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## GENERAL FISHERIES COMMISSION FOR THE MEDITERRANEAN

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### SUMMARY REVIEW OF THE FAO REGIONAL PROJECTS IN SUPPORT TO THE SCIENTIFIC ADVISORY COMMITTEE

#### I. INTRODUCTION

1. This document summarizes the most significant activities carried out by the FAO Regional Projects, namely CopeMed<sup>1</sup>, AdriaMed<sup>2</sup>, MedsudMed<sup>3</sup> and MedFisis<sup>4</sup>, during the intersessional period of the Scientific Advisory Committee (SAC). These included research and training programmes, workshops and working groups as well as the technical assistance provided in support to specific country and relevant regional institutions, primarily the GFCM/SAC and its Sub-Committees. This is an updated version of document GFCM:SAC7/2004/4 presented to the Seventh session of SAC as it also alludes to on going activities concerning the formulation of the EastMed project.

#### II. COPEMED

2. During the intersession, CopeMed has continued facilitating active participation of experts from the southern shore of the Western Mediterranean in several GFCM/SAC and ICCAT/SCRS meetings through co-funding arrangements. In May 2004, the project also co-organised with the *Secretaría General de Pesca y el Instituto Español de Oceanografía* (IEO), in Malaga, Spain, the meetings of the four SAC Subcommittees, at which the project presented a number of scientific contributions to the respective Subcommittee.

<sup>1</sup> "Advice, Technical Support and Establishment of Cooperation Networks to Facilitate Coordination to Support Fisheries Management in the Western and Central Mediterranean". The Project is financed by the *Agencia Española de Cooperación Internacional*.

<sup>2</sup> "Scientific Cooperation to Support Responsible Fisheries in the Adriatic Sea". The project is financed by the Italian Ministry of Agriculture and Forestry Policies.

<sup>3</sup> "Assessment and Monitoring of the Fishery Resources and Ecosystems in the Straits of Sicily". The project is financed by the Italian Ministry of Agriculture and Forestry Policies.

<sup>4</sup> "Mediterranean Fisheries Statistics and Information System". The project is jointly financed by FAO and the European Union.

### **Fishery statistical and information systems**

3. The support for the upgrading of fisheries statistical systems has been uneven depending of the present status in each of the concerned CopeMed participating countries. In Malta and Morocco for example, the system is totally operational; Algeria, Tunisia and Libya received therefore stronger support to match actual needs and capacities.

4. New data for the year 2003 have been incorporated to the Spanish MEDITS Atlas, thus allowing completing a 10 years historical series. An Atlas on demersal resources is under preparation to be published early 2005.

5. The Information system comprises the maintenance and upgrading of the project Databases and Website as well as the publication and dissemination of programme results, as follows:

- the three *databases*, respectively on Artisanal fisheries, Tuna and Swordfish fisheries and the CopeMed Management and Information System have been continuously upgraded. A new database on socio-economic indicators is being established.
- the project *Web site* was regularly enhanced with information generated within the project or gathered from outside. Web sites of Maltese, Tunisian and Moroccan institutions have been improved as well, with assistance of the Project. Development of GFCM Web site has also been specifically supported.
- efforts were made to ensure publication and dissemination of outputs, including through updating the CD Rom on artisanal fisheries and related printed version or publishing in the *Informes y Estudios Series*, technical documents, such as on “*Áreas Marinas Protegidas como herramientas de Gestión Pesquera en el Mediterráneo*”.

### **Research programs**

6. The regional research programmes included the following:

- **Artisanal Fisheries.** Algerian and Tunisian data have been incorporated into the regional inventory. A new updated CD has been released and a new CopeMed publication synthesizing the status of artisanal fisheries in the area is under press.
- **Large pelagic species.** The routinely work already established since 1999 in the five countries concerned has been pursued. This includes: sampling network maintenance at sea and in ports; processing and analysis of biological sampling; compilation and analysis of environmental data related to the variability of fishing yields and tagging activities. Swordfish has been added to the group of studied species. Results have been presented to the ICCAT/SCRS meetings in 2003 and 2004. A progress report on the assessment trials performed during last year on Dolphin fish fishery was also presented to the SCSA<sup>5</sup>, in May 2004, including recommendations for its management.
- **Socio-economic indicators and bio-economic modelling.** Data compilation for the SAC agreed indicators was completed in Algeria and Libya. Previous work in the Gulf of Gabès was extended to the remaining Tunisian area. A SAC/SCESS workshop was also organised in March 2004, in collaboration with the University of Barcelona, on socio-economic indicators. A testing of practical application of the EU BEMMFISH<sup>6</sup> project, using indicators collected along these last five years in the Southern Western Mediterranean countries is going to be designed.

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<sup>5</sup> SAC Sub-Committee on Stock Assessment

<sup>6</sup> Bio-Economic Modeling of Mediterranean Fisheries

- **Operational Units (OUs).** A new program on dolphin fish is being implemented in Tunisia, Malta and Spain as pilot studies for the application of the OUs concept on specific shared stock fisheries. The project also organised a workshop in December 2003 to define the *modus operandi* for the pilot case study on OUs applied to the small-pelagic fisheries in the Iboran Sea.
- **Lobster fisheries.** A final report of the past 2 years program executed in Spain and Tunisia has been made available. A second phase of this study is being initiated in Tunisia, including the testing of selective gears for lobster.

### Training activities

7. The following series of training activities were organised, mainly abroad:
- participation of Tunisian experts in a research cruise for large Pelagics ichthyoplankton survey (TUNIBAL), in July 2003
  - practical stay of Tunisian expert for large pelagics ichthyoplankton lab techniques, in October-November 2003
  - practical stay of Tunisian expert for ichthyoplankton identification and daily growth studies, in February 2004
  - Course on Harmful Algal Blooms for Maghreb countries in collaboration with IOC<sup>7</sup> and INSTM<sup>8</sup> in December 2003
  - Use of relational database management system (MS ACCESS) in Algeria, January 2004
  - On-site expert assistance on statistics in Algeria, in February 2004
  - Practical stay of a Moroccan expert at FAO HQ for the National Statistical System components, in January 2004
  - Training workshop on the study of fish growth in Morocco, April 2004
  - Co-organisation through FAO FID, with the *Universidad de Barcelona*, CIHEAM and the *Secretaría General de Pesca Marítima* of a 2-years Master (Sept. 2004-March 2006) on “Economics and Fisheries Management”.

### Fishery Legislations and Dialogue among the Actors of the Fishery System

8. The outputs of the three meetings of the CopeMed Working group on fisheries legislation, organised during the past years has been processed for publication. Following the recommendations of the First CopeMed Dialogue Forum, technical meetings have been held, including for the preparation of a pilot management plan for small pelagic species in the Alboran Sea. The format for this plan is under clearance by the relevant authorities in Algeria, Morocco and Spain.

9. A meeting for organizing the Second CopeMed Dialogue Forum (scheduled for March 2005) was held in May 2004. Agreed topics for the Forum will focus on the practical harmonisation of selected fisheries regulations and on aspects related to fish market, including eco-labelling and product traceability.

### III. ADRIAMED

10. The activities carried out during the period under review followed the three main components of the project, respectively on fishery resources, social and economic sciences, statistics and information systems. In addition a specific programme entitled “Scientific Support to Strengthen the Montenegrin Fishery Sector” was initiated in January 2004 following the adhesion of Serbia-Montenegro to the project. This programme focus on integrating scientists and managers in the

<sup>7</sup> UNESCO/International Oceanographic Commission

<sup>8</sup> Institut National des Sciences et Techniques Marines, Tunisia.

framework of the established cooperation, such as participating to the Third Demersal Trawl Survey, and the launching of specific activities, such as *ad hoc* meetings on data handling, input and compilation for the Trawl Bank, including use of cartographic soft wares or specific programme for the collection and analysis of data on: i) species catch composition, catch and effort and fishery production and on, ii) socio economic aspects of the Montenegrin fishery.

11. AdriaMed continued supporting the participation of experts at many GFCM meetings, including the SAC Sub-Committees, the 4<sup>th</sup> Session of the Committee on Aquaculture (CAQ), the SCSA Working Group on Reference Points, the 7<sup>th</sup> SIPAM National Coordinators Meeting, etc

### **Shared Fishery Resources**

12. Topics related to shared fisheries remained the main focus of the Project activities during the period. These included:

- a Meeting of the **Working Group on Shared Demersal Resources** in March 2004 which focused on stock assessments, the identification of indicators and reference points, the results of the programme on the Identification of Population Units by Genetic Structure Analysis (IPUAS), the Trawl Survey and the identification and applicability of Operational Units to the Adriatic. Attention was also paid to identifying nursery areas of the main demersal fishery. Results were presented to SCSA in May 2004.
- the second phase of the AdriaMed International **Bottom Trawl Survey** Programme took place in the autumn/winter of 2003 in the eastern Adriatic, back to back with the Italian national survey in the western Adriatic. Following another meeting of the Working group on Demersal Resources mid September 2004, the preparation of Third Trawl Survey, underway, was finalized to covers the Geographical Sub-Areas (GSAs) 18 and 17. An updated version of the Trawl Survey Data Bank (on an access rather than excel support) is being developed, including with a GIS interface.
- the Second **Small Pelagic Stock Assessment Workshop** was held in April 2004. Assessments on sardine and anchovy shared stocks were presented to the SCSA in May 2004. The Working Group on Small Pelagic Resources met in June 2004. It focused on the use and integration of available assessments and related information for scientific advice on fishery management. The meeting also addressed issues such as, Inter-ship acoustic calibration (i.e. parallel acoustic surveys, GSA 17); eggs and larvae survey (GSA 18); fish ageing otolith reading calibration exercise.
- the document “Review of current knowledge on demersal shared stocks of the Adriatic Sea.” was published in the AdriaMed Technical Document series. It compiles a large amount of scientific knowledge accrued over years, on main shared demersal resources.

### **Experts network on small scale fisheries**

13. A Technical Consultation on Small-Scale Fisheries, held in Split, Croatia, mid October 2003, reviewed knowledge on this sub-sector and identified priorities for cooperative future work either within AdriaMed or in other contexts.

### **Social and Economic Fishery Sciences**

14. Emphasis was put on the programme “Social Survey of Albanian Marine Fisheries”, including the design and development of a data base. Survey design, data analysis and results were presented to the SCESS<sup>9</sup>, in May, 2004. The SCESS suggested that guidelines on implementing sociological studies should be developed based on this experience.

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<sup>9</sup> SAC Sub-committee on Economic and Social Science

15. Similarly, SCESS suggested that guidelines on implementing studies of fish markets, including fish trade, price systems and fish product quality, be developed taking into consideration the methodology used by the Study on Aspects of Fish Markets in the Adriatic Sea which was published in 2004.

16. The review of the legislation regarding the fishery sector of all countries bordering the Adriatic was updated in September 2004 and more recently the legislation of the Republic of Serbia and Montenegro was integrated to the inventory.

17. The report of the AdriaMed Seminar on Fishing Capacity: Definition, Measurement and Assessment<sup>10</sup> was also, following the 2003 Seminar on this issue which provided basic elements to define, measure and appraise Mediterranean fishing capacity.

### **Fishery Statistics and Information Systems**

18. The “AdriaStat Fishery Database System” covers several domains. It is developed through implementing standalone national Database Systems which are made compatible in terms of data structure and communication, and transfer protocols with the GFCM system being developed within MedFis. Progress accomplished included:

- in Albania, the Census was completed, the Catch and Effort Survey started and the Artisanal Fishery Survey was prepared. The final version of the data base will dialogue with the catch and assessment survey system under implementation and with other data bases developed through the “Central and Control System for the Albanian Fishery Statistics”.
- in Slovenia, the Census was completed. The fleet database was certified and put in motion.
- in Croatia, the review of the Catch and Effort Survey is being initiated as well as the preparation of the Census and of training course on Fishery Statistics and the update of the Prototype Data Base on fleet.

### **Information Centre and Web Pages**

19. The AdriaMed Information System has been further updated and developed. At present the website hosts five databases, respectively on: Institutions, Fishing Ports, Fish Markets, Adriatic libraries, Adriatic links and Documents. A proposal was made in March 2004 to ASFA to use the Project as a Technical Backup Centre for the Adriatic region. AdriaMed, in cooperation with the GFCM Secretariat and support from CopeMed, is preparing the retrieval of the publications and scientific contributions edited or produced within the framework of GFCM since 1952.

### **Working Group on Operational Units**

20. The first Meeting of the project Working Group on Operational Units was held early April 2004. It assessed the available multidisciplinary data existing in GSAs 17 and 18 for possible application, and defined the pilot studies to be implemented in these GSAs. The results, including methodologies applied, were presented to the SCISS<sup>10</sup>, SCESS and SCSA, in May 2004. A second meeting of the Working group was held in September 2004 to address constraints identified in the application of OUs and to prepare a document on the practicality of identified OUs

### **Expert Consultation on the interaction between aquaculture and capture fisheries**

21. The Consultation was organized in November 2003. A comprehensive framework on aquaculture in the Adriatic countries and its interaction with capture fisheries was defined on the basis of National reports. The Consultation defined a matrix to synthesize the interactions between the two sub-sectors and identified some indicators using a systemic approach (ecology, economy, governance

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<sup>10</sup> SAC Sub-committee on Information and Statistics

and legal framework). Results were presented to and welcomed by the Fourth Session of CAQ, in June 2004.

#### IV. MEDSUDMED

22. During the intersession period, the MedSudMed Project conducted activities related to two research components on i) small pelagic fish: stock identification and oceanographic processes influencing their abundance and distribution and ii) the spatial distribution of demersal resources and the influence of environmental factors and fishery characteristics. In parallel, the development of the MedSudMed Fisheries and Ecosystems Information System (MSM FEIS) was intensified, as one of the main tasks of the Project aiming at centralizing data and information in a standardized format thus allowing for joint data processing. For each component, the Project, in cooperation with research institutes from the participating countries, has implemented a cooperative programme, workshops, working groups and training courses.

##### Small pelagic fish

23. This included:

- an **Expert Consultation on Small Pelagic fish** (October 2003) was organized to identify the gaps in the knowledge on the biotic and abiotic parameters and oceanographic processes influencing the distribution and abundance of small pelagic fish. The follow-up activities agreed upon include: i) spatial distribution and stock assessment of small pelagic populations, ii) biological and genetic studies; iii) eggs and larvae studies, iv) fisheries analysis / catch and effort data, v) relationships between biotic and abiotic factors and life cycles of small pelagic species as well as related training programmes.
- **Workshop on the standardization of echo-surveys and ichthyoplankton surveys protocol** (April 2004) produced a common protocol to be used at sea. Experts agreed on the equipment to be used on board, periods of sampling, protocols of biological and environmental sampling, processing and management of collected information.
- **Cooperative programme of surveys at sea** were carried out. An ichthyoplankton survey was conducted in June-July 2004 with the R/V “Urania” from the IRMA-CNR<sup>11</sup>, covering international and Maltese waters. An echo-survey is being currently held in international and Maltese waters (4-18 October 2004) with the R/V “Dalla Porta” from the IRMA-CNR, in collaboration with the MCFS<sup>12</sup> and the MBRC. Teams of scientists from Tunisia, Libya, Malta and Italy were involved in the surveys on board these research vessels.
- **On board the research vessels, three training courses** were also provided during surveys at sea, specifically on acoustic evaluation of pelagic biomass related to the zooplankton and to the eggs and larvae of small pelagic species, measurements of physical/chemical parameters of the water column using a CTD, zooplankton sampling using a Bongo net, conservation of zooplankton samples and identification of fish larvae species, sediment sampling and analysis. The training courses were provided to scientists from Libya and Malta on the occasion of the two above cited surveys and on board the R/V “Hannibal” from the INSTM<sup>13</sup> (August 2004);
- in view of future surveys at sea, the acoustic **equipment and technical specifications** of R/V “Nour” from the MBRC<sup>14</sup> of Libya were assessed (September 2004), in order to perform the calibration and testing of the vessel’s echo sounder.
- **Study tour** (November 2003 to January 2004) was organized for Tunisian scientists at the University of Hull, United Kingdom. The study comprised the processing of data collected in Tunisia in the framework of a work on “Interactions and modelling related to small pelagic species and environment” which analyses the relationship between environmental factors

<sup>11</sup> IRMA-CNR: Istituto di Ricerche sulle Risorse Marine e l'Ambiente- Consiglio Nazionale delle Ricerche

<sup>12</sup> MCFS: Malta Centre for Fisheries Sciences, Marsaxlokk, Malta

<sup>13</sup> INSTM : Institut National des Sciences et Technologies de la Mer, Salammbô, Tunisia

<sup>14</sup> MBRC: Marine Biology Research Centre, Tajura, Libya

variations and the fish distributions and aggregative behaviour as well as their processes of interactions and the modelling of their evolution.

- **Working Group on Basic parameters related to small pelagic fish** met in mid April 2004. The length at sexual maturity of anchovy (*Engraulis encrasicolus*) and sardine (*Sardina pilchardus*), including the methodology applied for its estimation, were reassessed for each of the GSAs covered by the project. Additional information was provided for the round sardine (*Sardinella aurita*). The possibility for standardizing the methodologies at regional level was addressed. An agreement was reached on a joint estimation of the length at sexual maturity of anchovy, using different data sets, but comparable approaches.

### Spatial distribution of demersal resources

24. This included:

- **Cooperative programme of surveys at sea** (September-October 2004), conducted by IRMA-CNR, MCFS and INSTM covered GSAs 12, 14, 15 and 16, up to a maximum depth of 800 m. The two research vessels (trawler “St Anna” and R/V “Hannibal”) prospected the areas where they usually sample contemporarily. Overlapping zones were identified which will favour the inter-calibration of the gears. The survey was executed according to the standardized protocol adopted during a MedSudMed workshop organized for this purpose (May 2003).
- A broad **data inventory** was conducted in the participating institutes (MCFS, MBRC, INSTM and IRMA-CNR) who agreed that they would process and compile information on existing data and data sources, present this in an appropriate manner according to agreed standards, and integrate this information into a national database and information system, which would be developed through the assistance of the MedSudMed Project.
- A study on identification and mapping of essential **fish habitat** is being conducted in the Maltese waters by the MCFS. The study should characterise, in terms of benthic assemblages and physical characteristics of the seabed, such benthic habitats as foraging areas, nursery grounds, and spawning areas. Samples were collected last spring and are being processed.

### Data base and Information System

25. During the intersession period, the MedSudMed Fisheries and Ecosystems Information System (MSM FEIS), was further developed. Emphasis was put on the standardization, aggregation and analysis of the data, and the possibility to export into a Geographical Information System. The module that allows the input and the control of data was finalized. A “beta version” (trial prototype) was distributed for testing to the different participating Institutes. Moreover, a web interface is being finalised finalization to allow the display/access of authorized information and data on the internet. Several technical meetings were held with scientists belonging to different fields who gave their comments and requests on the modules regarding haul characteristics, biological data on target species, biotic environment, abiotic environment and fishing pressure.

## V. MEDFISIS

### Background

26. MedFisis was finally launched during the intersession. The project aims at establishing the regional statistical and information system to serve as a vital tool for monitoring the state of GFCM fisheries and supporting ecosystem and for contributing to the formulation of sound multidisciplinary management advice. A prerequisite for the system to be efficient in term of regional use is to ensure that GFCM Members maintain a national fishery statistics system that collects, processes, stores and

disseminates an agreed common set of data; i.e. with the same standards and definitions (unit of measurement, frequency, classification, terminology, etc.).

27. The project therefore will pursue efforts to promote enhancement and standardization, as appropriate, of national systems in order to favour the obligations associated with the countries' respective requirements and those of GFCM. It will follow the standardized methodology which has been introduced in a number of countries of the Western and Central Mediterranean and on the Adriatic Sea, with assistance from the statistical components of CopeMed and AdriaMed. The countries of the Eastern Mediterranean (Cyprus, Egypt, Lebanon, Syria and Turkey) that had not benefited from the aforementioned assistance were backed through a MedFisis sub-regional component, namely the FAO/TCP-project "Enabling participation in the fishery statistics and information system in the Mediterranean "(TCP/INT/2904). They were thus affiliated in the regional network. It is expected that present commitment will be retained and further enhanced through the EastMed Project under formulation.

### **MedFisis activities**

28. A First coordination meeting of the above mentioned FAO/TCP project was held in January 2004. Fishery data collection and processing systems were discussed. The **MedStat** adaptive approach being applied by CopeMed and AdriaMed was endorsed by the concerned countries. This meeting also agreed upon a **working strategy** to guide the implementation of MedFisis in the Eastern Mediterranean, through the work of national focal points. Simultaneously, a preliminary assessment of the fishery infrastructure and the current data collection system in each country was initiated, in line with the following points, emphasized in the strategy:

- undertaking an objective assessment of the situation in the countries in relation of each field of application of the project;
- designing a data collection and statistical programme based on short-medium term requirements
- securing, through adequate upgrading, the infrastructure (staff, resources, methodologies) and the self sustainability of long-term implementation within the Fishery Departments.

29. Within the same approach, concerned authorities were invited (depending on the respective situation) to implement the following:

- establish a statistics and information unit in the Fishery Department (or equivalent);
- identify staff and assign corresponding duties backed with adequate computer resources;
- draw up mandates to cover the statistics and data processing domain and ensure secondment, recruitment or assignment;
- liaise with the Central Statistical Office and the Fishermen's Cooperative/Associations as appropriate.

30. Concomitantly, the Project staff would elaborate or upgrade, with the national counterparts, detailed statistical programmes. Apart from the direct technical assistance, the following four steps were identified and launched as priorities for the course of action:

- identification of clear national objectives toward establishing a customised fishery statistics system, including rationale, aspects of data/information use and self sustainability of the System;
- undertaking a Fishery Census covering the complete fishing fleet (artisanal/industrial) and the infrastructure (e.g.: fishing harbours). If already recently conducted, undertaking a quality assessment to verify contents, consistency and coverage in order to fulfil national and regional requirements, especially FAO/GFCM references.

- designing and conducting a Catch and Effort Assessment Survey (CAS), including fishing effort estimates, based on a pilot CAS for validating design and choices for the complete CAS.
- ensuring Capacity building through tailored on the job and formal training as a complement to the above priorities, on the basis of an inventory of each country's training needs.

31. The legislative framework in each country concerning laws and regulations related to fishery data collection, ownership, responsibilities, dissemination and publication is being considered as well.

32. Up to now, MedFisis has also prepared a series of documents to present the work so far accomplished. Finally, the project is opening an informative web page already in preparation ([www.faomedfisis.org](http://www.faomedfisis.org)) where all the information concerning the project activities will be posted.

## **VI. EASTMED**

The EastMed project aims at extending support to the fishery management of the Eastern Mediterranean to attain coverage throughout the whole basin through complementing, area wise, the activities of the other Sub-regional projects respectively undertaken in Western Mediterranean, the Strait of Sicily and the Adriatic Sea. EastMed will also contribute to the MedFisis project which covers the whole Mediterranean, including the Eastern Mediterranean.

As requested by the donor, the Fishery department of FAO has recruited a formulation team which visited Cyprus, Egypt, Israel, Lebanon, Syria and Turkey in December 2004. The mission also had discussions with representatives of the European Commission, Italy and Greece. Greece will be visited early February 2005. During these visits the formulation team, together with national counterpart is assessing the needs at national and sub-regional levels in line with the following four main component related to fishery management: Fishery resources, Environment, Socio-economics, and Institutional settings. A project document is being prepared. It is expected that the project will be operational prior to the next session of the Commission.