting up of a database on on-going and finished projects concerned with fisheries and marine enviroment.

F. Andaloro presented information on a project which studies the impact of FADS on *Naucrates ductor* and other fish species from a point of view of ecosystem approach and conservation.

S. Tudela, who agreed last year to act as the focal point for WWF regarding the task to gather information on on-going projects relevant to this sub committee presented a document with this information.

I. Palomera presented information on the application of the ECOPATH model in the Catalan coast. At the moment they are defining groups of species and preparing diet matrices.

F. Sarda presented information on recent and ongoing projects carried out by ICM.

N.B. All annexes concerning ongoing and finished projects will be presented in one document (Annex 12).

In the framework of COPEMED Morocco and Tunisia are conducting a project on the use of INSTM deterrent device for dolphins from the fishing zones. A. El Abed will provide information.

S. Tudela presented a document in relation to tuna farming practices in the Mediterranean. The document is included in the Annex 13.

7.6. Ongoing of national sharks plans of action

M. Vacchi presented the activity for the formulation of the Italian Plan of Action on sharks. ICRAM coordinates a working group charged to elaborate the document.

8. Opportunistic creation of a transversal working group and other items.

Recommendations of the working group:

- To ensure that technological improvements are consistent with responsible fisheries (*e.g.* introduction of sorting grids in trawlers or effective effort reduction)

- To apply the precautionary principle

- To encourage the introduction of the ecosystem approach as a tool for fisheries management in the Mediterranean Sea

- To extend sub committee prospecting to all Mediterranean countries and Black Sea.

- Creation of working groups in the framework of the sub committee, in order to improve efficiency

- Recommend the commission to charge a specialised group to insure the information flow between all the international organisations dealing with marine environment and fisheries

PROPOSAL OF WORKING GROUPS FOR SUB-COMMITTEE OF EME Co-ordinator: Amor El Abed		
Working Group	***Topics***	***Responsibles***
Anthropogenic effects and fishing technology	Community disturbance Fishing technology Artificial reefs Protected species Fishing impact Contamination Waste materials Effects on reproduction	
Ecology and Environment	Life cycles Consumption rates Behaviour Environmental influence Implication on assessment Benthos Ecosystem approach Biodiversity Genetics Protected areas	
Others		

Working Group activities for 2002-2003
Priorities
species of shared fisheries
other target species

Background and update (projects, relevant bibliography, estate of the art, and EC recommendations)
Lacks and gaps
Precautory aspects
Recommendations to the SAC

Annex 1

1-Opening of the Session.

2-Adoption of the agenda and arrangement of the session.

3-Investigation and updating of data on incidental catches of protected species in fishing activities.

4-Investigation and updating of data on target and incidental catches of highly migratory shark species in fishing activities.

5-Investigation and updating of data on estimates of discards by operational units,geographic sub areas or management units and season.

6-Investigation and mapping of essential fish habitats for littoral and offshore priority species.

7-Following up of specific actions linked to GFCM recommendations and started by S-C from 2000:

7.1:Forms on effects of environmental parameters

7.2:Forms on the effect of fishing gear

7.3:Preparation of a field guide for identification of cartilagenous species.

7.4:Glossary presentation

7.5:Setting up of a data base on ongoing and finished projects concerned with fisheries and marine environment.

7.6:Ongoing of national shark plans of action.

8- Opportunities of creation of a transversal working group and other items.

Annex

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Annex

T. Bahri

On-going programs at the Environment Department of Malta

1. Mapping of Posidonia beds as priority habitat: the objective is to follow the evolution of the zone. A tender is about to be launched (or recently launched) for the implementation of the study.

2. Research of funds for a project on grouper to study and estimate the population. While it is a protected species, it is suspected that it is still fished and sold directly to restaurants.

3. On-going rescue program for marine turtles: the objective is to collect the individuals found on the beaches, rehabilitate and tag them before releasing the animals.

4. Cetaceans: study of Persistent Organic Pollutants by sampling on stranded animals.

Annex 10

Taxonomic List

GUIDE OF ORDERS

CHIMAERIFORMES

HEXANCHIFORMES

SQUALIFORMES

SQUATINIFORMES

RAJIFORMES

LAMNIFORMES

CARCHARHINIFORMES

GUIDE OF FAMILIES AND SPECIES OCCURRING IN THE AREA

Order CHIMAERIFORMES

Family CHIMAERIDAE

Chimaera monstrosa

Order HEXANCHIFORMES

Family HEXANCHIDAE

Heptranchias perlo

Hexanchus griseus

Hexanchus nakamurai

Order SQUALIFORMES

Family ECHINORHINIDAE

Echinorhinus brucus

Family SQUALIDAE

Squalus acanthias

Squalus blainvillei

Squalus cfr megalops

Family ETMOPTERIDAE

Etmopterus spinax

Family CENTROPHORIDAE

Centrophorus granulosus

Family SOMNIOSIDAE

Centroscymnus coelolepis

Somniosus rostratus

Family OXYNOTIDAE

Oxynotus centrina

Family DALATIIDAE

Dalatias licha

Order SQUATINIFORMES

Family SQUATINIDAE

Squatina aculeata

Squatina oculata

Squatina squatina

Order RAJIFORMES

Suborder PRISTOIDEI

Family (PRISTIDAE) (Disappeared)

Pristis pectinata

Pristis pristis

Suborder RHINOBATOIDEI

Family RHINOBATIDAE

Rhinobatos cemiculus

Rhinobatos rhinobatos

Suborder TORPEDINOIDEI

Family TORPEDINIDAE

Torpedo marmorata

Torpedo nobiliana

Torpedo torpedo

Suborder RAJOIDEI

Family RAJIDAE

Dipturus batis

Dipturus oxyrinchus

Leucoraja circularis

Leucoraja fullonica

Leucoraja melitensis

Leucoraja naevus

Leucoraja rondeleti (cfr fullonica)

Raja asterias

Raja brachyura

Raja clavata

Raja miraletus

Raja montagui

Raja polystigma

Raja radula

Raja undulata

Rostroraja alba

Suborder MYLIOBATOIDEI

Family DASYATIDAE

Dasyatis centroura
Dasyatis chrysonota
Dasyatis pastinaca
Dasyatis violacea
Himantura uarnak
Taeniura grabata

Family GYMNURIDAE

Gymnura altavela

Family MYLIOBATIDAE

Myliobatis aquila
Pteromylaeus bovinus

Family RHINOPTERIDAE

Rhinoptera marginata

Family MOBULIDAE

Mobula mobular

Order LAMNIFORMES

Family ODONTASPIDIDAE

Carcharias taurus
Odontaspis ferox

Family ALOPIIDAE

Alopias superciliosus
Alopias vulpinus

Family CETORHINIDAE

Cetorhinus maximus

Family LAMNIDAE

Carcharodon carcharias
Isurus oxyrinchus
Isurus paucus (Probably)
Lamna nasus

Order CARCHARHINIFORMES

Family SCYLIORHINIDAE

Scyliorhinus canicula
Scyliorhinus stellaris
Galeus atlanticus
Galeus melastomus

Family TRIAKIDAE

Galeorhinus galeus
Mustelus asterias
Mustelus mustelus
Mustelus punctulatus

Family CARCHARHINIDAE

Carcharhinus altimus
Carcharhinus brachyurus
Carcharhinus brevipinna

Carcharhinus falciformis
Carcharhinus limbatus
Carcharhinus melanopterus
Carcharhinus obscurus
Carcharhinus plumbeus
Rhizoprionodon acutus
Prionace glauca
Galeocerdo cuvieri (Probably)

Family SPHYRNIDAE

Sphyrna lewini
Sphyrna mokarran
Sphyrna tudes
Sphyrna zygaena

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