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GENERAL FISHERIES COMMISSION FOR THE MEDITERRANEAN

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MAJOR ACTIVITIES OF THE FAO REGIONAL PROJECTS IN 2005

I. INTRODUCTION

1. This document summarizes the most significant activities carried out by the FAO Regional Projects, namely CopeMed¹, AdriaMed², MedsudMed³ and MedFisis⁴, during the intersessional period of the Scientific Advisory Committee (SAC). It also provides some information on progress made in the formulation of EastMed⁵. 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 Scientific Advisory Committee (SAC), its Sub-Committees and Working groups. The document reproduces information in the format provided by the respective regional project Coordinator. It complements document SAC8/2005/2.

II. COPEMED

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

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

³ "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.

⁴ "Mediterranean Fisheries Statistics and Information System". The project is jointly financed by FAO and the European Community.

⁵ "Improvement of Fisheries Management in the Eastern Mediterranean. the project is expected to be financed by Greece and the European Community with support from the Italian Ministry of Agriculture and Forestry Policies.

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The first phase of the Project CopeMed ended on 31st May 2005. The second phase (henceforth referred to as CopeMed II), for an initial period of three years, is due to start soon upon the approval by the interested parties of the relevant Project Document.

In the months before the end of the Project, most of the activities focussed on the necessary closing procedures. An evaluation team was organized which reviewed the Project work and assessed its performance. A final evaluation report was produced, the findings and recommendations of which have been taken into account for the formulation and preparation of the second phase of the Project.

Some of the activities have been concluded and/or are being carried out by the countries concerned, other activities have temporarily slowed down or been suspended to be further developed and consolidated within the CopeMed II implementation. However, during the few months of activity within the intersession period, the Project has succeeded in achieving several outputs and results some of which are reported below.

Research programmes and scientific activities

The support has been maintained for the participation of experts from the south on shore of the Western Mediterranean in GFCM SAC and ICCAT SCRS meetings and activities. The Project has backed the SCSA Working Group on Standardization of Selectivity Methods Applied to Trawling in Mediterranean sea (February 2005) organized by IFREMER.

The regional working group on Dolphin fish fishery has concluded its work. The standardized monitoring in the three participating countries (Malta, Spain and Tunisia), carried out also through the implementation of the MedStat approach, and assessment of this FAD-based fishery has made a sound knowledge of the fishery exploitation dynamics available and has led to the identification of possible management options; the routine biological data collection and processing on large pelagic fish has continued through the network established since 1999 in five countries.

The Field Identification Guide to the Sharks and Rays of the Mediterranean Sea has been finalized and is currently in press. It includes a section on technical terms and measurements for sharks and batoids. The guide has been prepared in collaboration with the Species Identification and Data Programme (SIDP) of the FAO Fisheries Department and will serve as a support-tool to the International Plan of Action (IPOA) for the Conservation and Management of Sharks, in the Mediterranean region.

The work on socio-economic indicators for the Mediterranean fisheries has been completed through data collection and analysis work carried out in Algeria, Libya, Spain and Tunisia in cooperation with the University of Barcelona. The whole work will be published soon as a book and on CD.

Fishery statistics and information

Efforts have been made to continue the assistance in upgrading and developing the national fishery statistical system. Such a key activity is expected to be maintained within the framework of the forthcoming CopeMed II.

The practicability of the Operational Units concept has been tested through its application to the Dolphin fish fishery. A joint study has been performed by Maltese, Spanish and Tunisian researchers. An *ad hoc* workshop has been organized in April 2005 to assess and review the results. The detailed bio-economic knowledge acquired on this fishery and the findings of the study have made the formulation of a set of management measures possible.

A number of key publications have been completed during the intersession period and are being released. Among the most relevant are the Atlas on demersal resources along the Spanish coast of the

Mediterranean, the popular book on the Mediterranean artisanal fisheries, and the work on fishery socio-economic indicators carried out in the south-western Mediterranean.

The Project web site was maintained and developed until the end of May 2005. Currently, the web site is fully accessible and all materials (e.g. virtual library) available to the users. CopeMed II will revive the site and ensure its maintenance so that it continues to serve as a dynamic information tool.

Training activities

During the last year before its closure, CopeMed participated in the organization of the Master on Economics and Fisheries Management held at the University of Barcelona. Moreover, Tunisian experts, attended a course (November 2004-January 2005) on a statistical package within the framework of the national fishing census and catch and effort survey.

III. ADRIAMED

The activities carried out during this period followed the methodological approach used by the Project, and are principally presented according to three main components: Adriatic fishery resources, Adriatic social and economic fishery sciences, Adriatic fishery statistics and information systems. The chief output and results of these activities are highlighted hereafter.

Shared Fishery Resources (demersal and small pelagic)

The Project achieved the following:

- The third phase of the *AdriaMed International Bottom Trawl Survey Programme* took place in the autumn/winter of 2004 in the eastern Adriatic Sea, (GFCM Geographical Sub-area 18 and 17) using the same procedures and protocol as the previous surveys. Montenegrin territorial and adjacent international waters were included in the survey thus allowing for the first time the joint and complete coverage of the eastern Adriatic Sea from Slovenia to Albania.
- The *AdriaMed Trawl Survey Information System* (ATrIS) version 1.1 has been finalised. It is a computerized system, which allows preliminary analysis of the dataset available after the surveys. Following extensive testing of the application in Croatia, Italy and Slovenia, this is now the common database application for all the countries participating and it is supported by digital cartography 1:250000 covering the whole Adriatic Sea. The application was further presented and appraised at selected SAC Sub-Committee meetings as a possible example for the whole Mediterranean. A paper was also circulated illustrating the software (issued as *AdriaMed Occasional Paper N°17*). The user manual of ATrIS was published as *AdriaMed Technical Document N°17*.
- The *identification of nursery areas* of priority species whose stocks are shared was attempted on the basis of the best available data sets jointly provided by the Institute of Oceanography and Fisheries of Split (Croatia), the National Institute of Biology of Ljubljana (Slovenia) and the Laboratory of Marine Biology and Fisheries of Fano (Italy). The results on mapping the distribution of juveniles of some demersal species in the Northern and Central Adriatic Sea (GSA 17) were presented to the SCSA. The results showed that there is an overlapping of nursery areas for different species. The most important overlapping nursery areas are: the open Central Adriatic Sea, the Northern Adriatic from the western coast to the delta of the Po river and the channel area of the eastern Adriatic.
- *Indicators and reference points*

a preliminary list of biological and economic indicators for fisheries management of demersal resources was selected by the AdriaMed Adriatic Sea experts group. Several meetings were held on the issue of indicators for selected demersal species and their reference values for fisheries management. Preliminary guidelines for the standard compilation of the selected indicators, were presented on the fishery-dependent and fishery-independent data. In September 2005 the results of the AdriaMed work on indicators entitled “A preliminary contribution on the applicability and the performance of some biological and economic indicators for the Adriatic Sea demersal fisheries, the case of the operational units in the western GSA 18” was presented to SCSA and SCESS.

- The *acoustic intercalibration exercise* on estimations of small pelagic stocks in the Adriatic Sea was jointly carried out between two different research vessels (the Italian R/V Dalla Porta and the Croatian R/V BIOS) in the Neretva Channel (Northern Adriatic Sea, GSA 17) in spring. The exercise enabled data comparison between the results of the two vessels and contributed to achieving a reliable estimate of stock size for the whole area. The results of this exercise were presented to the SCSA. Furthermore, the Project supported the participation of an expert at the same Sub-Committee meeting in order to present a paper on “Acoustic estimate of small pelagic fish stocks in the eastern part of the Adriatic Sea: September 2004” with the results of a survey carried out in the framework of the national PELMON programme covering the Croatian waters.
- *Data Collection and Biological Sampling* on small pelagics. The established regional monitoring system for the assessment of the small pelagic fish biomass in the Adriatic Sea (AdriaMed-SP) continued. Two assessment papers on sardine and anchovy shared stocks were presented to the SCSA. Annual estimates of mid-year stock biomass and of mean fishing mortality rates were obtained. The mean ratio between fishery catch and estimated mid-year biomass was assessed for both anchovy and sardine stocks. An exercise to estimate the small pelagic fish spawning stock biomass was carried out in part of the GSA 18 (Italy and Montenegro only).
- The *length at first maturity* of the Adriatic anchovy *Engraulis encrasicolus* was studied. A histological analysis of gonads was performed during the spawning season of the species. A paper summarizing the outcome of this programme was presented to the SCSA.

Social and Economic Fishery Sciences

- A *social and economic survey* entitled “Albanian Marine Capture Fisheries: Social Survey and Socio-Economic Aspects of the Sector” was finalized and presented to SCESS. It was suggested to extend the experience in other GFCM countries.
- A *review of the legislation* regarding the fishery sector of all countries bordering the Adriatic Sea was performed (updated as of September 2004) and published in digital format as “General outline of marine capture fisheries legislation and regulations in the Adriatic Sea countries”.

Adriatic Fishery Statistics and Information Systems

- Support to the national statistic systems is in cooperation with MedFiSis. In Serbia and Montenegro a fishing fleet register was organized and established at the Fisheries Directorate. The register meets both the national and international standard requirements.
- The entire AdriaMed website and related Information Centre has been re-designed and structured. All the databases are now linked together. The Project web now hosts seven databases: Adriatic Institutions (155), Fishing Ports (252), Fish Markets (27), Adriatic libraries (211), Adriatic links (210), AdriaMed Library (810), AdriaMed Documents available (over 50 documents). The Adriatic Fishery Legislation has been made available on the web site in the form, of hypertext. A new section summarizes the results achieved⁶.
- Information on Aquatic and Fishery Sciences: AdriaMed continues monitoring Adriatic scientific literature, within the ASFA framework. AdriaMed took steps to transform the Project HQ into a Technical Backup Centre for the Adriatic region. As a first step, through the Institute of Oceanography and Fisheries in Split, Croatia, a national ASFA collaborating centre is being established.

Operational Units

Preliminary results of the AdriaMed work on Operational Units were presented to the SCSJ transversal workshop on Operational Units and measurement of fishing effort, in July 2005. In September 2005, the full results of the AdriaMed work on indicators were presented to the SCSJ and SCESS.

Overview of small scale fisheries of the Adriatic Sea

The report of the Technical Consultation on Adriatic Sea Small-Scale Fisheries (Split, Croatia, October 2003) was published. The Technical Consultation reviewed the current knowledge and the status of small-scale fisheries, existing monitoring systems, available scientific and technical knowledge in each country and on-going programs focusing on small-scale fisheries.

IV. MEDSUDMED

The MedSudMed Project aims to support the scientific communities of the participating countries in the development of a monitoring system for the studies of fisheries resources and ecosystems in the Project area (GFCM GSAs: 12, 13, 14, 15, 16 and 21), with particular focus on standardized methodologies.

During the inter-session period MedSudMed undertook within each Project components the organisation of working groups and training, cooperative research programmes on demersal resources and small pelagic fish and technical cooperation and participated in the SAC working groups and meetings.

Two components are being developed by the Project, respectively on "*Spatial distribution of demersal resources and the influence of environmental factors and fishery characteristics*" and on "*Small pelagic fish: stock identification and oceanographic processes influencing their abundance and distribution*". In parallel, the Project is developing an Information System to centralize data and information in a standardized format and to allow for joint data processing.

Demersal Resources

⁶ An average of more than 11000 pages have been visited and over 7000 users of the AdriaMed website have been registered per month; over 18000 AdriaMed Technical Documents have been downloaded

During the inter-session period, the following working groups and workshops were convened:

- **Workshop on standardisation of fish age determination based on otolith samples in the MedSudMed Project area (Mazara del Vallo, Italy, December 2004).** The Workshop was organized as a follow-up to the standardization needs identified during the Expert Consultation on Spatial distribution of demersal resources in relation to environmental factors and fishery characteristics (Malta, December 2002) and follows the Workshop on standardization of trawl survey protocol (Mazara del Vallo, May 2003). The workshop focused on the preparation and reading of otoliths according to a common protocol, including the standardization of age-reading methodology and the establishment of homogeneous age-reading criteria at regional level for 2 target species: *Merluccius merluccius* and *Mullus barbatus*.
- **Seminar on multivariate methods to analyze marine communities (La Goulette, Tunisia, January 2005).** The seminar provided an overview of the multivariate analysis methods currently used in one of the participating Institute for the study of marine communities, more specifically fish assemblages and description of biocenosis.
- **Meetings on Geographical Information System (GIS).** The meeting was convened at Salammbô, Tunisia, February 2005). It concentrated on the mapping procedures to be adopted for the study of the spatial distribution of demersal resources. Special effort was devoted to the exploration and comparison of existing data from Italy and Tunisia. Geographical distribution of the hauls, period of the surveys, abundance indexes and length structures of *Merluccius merluccius* and *Mullus barbatus* were compared.
- **Meeting on demersal resources mapping, identification of nursery areas and description of fish assemblages (Mazara del Vallo, Italy, 2005).** This meeting reviewed the nursery area criteria and available methodology for the description of fish assemblages, for *Merluccius merluccius* and *Mullus barbatus* as a first step and all definitions of the parameters to be mapped were agreed upon. A single GIS project was created with information layers from all GSAs concerned. Biomass index for the two species were identified, and indices were standardized to the maximum value. The results were presented to SCSA in September 2005.
- **Workshop on age reading of selacean fish (Mazara del Vallo, Italy, Autumn 2004).** The workshop provided an overview of the techniques currently used for the preparation and reading of spines and vertebra of a series of cartilaginous fish species. A synthesis was made on the most relevant techniques for each studied species. A manual was produced which contains general guidelines for cartilaginous fish age determination, as well as the limits of the methods currently used.

Component on Small Pelagic fish

- **Meeting on common methodologies for acoustic data processing (La Goulette, Tunisia, February 2005).** The meeting dealt with the different steps of the procedure for estimation of small pelagic fish biomass by means of the acoustic method. Experts in acoustic sampling collaborated reviewing some issues related to the working group on joint processing of acoustic data.
- **Working Group on joint processing of acoustic data (Mazara del Vallo, Italy, March 2005).** This Working Group performed joint data processing and the workshop and also provided on-the-job training towards identifying methodological steps from data collection to thematic map drawing,

for illustrating sardine and anchovy biomass distribution. Preliminary results were made available for GSA 15 and 16 and were presented to SCSA.

- **Training course on processing of ichthyoplankton samples (Mazara del Vallo, Italy, July 2005).** The training course was organized as a follow up to the cooperative ichthyoplankton surveys conducted in summer 2004. The course continued the training that had begun on board the vessels and dealt with the processing of the samples in laboratory.
- **Cooperative echo-survey (R/V “Dalla Porta”, 2005).** The “ANCHEVA 2005” echo-survey estimated the spatial distribution and abundance of the pelagic organisms on the southern continental platform of Sicily, between Marsala and Capo Passero and on the Maltese territorial waters. Acoustic measurements of small pelagic fish stock, the biological sampling of small pelagic fish and the measurement of physical-chemical parameters of the water column were conducted.
- **Cooperative Ichthyoplankton surveys (R/V “Hannibal”, July 2005 and R/V “Urania”, July-August 2005).** As for the previous year, mixed research teams participated in the two ichthyoplankton surveys organized. The surveys collected data on the density and distribution of ichthyoplankton as well as on environmental factors in the Gulf of Hammamet (GSA 13), the southern Sicilian coast (GSA 16) and the Maltese territorial waters (GSA 15). Data collected allowed to identify two main spawning areas in GSA 13 and GSA 16 for anchovy (*Engraulis encrasicolus*). Results were presented to SCSA.

MedSudMed Fishery and Ecosystem Information System (FEIS)

The FEIS was developed at two levels: i) National databases which allow the national users to store and manage their own data and a selective export to, ii) a Regional (corporate) database that contains all data available. Improvements were made on the data structure and in the data entry module. Two new modules of data query and data analysis in the national versions were created; they allow the users to export data, as well as simple GIS analysis. To date, the FEIS includes four components on i) demersal resources, ii) small pelagic fish, iii) ichthyoplankton and iv) abiotic environment. Furthermore, a component allowing the input of “other types of information and data” was created to host any relevant maps, tables, graphs, etc. that the users may wish to store in the FEIS. An outline of the last version available was presented at SCSA.

V. MEDFISIS

Background

During the intersession period, the MedFisis project (both TCP and EC components) continued to promote the gradual establishment of a Mediterranean Fishery Statistics and Information System with the ultimate objective of achieving a region-wide integrated statistical fisheries information system for the Mediterranean. The system being developed is based on national fishery statistics systems, enhanced and standardised within the Project framework.

CopeMed, MedSudMed and AdriaMed, in collaboration with MedFisis, have been instrumental in introducing these standardised methods in several countries of respectively the Western and Central Mediterranean, and those bordering the Adriatic.

Eastern Mediterranean

The FAO-funded TCP component of the MedFisis project ‘Enabling Participation in the fishery statistics and information system in the Mediterranean’ (TCP/INT/2904) has been assisting Eastern

Mediterranean countries that had not been covered by earlier assistance in this field. The assistance emphasized the development of fishery statistics systems, while ensuring regional compatibility, a minimum level of data quality, and sustainability of the proposed system.

The objectives of the Project in the Eastern Mediterranean area were:

- the identification of clear national objectives aimed at having a customised fishery statistics system properly formulated and implemented;
- the execution of a fishery census covering the complete fishing fleet (artisanal/industrial) and infrastructure (e.g. ports) as the primary need;
- the planning and, when possible, the realization of catch assessment surveys, CAS (including fishing effort estimates).

The project collected national and sub-regional information on the countries involved (Cyprus, Egypt, Lebanon, Syria, and Turkey) and is finalizing a review document on fisheries and related statistical systems in the Eastern Mediterranean area.

Twenty supervisors from Lebanon and Syria were trained to conduct a complete fishing vessel census, resulting in the first ever fishing vessel registry in Lebanon, while in Syria the fishing vessel registry is being finalized.

A quality check survey of the fleet record was performed in Turkey. This allowed the identification of some relevant issues on data quality. Twenty recorders and other government officials were trained in the design and implementation of a fishing vessel registry.

A training workshop on species identification, gear and vessel classification for the needs of marine capture fisheries monitoring was organized in Lattakia, Syria, conducted by two experts from the region (Lebanon and Turkey) together with the Project staff. In total, thirty-five people from five Eastern Mediterranean countries took part in the course which constituted a first basic step in towards the design and implementation of a catch and effort assessment surveys.

A popular poster highlighting some key fishery species of the Eastern Mediterranean region, species has been produced in cooperation with the FAO Fishery Species Identification Programme.

The development of a technical cooperation network, within the sub-region was promoted by MedFisis through the organization of a number of missions to facilitate the sharing of experience and knowledge among experts from Egypt, Lebanon, Malta, Morocco, Syria and Turkey.

The MedFisis project has also been instrumental in the formulation of the foreseen EastMed project, though carrying out some basic preparatory work.

Central and Western Mediterranean and the Adriatic

In cooperation with AdriaMed, Serbia and Montenegro received technical assistance with the design and establishment of the national marine fishing vessel register. The database was developed and installed at the national fishery statistical unit. It will be soon updated with the last MedFisis software release to be adapted to national needs.

The reference system dealing with fishery information of Tunisia was reviewed. A new national fishery information system following national and regional standards was designed and constructed, to which data from the old system was transferred to.

Both Albania and Malta have a full MedStat fishery statistical system (see document SAC8/2005/Dma.10). MedFisis continued to offer support with the use and adaptation of these systems according to national needs.

Software conceptualization, engineering and development

The conceptual design and system engineering of the MedStat software has been modularized to ensure easy and timely maintenance and incorporation of future developments into the system. Systems established at the national fishery directorates consist of one component common to all countries and another reflecting and addressing specific country requirements and characteristics. The standard common component is the element to ensure that regional and international requirements are being met.

The MedStat database and information system to accommodate and manage the national fishing vessel register has been developed, tested and is now used by the fishery management authorities of six GFCM Member states. Moreover, preliminary steps have been taken and a working strategy is being identified in other coastal countries. A French language interface is also being finalised. Due to shortage of funds, the MedStat system could not be introduced on the Black Sea, as suggested at the 29th Session of GFCM.

Support to national fishery statistics and information systems

The project has dealt with and supported the improvement to various levels of national fishing vessel data sets and/or databases sets in nine countries, five of which in the Eastern Mediterranean region.

The appraisal of the fishing vessel census system and vessel register of the countries so far covered has made it possible to apply sound planning and organization to the regionalization process. This procedure should progressively be extended to other Mediterranean countries.

Contribute to regionalization and standardization

Regional reference tables and an associated codification system within the core structure of national vessel registers of national vessel registers have been established in consultation with those countries where a fishing vessel register exists or has been developed.

This activity was necessary on account of a GFCM priority to promote and develop a regional classification of references and standards pertaining to critical aspects of the Mediterranean fishery system such as fleets and fishery statistics.

The output of the national fishing fleet statistics based on the fishing vessel register being established through MedFisis are now standardized and consistent with GFCM regional requirements.

Future outlook

Future activities of MedFisis in the Eastern Mediterranean will build upon the achievements of the MedFisis-TCP component and will be included in the framework of the MedFisis-EC component. The Project will continue to follow the adaptive approach, and foresee to design and implement catch and effort assessment surveys (CAS) following the successful establishment of fishing vessel registries. This will be followed by the regional system, collecting national, aggregated data. The work of the Project in the region will be further valued and possibly developed in cooperation with the EastMed Project which will have full benefit from the MedFisis-TCP outputs.

It is expected that within MedFisis-EC and particularly in full concerted synergy with the forthcoming EastMed Project and the AdriaMed, MedSudMed and Copemed Projects, MedFisis, upon request of countries, will continue to develop and consolidate the work performed so far. Activities will consist of assistance to the GFCM Secretariat with the development of a GFCM record of vessels over 15

meters authorized to operate in the GFCM area, assistance to participating countries with the development of modern, internationally compatible, fishing vessel registers where these are not available and, when favourable conditions exist, with the promotion and establishment of catch and effort monitoring systems.

The above results were presented to SCSI.

VI. EASTMED

During the intersession period the formulation of the “Regional Project for Improvement of Fisheries Management in the Eastern Mediterranean – EastMed” has been carried out. A formulation team has been organized by FAO/FI and field missions in potentially involved countries have been performed. A note on the state of progress of the EastMed formulation was prepared in occasion of the 29th Session of the GFCM (February 2005). The Commission acknowledged the offer of the Government of Greece to host the project in Athens. A meeting with the interested parties was held at FAO HQ on 25th February 2005.

The Project Document is being finalised and it envisages activities aimed at supporting and developing the capacity of the participating countries to deliver coordinated, cooperative and participatory fisheries management in the Eastern Mediterranean sub-region in partnership with GFCM. The Document is based and results of the formulation mission as obtained through visits to the countries potentially involved and taking into consideration national scientific and institutional needs and priorities.

Besides the promotion of national capacities and of sub-regional scientific cooperation for fishery research and management, the Project aims to foster the role and presence of the Eastern Mediterranean region in the Mediterranean scenario, particularly in supporting the GFCM through effective contribution to its Scientific Advisory Committee (SAC). It is also expected that EastMed will integrate and complement the Mediterranean cooperation framework established by the other FAO-executed fishery projects operating in the Mediterranean.

VII. SUGGESTED ACTION BY THE COMMITTEE

The Committee is invited to review the work performed by the FAO regional projects and provide comments and views, especially on those activities directly supporting the current scientific and technical priorities of SAC.