GENERAL FISHERIES COMMISSION FOR THE MEDITERRANEAN (GFCM)

REPORT OF THE FIFTH ECONOMIC AND SOCIAL SCIENCES (SCESS) SUB-COMMITTEE MEETING

Malaga, Spain 10-12 May, 2004

1. OPENING OF THE MEETING

1. The Sub-Committee on Economics and Social Sciences (SCESS) of the General Fisheries Commission for the Mediterranean (GFCM) held its Fifth Meeting from 10 to 12 May 2004 at the Aduana Palace in Malaga, Spain. The Instituto Espanol de Oceanografia (IEO), COPEMED, and SGPA hosted the meeting. The meeting was opened by Mr. Malouli Idrissi, the Sub-Committee Coordinator, who thanked the meeting organisers for their preparations and the FAO AdriaMed and COPEMED projects for their assistance in participation of project countries during the SCESS.

2. ADOPTION OF THE AGENDA AND ARRANGEMENTS OF THE SESSION

2. The Sub-Committee adopted the agenda of the meeting (Annex 1). Mr. Idrissi was designated Chairman, and Mr. Skander Ben Salem and Ms. Cassandra De Young were designated as Rapporteurs.

3. The meeting was attended by 16 scientists, representing 10 countries from throughout the Mediterranean (the list of participants is attached in Annex 2). The SCESS welcomed the first-time participation of scientists from Libya, Serbia-Montenegro, Lebanon, and Syria. Concern was expressed in relation to the lack of attendance by some Member States, for example, from France.

3. REVIEW OF THE RECCOMMENDATIONS OF THE TWENTY-EIGHTH SESSION OF GFCM, THE SIXTH SESSION OF THE SAC, AND THE FOURTH SESSION OF THE SCESS.

The Coordinator presented the past recommendations made by the GFCM and the SAC, and by the previous year's SCESS, to the SCESS. The Coordinator noted that most requests had been addressed over the inter-sessional period including the following four research areas:

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

The Secretary of the GFCM reminded the SCESS that the process of choosing the minimal list of socio-economic indicators was a complicated one and that the next step is to assure their use in the management of fishing effort. The market studies will assist in the understanding of the influence of management decisions on effort. The database of socio-economic indicators will be part of a GFCM system of managing Mediterranean fisheries and the reference points, when established, will enable the use of trigger points for management action. All of these aspects are to be housed under the Operational Units concept of fisheries management.

It was noted that, given a global lack of experience in using fleet segmentations under an OU concept, the GFCM is providing a pioneering role in this respect. Therefore, experiences on the difficulties in applying these concepts, their costs, and their usefulness in fisheries management need to be documented and disseminated.

4. INTERSESSIONAL ACTIVITIES

a) *Presentation of the results of the Fourth Working Group on Socio-Economic Indicators (Barcelona, Spain 15-17 March, 2004)*

M. Malouli presented the major results of the 4th Working Group on the social and economic indicators held in Barcelona (15 – 17 March, 2004) (Annex 3).

The principal points discussed during the WG concerned:

Presentation of studies carried out in the intersession

- Survey of socio-economic indicators for fisheries in the Algerian Mediterranean, situation and perspective.
- State of development of the socio-economic survey in northern and eastern Tunisia
- Case study on blue fin tuna fishing in the region of Ksar Sghir, in the Moroccan Mediterranean.
- Document compiling the work on socio-economic indicators completed under the framework of the FAO COPEMED project.
- Implementation of the manual created by GEM Barcelona and IREPA on the collection of socio-economic data and the application of socio-economic indicators

b) Presentation on Operational Units and co-management work under the FAO COPEMED Project[1]: the small pelagics fisheries in the Alboran Sea

Mr. Rafael Robles, the Director of COPEMED, presented a review of the COPEMED work on Operational Units (OU) (Annex 4) and noted that an effort control regime on groups of vessels or operational units had not been applied in western Mediterranean region. The reason for this situation was attributed to the mismanagement of available data and information at country and regional level. Therefore, a number of data models were considered in order to develop a data collection structure to serve the management of fisheries by OU.

The OU Expert Working Group (WG) held in Madrid (December 2003) proposed the terms of reference for a pilot study on OU of small pelagic fisheries in the Alboran Sea, some of them including components which link this OU study to a broather study, including co-management of fisheries.

Long-term and immediate objectives for this study were presented as well as the inputs needed to achieve those objectives. Some ideas on the activities to be developed and the expected results were also given in the paper.

The feasibility for pilot project depends upon the acceptance of its implementation by the concerned Fisheries Administrations (Spain, Morocco and Algeria) that had already indicated their interest in the pilot project during the first COPEMED Forum of fishing system actors, administrations, fishing industry, and research.

c) Presentation on Operation Units work under the FAO ADRIAMED Project[2]

Mr. Fabio Massa, the Director of the ADRIAMED, and Mr. Paolo Accadia introduced and presented the results of the Working Group on Operational Units (OUs) in the Adriatic Sea (May 2004, Durres Albania) (Annex 5). Experts and Representative of the fisheries directorates from Albania, Croatia, Italy, Montenegro and Slovenia attended the WG and the meeting focused on the following three issues:

- The discussion and the application of the Operational Unit concept in the Adriatic Sea (GSA 17 and the GSA18);

- The most appropriate and practical application of the standard Operational Unit forms adopted by the SAC; and

- The further development of AdriaMed activities in the framework of the OU. In order to homogenise data aggregation to the basic parameters (fleet segmentation and area; main resource components and effort information; economic structure) required for the identification of the OUs in GSA 17 and GSA 18.

[1] http://www.faocopemed.org
[2] http://www.faoadriamed.org/

The Durres WG discussed and agreed on the aggregation system adopted. In the short-term, the WG agreed to compile OU tables based on the best information available from national and AdriaMed programmes. The main objective of the tables prepared by the participants was to obtain a first regional picture of the Operational Unit in the Adriatic Sea and ascertain the data availability. Furthermore, this will allow for identifying the basic information that are missing or insufficient and would signal which data are required and the necessary programmes to fill this data gap.

The available tables satisfy the Operational Units economic structure data needs expressed by the SCESS, the effort data needs expressed by the SCSI, and the information needs on target and by-catch species in the biologic table Main Resource components expressed by the SCSA.

d) Presentation of the final report on socio-economic indicators in Algerian Fisheries

Mr. Hachemane presented the results of the survey, "Socio-Economic Indicators of Algerian Fisheries", conducted by the National Center of Studies and Documentation for Fisheries and Aquaculture (NCSDFA), under the framework of the regional program financed by the FAO COPEMED project. A data collection operation was launched from the end of 2002 and the beginning of 2003.

For that purpose, surveys were conducted in fourteen representative ports out of 64 landing sites (one port by each maritime Wilayas (Municipalities)) and 615 vessels on a total of about 2063 were subject to this survey (i.e. a 30% sample size).

Through this survey, both fleet segmentation and socio-economic assessment of the sector were empirically addressed.

In this case, six segments were identified in accordance to the segmentation adopted by SCESS, that is, minor gears (< 6m) and (6 - 12m) (segments B and C), trawlers(> 24m) (segment F), trawlers (12-24m) (segment E), sardine boats (12-24m) (segment H) and sardine boats (6-12m) (segment G).

These fleet segments share resources essentially from small pelagics, large pelagics and demersal species. It is important to notice that some fleet segments exploit multiple species, thus creating conflict between the segments (e.g. minor gears – trawlers and sardine boats).

During the implementation of the survey, both microeconomic and macroeconomic data were collected.

The microeconomic data necessary for indicators calculation mirror those which were gathered by previous feasibility studies in Spain, Morocco and Tunisia.

On the macroeconomic level, a set of data necessary to understand the general economic situation of a country was compiled through different national statistical bodies.

The analysis of macroeconomic data made it possible to register the following observations:

- the index of production and export is clearly lower than the figures recorded by neighbouring countries ;
- there is a very high unemployment rate ;
- the inflation rate, which has been decreasing during the past few years, declined to almost 6% in 2003.

As far as the socio-economic indicators are concerned, the annual profit ratio registered was negative for most of the fleet segments. Many reasons can be behind this conclusion such as a lack of qualified crew, the age of the fleet, but the main reason is the high opportunity cost due to an interest rate around 12%.

Several constraints were found during the data collection process, such as:

- lack of qualified data collectors
- fishermen reluctance to divulge information
- lack of ability to control survey sampling due to lack of prior information on the population.

e) Presentation of the final report on socio-economic indicators in Tunisian Fisheries

Mr. Ben Salem presented the fisheries socio-economic indicators survey in northern and eastern Tunisia carried out by the National Institute of Marine Sciences and Technologies (INSTM) with the cooperation of the FAO COPEMED project. He noted that the methodology adopted is in accordance with those used in the Alboran Sea (Spain/Morocco) and the Gulf of Gabes (Tunisia) studies.

In order to compare different ports and fisheries fleet segments in Tunisia, the fleet segmentation used in the first Tunisian surveys was selected in lieu of the one adopted by SCESS. Also, three specific segments were added. They were mid-water trawls in the eastern region as well as crawfish boats (those exploiting red lobster) and the coral boats (exploiting red coral by diving) in the northern region. The sampling rate selected was 10% for artisanal fleet and 15% for the other fleet categories. This rate related to 100 % of the fleet for some segments and/or LOU for which the total size of the fleet is very small (i.e. 1 to 5 units).

The sample of fishing units was based on the general fleet survey made by the INSTM in the frame of the National Project “Assessment of the Fishing Stocks along the Tunisian Coastlines” covering the period from 1997 to 2001. Therefore, 315 fishing boats were selected in the two regions, representing 13% of the active fishing fleet. The field work started on February 1, 2004 and so far, 113 and 183 inquiries have been completed in the northern and the eastern regions, respectively. These samples account for 87% and 100% respectively of the sample sizes projected.

It was possible to present only preliminary results of the eastern region for which the field work has finished. These results concern the vessel and human productivity estimates, total estimated invested capital compared with those related to the other regions of the Mediterranean, gross added value, and an analysis of costs and revenues.

- In terms of physical productivity (in volume), the pelagic trawlers and the purse seiners are the largest producers;
- In terms of value, the botttom trawlers, the purse seiners of Teboulba and the artisanal boats of Teboulba and Monastir are the most valuable segments;
- A comparison of the invested capital among the fisheries in Morocco (Alboran Sea), Spain (Alboran Sea), the Gulf of Gabes and the Eastern region of Tunisia, show that there are no significant differences in the global amount of investments. However, the distribution of those investments differs between fleet segments in each country. The greatest proportion of total investments is made in bottom trawlers in the golf of Gabes, the middle purse seiners and the bottom trawlers in Morocco, the small bottom trawlers in Spain, and the Middle purse seiners and bottom trawlers in the Eastern region of Tunisia; and
- The bottom trawlers of Mahdia and the artisanal boats segments of Teboulba and Chebba contributed the most to Gross Added Value in Tunisia.

Mr. Ben Salem also stated that the field work related to the Northern part of Tunisia will be concluded in May, 2004 and that the first updating of fisheries socio-economic indicators in the Gulf of Gabes will commence at this point. This updating will enable the analysis of trends in the indicators between 2001 and 2003. The final report of the study related to the northern and eastern regions of Tunisia will conclude in June, 2004 and will be included in the document compiling the work on socio-economic indicators completed under the framework of the FAO COPEMED project.

f) Presentation of the ADRIAMED sociological survey in Albanian marine fisheries

Ms. Maria Forleo presented the research programme "AdriaMed Social Survey of Albanian Marine Fisheries" implemented in 2003. The goal of this study was to gain a detailed insight into the social context of the Albanian fisheries. The social survey was executed in cooperation with the Albanian Fisheries Directorate and AdriaMed project.

This presentation introduced the preliminary considerations resulting from the survey.

The social context of the national fisheries is particularly relevant as Albanian fisheries have changed remarkably since the 1990s; making it necessary to understand the current characteristics of the social component of the fishery sector. Furthermore, the social survey is intended to provide the fisheries managers and Administration with an analytical tool to facilitate the following information needs: the identification of the target groups and the livelihood of the fishers; the identification of the motivation of the resources users; the evaluation of the working conditions and fishing strategies; the understanding of the characteristics and the relations within and between the maritime

districts; the business practices and strategies. The results of the survey could also help in trying to identify and select a set of general sociological indicators.

Because of the lack of existing data, a direct survey was implemented. The relevant socio-economic aspects were identified at three levels: the *fisher,* which represents the basic unit of the investigation; the *crew* and the *port*. At each level, the questionnaire was designed to detect both the characteristics of the single unit and the interaction in the framework of the sector. The identification of the specific socio-economic data to be collected evolved from an initial compilation of all the possible socio-economic aspects that concern the various objectives of this analysis. Then, the information considered relevant was selected to reduce the complexity of interview and the statistical error margins and the questionnaire was tested on local fishing operators and experts. Boxes 1-3 of Annex 6 contain the main information requested through the questionnaire.

The field implementation of the survey was carried out in commercial fishing ports of Lezhe; Durres; Saranda and Vlore, according to a random fleet segment stratified sampling design. The sample size consisted of a total of 183 fishers interviewed (561 questionnaires) from 67 fishing vessels (30% coverage). For the success of the survey (in terms of a high rate of answers and good quality of information) particular care was taken in the choice of interviewers including their experience with fisheries, their acceptance by local operators. In addition, interviewers followed a series of brief training activities. The data collected were then organised into a database structured to insert, modify, and browse information as well as to extract some basic statistical analyses and advanced statistical management of the archive according to the questionnaire structures.

The formulation of the survey and the methodology adopted proved effective in terms of the information obtained and efficient with respect to the costs of the data collection.

Developments of this research will follow three lines: an advanced statistical processing of data; a progression from survey results to indicators; a review of the project activities to validate and improve objectives, methodology, and results so as to define a general framework for further implementation.

Concerning the estimation of indicators, a further aim of the research will be the identification of a key set of indicators that would be useful for the description and interpretation of the socio-economic context and also as a tool to support fisheries management.

Some relevant points were stressed:

- *concept and definition*: How to define sociological information, traditionally restricted to labor market data.
- *linkages* to other dimensions of sustainable development: how the social sphere is linked to others, most of all the economic one? Which are the more relevant linkages with environmental sphere?

- *data source*s: Do official data exist and can they contribute to reducing the costs of direct collection?
- *tools*: how to measure relevant social aspects which are mainly of qualitative nature? Are social (properly economic) indicators currently proposed sufficient to give insights of social reality of fisheries?
- *interpretation*: how to define reference points? Along time, following the evolution of social indicators of fishery: problems of frequency and costs in collecting data. Across sector, comparing fishery indicators with other sectoral indicators: agricultural?
- *management*: how and which sense can social indicators be used in the process of fishery management, not from a theoretical point of view but from an operational perspective?
- *scales*: port, region, nation. For some information it is useful to consider all the scales; for other information, local scales are relevant.
- *time*: social conditions are subject to constant changes but generally not as frequently as for the other dimensions of fishery (e.g. economic dimension).

Future activities will consider these points leading to formulation of a general framework for social analysis and indicators integrated with the economic and environmental dimensions of fishery.

g) Presentation of the ADRIAMED study on Adriatic Sea Fish Markets

Ms. Adele Finco presented a review of the general issues of the AdriaMed on *Aspects of Fish Markets in Adriatic Sea*, Ancona, University Politecnica Marche (Italy, 2002); the final version of which was published in the Adriamed Technical Document N. 10 (2003).

The main objective of the study was to gain a better understanding of the markets for fish and fish products through the collection of relevant information available at national and international levels. The development of economics research related to the fish markets sector was highlighted. The importance of reliable fishery statistics and constraints often imposed by their unavailability was pointed out with reference to all Adriatic Coastal countries.

Among the different aspects influencing the fish markets in the Adriatic Sea, the most relevant issues were identified. Fish marketing and trading systems in the Adriatic vary greatly and, in some countries, the fish markets are absent. An efficient fish market system is fundamental for the fishery market in Adriatic Sea. Knowledge on imports and exports of the fish products is essential for a better understanding of the fish industry dynamics, for which the quality has a positive effect. Regarding the positive effects on trade of fish product quality, the market strategy of the Ancona wholesale market of small pelagic fish was presented as case study demonstrating the benefits produced by the quality certification of fish products.

This list of indicators relating to market analyses are presented in Annex 7.

h) Presentation on the status of reviews of Mediterranean Fisheries Legislations

The Secretariat informed SCESS on progress made on the comparative study of fisheries legislations in the Mediterranean.

It was recalled that three meetings of the legal working group of the COPEMED Project were organized over recent years. The working group allows fisheries lawyers from Western Mediterranean to discuss various legal issues related to fisheries management in this sub-region.

The results of the working groups were summarised in meeting reports and on comparative technical reports covering issues such as: national jurisdiction, access conditions, management measures (e.g. closed seasons; mesh size regulations; minimum size of species), monitoring control and surveillance (MCS). These inputs were further presented at the First COPEMED Forum held in 2003 (Annex 8) which recommended, inter alia, that the COPEMED legal working group be incorporated within SCESS. This recommendation was acknowledged by GFCM at its 28th session (Tangiers, Morocco, October 2003).

Similarly, the ADRIAMED project undertook a study on fisheries legislation and regulations in the ADRIAMED countries. The study covered the same topics as the COPEMED study and included an analysis on recreational fishing.

SCESS was further informed that, based on the above mentioned studies for Western Mediterranean and the Adriatic, the Secretariat initiated a study, using the ADRIAMED questionnaire, to further cover the analysis of the fisheries legislation of the Eastern Mediterranean countries. It is intended to produce a joint Mediterranean comparative analysis of fisheries legislation, incorporating the COPEMED and ADRIAMED studies.

In the following discussions, SCESS acknowledged with satisfaction the work being undertaken. However, the SCESS felt it premature to establish a legal working group within the SCESS; while recognizing the importance to maintain the momentum established by the network of COPEMED fisheries lawyers in view of the forthcoming need for legal-related analyses in fisheries management and in the context of addressing IUU fishing in the Mediterranean.

SCESS suggested that the Secretariat present the results of the Mediterranean Comparative Legal analysis at the next session of SAC and requested guidance from the Committee on how to include fisheries legal issues in the framework of SAC (e.g. consideration of the creation of a SAC or SCESS legal working group).

It was further recommended that Member countries send a copy of new or amended laws and regulations to the Secretariat; for inclusion into the FAOLEX database and for routine updates of the Mediterranean Legal study, as appropriate.

5. NATIONAL THEMATIC REPORTS

National thematic reports listing the on-going work related to SCESS were presented by representatives of Morocco, Tunisia, Algeria, Albania, Libya, Italy, and Spain. These reports are summarised in Annex 9.

6. SCESS NATIONAL DATA PROCESSING SYSTEM NEEDS AS RELATED TO THE SCSI

In consideration of the reticence of members countries to release individual vessel data, the SCESS called for the development, with the assistance of SCSI, of a data analysis system which would enable member countries to input their raw data concerning fishing fleets and produce a two-tiered collection of outputs: one for national use and one to be delivered to the sub-committees (i.e. tables and figures containing the GFCM-required data on socio-economic data). These final tables would then be compiled into an annual or bi-annual report containing a systematic and comparative review of the socio-economic status of Mediterranean fisheries.

Some experience in the development of such a system was gained in Algeria and could provide a starting point for this work. The SCESS will develop a proposal to be submitted to the SCSI for its consideration. As the eventual goal is to present data on Operational Units, the SCESS deemed there are common benefits to developing such a system. It was pointed out that a similar system has been developed under the MedFiSis programme as concerns Vessel Registration and Catch Assessment data; therefore it was suggested that this system be expanded to include the remaining socio-economic parameters and provided to all member countries for their use as needed.

The SCESS agreed that a first draft on the requirements and structure of this software be prepared by Ramon Franquesa. The SCESS coordinator will circulate this proposal for review within SCESS, and in two months, will present to the SCSI for possible development.

7. SUGGESTIONS AND WORK PLAN FOR THE FOLLOWING YEAR

In summary, the SCESS suggests to the SAC the following for consideration:

Suggestions to SAC and SCESS

- That a program for data entry and analysis related to the construction of socio-economic indicators to be developed with the assistance of SCSI and distributed to the country members for their completion and successive distribution to SCESS;

- That regional projects including socio-economic components be extended and that the forthcoming EastMed project for the eastern Mediterranean (implementation of MedFisis) includes a fisheries economics and social sciences component;

- That studies on social aspects of fishery, as in the case of Albania, be developed inside the framework of socio-economic analysis and indicators. That is important to gain a better comprehension of fishery sector and implementation of management measures. At this regard the SCESS suggests that guidelines on implementing fisheries sociological studies could be developed based on Adriamed experience;

- That guidelines on implementing Fisheries Markets studies including trade fish market, price system and quality fish product, according to recommendation of the 28 GFCM session, be developed based on AdriaMed experiences;

- That national thematic reports, listing work related to SCESS from Member countries, be submitted to the Coordinator.

- That the active and permanent participation of a representative from SCESS in the Working Group on Operational Units, piloted by SCSI, be supported;

- That scientists from Member countries participate in further SCESS-related meetings to present their results of studies relating to socio-economic indicators; providing for a more equitable distribution of efforts within the SCESS;

- That participation by researchers from Algeria, Libya, Morocco and Tunisia in the October, 2004 meeting on the BEMMFISH model[3] be assured as a first step toward conducting case studies in their countries to make test the prototype model before the launching of the final version;

- That the Socio-economic indicators WG meetings be held in the same location as the SCESS sessions, and that the WG meetings be limited to one day before such SCESS session, until a need to increase the length of the meetings is warranted;

- That the Secretariat present the results of the Mediterranean Comparative Legal analysis at the next session of SAC and requested guidance from the Committee on whether to include fisheries legal studies as a segment of fisheries social sciences given the current competencies of the SCESS participants (e.g. consideration of the creation of a SAC legal working group);

- That member countries send a copy of new or amended laws and regulations to the Secretariat; for inclusion into the FAOLEX database and for routine updates of the Mediterranean Legal study, as appropriate.

- That the collaboration between the Socio-Economic and Legal Aspects of Aquaculture in the Mediterranean (SELAM) of CAQ and SCESS be strengthened where overlaps exists between the two sub-committees (e.g. market and environmental impact analyses);

[3] www.bemmfish.net

- That studies on Operational Units identification, following the GFCM and SAC objectives to cover all Mediterranean Geographical Sub-Areas, be completed following the example of the GSA 17 and 18 under the FAO ADRIAMED project;

- That socio-economic indicators by fleet segments, following the Operational Units concept wherever possible, be produced and provided to the SCESS;

- That the "Manual of Fisheries Sampling Surveys: Methodologies for Estimations of Socio-Economic Indicators in the Mediterranean Sea" be used in data gathering procedures in order to guarantee an acceptable level of data quality;

- That, when possible, minimum data quality requirement linked to the sampling methodologies to collect socio-economic data on fleets be established;

Suggestions to FAO FIPP

- That a workshop of experts be held to analyse the use of socio-economic indicators in fisheries management;

- That the FAO Circular 927, entitled "Les Pêches en Méditerranée: Eléments d'Information sur le Contexte Halieutiques et les Enjeux Economiques de leur Aménagement" be updated.

8. GENERAL CONSIDERATION OF THE SCESS

The SCESS noted the following positive achievements during the past 5 years, in spite of the vast differences between the Mediterranean countries:

- The feasibility of collecting data;
- The feasibility of producing economic indicators;
- The approval of the SCESS-proposed fleet segmentations;
- The capability of using the indicators to compare across the various fleet segments, ports and countries;
- The pertinence of the chosen indicators to fisheries management;
- The ease of interpretation of the indicators;
- The relative low cost of data collection and indicator estimation;
- The additional use of such data in bio-economic models, such as BEMMFISH.

In order to progress in this direction, it is first necessary to guarantee the continuity of the socio-economic data collection. However, in this direction, two main constraints are faced:

- Lack of human resources. Despite the creation of some teams in Albany, Algeria, Spain, France, Greece, Italy, Morocco and Tunisia, the SCESS recommends that the remaining GFCM designate trained data collection and analysis teams to ensure the consistency and quality data for input into the management process.

- Lack of financial resources to assure the annual survey process.

In the discussion, scientists from Tunisia and Morocco suggested that the other countries of the GFCM, especially those who have collected and analysed socioeconomic data, present their results in the next session.

The SCESS was reminded of the European Union regulations related to the collection of fisheries data (among others, economic data from 2004).[4] This decision is very positive for the future of SCESS, because 7 countries from the GFCM: Cyprus, Slovenia, Spain, France, Italy, Greece and Malta, will be collecting economic data on their fleets.

In view of the fundamental role played by the FAO regional projects in support of SCESS, the SCESS committee expressed the wish that COPEMED be extended and that the forthcoming EastMed project for the eastern Mediterranean includes a fisheries economics and social sciences component

In the discussion about the pilot studies on socio-economic indicators and the possible additional use of the data collected in bio-economic models, such as BEMMFISH, Mr. Accadia pointed out that, for many countries and Geographical Sub Areas in Mediterranean Sea, there are no data or very poor economic data. He highlighted that the priority is to collect economic data for these countries in a systematic way.

Moreover, Mr. Accadia expressed a concern with the previous approaches followed, based on pilot studies, followed by the SCESS. These studies have generally been applied to limited areas and not related to the entire coverage of the Geographical Sub Areas, especially in the case where one GSA contains more than one country. Therefore, the results of these studies are not applicable to the analysis of management measures at a Geographical Sub Areas level.

The approach suggested is based on the building of a permanent statistical system, for each country, comprising the following steps: the implementation of a full census of fishing fleets, the development of stratified statistical samples according to the concept of Operational Units, the establishment and implementation of data quality control procedures, and the creation of data recording institutions/mechanisms.

9. OTHER TOPICS

Mr. Massa recalled to the participants that MedSudMed Project is aiming at supporting the scientific community and countries in the improvement and development of a monitoring system of fisheries resources and their ecosystems in the Central Mediterranean. To date, the Project activities concentrated on studying biological and environmental aspects related to small pelagic and demersal fisheries resources and no

[4] Regulation (EC) nº 1543/2000 from June 29, 2000 Council (http://europa.eu.int/eur-lex/pri/en/oj/dat/2000/l_176/l_17620000715en00010016.pdf) and Regulation (EC) n° 1639/2001 from July 25, 2001 Commission (http://europa.eu.int/eur-lex/pri/en/oj/dat/2001/l_222/l_22220010817en00530115.pdf).

immediate actions related to the activities of the SCES were considered. However in the next steps of the project activities analysis of the fisheries sector and of the spatial distribution of the fishing effort based on the available information are foreseen. Other relevant issues on socio-economic aspects will also be considered

Ms. De Young called attention to the recent meeting of the European Association of Fisheries Economists, held in Rome from 5-7 April 5-7, 2004.[5] Much of the research presented during this conference is pertinent to the work of the SCESS; therefore, requests from SCESS for full articles are welcomed.

Mr. Abukhder noted some of the activities on socio-economic issues being implemented in Libya including the impending development of a socio-economic indicators database in cooperation with the FAO COPEMED project

10. ADOPTION OF REPORT

The report was approved by the participants on May 12, 2004.

[5] http://www.eafe-fish.org/conferences/conferences.htm

ANNEX 1. PRELIMINARY AGENDA

COMMISSION GÉNÉRALE DES PÊCHES POUR LA MÉDITERRANÉE

COMITÉ SCIENTIFIQUE CONSULTATIF

CINQUIEME SESSION DU SOUS COMITE DES SCIENCES ECONOMIQUES ET SOCIALES

(Malaga, Espagne, 10-12 mai 2004)

Agenda provisoire

1. Ouverture de la session.

2. Adoption de l'ordre du jour et arrangement pour la réunion.

3. Rappel et discussion des recommandations des dernières sessions de la CGPM, du CSC et des Sous Comités.

4. Travaux d'intersession

   4.1. Présentation des recommandations du GT du projet FAO COPEMED sur les unités opérationnelles
   Il serait très important de discuter l'applicabilité des paramètres socio-économiques dans la gestion des unités opérationnelles ;

   4.2. Présentation des recommandations du GT du projet FAO ADRIAMED sur les unités opérationnelles

   4.3. Présentation des rapports finaux des études sur les indicateurs socioéconomiques de la pêche en Algérie et en Tunisie.
   Après la présentation des rapports finaux sur les indicateurs socio-économiques de la pêche en Algérie et en Tunisie, la base de données sera élargie.

   4.4. Présentation des récents travaux réalisés par ADRIAMED, sur les aspects sociométriques et sur la commercialisation.
   Ces travaux concernent l'actualisation de l'étude réalisée en Albanie, intitulée "Social survey of Albanian marine capture fisheries", et les résultats du travail réalisé en Adriatique intitulé "Aspects on Fish Market in the Adriatic Sea".

5. Rapports nationaux
   Chaque pays présentera un rapport sur les différents travaux de recherches sur les sciences sociales et économiques, en relation avec la gestion des pêches.

6. Besoins du SCSES en relation avec le système statistique prévu de la CGPM ;
   Le SCSI est entrain de mettre en place un système statique de gestion des différentes bases de données, le SCSES doit présenter ses besoins vis-à-vis ce système, en programmes et en données bioéconomiques ;

7. Présentation des travaux sur les législations et la réglementation des pêches au niveau des pays de la CGPM.
   Cette présentation concerne les travaux réalisés et en cours de réalisation, par les projets COPEMED, ADRIAMED et le Secrétariat de la CGPM sur les revues des législations et réglementations de pêche des pays membres de la CGPM.
   Le SCSES peut présenter une réflexion sur la possibilité de développer ses travaux dans le futur.

8. Réflexion interne sur les travaux réalisés par le Sous Comité
   Il s'agit d'examiner :
   - *Les attributions des membres institutionnels du Sous Comité ;*
   - *Les implications des changements de la CGPM sur le SCSES.*

9. Recommandations en matière de recherche et développement

10. Programme de travail et activités pour l'année prochaine.

11. Autres questions

    - *Présentation des récentes activités de MedFIsis et MedSudMed, en relation avec les travaux du SCSES.*
    - *Présentation des discours de la 16ème conférence de l'EAFE (avril 2004), en relation avec les pêcheries méditerranéennes.*

12. Adoption du rapport.

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ANNEX 3. MAIN BODY TEXT FROM 4TH SCESS WORKING GROUP ON SOCIO-ECONOMIC INDICATORS

GENERAL FISHERIES COMMISSION FOR THE MEDITERRANEAN

SCIENTIFIC ADVISORY COMMITTEE

SUB-COMMITTEE ON ECONOMIC AND SOCIAL SCIENCES

WORKING GROUP ON SOCIO-ECONOMIC INDICATORS

Barcelona, Spain, 15-17 March, 2004

1. Opening of the meeting

The meeting was organized by the University of Barcelona upon kind invitation by the Gabinete de Economia del Mar (GEM) and the FAO COPEMED project. Mr. Malouli, the SCESS Coordinator, presented on behalf of the Working Group (WG) participants, heartfelt sympathies to the Spanish colleagues following the bomb attacks in Madrid and he opened the session with a minute of silence. He thanked the organizers for gathering this group for the second consecutive year. Afterwards, Mr. Franquesa, GEM Director, welcomed the participants (list in annex 1).

The WG regretted the absence of representatives from several countries, particularly France and Italy that were active and often present in previous meetings. The WG proposes that the GFCM Secretary, in consultation with the Coordinator, re-activates the call to countries to send the official delegates of GFCM countries.

The WG expressed its appreciation to the FAO COPEMED regional project for its support regarding the participation of researchers from Algeria, Morocco and Tunisia.

2. Approval of the agenda and organization of next meeting

Mr. Franquesa was invited to chair the working group and Mr. Malouli and Mr Ben Salem were appointed rapporteurs.

The agenda was adopted with minor amendments (annex 2).

3. Presentation of studies carried out in the intersession

3.1. Survey of socio-economic indicators for fisheries in the Algerian Mediterranean, situation and perspective.

Mrs Ferhane and Mr. Hachemane presented the results of the survey, "Socio-Economic Indicators of Algerian Fisheries", conducted by the National Center of Studies and Documentation for Fisheries and Aquaculture (NCSDFA), under the framework of the regional program financed by the FAO COPEMED project. A data collection operation was launched from the end of 2002 and the beginning of 2003.

For that purpose, surveys were conducted in fourteen Wilayas (Municipalities) with maritime access.

Through this survey, both fleet segmentation and socio-economic assessment of the sector were empirically addressed.

In this case and, six segments were identified in accordance to the segmentation adopted by SCESS (annex 3), that is, small liners (< 6m) and (6 - 12m) (segments B and C), trawlers(> 24m) (segment F), trawlers (12-24m) (segment E), sardine boats (12-24m) (segment H) and sardine boats (6-12m) (segment G).

These fleet segments share resources essentially from small pelagics, large pelagics and demersal species. It is important to notice that some fleet segments exploit multiple species, thus creating conflict between the segments (e.g. small liners – trawlers and sardine trawlers).

The analysis of macroeconomic data made it possible to register the following observations:

- the index of production and export is clearly lower than the figures recorded by neighboring countries ;
- there is a very high unemployment rate ;
- the inflation rate, which has been decreasing during the past few years, reached almost 6% in 2002.

The annual profit ratio registered is negative for each fleet segment due to:

- a very high immobilization rate;
- aged fleets.

Several constraints were found during the data collection process, such as:

- lack of qualified collectors
- fishermen reluctance.

3.2. Presentation of the state of development of the socio-economic survey in northern and eastern Tunisia

Mr. Ben Salem presented the state of development of the fisheries socio-economic indicators survey in northern and eastern Tunisia carried out under the framework of FAO COPEMED project. He noted that the methodology adopted is in accordance with those used in the Alboran Sea (Spain/Morocco) and the Gulf of Gabes (Tunisia) projects.

This second Tunisian survey is related to the other two regions in Tunisia; that is, the northern and eastern regions. Eight Local Operational Units were selected in each region to cover 20 ports. In order to compare different ports and fisheries fleet segments in Tunisia, the fleet segmentation used in the first Tunisian surveys was selected in lieu of the one adopted by SCESS. Also, three specific segments were added. They were mid-water trawls in the eastern region as well as crawfish boats (those exploiting red lobster) and the coral boats (exploiting red coral at diving) in the northern region (annex 4). The sampling rate selected was 10% for artisanal fleet and 15% for the other fleet categories. This rate related to 100 % of the fleet for some segments and/or LOU for which the total size of the fleet is very small (i.e. 1 to 5 units).

The field work started on February 1, 2004 and so far, 69 and 133 surveys have been completed in the northern and the eastern regions respectively. These samples account for 50% and 70% respectively of the sample sizes projected. This field work will conclude during the month of April, and the final results will be presented in the next Sub-committee meeting.

Mr. Ben Salem also stated that a study to up-date the fisheries socio-economic indicators in the Gulf of Gabes should start during the month of May 2004. This would allow the tracing of trends of the indicators between 2001 and 2003. This study will be presented at the next Working Group (2005).

3.3. Presentation of a case study on red tuna fishing in the region of Ksar Sghir, in the Moroccan Mediterranean.

Mr. Malouli presented the pilot study on red tuna fishery in the region of Ksar Sghir, which was implemented within the framework of the FAO COPEMED project. The WG was reminded that this fishery presents a very special interest as it targets a large pelagic with great bio-ecological and economic values.

This study approached the different aspects of red tuna exploitation: exploitation means, evaluation of socio-economic parameters, and determination of certain biological parameters.

It is a seasonal activity (July to September), developed by an artisanal fleet of around 200 vessels attached at 5 sites; generally lacking the necessary basic infrastructure.

In 2003, the fishing effort of the artisanal fleet recorded an increase of close to 25% compared to the previous year. This allowed for a total production of red tuna of about 210 tons, for a total value of about 8 million Dhs.

For the socio-economic aspects, this activity is practiced by a relatively young population, with an education level ranging from weak to poor. This activity presents the best economic productivity and the best results when compared with other Moroccan Mediterranean artisanal fisheries.

Most of the production is exported, mainly to the European market. The average price in the first sale is about 40 Dhs/kg, a relatively low price compared with those offered by the foreign markets, due to unfavorable working conditions for fishermen and to the lack of means for the preservation of the tuna catches.

The results from this study led to two groups of recommendations:

- In the field of scientific research, it is desirable: to annually update the database with information about the socio-economic aspects, to go deeper in the work with the commercialization circuits and the production destination, to improve the quality of fishing statistics through the implementation of a regular data collection system, and finally, to ensure the follow up of the biological aspects.

- In the field of development and improvement of exploitation conditions, it is desirable to help the fishermen to enhance their social condition by facilitating their adhesion to the National Social Security Bureau.

3.4. Presentation of a document compiling the work on socio-economic indicators completed under the framework of the FAO COPEMED project.

Mr. Franquesa presented the report about the progress of the publication, which includes the work done in the Western Mediterranean on socio-economic indicators. The structure of this publication is presented in Annex 5. The final version will be available after the conclusion of the reports from Algeria and Tunisia.

This publication will allow researchers and administrators to have:
- A description of the socio-economic indicators in fishing
- A segmentation method by type of fleet and maritime region
- A method for statistical distribution of the surveys
- An example of the interpretation of results
- A description of the current situation for Algeria, Spain, Morocco and Tunisia

This publication summarizes the essence of the work developed in the last five years within the SCESS. The Working Group deemed it a very useful publication to facilitate the creation of indicators in other countries of the GFCM, and to show the usefulness of indicators in fishery management.

4. Implementation of the manual created by GEM Barcelona and IREPA on the collection of socio-economic data and the application of socio-economic indicators

Mr. Franquesa presented the final version of the working manual on statistical methods for fleet sampling in order to estimate the socio-economic indicators of fisheries in the Mediterranean. This work was published by FAO, in the collection "Studies and Reviews" n° 73 of the GFCM, under the title "Manual of Fisheries Sampling Surveys: Methodologies for Estimations of Socio-Economic Indicators in the Mediterranean Sea" (Rome, 2003).

This publication, undertaken by Evelina Sabatella (IREPA) and Ramón Franquesa (GEM), is the result of the work implemented during the last two years by this Working Group, with the main objective of solving the issue of optimizing the distribution of surveys among the different segments and locations. The application of this manual will allow to reduce sampling costs and to improve the precision of the data collected.

Regarding the establishment of minimum data quality requirements linked to the sampling methodologies used to collect the economic data on fleets, the WG considered it premature at this moment to make recommendations with respect to those reference points, and that the main objective should focus on the collection and availability of data in order to create the proposed indicators. Mr. Franquesa pointed out that, even after six years of work, there are no apparent quality standards linked to the «Economic Assessment of European Fisheries: Economic Performance of Selected European Fishing Fleets »[6].

Therefore, the Working Group does not recommend any data quality/statistical reference points; however, applying the GFCM Studies and Reviews n° 73 "Manual of Fisheries Sampling Surveys: Methodologies for Estimations of Socio-Economic Indicators in the Mediterranean Sea" (Rome, 2003) would assist in moving toward standardised data collection systems and, hence, robust economic data on fisheries.

5. Internal reflection about activities conducted by the WG

The Working Group noted the following positive achievements during the past 5 years, in spite of the vast differences between the Mediterranean countries:

- The feasibility of collecting data;
- The feasibility of producing economic indicators;
- The approval of the SCESS-proposed fleet segmentations;
- The capability of using the indicators to compare across the various fleet segments, ports and countries;
- The pertinence of the chosen indicators to fisheries management;
- The ease of interpretation of the indicators;
- The relative low cost of data collection and indicator estimation;
- The additional use of such data in bio-economic models, such as BEMMFISH.

However, the Working Group requested a concerted effort on the part of member governments to identify and fund data gathering teams in order to ensure continuity and complete coverage in the collection of socio-economic data.

[6] http://www.farec.fo/default.asp?show=page&id=2343

The Working Group recommended to creation of an annual report, similar to the one produced by the European Union ("Economic Assessment of European Fisheries"), in order to give the member countries a coherent comparison about the economic situation of the Mediterranean fleets.

In order to progress in this direction, it is first necessary to guarantee the continuity of the socio-economic data collection, which is our main objective of this WG. However, in this direction we face two main constraints:

- Lack of human resources. Despite the creation of some teams in Albany, Algeria, Spain, France, Greece, Italy, Morocco and Tunisia, the WG recommends the other countries of GFCM to design teams to be in charge of data collection and their analysis.

- Lack of financial resources to assure the annual survey process.

The WG was informed about the decision of the European Union regarding the regulations related to the collection of fisheries data (among others, economic data from 2004)[7]. This decision is very positive for the future of SCESS, because 7 countries from the GFCM: Cyprus, Slovenia, Spain, France, Italy, Greece and Malta, will be collecting economic data.

Likewise, the WG was very pleased about the inter-ministerial declaration of the European Commission of Venice to ensure the continuity and the creation of regional cooperation projects that will be co-financed by the EC, and eventually by Spain, Italy and Greece (regarding the implementation of a new project for the Eastern Mediterranean).

Following this declaration, the WG proposes the SCESS and the SAC:

- That the EU takes into account GFCM needs, after compilation of such economic data;

- To implement a range of actions, co-financed by regional projects and governments in order to regularly compile economic data necessary to produce economic indicators. This will allow governments to honor their commitments regarding GFCM requests.

The WG reviewed previous SCESS recommendations regarding this regulation (item 33 of SCESS fourth session report (Cyprus, 2003)):

- To ask the European Commission to provide a definition of the character, timetable, method and publication criteria of the data collection program in the next session of the GFCM.
- To analyze the points wherein the cooperation of non-EU members is necessary to assure a harmonized development of data collection activities.
- To provide paths of cooperation at all levels to assure these objectives.

6. Other issues

6.1. BEMMFISH Model

Mr. Jordi Guillen presented the necessary data requirements for the construction of the bio-economic model « BEMMFISH ».

BEMMFISH is a European project included in the context of the fifth research framework program from the EU[8]. Taking into account the similarities between the Mediterranean countries in the EU and

[7] Regulation (EC) n° 1543/2000 from June 29, 2000 Council (http://europa.eu.int/eur-lex/pri/en/oj/dat/2000/l_176/l_17620000715en00010016.pdf) and Regulation (EC) n° 1639/2001 from July 25, 2001 Commission (http://europa.eu.int/eur-lex/pri/en/oj/dat/2001/l_222/l_22220010817en00530115.pdf).
[8] Life quality and live resources management (Q5RS-2001-01533)

the Mediterranean countries that do not belong to the Community, this model could be applied in many fisheries.

There are two main objectives as part of this model:

- The model should take into account the bio-economic conditions of fisheries, taking into consideration the artisanal, multi-specific and multi-engine character of the Mediterranean fisheries where the control variable is actually the fishing effort. Hence, the main management measure considered relies on the limitation of the fishing effort;

- The model should ensure simulations based on various management strategies. It should allow the testing of such strategies in the technical and the economic fields through the introduction different kinds of events (biological, economic and commercial).

This model also controls for the strategy of fishermen to increase their fishing efficacy in order to increase fishing mortality but always keeping the nominal effort constant. This is modeled by the function that links efficiency (or technological progress) to capital invested in fisheries and time variables. The improvements introduced at the level of the function that links captures to capital (ship value) and at the level of the multi-varied function of price were also presented.

A copy of the last project report related to this model was distributed together with a list of the data necessary to run the model (Annex 6). For up-to-date information, please visit www.bemmfish.net.

The WG recommended using the data collection process already necessary for the creation of economic indicators to collect information for input into the bio-economic model.

The discussions of the different participants in this WG lead to the inclusion of the following aspects in the new version of the model:

- A simple statistical method to allow extrapolating data related to the sample of fishery unit and the fleet group.

- A statistical method (analysis of chronological series) to prevent variations of reproduction and climate conditions affecting particularly the small pelagics.

The FAO COPEMED project will assist the researchers from Algeria, Morocco and Tunisia to participate in the next BEMMFISH meetings, to conduct case studies in their countries, and to make test this prototype model before the launching of the final version.

6.2. Masters on Economy and Management of Fishing Activities

Mr. Franquesa informed the WG about the Masters of Fisheries Economics and Management (Master Internacional en Economía y Gestión de Pesca), which will begin next September, in the Facultad de Ciencias Económicas, at the Universidad de Barcelona (UB). This Masters is supported by both FAO—through the FAO-COPEMED project—and the Spanish Government—through its Secretariat General of Marine Fisheries.

It is an international Masters organized by the UB and the CIHEAM leading to a UB-CIHEAM university degree (Annex 7). The Masters program will have the financial support to facilitate the participation of fishery specialists in the Mediterranean countries and will train the participants in fisheries economics and management.

For further information, please visit www.ub.edu and www.gemub.com.

6.3. Publication of CIHEAM Yearbook

Mr. Franquesa noted the first-time inclusion of a fisheries-specific chapter in the CIHEAM 2003 Annual Report, "Development and agri-food policies in the Mediterranean region" [9]. Ramón Franquesa (GEM) and Pere Oliver produced a general overview of the biological and socio-economic status of the Mediterranean fisheries. Although the socio-economic data remained limited, the CIHEAM expressed an interest in the continual inclusion of such a chapter in successive reports.

6.4. Analysis of the consequences of management measures.

The WG believes that the recommendation from the first COPEMED forum—noted by 28th GFPM held in Tangier (October 2003)—proposing that the Scientific Advisory Committee of the GFCM be in charge of analysisomg the consequences from potential measures proposed for the reduction of the efforts (in terms of number of vessels, fishing time or fishing capacity) is very interesting. These analyses should include the consequences that such measures will have on the biological aspects (resources, habitat) as well as on the socio-economic aspects (profitability, employment).

In order to respond to this request, the WG deemed it necessary that all the countries ensure the active participation of their experts at the WGs level of and with the necessary basic data to accomplish this difficult task. The respective institutions should guarantee the availability of these data to the scientists (participants).

6.5. A socio-economic survey of Greek fishing fleets.

Pursuant to European regulations Reg (EC) 1543/2000 and Reg (EC) 1639/2001 concerning the National Fisheries Data Collection Program (NP), the member states are obliged to collecting economic data on all the fishing sectors during the period 2004 – 2006.

This will be the first time that an economic survey of this magnitude will be implemented in Greece. The NP in Greece is carried out by three national fishery research centers throughout the country. A questionnaire including both sociological and economic aspects was designed for application by "local representatives" to achieve sample sizes of up to 50% of the national fleet through the national ports[10]. These local representatives—official representatives of the local municipalities—were chosen to ensure a good geographical representation of the main ports, for example, the ports on the islands and the continental ports. The local representatives will receive surveying training by scientific survey experts from the three research centers.

The parameters that will be recorded for each individual vessel (in accordance to the Reg. 1543/2000 and Reg.1639/2001) will be the following:

- Total income as well as distribution of income based on the species.
- Production costs detailed in categories (personnel, fuel, maintenance etc.).
- Fixed costs (average cost calculated from investment)
- Leverage ratio of own to foreign capitals.
- Assets.
- Prices of fisheries products per tonne for species sold in the market.
- Distribution of the personnel based on occupation and tasks.
- Technical description of the fishing vessel (tonnage, engine power, age and fishing gears used).

[9] "Development and agro-feeding policies in the Mediterranean region" CIHEAM Annual Report. http://www.ciheam.org/

[10] Pursuant to the European regulation 1639/2001, up to 50% of the 12 to 24 meters vessels and purse seiners are to be surveyed. The sampling requirements for the smaller fleet segments are fewer given the large number of small vessels in the Greek fisheries.

- Fishing effort.

In addition to the economic parameters the questionnaire will also include social aspects such as:

- Educational level of skippers as well as of crew members and their experience level on their work
- Age of skippers and crew
- Preference of skipper on crew synthesis (foreign or Greek nationals) and justification of his/her choice
- Family dependency of skippers, fishing vessels' owners and crew

The first economic data collection of Greek fleets will be evaluated at the end of the first year of application and, if possible, the methodology used and the analysis of results will be presented in the next meeting of the Working Group.

6.6. Tentative agenda for the fifth session of the SCESS

The WG proposed an agenda for the next session of the SCESS that will be held from the 10th to the 12th of May 2004 in Malaga (Annex 8)

6.7. Place and date for the next Working Group session

Participants suggest that from now on, this WG meeting should be held in the same place of the SCESS session, and limited to one day before such SCESS session.

6.8. Suggestions

- The WG suggested the active and permanent participation of a representative from SCESS in the Working Group on Operational Units, piloted by SCSI;

- The Director of the FAO COPEMED project informed the WG about the preparation of a co-management pilot project on small pelagics in the Alboran Sea (Spain, Morocco and Algeria), which will take into account socio-economic aspects of the fishery;

- The WG requests the support of SCSI to prepare a program for data entry and analysis related to the construction of socio-economic indicators to be distributed to the country members (the MEDFISIS project coordinator is in favor of facilitating this activity). The SCESS will be in charge of recovering the results obtained at the level of each country;

- The WG considers that the updating of FAO memo N° 927 entitled "Les Pêches en Méditerranée: Eléments d'Information sur le Contexte Halieutiques et les Enjeux Economiques de leur Aménagement" with the support of FAO/FIPP, is useful to describe the macroeconomic context of the Mediterranean.

7. Working program and activities for next year

The WG decided to continue current projects until the next SCESS session where the working program for next year will be prepared.

8. Approval of the agenda

The report was approved by the participants on March 17, 2004.

ANNEX 4. OPERATIONAL UNITS WORK UNDER THE FAO COPEMED PROJECT

Operational Units Expert Working Group
Madrid, 2-3 December 2003

Introduction
The 28th session of the General Fisheries Commission for the Mediterranean (Tangiers, Morocco, 14-17 October 2003) acknowledged the importance of the work carried out so far on Operational Units (OUs) and stressed that the development of the concept should be given high priority among the activities of the Scientific Advisory Committee (SAC)[11]. It also noted with satisfaction the proposal made by the SAC to implement pilot projects on OUs with the support of the CopeMed and AdriaMed projects. In this context, a meeting of experts[12] was held with the support of CopeMed to discuss and prepare a protocol for a study on OUs in the Alboran Sea which would form part of a broader study[13] focussing on the co-management of small pelagic fisheries in the area.

Background information and discussions
The meeting based its initial discussions on a background document on Operational Units prepared by Jorge Baro which gave an overview of the knowledge on the subject (Annex I). It was noted that, in fact, an effort control regime on groups of vessels or Operational Units had not been applied in the GFCM region to date. The reason for this situation was attributed to the mismanagement of available data and information at country and regional level. It was agreed that data on fishing fleets, catches, effort, micro and macro economics as well as biological / stock assessment data are necessary to develop an OU management regime. The significant contributions which MedStat could provide to the work on OUs and the recent studies on the economic fleet segmentation and economic indicators carried out by the SAC Sub-Committee on Economics and Social Sciences (SCESS) were acknowledged and reviewed by the working group.

A number of data models were later considered in order to draw up a data collection structure to serve the management of fisheries by Operational Units. It was agreed that whichever view point is taken, the segmentation criteria of fleets should be fixed as much as possible in order to obtain time series of data. It was suggested that whilst data collected at national level would be specific to each country, it should be made possible to aggregate it according to a regionally defined fleet segmentation. Following a lengthy discussion, it was recognised that the most clearly defined segmentation to date was that proposed by the SCESS (Annex II) and should be used as the basis for the OU categories until further detailed information is made available to suggest that, in particular areas / sub-regions, one or more of these segments could be divided into more than one OU.

The Operational Units Pilot Study
Keeping in view five key elements (Table 1) contained in the definition of OUs, the working group drew up terms of reference for a pilot study on OUs of small pelagic fisheries in the Alboran Sea.

Table 1

Key definition elements	*Corresponding pilot study elements*
Management Unit	Alboran Sea
Managing fishing effort	Fishing effort of each small pelagics OU

[11] 28th session of the General Fisheries Commission for the Mediterranean (Tangiers, Morocco, 14-17 October 2003) - paragraph 65
[12] Rafael Robles, Salvatore Coppola, Jorge Baro, Abdellah Srour, Ramon Franquesa, Matthew Camilleri, Federico deRossi.
[13] Plan piloto para la gestión internacional (Argelia, Marruecos y España) de la pesca de pequeños pelágicos en el Mar de Alboran.

Type of fishing operation	Small pelagic fishery (eg purse seining)
Species or group of species	Small pelagic species (anchovies, sardines)
Economic structure	SCESS fleet segments

Points 5 to 8 of the following terms of reference include components which link this OU study to the broader study on the co-management small pelagic fisheries:

Terms or reference

1. An inventory of Operational Units targeting small pelagic fisheries in the Alboran Sea is to be drawn up. MedStat (Morocco, Algeria) and the Spanish fisheries information system should be used to extract data required for the inventory (Annex III).

2. The fleet segments proposed by the SCESS (Annex II) should be used as the basis for the Operational Units categories. However, if further detailed information is available to suggest that any of these segments make up more than one Operational Unit, then they should be subdivided accordingly.

3. Harmonisation of data collection schemes for catch and effort data (Annex III), biological and socioeconomic data (Annex IV) should be ensured. Where no such schemes exist, they should be set up accordingly. Data in all fields should be collected by fishing port or group of ports and aggregated by Operational Unit.

4. Data available is to be stored in an appropriate database especially designed to manage data on Operational Units.

5. Outputs of stock assessments applied to small pelagic species need to be harmonised in order to be adequately used in Operational Unit management.

6. Estimates of the percentage contribution of each Operational Unit to fishing mortality should be determined.

7. The standardisation of the measure of fishing effort for each Operational Unit should be addressed.

8. The implications of managing fishing effort by Operational Units for co-management are to be identified and assessed.

ANNEX 5. OPERATIONAL UNITS WORK UNDER THE FAO ADRIAMED PROJECT

AdriaMed Working Group on Operational Units in the Adriatic Sea
Durrës, Albania, 1st and 2nd April 2004

The Meeting of AdriaMed Working Group on Operational Units in the Adriatic Sea (henceforth referred as WG) was hosted by the Fishery Research Institute in Durrës, (Albania) on 1st and 2nd of April 2004. The meeting was attended by experts and Fisheries Directorate representatives from Albania, Croatia, Italy, Montenegro and Slovenia. The Albanian Minister for Food and Agriculture, H. E. Agron Duka, kindly welcomed the participants and underlined the interest of Albania on the topics related to the Operational Unit

The aim of meeting was mainly about the application of Operational Unit concept in the Adriatic Sea, the assessment of the available multidisciplinary data existing in GSA 17 and GSA 18 of relevance to the Operational Unit application, and the identification of possible pilot studies to be implemented in the area coverage of AdriaMed.

The meeting was arranged in three sessions that focused on the development of the Operational Unit concept, as well as on the work carried out so far in the framework of the GFCM activities. Second issue was concerning the most appropriate and practical standard Operational Unit form to hold the synthesis of available information for GSA 17 and GSA 18. Finally, the preliminary identification of pilot studies programme and actions to be implemented in the AdriaMed area (GSA 17 and GSA 18).

The Working Group was informed on the discussion held during the 28th session of the GFCM held last year in Tangier (October, 2003) where the issue of Operational Units and their role for fisheries management was dealt with, and where the undertaking of pilot studies coordinated by the Sub Committee on Statistics and Information and supported by the FAO Regional Projects AdriaMed and CopeMed was encouraged.

The need to implement pilot work concerning Operational Units in the Adriatic Sea was also mentioned during the last meeting of the AdriaMed Coordination Committee held in Rome (September, 2003).

A summary of the meeting discussion and outcome is given hereunder.

The MedFiSis Coordinator illustrated services and support which can be provided by the MedStat Data Base. The Data collection and Archive Structure with its two main components: Data Model View and Socio-Economic or Resource/Species View were outlined. It was underlined that the Data Model View is organized in such a way that depending on the topics of interest, the model and the way to process the data will change thus to conveniently compile the information needed.

In order to facilitate the work of the Meeting, it was necessary to clarify and reach a general consensus on the ultimate practical meaning of the Operational Unit with particular reference given to the practicality and sustainability of the Operational Unit concept as effective fishery management tool. It was concurred that the Operational Unit should be primarily a tool for the fishery manager to facilitate management actions. Once established Operational Units could be used by all countries

allowing results of management measures to be appraised, discussed and evaluated. The current Operational Unit definition was recalled[14].

Some aspects directly related to Operational Unit were dealt with through the presentation and discussion of results from Croatian and Italian fisheries monitoring studies carried out by the IOF of Split and IREPA of Salerno, which proved particularly useful to identify some of the problems that may arise during the compilation of the operational unit standard forms.

The discussion focused on the basic parameters required for the identification of the Operational Units also with reference to the standard form proposed by the SCSI[15] and the SAC inter Sub-Committees meeting held in 2003 in Rome[16]. The possibility to complete and integrated this form on the basis of available from the two Adriatic GSAs was considered. This led to the formulation of a preliminary set of three tables. The first holding the basic Operational Unit data (*Fleet and area*), the second the exploited resources (*Main resource components*) and *effort* information, the third socio-economic data (*Economic structure*). Subsequently, the resources and effort table was further split in two (i.e. *Main resource components* and *Effort* tables).

In order to make coherent the fleet segmentation by vessel LOA for the whole Adriatic, also in consideration of the available information, standard segments, as indicated by the SAC inter Sub-Committees meeting (Table 2 in the meeting report, footnote 3 refers) had to be modified as following: vessel LOA < 12m, 12-18, > 18m. The WG concurred that most likely fleet size of boats less than e.g. 8m without engine may result under-reported. To facilitate cross-referring to SCESS fleet segmentation, a further column was inserted where corresponding and/or overlapping SCESS segments are indicated.

Coding system to adopt, fishing gear definition and category as well as species names and abbreviations were taken into consideration. The Operational Unit alphanumeric code is composed as follows: first three characters indicate the United Nations country abbreviation (Albania: ALB; Croatia: HRV; Italy: ITA; Serbia and Montenegro: SCG; Slovenia: SLV). Followed by two-digit number to mean the GSA number (17 or 18). Then the fishing gear is given abbreviated (two or three characters). Last two digit number indicate the specific Operational Unit number to be assigned by those compiling the table.

For the sake of clarity fishing gear name and abbreviation where possible will be according to the to the International Standard Classification of Fishing Gear (ISSCFG; e.g. Purse seine: PS, Bottom otter trawl: OTB, Drifting longlines: LLD, etc). Species common name and abbreviation will be according

[14] Definition of OU: "For the sake of managing fishing effort within a Management Unit, an Operational Unit is the group of fishing vessels practising the same type of fishing operation, targeting the same species or group of species and having a similar economic structure. The grouping of fishing vessels may be subject to change over time and depends on the management objective to be reached".

[15] Sub Committee on Statistics and Information (SCSI) – Working Group on Operational Units, Ancona, Italy, 18th – 19th April 2001.

[16] Sub-Committee on Statistics and Information (SCSI); Sub-Committee on Economic and Social Sciences; (SCESS) Sub-Committee on Stock Assessment (SCSA). Working Group on Operational Units, Rome, Italy, 8-9 April 2003.

to the FAO three-letter code based on the FAO English common name as from the International Standard Statistical Classification of Aquatic Animals and Plants (ISSCAAP).

With regard to economic information (reference is made to Annex 7 of the SAC inter Sub-Committees meeting report), particularly to microeconomic data, it was evident that assistance of fishery economists will have to be sought. Preliminary definition of some basic economic parameters is given below. Possible incorporation of social parameters was also discussed**.**

As short-term programme the working group agreed to compile the Operational Unit tables with the best available information as available from national sources and AdriaMed activities. Tentatively, once the compiled tables from each country will be made available, the data will be assembled to delineate a first regional outlook of Adriatic Sea Operational Units.

Compiled Operational Unit tables will allow identifying the basic information which may result either not available or insufficient and that AdriaMed could address through the implementation of specific activities.

The results of preliminary data collection and compilation (as of May 2004) are briefly discussed below.

Table 1. (Fleet and area)*.

OU code	Gear Type	Vessel segment (LAO)	Cross reference SAC Table	Vessel N.	Main fishing zones	Base ports
ITA18OTB01	Bottom otter trawl	< 12 m	C		North and Central western shelf	
ITA18OTB02	Bottom otter trawl	12-18 m	E		Shelf and upper slope	
ITA18OTB03	Bottom otter trawl	> 18 m	E-F		Shelf and upper slope	
ITA18DRB01	Boat dredge				North western shelf up to 10 m depth	
ITA18HMD02	Mechanised dredge				Central western shelf up to 10 m depth	
ITA18PS01	Purse seine		G-H		North-western Area	
ITA18PT01	Midwater pair trawl		J		Northern and Central western areas	
ITA18GND01	Set gillnet		B-C		North-western coastal area	
ITA18LLS02	Set longline		B-C-I-M		South-western coastal and offshore areas	

Table 2. (Main resource components)*.

O.U. code	Target species	FAO species code	Main associated exploited resources	Fishing period
ITA18OTB01	Mullus barbatus, Merluccius merluccius, Eledone spp.	MUT, HKE, OCM	Demersal species	all year
ITA18OTB02	Merluccius merluccius, Mullus spp., Eledone spp., Parapenaeus longirostris	HKE, MUX, OCM, DPS	Demersal species	all year
ITA18HMD02	Chamelea gallina	SVE	Acantocardia tuberculata	all year

* Filled data are here given as example.

Table 3. (Effort)*.

OU code	Effort measure	Effort unit	CPUE
ITA18OTB01	trawling hour	1 hour	
ITA18GND01	net length	1000 m	
ITA18LLS02	hooks number	1000 hooks	

Table 4. (Economic structure)*.

OU code	Total GT	Total HP	Total Employment	Salary Share %	Yearly landing weight	Yearly landing value	Vessel value	Fishing days/year	Fishing hours/day	Cost of fishing day	Yearly fixed costs
ITA18OTB01											
ITA18GND01											
ITA18LLS02											

* Filled data are here given as example.

Definition[*] of economic parameters

The following definitions refer to the economic data set to be evaluated for analysis of the groups of vessels belonging to the given Operational Units in Adriatic Sea. These data are collected by year. To compile the standard Operational Unit table, data are generally reported in total for the given group of vessels. The average value can be considered instead for vessel value (8) and fishing hours per day (10).
For some parameters an estimation method is suggested.

1. **Vessel N.** = Number of fishing vessels belonging to the given Operational Unit.

2. **Gross Tonnage** = Total gross tonnage of fishing vessels belonging to the given Operational Unit.

3. **Horse Power** = Total engine power of fishing vessels belonging to the given Operational Unit.

4. **Employment** = Total number of people employed on fishing vessels belonging to the given Operational Unit. The number of crew members can be estimated on a full time equivalent (FTE) basis.

5. **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.

6. **Landing weight** = Total landings in weight.

7. **Landing value** = The volume of landed fish valued against actual market prices. It equals to quantities landed (6) multiplied by the landing average price.

8. **Vessel value** = 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.

9. **Fishing days/year** = Number of fishing days per year.

10. **Fishing hours/day** = Number of fishing hours per day.

11. **Cost of fishing/day** = These include daily expenses incurred in fishing activity, such as fuel, lubricants, etc. They are variable costs which depend on the time spent to fish.

[*] These definitions could be subject to variations following the results of the next workshop on "Economic Data Collection under the EU Regulation 1639/2001" which will be held in Paris on 10-14 May 2004.

12. **Yearly Fixed costs =** 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.

Adriatic Operational Units: preliminary considerations on data collection and compilation

The main objectives of the Operational Unit tables prepared at the AdriaMed Working Group on Operational Units in the Adriatic Sea were to obtain a first regional picture of Adriatic Sea Operational Units and to test the data availability.

Each country involved in the AdriaMed Project produced the above four tables according to the available data (only Slovenia data are not yet included). At present, Croatian data are available for demersal trawl fishery while pelagic and coastal fisheries data are being compiled. This note is a preliminary contribution to the definition of the Operational Units in the GSA 17 and 18.

The first table is to define the Operational Units (OUs). The identification is based on different vessel features. In detail, the OU have been identified on geographical and structural aspects. The first fleet stratification is based on the two geographical sub-areas 17 and 18 and on the national borders. So, the GSA 17 is divided into Italy, Slovenia and Croatia; while the GSA 18 is divided into Italy, Serbia-Montenegro and Albania. Another geographical level which determines the identification of the OUs is the main fishing zone where the OUs vessels exercise their activity. This aspect is not yet reported in a standardized way. In some cases it relates to the geographical position (North, Central or South), while in other cases it relates to the distance from the coast. In the last case, it is supposed that both the distance from the coast and so the OUs identification can be related to the vessel length. The vessel LOA is very useful in defining OUs for biological (fishing zones) and economic reasons. Usually, different length classes are related to a different economic structure. The AdriaMed WG for practical reasons defined three class: vessel LOA <12, 12-18, >18. The most important structural aspect to define vessels and OUs is the fishing gear. The gear types showed in the table can have a different level of aggregation for the different countries. For example, some Albanian OUs are composed only of one vessel, while, for instance, Italian OU related to minor gear in Emilia Romagna and Marche is composed of more about one thousand vessels.

Based on the above vessels features, the OUs have been defined by using an alphanumeric code composed as follows: first three characters indicate the United Nations country abbreviation (Albania: ALB; Croatia: HRV; Italy: ITA; Serbia and Montenegro: SCG; Slovenia: SLV). Followed by two-digit number to mean the GSA number (17 or 18). Then the fishing gear is given abbreviated (two or three characters). Last two digit number indicate the specific Operational Unit number to be assigned by those compiling the table. In the same table also the number of vessel, the base ports and the cross-reference to the SAC fleet segments for each OU are reported.

In the second table, the target species, the main associated exploited resources and the fishing period are reported for each OU defined in the previous table. This information can be used to

identify not only the species cached by the vessels of each OU, but also to highlight, for each species, how many OUs and which of them participate in a specific fishery. Moreover, the information about target and by-catch species and the fishing period are very useful to define some specific management measures. It reflects the meaning of OU concept as effective fishery management tool.

The third table shows the effort measure selected for each Operational Unit. It depends on the fishing gear used by the vessels considered in the specific OU. It is related to directed effort exercised on the resources and can be useful in management measures based on the effort restrictions when the resources are overexploited. Moreover, the definition of the effort unit allows to estimate catches per unit of effort (CPUE). Some differences can be highlighted by comparing data from different countries in the definition of the methods to measure effort. This table is not complete yet. CPUE figures are available only for Albanian fleet segments, which represent groups of OUs.

The last table, related to the socio-economic structure, is composed of a minimum data set of microeconomic data. These data are useful to measure the economic performance for each OU and their social relevance in terms of total employment. The structural parameters, such as total GT, total HP and total employment are available for all the countries, except for Croatia. The collection of the other economic data is very difficult for the countries, which have not an economic monitoring system. Data on landings in weight and value are available for Italy and Albania. Albanian data are aggregated by group of OUs. They do not take into account the fleet segmentation based on the vessel LOA classes. All the data on vessel value are available for Italy and Albania. The parameters related to costs, such as cost of fishing per day, yearly fixed costs and salary share, are the most difficult to collect. They are available only for the Italian fleet. Finally, parameters related to fishing activity, such as fishing days per year and fishing hours per day are completely available for Italy and Serbia-Montenegro, while show many missing values for Albanian OUs and are not available for Croatian OUs. As soon as data collection will be completed and data quality will be verify, further analysis on biological and socio-economic aspects will be performed.

Adriatic Operational Units: preliminary data collection and compilation (as of May 2004)

Country	Table 1: Fleet and area	Table 2: Main Resource components	Table 3: Effort	Table 4: Economic structure
Italy GSA 17	■	■	□	■
Slovenia GSA 17	◘	◘	□	□
Croatia GSA 17	■	■	□	□
Serbia-Montenegro GSA 18	■	■	◘	◘
Albania GSA 18	■	■	◘	◘
Italy GSA 18	■	■	◘	■

Legend: ■ = available; ◘ = partially available; □ = not available

ANNEX 6. ADRIAMED SOCIOLOGICAL SURVEY OF ALBANIAN MARINE FISHERIES: Preliminary Results[17*]

1. Introduction

For fisheries management to be sustainable it should take into consideration the social dimension of fisheries communities, management success also depends on efficient communication among the different stakeholders; a knowledge of the fishing community is now considered a key aspect of the fisheries management process[18]. The relevance of social issues is indicated in all 12 articles of the Code of Conduct of Responsible Fisheries; in a Sustainable Development Reference System[19] the social component is indicated as one of the main dimensions to be taken into consideration in the framework of the fishery system.

The knowledge of all the social aspects of fisheries is important as it provides a better understanding of the fishery system. In the past, the social aspects of the fishery sector have often been neglected, the complexity and interdependence of the social, economic and political profiles proved somewhat difficult to grasp. More recently an awareness of the importance of this aspect of the fishery sector has grown in national and international contexts, thus determining a need for a deeper knowledge and further investigation that has promoted the development of research in this field.

The success of fisheries policies at national and local level depends on the motivation and priorities of the resources users, a better understanding of which could help in the fisheries management process. Sociological analysis in fisheries represents a valid tool in order to understand the context of the fishing communities; in particular which factors could influence the management of fishing activities and also to understanding some of the circumstances in which the fishery system[20] is established, from the working conditions to the fishing strategies.

In the mandate of the SAC[21] (Scientific Advisory Committee of the GFCM) it is highlighted that the Committee must provide scientific, social and economic information, data or advise relating to the work of the Commission. The recommendation of the SAC to increase studies on the social component of fisheries, as

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[17] This paper was prepared by M. Forleo. It is based on the AdriaMed Technical Document *Social Survey of Albanian Marine Fisheries* by Forleo M., Flloko A., Kristo R., Mannini P., Massa F. GCP/RER/010/ITA/TD-XX (in prep.).

[*] The opinions, interpretations, conclusions, or recommendations expressed in this document do not necessarily reflect the view or position of FAO or of the Countries and Institutions participating in the AdriaMed Project.

[18] Kaplan I.M, Mc Cay B. (2004) Cooperative research, co-management and the social dimension of fisheries science and management. Marine Policy 28: 257-258.

[19] FAO Fishery Resources Division. Indicators for sustainable development of marine capture fisheries. *FAO Technical Guidelines for Responsible Fisheries*. No. 8. Rome, FAO 1999. 68p.

[20] Townsley, P. (1998) Social issues in fisheries. *FAO Fisheries Technical Paper*. No 375. Rome, FAO. 1998. 93p.

[21] General Fisheries Council for the Mediterranean. Report of the twenty-second session. Rome, Italy, 13-16 October 1997. GCFM Report. No 22. Rome, FAO. 1997 52p.

well as the identification of some indicators for the studies on Operational Unit, have been adopted by the GFCM.

The FAO Regional Project AdriaMed "Scientific Cooperation to Support Responsible Fisheries in the Adriatic Sea", in order to gain a detailed insight into the social context of the Albanian fisheries, implemented the research programme "AdriaMed Social Survey of Albanian Marine Fisheries". This initiative was introduced during the second SCESS Working Group on Indicators and during the 6th SCESS Sub-Committee meeting and this initiative was considered a positive contribution in the context of sociological indicators of Mediterranean fisheries.

During the third AdriaMed meeting on socio-economic aspects of the Adriatic Sea Fishery Sector[22] it was agreed to define content and methodological aspects of the socio-economic data collection for the study to implement in Albania. The social survey is executed in cooperation by the Albanian Fisheries Directorate and AdriaMed.

This paper introduce the preliminary considerations resulting from the AdriaMed social survey of Albanian marine fisheries which was carried out in 2003. The objectives, the methodological approach and the structure of the survey are presented. Some considerations on the methodologies applied and results are also given.

2. Objectives

The aim of the study is to gain a detailed insight into the social context of the national fisheries. This is particularly relevant as Albanian fisheries have changed remarkably since the 1990s and this makes it necessary to know the current characteristics of the social component of the fishery sector. This will allow the identification of some of the crucial aspects, the knowledge of which will contribute to the amelioration and proper development of the national fishery sector.

Furthermore, the social survey is intended also to provide the fisheries managers and Administration with an analytical tool to facilitate: the identification of the target groups and the livelihood of the fishers; the identification of the motivation of the resources users; the evaluation of the working conditions and fishing strategy; the understanding of the characteristics and the relations within and between the maritime districts; the business practices and strategy.

The results of the survey could also help in identifying and select a set of indicators useful not only for the Albanian fisheries but also for other fishing areas present in the Mediterranean.

[22] See Forleo M. (2001), A survey on socio-economic profiles of sea fishing area: the case study of Termoli, AdriaMed Meeting on Socio-economic Aspects of the Adriatic Sea Fishery Sector, Campobasso 28-29 May 2001, FAO AdriaMed Technical Documents, No. 5 (GCP/RER/010/ITA/TD-05).

3. Activities and methodology

The main activities implemented for the social survey could be summarised as follows:
a) the design of the work plan (objectives, actions, time);
b) the preparation of the questionnaire structure;
c) the survey sampling design and implementation;
d) the organization of the field recorder team;
e) the creation and refine of an *ad hoc* Data Base;
f) the plan of data processing:
    1.for data base users
    2.for analytical purposes
g) data processing;
h) interpretation of basic results;
i) further analysis (advanced processing, indicators, …);
j) objectives, methodology, results validation for further implementation.

At the present stage, point a) to e) are fulfilled, points g) to h) are in progress and the last two points are objects of preliminary considerations.

Following are some details concerning the relevant activities under points a) to h) and few insight on point i).

a) The work plan (objectives, actions, time)

As already mentioned, objectives and research actions were the results of formal[23] and informal meeting among AdriaMed team and country experts.

The wideness of research objectives and related activities has suggested to make a work plan of actions in which lay down activities to put in force, the work stages and team, and the term of each stage. As regards to the time scheduled, some delays were in the collecting of data, as usual with direct survey mostly in the fishery sector, and in the actual stage of data processing and interpretation. This is because of the amount of information collected, the qualitative nature of most of them (that requires preliminary stardardisation before processing), the complex design of processing, even at the basic stage of descriptive statistics, further processing activities feeding back from interpretation needs.

Next few months will be entirely devoted to the completion of the interpretative analysis together with advanced statistical applications.

[23] See Forleo M. (2001), A survey on socio-economic profiles of sea fishing area: the case study of Termoli, AdriaMed Meeting on Socio-economic Aspects of the Adriatic Sea Fishery Sector, Campobasso 28-29 May 2001, FAO AdriaMed Technical Documents, No. 5 (GCP/RER/010/ITA/TD-05).

b) The questionnaire structure

In the preparation of the questionnaire to be utilised in the social survey, the relevant socio-economic aspects were identified in three levels. The *individual,* which represents the basic unit of the investigation. The following social aggregation level being the *crew* and the third level, identified as the *maritime district*.

At each level, the questionnaire was designed to detect both the characteristics of the single unit and the interaction of the single in the framework of the sector. For explain further: the intention was to understand the socio-economic characteristics of each individual fish worker as well as the way in which this worker interacts with the other local fish workers. In the same way the analysis proceeded to the levels of crew and maritime district.

Once the areas of study were defined, the successive phase concerned the specific socio-economic data to be collected. The identification of this information was made possible by the initial compilation of all the possible socio-economic aspects that concern the various objects of this analysis.

Following this the information considered relevant was selected, thus eliminating the less significant data for the aims of the study, or alternatively the data already available from other sources.

This selection process was also determined by the need to make the activity efficient, given that the interviews would be complex and in order to reduce the error margin.

Boxes 1, 2 and 3 show the main information requested at all three levels.

1. Crew: working conditions and fishing strategy

2.1 *Working condition*

- N° of relatives in the crew
- Kind of payment (salary, % of sales, …)
- Time of payment (week/month; beginning/end of period)
- Shared cost
- Risks at sea
- Occupational diseases, insurance and pension
- Employment contract
- Foreign people on board

2.2 *Fishing strategy*

- Decision level (community, vessel owner, crew members, ...)
- Objectives (profit, household condition, cost efficiency, …)
- Household situation

2. Fishermen: personal data

- Age
- Educational level (highest scholar degree; correspondence between educational level and work activity)
- Task, position in the crew
- Previous job/Future job
- Part time job (sector of activity, time spent, reason, % of income…)
- Father's job
- Household members by numbers, age, gender, job
- Minimum earnings to family livelihood (share of savings on salary)

To fulfil all the objectives of the research, because of the lack of existing data, it was decided to carry out direct

surveys on the different aspects, that is:

- a survey on *Personal data* (called Task 3_1)
- a survey on *Crew working condition and fishing strategy* (called Task 3_2)
- a survey on *Maritime district characteristic and relationship* (called Task 3_3).

3. Maritime district: characteristic and relationships
3.1 ***Strength and weakness factors***
• Type (owner association, trust union, co-operatives, other local institution)
3.2 ***Membership***
• Type (owner association, trust union, co-operatives, other local institution)
• Purposes, activities, frequency, degree of satisfaction, …
• Decision making (mechanism, power, enforcement, etc.)
• Local community identity and cohesion (places, occasion, institutions)
• Non fishery local institution (frequency and kind of relation, …)
3.3 ***Market and sales***
• Channels
• Market information
• Trade relationship (formal/informal, customary relation, …)
3.4 ***Inter-maritime district relationship***
• Kind of relationship (co-operation, competition)
• Factors in relation (Labour emigration (from, to), Information, Common association, Shipyard, repair, Services, Trade market)

For the questionnaire to be well constructed and to allow a high level of answers we tested it with local fishing operators and experts, modifying the questionnaire structure according to necessity. It is important to stress that the people interviewed are fishing operators, especially ship owners and crew members, not others, such as consultants or accountants.

c) The survey sampling design

The field implementation of the survey is being carried out in commercial fishing ports of Lehze; Durres; Saranda and Vlore; according to a random fleet segment stratified sampling design.

The selection of people interviewed (both ship owners and crew members) for each Albanian fishing port was intended to guarantee that all the strata (from small – less than 12 m LOA – to larger scale fisheries) are covered. This is because socio-economic analysis requires the differentiation of strata and the separate study of at least small from medium-large fishery, both of them representing the targets of our survey.

All the interviews observed two conditions: the numbers of fishers to interview and a minimum number of fishing vessels representing the fishers interviewed. Furthermore for each fishing port a number of interviews were also made on the basis of the different fishing gear (surrounding nets, seine nets, trawls, gillnets, hook and lines) of each fleet segment present in the strata (i.e. less and above 12 m LOA). The sample size consisted in a total of 183 fishers were interviewed (561 questionnaires) from 67 fishing vessels[24] (30% coverage).

[24] The fishing vessels were selected from the Albanian Fishing Fleet Registry established in the framework of the AdriaMed support to the Albanian Fishery Statistical System.

d) The field recorder team and the field interview

Following brief training, the field recorder team was properly acquainted with the data collection and compilation scheme adopted and with the questionnaires to be filled: the questionnaire on personal data; the questionnaire on crew working conditions and fishing strategy; the questionnaire on maritime district characteristics and relations.

For the success of the survey (in terms of a high rate of answers and good quality of information) experiences suggest to take particular care in the choice of interviewers and their experience with fisheries. Interviewers were chosen among people that belong to the local fishing sector or that are well known to the local community, so as to be both well informed on the questions asked and to be accepted/known by the interviewees. For the same reason before starting the survey, the whole project was introduced to the fishery communities by a key local expert to clarify the aim of the research, (of exclusively scientific nature) and the commitments, required by the interviewers. Furthermore the questionnaires had been previously tested during a pilot exercise. The overall supervision of the survey execution was in full coordination with the Albania Fishery Directorate.

e) Data Base

Data collected were organised in a database[25] structured to insert, modify, browse information and to extract some basic statistical analysis and advanced statistical management of the archive according to the questionnaire structures. The data collected are analysed for each phase on the basis of the more common descriptive statistics and on the correlation links among variables. At the end of the three-step data collection process, the results of each step are interrelated to produce a complex socio-economic profile of each maritime district and for the fishery sector in Albania.

f)-h) Data processing and interpretation

Before processing data, it was necessary to make some preliminary categorisation and standardisation of elementary variables, mostly because of the qualitative nature of many information collected.

Data processing was planned to fulfil for a double use:

1. for data base users
2. for analytical purposes

As far as data base users it was thought useful to realise some elementary statistics (e.g. frequency tables, graphs) to give a general insights of the socio-economic situation

[25] The software application "Questionnaire on AdriaMed survey on socio-economic data in Albania". (Software used: Microsoft Access©) is developed by AdriaMed. The realisation of this application was carried out by Vincenzo Zeuli (FAO AdriaMed) and Marco Spinelli (FAO FIRM).

of Albanian fishery sector. These results are at disposal in the structure of the data base. Together with the pre-arranged tables and graphs, users can extract further results from each question of the questionnaire on the base of frequency tables.

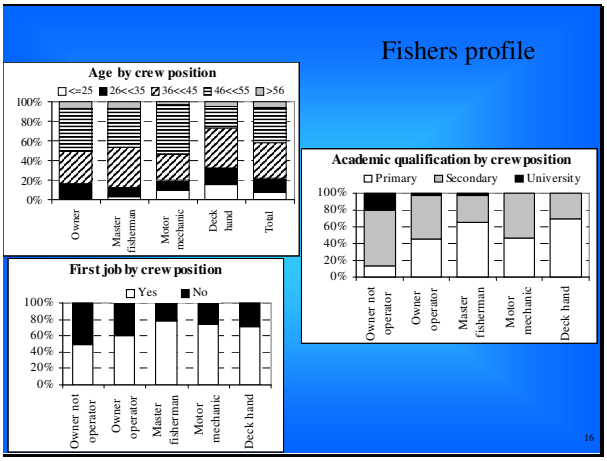
As far as the analytical purposes, the data processing consists of two steps: firstly, the application of common descriptive statistics on the whole sample; secondly, data will be analysed and interpreted with reference to each segments obtained sharing the sample according to three variables: the vessel dimension (<12 mt; >12 mt); the four Albanian ports; the fisher position (owner and crew). In the following paragraph there are some examples of results coming from this step of the project.

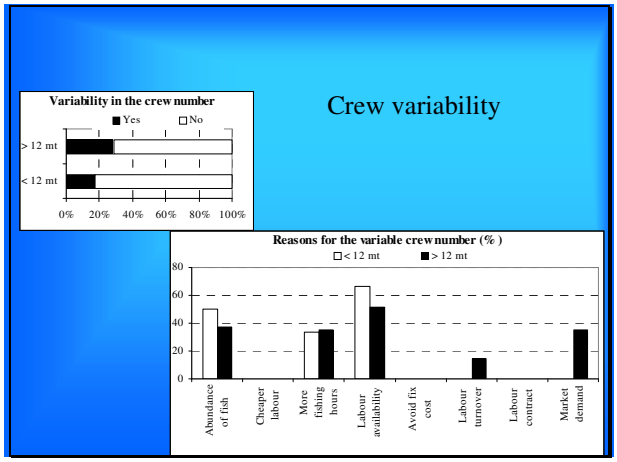
4. Preliminary considerations

As this is a preliminary explorative study, the validity of the methodologies adopted before any results are available is of particular importance. The formulation of the survey and the methodology adopted proved effective in terms of the information obtained and efficient with respect to the costs of the data collection.

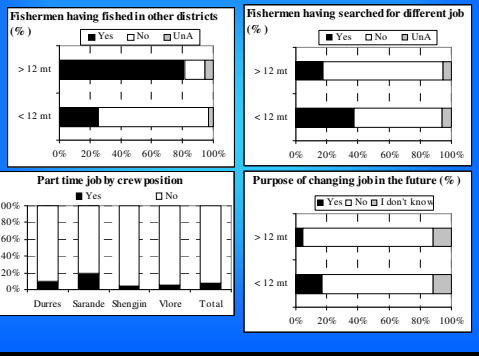
As well as obtaining demographic information that was not otherwise available, the study allowed, among other things, the analysis of the motivation of the fish workers and of the intergenerational dynamics, and the interrelation between the various roles within the crew structure, the perception of strengths and weaknesses in the sector, within each maritime district and between the districts.

There follow some graphs which summarise some of the results that emerged from the study of the three areas (individual, crew and maritime district), it should be stressed that these graphs are only an example.





Working in the fishery sector: motivations, diversification, perspectives



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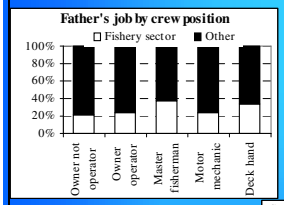
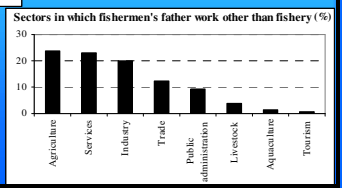
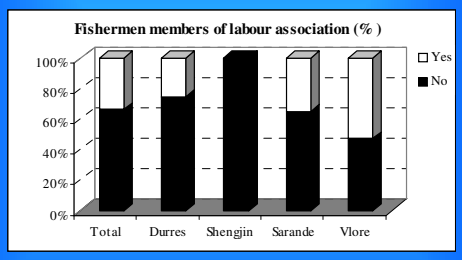
Intergenerational linkage





Membership



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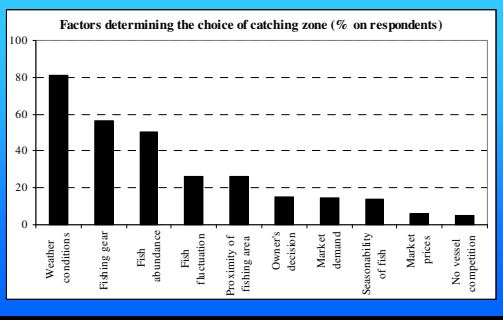
Fishing strategy



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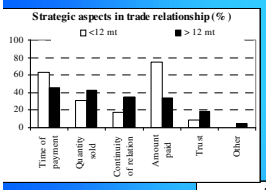
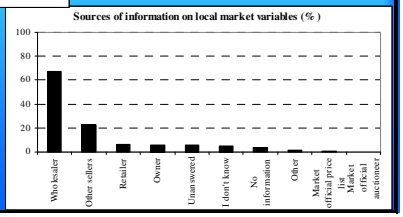
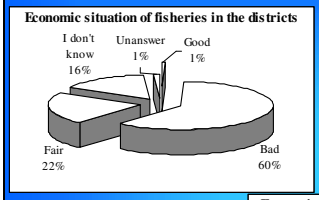
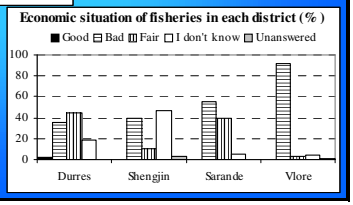
Markets

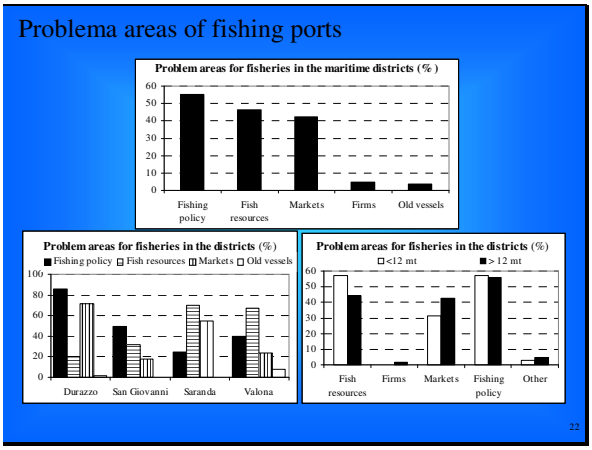


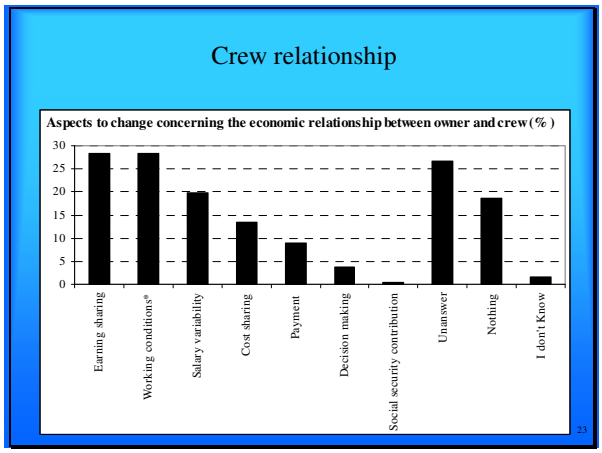


Perceptions of economic perspectives of fishery









5. Forthcoming work

Further developments of this research will follow three lines:

- an advanced statistical processing of socio-economic data on Albanian maritime fishery sector;
- from survey results to indicators;
- a critical review of the project activities to validate and improve objectives, methodology, results so to define a general framework for further implementation.

As far as indicators, as a consequence of this study, a further, direct aim of the research will be an attempt to identify a set of indicators that would be useful for the description and interpretation of the socio-economic context and also as a tool to support fisheries management.

Indicators are an essential tool to help make clear assessments of and comparisons between fisheries, to evaluate the contribution of fisheries towards the general aim of sustainable development, to support the fisheries management process. In this general framework, social indicators have acquired recently a great interest both because of the recognised importance of social sphere as one of the dimensions of sustainable development concept and policies and because of the delay in developing social aspects of fisheries in theory and practise.

At this stage of our project activities we can stress some relevant points:

- *concept and definition*: what is social? Not only labour market.
- *linkages* to other dimensions of SD: how social sphere is linked to others, most of all the economic one? Which are the more relevant linkages with environmental sphere?
- data sources: official data exists and can contribute to alleviate the problem/cost of direct collection?
- *tools*: how measure relevant social aspects which are mainly of qualitative nature? Are social (properly economic) indicators currently proposed sufficient to give some insights of social reality of fisheries?

- *interpretation*: how to define reference points? Along time, following the evolution of social indicators of fishery: problems of frequency and costs in collecting data. Across sector, comparing fishery indicators with other sectorial indicators: agricultural?
- *management*: how and which sense have social indicators in the process of fishery management, not from a theoretical point of view but from an operational perspective?
- *scales*: port, region, nation. For social data are relevant the three scales. For some information it is useful to consider all the scales, for other information are more relevant local scales.
- *time*: social conditions are subject to constant changes but generally not so frequent as for the other dimensions of fishery (e.g. economic dimension). For some information could be useful to have a frequency related to the fishing season (e.g. crew variability, part time), other can be collected on a yearly base or more (e. g. demographic data).

Future activities will consider all this points trying to formulate some proposal on a general framework for social analysis and indicators integrated with economic and environment dimension of fishery.

ANNEX 7. ADRIAMED STUDY ON ADRIATIC SEA FISH MARKETS

Aspects of Fish Markets in the Adriatic Sea[26,27]

Introduction

The market organisation contributes to guarantee sustainable fisheries and to secure the future of the fisheries sector.

Price stability, an optimal balance between supply and demand have been the key goals of the fishery management for the future in the European Union including the whole Mediterranean area. To achieve these aims, the main instruments have been: establishing common market network and marketing standards; setting up producer organisations; quality improvement plans; constructing a trade regime with non-member countries.

The analysis is made difficult by the scarce data available, as well as by the sometimes extremely remarkable differences between data themselves, depending on the statistical sources used.

The efficiency of the sale market and in general of the fish trade chain help to guarantee an optimal price system of sector. The first step it is to build wholesale markets were does not exist. The efficiency of distribution is *conditio sine qua non* to implement optimal quality plan.

Often it would be necessary to improve and renew organisation equipment and services of the markets, thus opening the markets up to the responsible and competent participation of the fishers and traders who unite in cooperatives or fisheries associations, however this has only begun to take place more recently.

The producer organisations play a central role to realize this objective. Traditionally, one of the key roles for producer organisations has been the distribution of market support funds to their members. But increasingly they are being called upon to play a far more crucial role in regulating supplies from their member producers and adjusting these to market requirements. One of the objectives is to avoid catching fish for which there is little or no demand by encouraging better planning of fishing activity. To conserve fish stocks and remain competitive, producers must anticipate market needs not only in terms of quantity, but also of quality and regularity of supply.

Hence the importance of the study of market issues in the analysis of the fishery sector have been investigated on Adriamed Meeting on Aspects of Fish Markets in the Adriatic Sea organised by Fao - Adriamed project in Ancona, Italy june in 2002. This working paper represent the review of the general issues of the meeting which final version is edited in a technical document (TD n.10 2003). A study should contribute on the one hand to better highlight the causes of the above mentioned difficulties and, on the other hand, to identify some possible solutions to the sector's problems, including the quality way.

In order to study the different markets aspect other factors need to be considered: the ill-functioning of the trade and distribution system, the great imbalance of the trade balance, and the trend in sales prices are all factors that even worsen the already difficult conditions, already faced by the sector in the last few years.

The Mediterranean fisheries

Mediterranean fisheries are generally categorized as multi-gear, multi-species activities.

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[26] This paper was prepared by **Adele Finco** (Università Politecnica delle Marche, Ancona Italy).
It is based on the AdriaMed Technical Document *Aspects of Fish Markets in the Adriatic Seas* by AdriaMed (2003), GCP/RER/010/ITA/TD-10. AdriaMed Technical Documents, 10: 152 pp.

[27] The opinions, interpretations, conclusions, or recommendations expressed in this document do not necessarily reflect the view or position of FAO or of the Countries and Institutions participating in the AdriaMed Project.

The fishery is carried out most largely by Mediterranean coastal nations, and to a much less extent by other countries (e.g. Japan).

Table 1 shows that the percentage of catch is statistically most important to Mediterranean area over EU, but the percentage of EU is in any case 42%.

Tab. 1 Landing catches in the Mediterranean Sea 2000 (tons, %)

	European-Mediterranean Sea	Of which Adriatic Sea	Mediterranean Countries external UE	Countries Extra-Med	Med Totale
species	**%**	**%**	**%**	**%**	**tons**
pelagic	53,6%	13,3%	46,2%	0,2%	514.141
demersal	48,8%	7,3%	51,2%	0,0%	220.012
cuttle fish	74,9%	13,8%	25,1%	0,0%	53.455
crustaceans	62,1%	12,3%	37,9%	0,0%	50.043
total	54,2%	11,7%	45,7%	**0,1%**	**837.651**

Source: our processing data Fao, 2000 (Finco, Mannini, Massa 2003)

Tab. 2 Landing catch in the Mediterranean Sea 2000 (tons, %)

species	**1970**	**1981**	**1991**	**1994**	**2000**	**% sul 2000**	**Var. % 2000/70**	**Var. % 2000/94**
pelagic	335.900	506.680	473.550	558.122	514.141	61%	53,1%	-7,9%
demersal	141.003	182.875	257.003	311.478	220.012	26%	56,0%	-29,4%
cuttle fish	44.587	47.100	67.831	68.650	53.455	6%	19,9%	-22,1%
crustaceans	20.514	31.763	51.558	44.678	50.043	6%	143,9%	12,0%
total	542.004	768.418	849.942	982.928	837.651	100%	54,5%	-14,8%

Source: our processing data Fao, 2000 (Finco, Mannini, Massa 2003)

The Adriatic fisheries

The role played by Adriatic fisheries on Mediterranean area is undoubtedly predominant, as most of the national fish products are obtained from the Adriatic and Sicilian coasts.

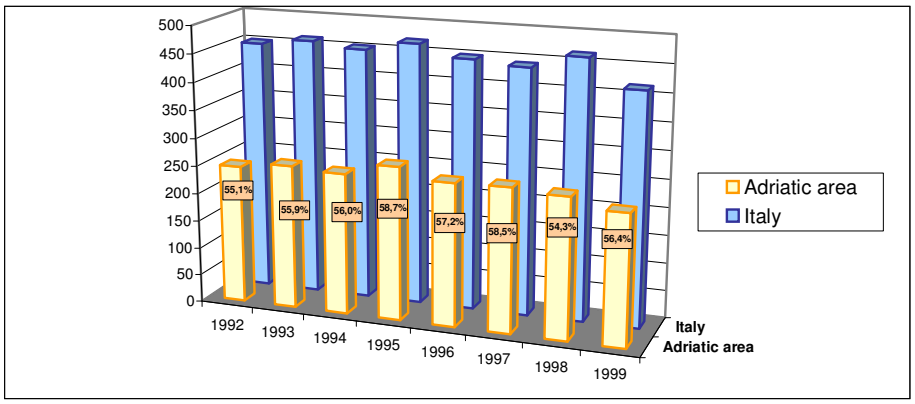

Figure 1 Impact of Adriatic fisheries on total national fisheries (volume).

Source: IREPA data.

In 1999 Adriatic production made up for 56.4% of the sector's physical production and for 44.6% of the total of its value.

This incidence was higher with particular reference to determinate species[28], as is the case of molluscs, which in the Adriatic alone made up for 72% of the total volume and 65% of the total value, and of clams, representing as much as 99% of both the national total volume and value. Within the Adriatic basin production was mainly centered along the coasts of the Middle (40%) and Upper Adriatic (34%); this applied in particular to the production of clams, representing almost the entire national production in this area.

As clearly emerges from the following figure (Figure 3 and 4), the sector's production mainly refers to species included in the "other fish" category in 1999 accounted for almost 45% of the total physical production in Italy and 36% in Adriatic.

In terms of value the same category have got respectively in Italy and western Adriatic 54,6% and 48% of total value.

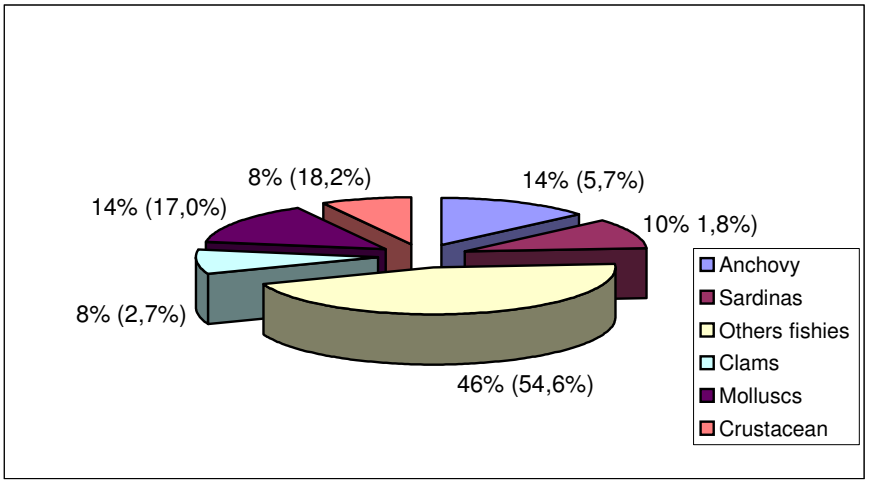

Figure 2. Italy. Productive mix in terms of quantity and % value incidence.
Year 1999.
Source: Elaboration of ISMEA and IREPA data.
*(the % including inside parenthesis point to value)

[28] Species' classification in the various categories, carried out by ISMEA and IREPA, is as follows: anchovies, sardines, other fish, clams, molluscs (clams excluded), crustaceans.

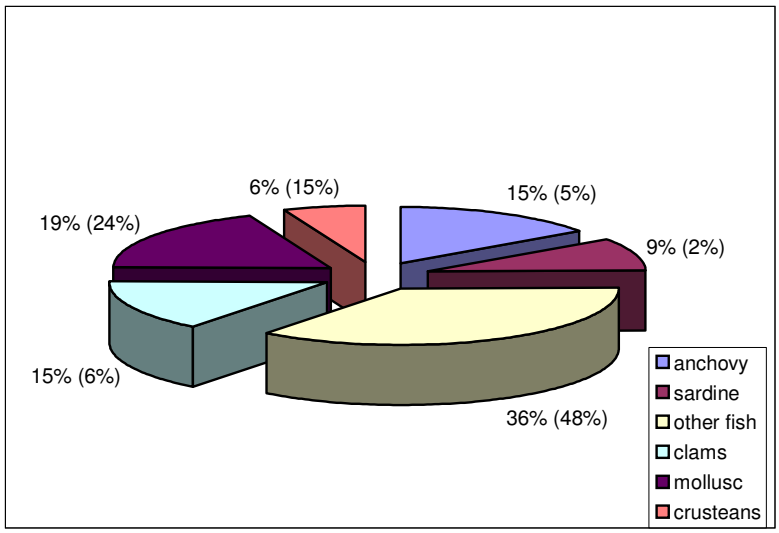

Figure 3 Adriatic western. Productive mix in terms of quantity and % value incidence.
Year 1999.
Source: Elaboration of ISMEA and IREPA data.
*(the % including inside parenthesis it point to value)

This is mainly due to the composition of the category, especially made up of demersal fish species of higher value. In the same period, 1992-99, a reduction in the catch of al categories was registered. The only exceptions were sardines (+9.1%) and anchovies, with an increase of 62%. In 1999 these two categories made up for 10-11% and 14% of physical production and just 2% and 6% of the overall production value respectively.

Molluscs and crustaceans show the largest incidence on the productive mix. The two categories of species together make up for about 35% of the value of Italian production thanks to a strongly supported demand and consequently high sale prices.

Table 3. Italy. Prices for species (euros/kilo) 1998-2001

Species	**1998**	**1999**	**2000**	**2001**	**Var.% 2001/00**
Anchovy	1,67	1,53	1,43	1,48	3,1
Sardine	0,57	0,64	0,63	0,74	17,6
Other fish	3,97	1,44	4,61	5.31	15,2
Molluscs	4,05	4,33	4,58	2,92	-1,5
Crustaceans	8,28	8,23	8,61	4,51	8,5

Source: Ismea

Table 3 shows the different species' prices in the period examined. Substantial deviations and the marked variability of prices do not allow the stabilization of company profits and the reduction of the risks associated with the fishing activity, which yet should be primary objectives of the policies for the sector.

Prices are unstable not only over time, but also and especially in their spatial dimension. Along the Italian coast of the Adriatic in 1999 alone the different species were quoted at prices with a variation

that was sometimes well over 100%, depending on the different local realities. In this respect, the following paragraph will show the difference between the average prices quoted in the different Adriatic fish markets.

The strong price variability seems to be linked to the organisational and functioning methods of the Italian trade and distribution system.

In this way national fish products pass along a whole series of competing commercial channels, which together with the fragmentation of landing ports and the low bargaining power of producers towards wholesalers and retailers, contribute to the creation of an extremely fragmented and variable price system for fish products.

Imported fish products are traded along other commercial channels, established by a restricted group of importers who quote their prices within an oligopolistic system.

Italian and Adriatic fish trade

Concerning total import, tuna fish is the most relevant (24%). *This category is* followed by imports in the category "other fish" (20%), mainly composed by valued demersal species, which are particularly demanded on the Italian market. Imports of prawns also play an important role; prawns generally come from developing countries, where labour costs are low and prawns as processed products are offered at a much higher price in comparison to Italian or European products.

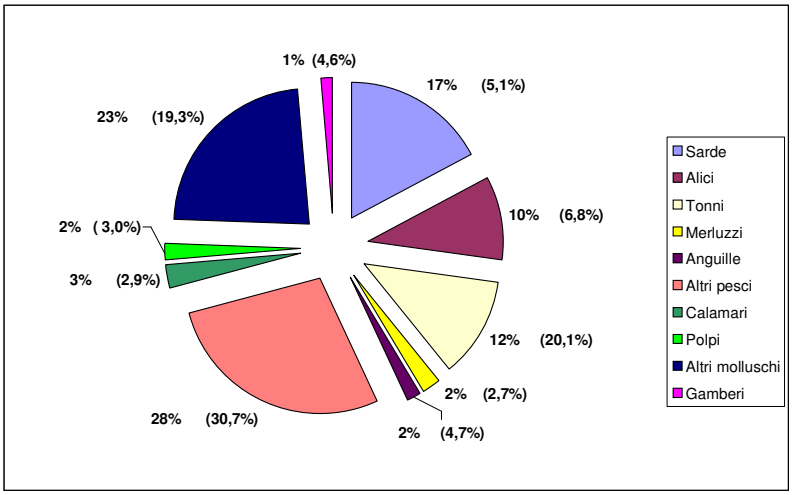

Figure 4. Italy, Imports per species in quantity and percentage values.
Year 1998.
Source: ISMEA database.

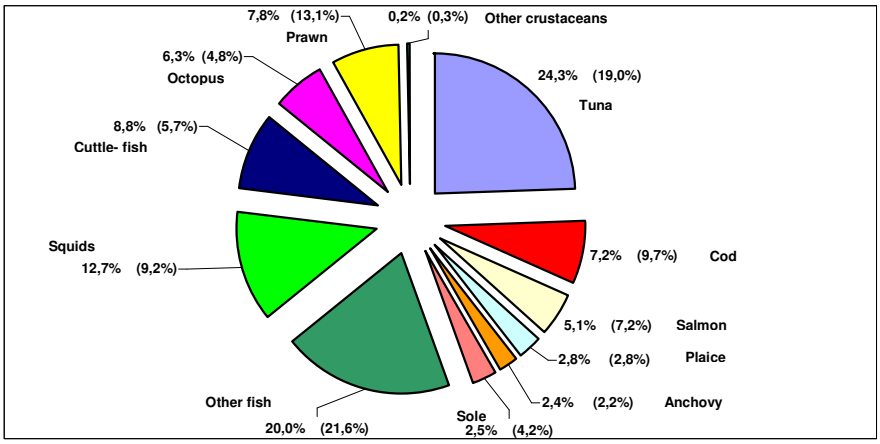

Figure 5. Italy, Exports per species in quantity and percentage values.
Year 1998.
Source: ISMEA database.

On the other hand, Italian export is made up for 27% by export of "anchovies and sardines" – small pelagics –, i.e. species that are sold at very low prices on the market in comparison to the valued demersal species.

Export' composition, with reference to the various exported species, is very important as for the prices that can be quoted for these species (Figure 6). It can be thus observed that the species "sardines and anchovies", which made up almost 30% of total export volume in 1998, were just slightly over 11% of their value.

Conversely, the category "other fish" accounted for 28% of the exported volume and for over 30% of its value.

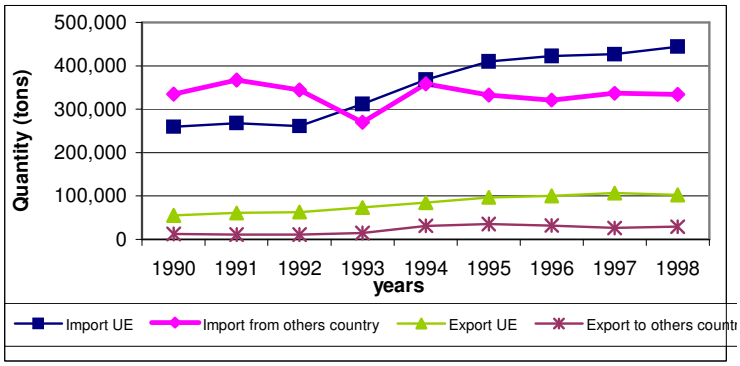

Figure 6. Italy, Imports and exports in terms of volume
Source: ISMEA.

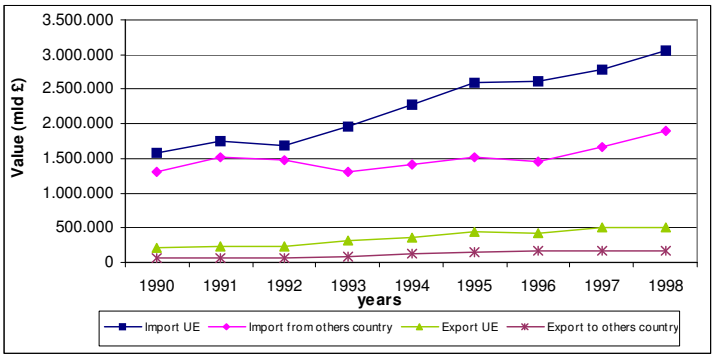

Figure 7. Italy, Imports and exports in terms of value
Source: ISMEA.

The trade trend with these countries has been extremely swinging in the last decade, as far as imports are concerned. Conversely, exports have registered extraordinary evolutions, especially with Albania and Slovenia, whose trends are clearly shown in the charts and its corresponding table. The table shows import and export trends from 1993 to 2000 for the four Adriatic countries, whereas the charts refer to the trend for each single country.

The sharp decline from 1993 till now in Italy's commercial relations with Croatia is particularly evident.

Another negative quantitative variation was registered in 2000 because of the war, thus negatively affecting the entire Italian imports with a total reduction of 34.5% in terms of volume. As for value, a decline was registered between 1998 and 1999 (-7.6%), following a substantial drop in average unit prices that also affected imports from EU-countries, even if to a lesser extent. Conversely, the total import value registered in 2000 has grown. The drop in supply, owing to extraordinary events that are external to the market, namely brought about a sudden increase in average unit prices.

In the year 2000 Slovenia, Albania and Croatia represented for *the Italian total fish trade*:

- 1% of total imports in terms of quantity
- 0.57% of total imports in terms of value
- 5.48% of total exports in quantitative terms
- 4.62% of total exports in value.
-

The overall value of Italian export towards the markets on the Eastern Adriatic shore exceeded the value of the products imported from Adriatic countries in the same year

Among Adriatic countries, Croatia is Italy's main trading partner. As a matter of fact, in the year 2000 almost 80% of import from Adriatic countries came from Croatia (Table 4). Croatia becomes considerably less important when it comes, however, to Italian exports. As a matter of fact, among Adriatic countries Slovenia plays a predominant role, being an outlet market for over 53% of the value of Italian exports (see Table 5).

Table 4 Italian Import from Eastern Adriatic (2000)

Countries	**Tons**	**%**	**000 euro**	**%**
Croazia	6.404	79,35	10.312	66,03
Albania	1.454	18,02	4.658	29,83
Slovenia	211	2,63	646	4,14
Totale	8.071	100	15.617	100

Source: Finco, Jukic, Petrocchi, 2002

Table 5 Italian Export to Eastern Adriatic (2000)

Countries	**Tons**	**%**	**000 euro**	**%**
Croazia	3.607	47,38	6776	36,49
Albania	2.138	28,07	1867	10,07
Slovenia	1.870	24,55	9923	53,44
Totale	7.616	100	18567	100

Source: Finco, Jukic Peladic, Petrocchi, 2002

Table 6- Adriatic import and export variation (2000-1993)

	Import 2000				**Export 2000**			
			Var. % 2000-1993				Var. % 2000-1993	
Countries	tons	000 euro	quantity	value	tons	000 euro	quantity	value
Croazia	6.405	10.312	-9,8%	-30,4%	3.607	6.776,46	-22,87	26,31
Albania	1.455	4.658	79,8%	140,3%	2.138	1.867,27	37,54	31,42
Slovenia	212	647	22,1%	88,6%	1.870	9.923,71	11,11	176,32
Totale	8.071	15.617	-0,2%	-8,7%	7.616	18.567,44	25,78	234,05

Source: Finco, Jukic Peladic, Petrocchi, 2002

Remarks and conclusions

The trade of the Adriatic basin was done because of the important role played by Adriatic fisheries, providing the largest quantity of Italian fish products, of the relevance of commercial exchanges with Adriatic coastal countries, as well as of the problems linked to the use of shared resources and the need to identify processes of joint fisheries management within the Adriatic basin.

The brief data referring to the percentage variation of trade between Italy and the other Adriatic coastal countries show a reduction in the overall traded quantities in the period between 1993 and 2000. This is to be attributed, in particular, to a contraction in the trade relations with Croatia, in terms of both quantity and value, which alone make up for almost half of the Italian trade with Adriatic countries. Conversely, trade with Albania and Slovenia are increasing.

In the light of the trade relations that are being established over time, it is believed that a joint strategy for the management of Adriatic resources should be envisaged; such a strategy should be able to detect the peculiarities of Adriatic productions, mainly consisting of fresh products, and quality and origin guarantee for them to be well recognizable among consumers, who are too often influenced by the asymmetric information on the supply of products imported from outside the Adriatic with qualitative features that are very different from those of local products. Economic theories namely suggest that similarly to other agricultural products or commodities also fish products are subject to price fluctuations in the short and long run. This is due to quantities that are in surplus or deficit in comparison to the predicted normal value, as well as to the essentially rigid demand, which causes prices to fluctuate more than proportionally in case of even small variations of the quantities offered. *This* would allow guaranteeing the stability of prices and companies' incomes, and at the same time reaching consumers' satisfaction within the general framework of responsible fisheries and trans-national cooperation.

According to issues that emerged form the Adriamed meeting in Ancona (Adriamed TD 2003 n.10) for a responsible management perspective two important questions need to be addressed:

1. functioning of the trade and distribution system;
2. fresh fish quality and whole fish chain.

The role of wholesale fish markets have been decisive for the development of Italian fisheries and this importance continues under the recent circumstances consequent to the important socio-economic and political changes of the last years. The markets are called on to use innovative tools and methods in the task of providing strong, effective support to fisheries as well as to sea farming particularly in this phase of restructuring and rationalization of the sector.

The importance of fish market in general terms and also in terms of the public interest is demonstrated by:

- the impartiality and the transparency when the price of products auctioned is decided;
- possibility to have further information (statistics, fiscal etc.) which can be useful in the creation of policies and programmes concerning fisheries.
- veterinary control concerning fish quality thus guaranteeing public health.

Product certification and ecolabelling are tools that can be used to support fisheries management. They can be valuable tools for achieving sustainable fisheries and healthy aquatic ecosystem. They can complement and strengthen conventional regulatory measures to achieve conservation and management outcomes. Ecolabelling of fish and fishery product has the potential to create a market incentive to manage fisheries and aquaculture farms in a sustainable way. Several benefits can accrue to the world community if this potential is realized:

- there will be environmental improvement reducing societal costs of the reduction in global biodiversity
- consumers will benefit as they receive more information concerning the products they purchase and will be able to choose from more products of various origin and quality. Further, consumers will be able to make informed choices regarding the purchase of seafood products.
- producers of ecolabelled seafood benefit from being able to extract that additional WTP from consumers
- the fishing industry will benefit as the move from unsustainable fishery to a sustainable fishery preserves production and jobs over the long run.

ANNEX 8. FAO COPEMED COMPARATIVE ANALYSIS OF FISHERIES REGULATIONS

Compte rendu général des trois ateliers sur la réglementation des pêches dans les Etats membres du projet COPEMED **(par** M. Hrouch**, janvier 2004)**

1. Contexte

En 2001, le projet COPEMED a inscrit l'étude comparative de la législation des pêches maritimes des Etats membres (Algérie, Espagne, Italie France, Libye, Malte, Maroc et Tunisie) parmi ses actions. Chaque étape de cette étude comparative a suivi la procédure suivante :

- Etablissement d'un document de travail préliminaire par un consultant -juriste Monsieur Philippe CACAUD ;
- Discussion de ce document préliminaire au sein d'un groupe de travail réunissant les représentants de chacun de Etats membres du projet, lors de rencontres ponctuelles ;
- Rédaction, par le consultant, d'un rapport reprenant les informations échangées, lors des ateliers avec mention des recommandations pour la suite à réserver aux travaux ;
- révision du document de travail préliminaire à la lumière des travaux de l'atelier ;
- Mise en œuvre de l'étape suivante à partir des recommandations de l'atelier.

Le groupe de travail constitué en 2001 lors du premier atelier dont les travaux ont eu lieu à Tanger (Maroc) du 24 au 26 octobre 2001, s'est retrouvé successivement à Rome pour le second atelier du 17 au 19 juin 2002 puis à Tunis pour le dernier atelier du 19 au 20 juin 2003. Ces trois ateliers ont été présidés par Mme Meryem HROUCH, chargée d'études au ministère de la pêche maritime Maroc, juriste, représentant le Royaume du Maroc. En outre, Mme HROUCH a établi le rapport du troisième atelier de Tunis et procédé à la révision du document préliminaire rédigé en 2003, par le consultant, M. Philippe CACAUD.

2. Démarche suivie

Chaque atelier correspond à une étape de la réflexion menée par le groupe de travail dont l'objectif était de trouver les points de convergence des législations des pêches maritimes des Etats membres du projet, dans la perspective d'une possible harmonisation de celles-ci. Pour ce faire, les participants, en se basant sur les études préliminaires établies par le consultant, ont examiné successivement :

- Une monographie décrivant le cadre juridique général des Etats participant au projet, intitulée ***« revue du cadre réglementaire relatif à la pêche maritime et aux aires protégées dans les pays participant au projet COPEMED »*** en 2001 puis ;
- Une étude intitulée ***« Etude comparative sur la réglementation en matière de pêche maritime dans les pays de la Méditerranée occidentale participant au projet COPEMED »*** en 2002, et;
- Une document intitulé ***« revue de la législation et de la réglementation des pêches maritimes relative aux mécanismes de participation, de planification et de mise en œuvre »*** en 2003

Les deux premières rencontres (Tanger et Rome) ont permis aux participants de prendre connaissance de manière approfondie des régimes juridiques des Etats concernés, applicables aux espaces maritimes y compris les aires spécialement protégées, à l'accès à la ressource et à la

gestion de l'effort de pêche. Le dernier atelier, (Tunis) a permis de compléter les travaux précédents dans le domaine de la gestion des ressources halieutiques en donnant l'occasion aux participants de se pencher sur les mécanismes d'élaboration, de suivi et d'évaluation des mesures d'aménagement et de gestion des pêcheries. Cette dernière rencontre a été également l'occasion pour tous de se pencher sur les orientations possibles de l'aménagement des pêcheries par un échange de vues sur le nouveau concept d'approche écosystémique dans la législation des pêches maritimes.

On retiendra surtout le caractère dynamique revêtu par les travaux du groupe de travail, puisque chaque participant, tant à l'issue de chaque rencontre, qu'après la diffusion du rapport final et la révision du document de base, a toujours la possibilité de faire compléter l'ensemble des documents produits, par les nouveaux apports de sa législation nationale dans les domaines traités par lesdits documents. Ainsi, toute la documentation produite par les ateliers peut être considérée comme un tout, chaque rapport ou étude étant conçu comme un élément complémentaire des autres.

Par ailleurs, il convient de rappeler que la qualité des travaux des trois ateliers doit beaucoup à la présence continue des mêmes participants, tant au niveau du bureau juridique de la FAO que dans la représentation des Etats membres du projet, assurant ainsi une réelle cohésion au groupe et une continuité dans la réflexion.

3. Conclusions auxquelles sont parvenus les participants

Les travaux des ateliers ont permis aux participants de constater une similitude dans les approches législatives suivies par les Etats membres du projet. En effet, les législations de ces Etats se fondent sur les principes **de gestion durable des pêcheries, d'implication de toutes les parties intéressées** (Etats, organismes de pêcheurs et Instituts de recherche scientifique) **dans l'aménagement des pêches et de coopération au sein des organisations internationales des pêches**, notamment la FAO et les organes régionaux tels l'ICCAT et la CGPM.

Au cours de leurs travaux les participants ont pu dégager les tendances législatives communes qui s'expriment notamment aux niveaux *de la détermination des espaces maritimes, de la nécessité de planifier la gestion des pêches*, *des conditions d'accès à la ressource, des mesures techniques d'aménagement des pêcheries, des conditions de participation des intéressés à cet aménagement*, ainsi que *des mesures de contrôle.*

a) La détermination des espaces maritimes

Conformément aux dispositions de la Convention des nations unies sur le droit de la mer de 1982 que les Etats participant au projet ont signé ou ratifié, chacun dispose d'espaces maritimes placés sous juridiction ou souveraineté, même si, en raison de la proximité des territoires, il est difficile d'établir des ZEE de 200 milles comme prévue par ladite convention.

C'est ainsi que, si tous les Etats disposent bien d'une mer territoriale d'une largeur de 12 milles, la plupart d'entre eux ont établi une zone de pêche exclusive ou une zone de protection de la pêche de largeur adaptée à la configuration de la géographie côtière. Ces zones de pêche exclusive sont, en fait, considérées comme des zones de protection de la zone littorale dans laquelle s'exerce l'essentiel de la pêche, celle dont dépend une importante communauté de pêcheurs (pêche côtière et artisanale). Compte tenu de la fragilité des zones de pêche et des contraintes environnementales spécifiques à la méditerranée occidentale, les Etats ont dû instituer des zones de protection particulière qui peuvent prendre la forme « d'aires spécialement protégées », de « zones de

protection biologique » ou encore de « réserves marines ». En outre, des espaces spécifiques peuvent être inclus dans des zones relevant de la législation nationale sur les parcs naturels ou les réserves naturelles et non de la législation sur les pêches maritimes ou les espaces marins. Ainsi, un parc naturel peut englober, à la fois, une aire terrestre et une aire maritime de protection.

b) La planification de la gestion des pêches

En matière de planification de la gestion des pêcheries, les Etats participant au projet ont adopté des démarches semblables en considérant les activités de la pêche maritime dans leur ensemble, c'est à dire depuis l'extraction (activité en mer de pêche proprement dite) jusqu'à la commercialisation du produit à l'état frais ou transformé. C'est ainsi que, même en absence d'instrument de planification spécifique à la pêche, il demeure possible :

- D'inscrire les activités de la « filière pêche » en tant que composante économique spécifique, dans les orientations du plan de développement économique et social devant bénéficier de mesures de gestions cohérentes et adaptées aux différents segments qui la composent ;
- De prendre en compte l'aspect environnemental dans la perspective d'une gestion durable des ressources vivantes de la mer ;
- De trouver la meilleure adéquation possible entre les activités de pêche et les activités des autres utilisateurs du littoral et de la mer (notamment tourisme, extraction de sable, transport maritime, activités portuaires) ;
- D'impliquer, dans la prise de décision, tous les intéressés dans la filière et les activités connexes.

Par ailleurs, il convient de noter, qu'au-delà de l'inscription de la « filière pêche » dans les Plans de développement en tant que composante à part entière de ceux-ci, certains pays participant au projet COPEMED établissent, dans le cadre général de l'activité de pêche, de véritables mini-plans d'aménagement concernant des pêcheries spécifiques. Ces plans, mis au point par l'administration des pêches maritimes, en concertation avec les professionnels, à partir des données de la recherche scientifique, édictent, en général, de nombreuses mesures de restriction que les pêcheurs concernés doivent observer. Ils sont établis pour une période prédéfinie et impliquent, à la fois, une ou plusieurs espèces, un espace maritime déterminé, un engin de pêche autorisé ou des engins exclus, selon le cas, et un ou plusieurs type de navires. Ainsi, tous les éléments constitutifs de plans nationaux ou régionaux d'aménagement et de gestion des pêcheries sont contenus dans ces mini-plans (fondement scientifique, implication des professionnels, période couverte, zone, effort de pêche et espèce) Appelés à se développer, au fur et à mesure que la recherche scientifique et l'administration ont une meilleure connaissance de la ressource, ces mini-plans, deviennent la base de plans régionaux ou nationaux d'aménagement (toutes pêcheries confondues), tels que certains Etats l'envisagent dans leur législation, soit sous forme de plans d'aménagement quinquennaux, soit sous forme de schémas directeurs d'aménagement sur des périodes plus courtes.

c) L'accès à la ressource

Tous les Etats membres du projet ont une législation réglementant strictement l'accès à la ressource. En effet, l'attribution des droits de pêche à des fins commerciales et pour certains de ces Etats, l'attribution de droits de pêche à des fins récréatives (pêche dite sportive) sont des prérogatives exclusives de l'administration des pêches, qui octroi des licences ou des permis de pêche., notamment, pour les pêches effectuées avec un navire. En outre, certains d'entre eux, soumettent également la pêche sans navire («pêche à pied ») soit à l'obtention d'un permis ou licence de pêche soit à une déclaration préalable. Les permis et licences de pêche ont une durée de validité n'excédant pas une année civile. Quant à la pêche littorale avec des engins fixes ou

« madragues », elle reste le plus souvent soumise à un système de concession des droits de pêche pour une période supérieure à une année. Dans tous les cas, l'attribution de droits de pêche par l'Etat donne lieu au paiement de taxes ou de redevances. Enfin, tout détenteur d'un droit de pêche doit respecter la législation des pêches en matière de zone (période d'ouverture ou de fermeture de la saison de pêche), d'utilisation des engins de pêche (dimension, maillage, nombre d'engins à bord etc…), de taille minimale des espèces pêchées et plus généralement de toutes les mesures de protection des espèces (interdiction d'armes à feu ou d'utilisation de dynamite, interdiction de pêcher les espèces protégées, etc…).

d) La gestion de l'effort de pêche et les mesures d'aménagement des pêcheries

L'ensemble des pays membres du projet attribue les droits de pêche dans un cadre restrictif. Aussi l'administration chargée des pêches de chacun d'eux exerce-t-elle un contrôle de l'effort de pêche. Ce contrôle concerne, en premier lieu, les conditions d'octroi du pavillon, sachant que seuls les navires de l'Etat du pavillon sont autorisés à pêcher dans les eaux maritimes placées sous juridiction ou souveraineté du pays considéré[29].. Ainsi, en raison de la saturation de nombreuses pêcheries, les Etats ont souvent recours aux mêmes méthodes pour éviter de nouvelles entrées en pêche (nouvelle immatriculation = nouveau navire sous pavillon = nouvelle licence ou permis de pêche) en se bornant, soit à autoriser le renouvellement de la flotte (droit d'antériorité), soit à réorienter la flotte en surplus vers l'exploitation de nouvelles pêcheries (reconversion) ou la destruction (unités non adaptées). Les mesures prises dans ce cadre permettent une régulation directe et durable de l'effort de pêche.

En second lieu, le contrôle de l'effort de pêche s'effectue de manière indirecte aux travers des mesures techniques d'aménagement des pêcheries. A ce niveau il a été constaté une grande convergence des législations des pays membres du projet qui ont tous adopté des mesures entrant dans ce cadre. Ces mesures consistent dans des restrictions de pêche portant, alternativement ou cumulativement, sur *les espèces* (taille minimale, quotas de captures), *les zones de pêche* (exclusion temporaire ou définitive de pêche dans certaines aires maritimes), *les engins* (interdiction de certains engins, et/ou réglementation de leur utilisation), *les navires* (exclusion de certains types de navires de zones de pêche, notamment littorales, en raison de leur tonnage, de leur puissance ou de leur longueur) et *la durée de la pêche* (limites diurnes ou limites à certaines périodes de l'année).

e) La participation des intéressés à la gestion des pêcheries

L'ensemble des pays membres du projet dispose d'instituts de recherche scientifique dans le domaine halieutique jouant un rôle déterminant dans le choix des mesures d'aménagement prises par l'Etat. De même l'ensemble des législations concernées prévoit des mécanismes de concertation des professionnels soit au travers de leurs associations représentatives (généralement par segment d'activité tels la pêche côtière ou artisanale, ou encore les mareyeurs ou les industries de la conservation ou de la transformation), soit au travers d'instances élues (chambres de pêches). En outre, lors de l 'élaboration des Plans de développement ou lors de la mise en place de schémas d'aménagement régional ou local, les autres départements ministériels, notamment environnement et travaux publics, interviennent dans toutes les décisions d'aménagement de la ressource impliquant des infrastructures (utilisation des ports de pêche ou des halles aux poissons) ou nécessitant l'utilisation d'un espace commun (tourisme, agriculture).

[29] A noter que la même approche est suivie par l'ensemble des pays y compris les pays membre de l'UE, si l'on considère que les navires immatriculés dans un pays membres sont des navires communautaires et que les eaux des Etats membres sont, ou deviendront à plus ou moins brève échéance, des eaux communautaires soumises à la réglementation de la PCP

f) Le contrôle de l'application de la législation

Pour tous les pays membres du projet, le contrôle de l'application de leur législation des pêches comprend des mesures de suivi et de surveillance et des mesures de répression des infractions commises. A cet égard, il convient de souligner la grande convergence de l'approche suivie par ces pays qui privilégient le suivi et le contrôle de leur flotte *avant le départ en pêche* (contrôle des équipages, inspection des navires et des engins de pêche), *durant les opérations de pêche* (observateurs scientifiques à bord, tenue d'un journal de pêche, suivi par GPS) et *au débarquement des captures* (contrôle des espèces pêchées) ainsi que les sanctions de type économique (suspension, retrait ou non-renouvellement des licences et permis de pêche). Cependant chaque législation prévoit des sanctions pénales avec des amendes très élevées, les peines de prison, lorsqu'elles existent, restant peu appliquées.

4. Perspectives

A l'issus du dernier atelier (Tunis 2003) les participants ont discuté de l'avenir des travaux effectués par le groupe. Après s'être félicité des domaines de convergence des législations des pays membres du projet et repris ci-dessus, ils ont émis le souhait que le travail de réflexion soit poursuivi dans le cadre plus général de la CGPM, notamment au sein du sous comité économique et social qui pourrait devenir à cette occasion « un sous comité « économique, juridique et social ». Ils ont préconisé, une harmonisation de la réglementation des mécanismes et des systèmes applicables à la collecte des données et des législations concernant les stocks partagés.

ANNEX 9. NATIONAL THEMATIC REPORTS

ALBANIA

Through the support of AdriaMed and FAO expertise, the Department of Fisheries has set-up a reliable and efficient computerized fisheries statistics system (ALBANIASTAT) which would satisfy its obligations with international fisheries bodies. ALBANIASTAT is intended to serve as a register of fishing vessels which includes a detailed inventory of all licensed vessels. The inventory comprises information on vessel characteristics, fishing authorization, structural characteristics, engines, electronic equipment, deck machinery, ownership, crew, base port and operating port, fishing areas and periods, gear, species caught, preservation equipment, safety equipment and other equipment. The data were collected by means of an on-site census.

These data were used to compile Operational Units tables of Albania Fleets as discussed and agreed on during the Adriamed Meeting of Working Group on Operational Unit (Durres, Albania, 1-2 April 2004).

With support of the AdriaMed Project, the DoF has implemented the research program "Adriamed Social Survey of Albanian Marine Fisheries". The Albanian fisheries have changed remarkably since 1990s and the aim of the study was to gain a detailed insight of the social context of Albanian Fisheries.

In order to support the co-management-based on fishery communities, we promote the establishment of Fishery Management Organizations (FMO). In collaboration with FMO, we will realize co-management responsibilities concerning the resources and structures in cooperation with the other parties. We are currently preparing Fishery Management Plans for FMOs.

ITALY

A list of research projects financed by Italian Ministry of Agriculture and Forestry Policy (MIPAF) is reported. These project are related to the fourth, fifth and sixth triennial plan. All the projects reported are specifically or partially related to fishery economic and social aspects.
In the second part of this document the projects in which IREPA is involved are reported with a short description.

Projects financed by MIPAF[30]

Sixth triennial plan

- Supporto metodologico per un modello bio-economico di analisi di popolazione delle risorse demersali BIRD MOD. Messa a punto di un modello bioeconomico e analisi delle variabili biologiche.
- Studio di fattibilità dell'utilizzo di attrezzi selettivi per la cattura di crostacei economicamente importanti nell'ambito di una riconversione dei mestieri e di una riduzione dell'impatto sugli ecosistemi.

[30] For more details, visit the web site: www.politiche agricole.it

- Individuazione e analisi di elementi per la richiesta alla C.E. di adeguamento dell'obiettivo POP, connesso agli interventi per la sicurezza.
- Sviluppo del bilancio contabile ambientale nel settore dell'acquacoltura a tecnologia intensiva.
- Integrazione della pesca con le altre attività produttive. La pesca turismo come modello sociale e culturale.
- Processi di crisi e dinamiche evolutive della piccola pesca in Italia: modelli territoriali e tendenze del mercato del lavoro.
- Studio sull'evoluzione della struttura ittioproduttiva e socioeconimica della pesca artigianale in aree soggette a vincoli di tutela ambientale, finalizzato all'elaborazione di modelli di gestione sostenibile delle risorse - Analisi GIS dell'impatto socioeconomico subito dal comparto ittico a seguito dell'istituzione delle aree marine protette.

Fifth triennial plan

- Identificazione di un codice di condotta responsabile della pesca sportiva.
- Valutazione degli effetti delle mucillagini sull'attivita' di pesca nel medio Adriatico.
- Valutazione degli effetti delle mucillagini sull'attivita' di pesca in Adriatico.
- Elementi di valutazione ecologica, economica e sociale per fronteggiare la flessione produttiva di vongole filippine.
- Gestione produttiva della Sacca di Goro (delta del Po): analisi dei parametri ambientali, biologici, socioeconomici per la valutazione del regime concessorio.
- Valorizzazione delle risorse naturali e fattibilita` economico-sociale in acquacoltura.
- Realizzazione di due linee guida per l'applicazione al settore dell'acquacoltura del regolamento (CEE) n. 1836/93 sull'adesione volontaria delle imprese ad un sistema comunitario di ecogestione e audit (Eco Managemente and Audit Scheme).
- Cambiamento istituzionale e percorsi di apprendimento organizzativo nella politica italiana della pesca.
- Definizione e realizzazione di un modello statistico per l'indagine tecnico-economica della pesca professionale nelle acque dolci.
- Valutazione dell'impatto economico dell'applicazione del sistema di gestione ambientale ISO 14001 al settore dell'acquacoltura.
- L'impatto economico ed occupazionale della pesca e dell'acquacoltura: il ruolo delle politiche di settore.
- Gli indicatori economici e di mercato per l'allevamento di specie ittiche innovative.
- Analisi economica comparata delle tecnologie di allevamento di specie ittiche marine attraverso indicatori economici.
- Le interazioni tra settore ittico e ambiente: modelli di sviluppo sostenibile e impatto delle politiche di settore. La situazione e le prospettive in Abruzzo.
- Valutazione dell'impatto delle attivita` comunicazionali e promozionali pubbliche sull'atteggiamento e comportamento della distribuzione e dei consumatori.
- Le interazioni tra settore ittico e ambiente: modelli di sviluppo sostenibile e impatto delle politiche di settore. Situazione e prospettive con riferimento alle attivita` in Emilia-Romagna e Toscana.
- La pesca e l'acquacoltura in Sicilia: modelli di sviluppo sostenibile e impatto delle politiche di settore.
- Le interazioni tra settore ittico e ambiente: modelli di sviluppo sostenibile e impatto delle politiche di settore. Politiche sostenibili per settore ittico del Friuli-Venezia Giulia.

- Le interazioni tra settore ittico e ambiente: modelli di sviluppo sostenibile e impatto delle politiche di settore. Situazione e prospettive con riferimento alle attivita` in un'area del litorale romagnolo-marchigiano.
- Le interazioni tra settore ittico e ambiente: modelli di sviluppo sostenibile e impatto delle politiche di settore.
- Le interazioni tra settore ittico e ambiente - modello di sviluppo sostenibile e impatto ambientale delle politiche di settore: il caso della marineria dorica.
- Analisi della sostenibilità socio-economica della pesca nel basso Ionio.
- Modelli di ottimizzazione globale per le sparidae, trigliade, serranidae, gobidae, centracanthidae, sciaenidae, lophidae e moronidae (gruppo ISSAAPN0 33).
- Interazioni tra settore ittico e ambiente: modelli di sviluppo sostenibile e impatto delle politiche di settore in Sardegna.
- Interazioni tra istanze economiche ed ambientali nell'economia ittica veneta.
- Valutazione economico-ambientale e sociale delle attivita` di acquacoltura marina in gabbie galleggianti.
- Analisi socio-economica e sostenibilita' ambientale dell'acquacoltura in Sicilia.

Forth triennial plan

- Impatto della pesca di novellame di consumo (bianchetto) in Italia.
- Valutazione dell'impatto sulle risorse biologiche e socio-economiche della sciabica da spiaggia.
- Valutazione dell'impatto sulle risorse biologiche della pesca a strascico entro le tre miglia.
- Pesca del novellame d'allevamento: valutazione dell'impatto sulle risorse biologiche e dell'impatto socio-economico.
- Studi sulla pesca con cianciolo per il pesce bianco.
- Studio sui danni provocati dagli "attrezzi fantasma" e sui possibili rimedi.
- Impatto bio-economico dell'aumento delle dimensioni della maglia minima nella pesca a strascico.
- Realizzazione di un modello strutturale - economico finalizzato al miglioramento delle condizioni di sicurezza e di vita a bordo.
- Tecniche di acquacoltura ecocompatibili in ambienti lagunari e vallivi. Modelli di gambericoltura semintensiva finalizzati alla produzione di reddito integrativo per i pescatori lagunari ed alla diversificazione delle specie allevate in ambito nazionale.
- Valutazione dell'efficacia delle strutture artificiali nei mari italiani: valutazione degli aspetti socio-economici conseguenti alla pesca esercitata presso le barriere artificiali a fini multipli e strutture estrattive offshore del medio Adriatico.
- La percezione della qualità dei prodotti ittici.
- Studio di modelli bio-economici per la gestione della fascia costiera.
- Valutazione dell'impatto economico di politiche fiscali e redistribuzione sull'attività di pesca marittima.
- Le dinamiche dell'attenzione ed i processi di tematizzazione politica: il caso della pesca e dell'economia ittica.
- "Pesca difficile" - La percezione della crisi e le modalità di reazione del pescatore tra diffidenze ed aspettative, resistenze e disponibilità.
- Modello socio-economico di riconversione ad usi multipli dell'ex area a saline nel comune di Tarquinia .
- Valutazione dell'impatto economico - ambientale di una strategia di qualità nel settore della pesca e dell'acquacoltura.
- Prospettive di sviluppo del pescaturismo; valutazione dei relativi impatti socio-economici.

- Analisi delle problematiche commerciali e distributive del mercato dei prodotti ittici in Italia.
- Profili giuridici dell'acquacoltura in Italia: normativa vigente e prassi amministrativa. Prospettive di sviluppo del settore: incentivi economici.
- Efficacia reale della normativa sanzionatoria della pesca ai fini della tutela delle risorse marine.
- Il diritto della Pesca nei Paesi della CE.
- Incidenza del Diritto Comunitario sul Diritto della Pesca in Italia.
- Scuola formazione acquacoltura e pesca.
- Trasferimento e divulgazione dei risultati delle ricerche scientifiche agli operatori della pesca e dell'acquacoltura.

IREPA work program 2003 - 2004

Fishery Regulation and the economic response of fishermen: perception and compliance

Acronym: FISHREG

The central aim of the FishReg project is to investigate how fishermen respond to regulations in the fishery. This includes their knowledge of the regulations which apply to them, their perceptions of the economic implications of regulations, normative and other 'psychic' responses to regulations (such as judgements about the 'rightness' of compliance and the perceived legitimacy of the regulations and of the regulatory authority), their perceptions of the attitudes of fellow fishermen to the regulations, and how all these factors affect their behaviour, in particular their compliance with the regulations.

Co-ordinator: CEMARE - University of Portsmouth

Partners: IREPA (It); IDDRA (Fr); University of Western Brittany (Fr); Universtat de Girona (Sp); Universidade de Vigo (Sp).

Concerted action III: Economic Assessment of EU Fisheries

Acronym: CA3

The objective of this research is to develop a common methodology to evaluate the economic performance of the fleet segments in the EU Member States and the candidate countries.

Co-ordinator: LEI.DLO (Holland)

Partners: IREPA (I), SFIA(UK), IFREMER (France), SJFI(Dk), FGFRI (Finland), University of Vigo (Spain), National board of fishery (Sweden), EPB Consultant (Portugal), ESRI (Ireland), MARFISH (Greece), NIFA (Norway), IDDRA (F), EMI (Estonia), LIAE (Lithuania), LFRI (Latvia), NEI (Iceland), SFI (Poland), University of Greifswald (Germany), FAREC (Faeroe Islands).

Bio-Economic Model for Mediterranean Fishery

Acronym: BEMMFISH

The main objective of this project is to develop a computable bio-economic model to simulate the management of Mediterranean fleets and fisheries. The model is projected to be a useful tool to evaluate the effects of the management measures adopted within the Common Fishery Policy.

Co-ordinator: ICM-CSIC (Spain)

Partners: IREPA, GEM-UB (Span), IFREMER (France), Universitat Politecnica de Catalunya (Spain), IoES-UI (Iceland), INRIA (France).

Elaboration et application d'un model calculable d'equilibre general et evaluation de la contribution des activites halieulitiques au developpment regional
Acronym: PECHDEV
The objective of this project is to develop a new computable model which takes into account both the contributions from fishery and aquaculture activities to the coastal regions development, and the interrelations between these activities and the other economic sectors.
Co-ordinator: CEMARE - University of Portsmouth (UK)
Partners: IREPA, UCL (UK), ENSAR (France), Università di Nantes UNAN (France), Universidad del Pais Vasco UVASCO (Spain), Università della Danimarca del Sud USD (Denmark).

Modelli di ottimizzazione globale per le specie del gruppo ISAAP N. 33
Acronym: MOSES 33
The objective of this project is related to the identification of sustainable development models for Italian fishing areas, at a level of administrative district. This project will be performed producing a databank, improving the methodological tools and making available them to the Public Administration. In details, it is planned to apply the MOSES model, developed by IREPA, to estimate both the medium and long period reference, and the optimal social cost regarding fishing effort redistribution.

Supporto metodologico per un modello bio-economico di analisi di popolazione delle risorse demersali
Acronym: BIRD-MOD
The general objective of this project is the production of methodological protocols to define a prototype of bio-economic model. The project work plan consists of activities in design and technical implementation of a prototype-model, the identification of a programming code supporting these activities and their practical implementation.
Co-ordinator: SIBM (Società Italiana di Biologia Marina)
Partners: IREPA. COISPA

Sistemi di controllo satellitare finalizzati alla conservazione delle risorse ittiche
Acronym: SATCONTROL
The aim of this project is to implement a satellite based monitoring system of the trawler fleet in the south area of Salerno gulf. The objective is to realise an hardware prototype to measure the fishing effort exercised by the fleet in a specific area. This operative tool represents the preliminary step to develop a control system useful to collect information for the Italian and European policy in the management of fishing stocks.
Co-ordinator: IREPA
Partner: Parco Scientifico e Tecnologico di Salerno e delle Aree Interne della Campania

Gli indicatori economici e di mercato per l'allevamento di specie ittiche innovative
Acronym: PRODINOVA
The objective of this project is to apply a method to identify strengths, weaknesses, the opportunities and the risks related to the economic and market aspects in the breeding of innovative species in Italian aquaculture.
Irepa will work out market analysis and, in particular, the analysis of customers preferences.

Economic Observatory on the Production Structure of Italian Marine Fishing

The aim is to spread the outcomes of the National observatory on the productive structure on seafish in reports, papers and miscellaneous documents.

The objective is to assure a widespread and constant flow of quantitative and qualitative information and satisfy stakeholders' demands (in particular, from national and regional authorities). The Observatory measures year by year the economic performance of Italian fishery and its social relevance in terms of total employment.

Sviluppo del bilancio contabile ambientale nel settore dell'acquacoltura a tecnologia intensiva

The aim of the study is to focus the relations between aquaculture and environment in order to determine which are the concrete chances to cope aquaculture and sustainable development. An environmental balance will be developed with the aim to measure quantitative and qualitative data of environmental and social impacts at direct and indirect level related to intensive aquaculture. The study will give precise managing indications relating to reduction costs and consequently to competition improvement of the aquaculture sector.

MOROCCO

La pêche en Méditerranée marocaine participe vivement dans le développement du tissu économique national et particulièrement, la région du Nord. Elle se déploie sur l'ensemble du littoral et se compose de la pêche artisanale et la pêche côtière effectuées par les chalutiers, les sardiniers et les palangriers. D'autres activités sont présentes, telles que les madragues et la pêche sous marine.

L'institut National de Recherches Halieutiques, par le bais de ses deux Centres Régionaux de Tanger et Nador, s'occupe du suivi des aspects socio-économiques des différentes pêcheries.

Les principales activités socio-économiques pour l'année 2004, se focalisent sur :

1- **Etude de la pêcherie au Filet Maillant Dérivant en Méditerranée Marocaine (2004 – 2005)**

La pêche au Filet Maillant Dérivant (FMD) présente un effet néfaste et une menace pour l'environnement marin. Selon des ONGs internationales, cette activité cause la mort de plusieurs espèces protégées et elle a un effet négatif sur le stock de l'espadon, par la capture de juvéniles. Suite à cette situation, la Commission Internationale pour la Conservation des Thonidés de l'Atlantique (CICTA), a recommandée pour la première fois en 2003, l'interdiction du FMD en Méditerranée.

Afin de cerner la pêcherie du FMD dans la Méditerranée marocaine, un programme d'étude a été établi par l'INRH et qui comprendra deux parties, la première partie consiste à caractériser cette pêcherie et à évaluer l'impact du FMD sur la biodiversité marine. La deuxième partie touchera essentiellement l'étude de l'impact socio-économique lié à la politique d'abandon de cet engin, établie par le Ministère des Pêches Maritimes.

2- **Application de logiciels bio-économiques dans les problèmes d'aménagement (2004 – 2005)**

Ce travail consiste à appliquer la modélisation bioéconomique par le biais de logiciels, notamment "BEEMFISH" ou « MEFISTO », afin de réaliser un certain nombre de simulation de stratégies de gestion.

Toutefois, le grand manque de données économiques et parfois biologiques, présente une grande contrainte pour l'utilisation des modèles bioéconomiques, mais une éventuelle tentative pour l'application d'un logiciel adapté aux conditions marocaines est en cours d'étude.

3- l'actualisation de la base de données sur les indicateurs socio-économiques (2004 - 2005)

Après une première étude sur les indicateurs socio-économiques de la pêche an Méditerranée marocaine réalisée dans le cadre des travaux du SCSES, dont les résultats étaient très satisfaisants, l'INRH compte entreprendre cette année une deuxième étude plus complète, afin :

- d'analyser l'évolution de la distribution et de la dimension de l'investissement dans le secteur de la pêche et son impact économique ;
- d'actualiser la situation des segments, selon la nouvelle segmentation du CSC ;
- d'actualiser les structures des coûts et d'investissement ;
- Et d'ajouter d'autres indicateurs en relation avec les aspects sociaux.

Toutefois, l'importance des indicateurs socio-économiques, ne peut être concluante, que si la collecte des données serait réalisée, selon un système régulier et continu (chaque deux ou trois années). Pour le moment, nous essayerons de mettre en place ce système.

4- Commercialisation des produits halieutiques (2004 – 2005)

Ce travail consiste à caractériser la commercialisation des produits halieutiques, afin de voir et de proposer des mesures pour la valorisation et l'amélioration des prix du poisson.

Cette étude touchera en particulier, l'analyse des circuits de commercialisation, en se focalisant principalement sur les différents intervenant dans ces circuits. L'exportation des produits halieutiques et les conditions de vente au niveau des sites de la pêche artisanale.

5- Etude des aspects socioéconomiques du Parc National d'Al Hoceima (2004)

Le Parc National d'Al Hoceima est caractérisé par une grande richesse biologique marine et terrestre. Egalement, il présente des atouts favorables au développement économique de la région, par le biais des activités liées au tourisme et à la pêche. Toutefois, ce développement est handicapé par une exploitation excessive et non rationnelle de ces ressources, tel est le cas de la surexploitation des ressources halieutiques.

Donc, la gestion durable de ce Parc s'impose, dans la perspective de préserver les espèces animales et de sauvegarder les équilibres écologiques et naturels, mais également pour améliorer la situation sociale et les conditions de vie de la population locale, pour qu'elle puisse s'intégrer facilement dans le processus de gestion de cet environnement ci précieux.

Dans ce cadre, le Centre d'Activité Régionales pour les Aires Spécialement Protégées (CAR/ASP), a mis en place un Projet Régional pour le Développement des Aires Protégées

Marines et Côtières dans la Région Méditerranéenne, dont le principal objectif, est d'élaborer un plan de gestion relatif à la partie marine du Parc National d'Al Hoceima (PNAH).

Cette étude s'intègre dans le cadre de ce projet et elle touchera principalement les activités de la pêche et également les aspects liés au tourisme.

Elle aura pour objectif la collecte de données relatives aux activités socioéconomiques qui entrent en interaction avec la zone marine et côtière du Parc National d'Al Hoceima. Une attention particulière sera attribuée aux activités humaines dans la zone côtière du Parc notamment celles liées à la pêche et au tourisme.