GENERAL FISHERIES COMMISSION FOR THE MEDITERRANEAN
SCIENTIFIC ADVISORY COMMITTEE

Sub-Committee on Economic and Social Sciences (SCESS)

Workshop on the Use of Socio-Economic Indicators in Fisheries Management

Tajoura (Tripoli), 3–5 July 2007

OPENING AND ARRANGEMENTS FOR THE MEETING

1. The Workshop on the use of socio-economic indicators in fisheries management was held in the Marine Biology Research Center (MBRC) of Tajoura (Libya), from 3 to 5 July 2007. The meeting was attended by 14 participants from 8 GFCM Member States as well as by a representative of the Confédération internationale de la pêche sportive (CIPS). The list of participants is provided in Appendix 2.

2. Mr Nourredine Essarbout, Director General of the MBRC and Mr Sâad El Madani, FAO-representative, addressed the Workshop and welcomed the participants. They stressed in particular the important role played by the GFCM in promoting research activities and managing the Mediterranean fisheries. Mr Essarbout highlighted the particular interest of Libya to continue actively contributing to GFCM activities.

3. Mr Alain Bonzon, Executive Secretary of the General Fisheries Commission for the Mediterranean (GFCM) thanked the MBRC for hosting this meeting, and FAO and its regional projects for supporting the GFCM activities. The Executive Secretary opened the meeting and gave the floor to Mr Malouli Idrissi, Coordinator of the Sub-Committee on Economic and Social Sciences (SCESS).

4. Mr Malouli Idrissi recalled the context and the main objectives of the Workshop as a continuation of the effort developed since 1999. Mr Malouli presented the main issues to be discussed during the meeting and arrangements in the agenda. It was stressed that presentations should be focused on a methodological approach to the selection of socio-economic indicators and their relevance in support of fisheries management processes.

5. Mr Ramon Franquesa was designated Chairman and Mr Malouli Idrissi Facilitator. Messrs Paolo Accadia, Scander Bensalem and Malouli Idrissi acted as rapporteurs.

6. The meeting agenda was adopted (Appendix 1) and two discussion groups were set up concerning the use of socio-economic indicators and recreational fisheries, respectively.

7. Concern was expressed for the delay needed to adopt advice from the SCESS, especially with regard to the fleet segmentation proposed in 2003 and formally adopted by GFCM through a resolution (Task 1), only in 2007. The Workshop expressed the need for a resolution by GFCM to request the collection and compilation of economic data from all Member countries.

8. It was however stressed that a complete technical description of data to be collected by fleet segment, specifying timeframes and sources, still needed to be finalized prior to bringing the issue to SAC.

9. Mr Malouli referred to the concern expressed by some researchers during the Workshop on Task 1 held in Casablanca early this year in relation to the different classifications of fishing gears and, hence, fleet segmentations, used by the GFCM (i.e. by exclusive gear) and the EU (i.e. by dominant gear) data collection systems.

10. Mr Accadia insisted on the importance to start the collection of economic data as soon as possible, and stated that only by applying the fleet segmentation and collecting the data would it be possible to verify the validity of the indicators.

REVIEW OF THE WORK PERFORMED ON SOCIO-ECONOMIC INDICATORS IN THE MEDITERRANEAN

11. Mr Malouli summarized the results and recommendations of the SCESS during the last 6 years in relation to socio-economic indicators. Mr Malouli stressed the need to consider all these recommendations, especially the need for a systematic economic data collection for many Mediterranean countries, and the collection of social data. A summary of this historical resumé is provided in Appendix 3.

Work performed in the framework of FAO regional projects

- **"Socio-Economic indicators in the Northern and Central Adriatic Sea", by Paolo Accadia**

Mr Accadia presented a socio-economic analysis of demersal and pelagic fisheries in the North and Central Adriatic Sea (GSA 17) developed as contributions respectively for the AdriaMed Working Group on Biological and Economic Indicators for Adriatic Sea Demersal Fisheries, held at the Laboratory of Marine Biology and Fisheries in Fano, Italy (May 2005), and for the AdriaMed Working Group on Small Pelagic Fisheries Resources of Adriatic Sea, hosted by the ISMAR-CNR in Ancona, Italy (May 2006).

The analysis was performed using a set of 24 socio-economic indicators. Economic indicators included 6 indicators on economic performance, 8 on productivity, 4 on costs and prices, and one general indicator summarising economic sustainability. From the social point of view, 4 indicators plus one general indicator summarising social sustainability were defined.

Trends of these indicators were analysed using the so-called Traffic Light System. Reference values were set according to their percentile value in the following series: > 66th percentile, 66th-33rd, and < 33rd percentile. Based on each specific indicator, the three standard colours, green, yellow and red, were assigned to the three areas defined by the reference values at 33rd and 66th percentiles.

The indicator summarising economic sustainability was obtained comparing the profitability of investments in fishery (by the return on capital invested (ROI)) to the average rate of the Italian Treasury securities with a long term maturity (Buoni del Tesoro Pluriennali (BTP)). The rate of Italian BTP were used as a limit reference point.

The indicator summarising social sustainability was obtained as a difference between the average salary per man employed and the minimum salary stipulated by the Italian laws (Contratto Collettivo Nazionale di Lavoro (CCNL)). This level of salary was considered as a limit reference point from a social point of view.

The analysis was performed by using data available from the IREPA monitoring system along the Italian coastline. The period under investigation covered 1996 to 2004.

Mr Accadia highlighted that this analysis was made possible by the availability of economic data comparable over time, and stressed the need for a homogeneous definition of fleet sub-units to allow for this kind of analysis.

- **"Application of selected economic indicators: Croatia case study", by Maja Fredotovic**

The presentation stressed the difficulties related to the obtention and compilation of sustainable socio-economic indicators in Croatia. The presentation included a review of macroeconomic indicators followed by general data on the fleet. Emphasis was put on data related to fishing gears, fishing activity, catches/production, fish market, mariculture and fish processing industry.

The collection of social indicators faced problems of lack of statistics and data could be obtained only through "on site" investigations and studies which are resource demanding. Some projects and studies done recently show that about 500.000 people, only in the coastal area, depend on fishery.

Economic indicators related to economic efficiency in fishing were not available (for example, data on investment efficiency in fishery or data on vessel efficiency). Analysis based on operational units was not possible (according to available data). Analysis of value added was also limited. Indicators on fish trading were not possible to provide (or would be unreliable according to existing data).

The study concluded that, if any reliable indicator is to be produced, it can be done either by changing the existing data collection system (the process has started and should be completed by 2010), or by field (on site) research and monitoring.

- **"Adriatic application on Fisheries Socio-economic data", by Paolo Accadia**

Mr Accadia presented a database for social data developed in the framework of the FAO AdriaMed Project. It has been designed and developed to store, archive and provide basic analysis tools of the data collected during the AdriaMed Social Survey carried out in 2003 in Albania.

He highlighted the utility of this tool particularly for its flexibility and capacity to adapt to each context: adding, modifying and deleting indicators or groups of indicators makes it possible to produce questionnaires suitable for any social reality in the Mediterranean Sea.

Studies undertaken at national level

- **National report on some indicators of the Libyan fisheries, by Abdulbasset Abuissa**

Libyan coastline extends about 2000km. The Libyan fishing grounds are divided in three regions on the basis of the topography and the steepness of the continental shelf. 1)-The western region, from the Libyan-Tunisian border to the Musrata, is characterized by a wide continental shelf and almost sandy trawlable bottom. 2) The medial region, from Musrata to Benghazi, is characterized by a rocky bottom region with sharp steepness continental slope. 3) The eastern region, from Benghazi to the Libyan-Egyptian border, is characterized by a rocky substratum and very narrow continental shelf. The fish production is mainly based on the western region, the most trawlable area. Light fishing activity for the small pelagics is mainly conducted in the western region as well. The fishing fleet and fishing effort data were recorded by segments. The landing sites are distributed along the coast: 50 percent in the western region; 17.4 percent in the medial region and 32.6% in the eastern region. Accordingly the socioeconomic indicators study conducted by the MBRC during 2004-2006 (following the scheme of the GFCM fleet segments and methodology) showed a good potential for net profit based on productivity, even though the fleet efficiency is generally very low (20-55 percent) for most of the

segments. Social indicators reported 10040 working fishermen, 60 percent of which are based in the western region.

- **"Socio-economic indicators of the Moroccan Mediterranean fisheries", by Malouli Mohammed**

In the Moroccan Mediterranean waters, fishing activity presents several assets, mainly: an important social weight, resources with high commercial value and proximity to the European markets. The marine resources are exploited by about 660 vessels and approximately 2500 artisanal boats (<6m). The annual catch is about 44 000 tonnes, of which 30 000 tonnes of small pelagic species and 11 000 tonnes of demersal species. Two kinds of indicators are used, the social indicators related to the labour, the level of education and maritime training and the economic indicators linked to the evolution of the sales turnover, the invested capital, the costs of production and the profits.

The sector allows for approximately 20 000 employment. Overall labour is stagnant for several reasons: the boats are more and more industrialized; the social conditions do not improve; the share system gives more advantages to the ship-owners. As for education, the level of illiteracy remains very high compared to other economic sectors, with an average of about 80%, despite the effort of the Ministry national programs. As education became mandatory, it is expected that the next generation of fishermen will not be illiterate. The maritime training is also mandatory to obtain a fishing permit, but the programs taught are considered inadequate. Generally, women do not participate in the various fishing activities, but they contribute intensively to the fish processing chain. The invested capital in the fishing sector is in the range of 150 million Euros, representing a substantial increase from the previous year. The sales turnover is estimated at about 66 M Euros. There has been an increasing trend during the last 4 years. The raw profits are positive for all the fleet segments, and the added values are very important as well.

- **"Socio-economic indicators and economic performance in Turkish small-scale fishery : a comparative study", by Vahdet Ünal**

The study evaluates the state of small-scale fishers, fishing operations, in terms of socio-economic indicators and economic performance during 2002-2003 fishing season in six selected fishing areas in Turkey. The work was carried out in close co-operation with fishers and the management board of each cooperative. During the field study, 127 fishers, all of whom were skipper owner and cooperative members, were interviewed in six different fishing districts. The general aims of the study were to assess economic viability of the fishing activity through the estimation of some socio-economic indicators and economic performance. Analyses showed that 53 percent of small-scale fishing boats have a positive net profit and fully recover their costs, with no losses. However, considering an economic performance ratio of more than 10 percent is accepted as good, only 41 percent of small-scale fishing vessels showed favourable results. Moreover, 25 percent of fishermen desired to quit the profession. They continue fishing due to lack of other employment opportunities. Overall, livelihoods and viability are generally threatened by irregular and relatively low levels of income (the mean catch usually ranges from 2.0 to 7.2 kg per day and per vessel day productivity ranges from 10.3 to 36.8 US$) in small-scale fishery. The economic situation in small-scale fishing communities requires that all those concerned take a fresh look at the problem, with more attention to fishery management issues.

Other studies

- **"Relation Prix-quantité pour les petits pélagiques en Méditerranée marocaine", by Zahri Yassine**

Currently, the small pelagic fishery in the Moroccan Mediterranean Sea is facing an over-exploitation situation of some targeted species, particularly the sardine (Sardina pilchardus). The study established a price model for small pelagics in relation to their captures, in order to evaluate the economic consequences of an eventual reduction of the fishing effort.

The inverse demand model Almost Ideal Demand System (AIDS) which proved to be empirically consistent, was used to evaluate the effect of the variation of captures on prices. Monthly dummy variables were incorporated into the model in order to evaluate seasonality effect. Data have been collected for the three main Moroccan Mediterranean ports on a monthly basis for a period of 23 years.

The main results showed that the prices of small pelagics in the Moroccan Mediterranean Sea are inelastic at the ex-vessel level. Owns elasticises are higher than cross elasticises; a reduction of 10 percent of the sardine captures induce a price increase of this species of 3.8 percent to 4.3 percent. The analysis of crossed elasticises revealed that the capture of sardine and horse mackerel in the Moroccan North Atlantic affects the prices of Mediterranean small pelagics. The dummy variables showed a significant decrease in the sardine price during the summer period, with levels that can reach 53 percent; this decrease is mainly due to the temperature increase during this period, and to the drawbacks in the handling and transport conditions of fish.

- **"Application of socio-economic indicators in the French Mediterranean Sea", by IFREMER**

During the Workshop, participants received from IFREMER (France) an electronic version of a study on the application of socio-economic indicators in the French Mediterranean, which was acknowledged with satisfaction although, due to time constraints, the study could not be properly reviewed. The Workshop noted however that the SCESS indicators and fleet segmentation were only partially implemented.

REVIEW OF THE AVAILABLE INFORMATION ON RECREATIONAL AND SPORT FISHERIES INCLUDING THE ANALYSIS OF ITS LEGAL FRAME

- **"Recreational fisheries in the Mediterranean countries: A review of existing legal frameworks", by Charline Gaudin and Cassandra De Young**

This study reviews the existing laws and regulations concerning recreational fisheries adopted by Mediterranean countries. It begins with an overview of relevant international initiatives regarding recreational fisheries management and a description of the marine recreational fisheries within the Mediterranean basin. The issue of recreational fisheries' definition, of recreational fisheries policies and of the role of stakeholders are addressed and a list of target species in Mediterranean recreational fisheries is identified.

The core of the study analyzes the main management measures adopted by States including: (i) access regimes to fisheries resources; (ii) conservation measures; (iii) special recreational fisheries regulations; and (iv) monitoring, control and surveillance of recreational fisheries.

The purpose of this study was to provide a snapshot of recreational fisheries legal frameworks within the Mediterranean with a view to promoting discussion and experience to promote homogenous and comprehensive recreational fisheries management in the Mediterranean.

- **“Some preliminary notes on the Recreational Fisheries in the Adriatic Sea”, by Oldin Bojic**

The study emphasized the need to better define recreational (sport) fisheries, since it is a widespread and growing activity in Croatia. Basic provisions are stressed in order to facilitate the understanding of such an important activity both from a social and an economic point of view. It contributes to the state economy, through tourism development, competitions, big game fishing etc. Recreational fisheries usually have a large number of individual participants and it presents different socio-economic challenges for the country. Access regimes, targeted species, duration, fees and institution issuing licences, were identified and found equally important. Special attention was given to the conservation measures and monitoring and control of recreational fisheries.

Better future management of recreational fisheries are provided. True problems lay when it comes to the enforcement of regulatory provisions. The regulatory system has to be straightforward and easy to understand, and must not be changed on a yearly basis. More subtle experts should be involved in the development and evaluation of new regulatory schemes.

The question that emerges when observing regulations of recreational fishing is whether those activities are well controlled. Clear objective of regulations in force, especially regarding tools, gears, type and quantity of fishing effort seems to be scarcely obeyed. The main problem seems to be the strong increase in the number of recreational and sport fishermen.

- **Legal Frame of Recreational Marine Fishing in Turkey: Current Status and Regulations, by Vahdet Ünal**

Recreational fishing, which can be defined as harvesting fish for personal use, fun, and challenge, is an activity that becomes more popular day by day in Turkey because of increasing welfare of people. The existing vast coastline of the country offers people a variety of great fishing activities. The Ministry of Agriculture and Rural Affairs (MARA) is the main state administration responsible for both commercial and recreational fisheries regulation, administration, promotion and technical assistance through four General Directorates. According to the Law (1380), MARA publishes and announces fishing circulars every year in order to regulate recreational fishery. The circular covers relevant definitions, required information (frequently asked questions section), restrictions and bans for species, fishing gear and areas. According to Turkish fishing circulars, recreational fishing covers both amateur and sportive fishing but this activity is seen usually in the form of amateur fishing because there are no fishing clubs or federations in Turkey. Spear-fishing competition, which is organized by the Underwater Sports Federation, is the only sportive fishing activity. In any case, neither activity includes sale, barter or trade of all or part of the catch. The most common form of recreational fishing is done for pleasure and self consumption (rather than competition) by fishing line, troll line and spear gun. Using cast net was banned by the latest fishing circular (2007). This increasingly important activity is managed by traditional methods such as bag and size limits. There is not a compulsory license system yet. It is of public access (free for all) but a document is given to anglers who want to certify their activities, although without privileges to users. Although legislative framework of recreational fishing is well prepared, quite detailed and seems to cover almost all fundamental aspects of recreational fishing, there are some gaps and defects in practice and enforcement. Furthermore, capacity of recreational fishery, number of people involved in this activity (their age, gender, education level etc.) and their contribution to the national economy, ecosystem effects of this activity are not known. Lack of data, monitoring, control and enforcement appear to be the most important gaps of the activity. The study concluded that there is an urgent need for multidisciplinary research and collection of reliable data

aimed at assisting science-based fisheries management in recreational marine fishing in Turkey.

- **Definition of the management of amateur fishing at sea proposed by the CIPS, Conclusions presented by Louis Morvan**

The CIPS is ready to collaborate with all the organizations working for the environment and the protection of the species. The sport fishermen can provide information referring to the good management of our seas. They are responsible people having a good knowledge for fishing. They are aware of the effects of the climatic change, the pollution, the poaching and sometimes of the excessive fishing effort on some species.

Sport fishing takes little but represents a significant socio-economic weight. Amateur fishing is not sufficiently present or represented in national or international organizations. There is a willingness to be present at the time of the decisions relating to the management of this activity.

The FAO report (Gaudin, De Young, 2007) on recreational fishing legal framework shows the need for further collaboration between the Mediterranean countries on the regulation of amateur fishing, and should be used as a basis for a harmonization of the latter, in particular on subjects such as minimal sizes, charters boats and restriction of catches, etc.

A definition of salt water amateur fishing and recommendations regarding their management proposed by the CIPS are summarized in Appendix 5.

GENERAL FRAME FOR THE ELABORATION OF GUIDELINES ON THE USE OF THE SOCIO-ECONOMIC INDICATORS IN THE FISHERIES MANAGEMENT INCLUDING FOR THE RECREATIONAL AND SPORT FISHERIES

12. This reference document was presented by Ramon Franquesa. The document provided a summary of the state of the art in the development of the methodology for the production of indicators. The utility of economic indicators was explained in different fields: they are synthetic information that can provide an adequate picture about the relative importance of each fleet segment in their economic context, for both managers and stakeholders. They allow for the evaluation of the potential gains and losses of potential measures and help monitor the administrators' decisions and evaluate their efficiency and coherence. They allow for the comparison of fleet segments across countries, the simulation of the impacts of the different measures in the future and can be used jointly with bioeconomic models. They may show the dynamic evolution of the fisheries with regards to established reference points. Two ways are considered to help the Member States for the processing, elaboration and interpretation of the use of socioeconomic indicators. First, through the preparation of a handbook for collecting and processing the data to produce the economic indicators, with a guideline for interpretation of outcomes; second through the development of a software to facilitate the process. The summary of the proposed guidelines is presented in Appendix 4.

DEFINITION OF A MINIMAL LIST OF SOCIOLOGICAL INDICATORS FOR CONSIDERATION IN THE GFCM TASK 1 MATRIX

13. The suggested priority list on social indicators includes the following indicators by fleet segment. They should be calculated as averages over the samples of each stratum:

- Age of the fisherman
- Years of experience in fishing activity
- Share of the fishing incomes over the total yearly personal revenue

ANY OTHER MATTERS

14. There were no other matters.

GENERAL CONCLUSIONS OF THE WORKSHOP

Task 1.3 – Economic components variables

15. The Workshop discussed the GFCM Task 1.3 and suggested the following arrangements to facilitate the understanding and the collection of economic data. The Workshop recommended that Member State administrations proceed urgently in the collection of data following the task 1.3 table.

Data	Description	**Sources**
Gross Tonnage	Total gross tonnage of fishing vessels belonging to the given Fleet Segment.	**Census**
Engine Power	Total engine power (kW) of fishing vessels belonging to the given Fleet Segment.	**Census**
Employment	Total number of people employed on fishing vessels belonging to the given Fleet Segment. The number of crew members can be estimated on a full time equivalent (FTE) basis.	**Surveys**
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.	**Surveys**
Landing weight	Total landings in weight.	**Auctions – Surveys**
Landing value	The volume of landed fish valued against actual market prices. It equals to quantities landed multiplied by the landing average price.	**Auctions – Surveys**
Vessel value of total Fleet	This is defined as **present value of the** total invested capital - value of hull, engine, gear and equipment. The replacement-value method can be used to estimate this parameter.	**Surveys**
Working days/year per vessel	Number of **working** days per year (average).	**Surveys**
Working hours/day per vessel	Number of **working** hours per day (average) **including the time of work in harbour preparing the trip and commercialization**.	**Surveys**
Cost of fishing/day per vessel	These include daily expenses incurred in fishing activity, such as fuel, lubricants, etc. They are variable costs that depend on the time spent in fishing.	**Surveys**

Yearly Fixed costs per vessel	These comprise costs not directly connected with operational activity, such as non-routine maintenance, vessel insurance, taxes and dues, etc. The fixed costs are all the costs that are inevitable to pay yearly, independently from the time spent to fish.	**Surveys**

16. The Workshop stressed the importance of clarifying and disseminating the methodology established in the development of the economic indicators, particularly for:

- the use of the fleet segmentation already agreed on for collection of data, monitoring and formulation of advice on the management of Operational Units;
- the implementation of the Resolution GFCM/31/2007/1 adopted on data collection listed in the task 1.3; and
- the facilitation of the work of the Workshop on socio-economic indicators to establish procedures on data transmission from Member States to the GFCM secretariat and from the secretariat to the Workshop for data analysis and elaboration of management advice.

17. The Workshop agreed on the importance of time series analyses to provide management advice using methods such as the Traffic Light Method to analyse the dynamic of socio-economic indicators with the aim of evaluating the status and trends of fisheries. It was recognized that the longer the period under investigation, the more reliable results are. Therefore, the Workshop recommended to collect a minimum of 4 years of data for the application of these methods.

18. The Workshop recognized the utility of reference points suggested by Mr Accadia (Accadia P. and Spagnolo M., Socio-Economic Indicators for the Adriatic Sea Demersal Fisheries, IIFET Conference 2006, Portsmouth, UK) for the evaluation of trends based on the economic and social indicators. The Workshop recommended the adoption of this method in the analysis of the fisheries status. In particular:

- for the indicators evaluating the status of fisheries, reference points could be set according to their percentile values in the following series: > 66th percentile, 66th-33rd, and < 33rd percentile;
- for the indicator measuring economic sustainability (ROI, return on investment), the reference point could be the average rate of the Treasury securities with a long term maturity (risk free investment); and
- for the indicator measuring social sustainability (the average salary per man employed), the reference point could be the minimum salary stipulated by the national laws.

19. The Workshop recommended the elaboration of a mechanism so as to help the production of economic indicators which should include:

a) The speedy publication of the COPEMED Study "*The economic indicators estimation in the Mediterranean fisheries"*, completed in 2005. It is also suggested that this study include the last Libyan study recently completed in the eastern part of the country.

b) The elaboration of a handbook as a guideline on the use of socio-economic indicators in fisheries management supported by software. The software is intended to facilitate data processing at national level. It should:

- be free and open to national users (including the code source);
- assure the property and control of the gross data in the hands of the national administrations;
- facilitate the homogeneity of the frames of data transmitted to GFCM;
- include facilities to export data to graphical representations, bio-economic models, the modification of reference points; and
- allow to accumulate gross data, to analyse the quality of enquiries and to include statistical analysis to optimise the distribution of the surveys inside the observed population by stratum.

Recreational and sport fisheries

20. The Workshop addressed the problem of the recreational fisheries' definition and recommended that SAC adopt a common definition at the Mediterranean level (also called for by ICCAT and the European Union, as leisure fisheries). Common definitions should also be adopted for the different types of recreational fisheries activities, known as sport fishing, tourism fishing and amateur fishing, each having their own associated goals.

21. In this respect, the Workshop advised to follow the definition adopted by ICCAT and the European Union but to include also tourism fishing within this definition (not yet covered by the ICCAT or EU's definitions). The workshop's suggested definitions are presented in Appendix 6.

22. The Workshop also recommended that SAC consider the inclusion of these definitions within its glossary for potential use by Member countries within their regulation.

23. The Workshop also noted that there is a severe lack of data and of social and economic surveys which prevent homogeneous and regular monitoring of these activities.

24. Therefore, the Workshop insisted on the need to collect at least a minimum set of data and information to build major socio-economic indicators on leisure fisheries. It recommended collecting primarily the following:

- Number of licenses/permits for each segment for sport, tourism and recreational fisheries (shore based, boat based, underwater fishing) with the aim of evaluating the number of recreational fishermen;
- Catch amount (kg) with the view of contributing to the assessment of fishing effort for all the species caught and to better understand the impact of recreational fisheries on marine resources. These "catch reports" should include daily catch focusing initially on selected GFCM priority species, in addition to migratory species;
- Data and information on leisure fishermen expenses (hotel, restaurant, transport, fishing gears [e.g. baits and accessories], etc.) with the view of evaluating the value of the induced economic activity.

25. Regarding social indicators, the Workshop recommended that the collection of information should concentrate on parameters such as age, gender and education, and agreed that this social and economic information is enough to assess the importance of recreational fisheries (size of anglers community, pressure on marine resources and economical value of recreational fisheries).

26. In most cases, questionnaires and surveys should be used to collect data. The Workshop also stressed the important role of the federations, associations, fisheries administrations and port authorities in obtaining and sharing relevant data such as catch reports.

27. The benefit of stakeholder participation has been recognized throughout the Mediterranean basin. Nonetheless, the Workshop emphasized that cooperation between national authorities and recreational anglers should be further developed. In the case of sport fishing, the creation of federations or associations facilitated cooperation. There would be a need to further promote the establishment of federations or alike for amateur and tourism fishing.

28. The Workshop noted that there are few comprehensive recreational fisheries regulatory frameworks, often as a result of a lack of specific policy.

29. While harmonization on regulatory frameworks at regional level would appear premature in a context of lack of information, the Workshop recommended that some relevant guidelines should be prepared. Such guidelines on recreational anglers could include, inter alia, the following issues:

- Access regimes such as for shore based, boat based and underwater fishing.
- Conservation measures including prohibition of sales, gears restriction, daily bag limit, prohibited species, minimal sizes, fishing reserves and others restrictions.
- Special leisure fisheries regulation including underwater fisheries, sport fishing, tourism fishing (charter fishing and pesca turismo).
- Monitoring and control measures (inspection, sanctions and reporting).

30. Finally, the Workshop agreed that without an education and sensitization campaign, the success of any legislative framework would be compromised. Thus, the Workshop advised that Member States diffuse information on leisure fisheries regulations by disseminating booklets or alike including minimal sizes, gear restrictions and bans.

ADOPTION OF THE REPORT

31. The conclusion and recommendations of the Workshop were adopted at the meeting. The full report was adopted by e-mail in August 2007. Following a warm conclusive statement by Mr Nurredine Essarbout, Director General of the Marine Biology Research Center, the Workshop was closed by Mr Mohamed Hadjali Salem, Chairman of the GFCM.

Appendix 1

Agenda

1. Opening and arrangements for the meeting

2. Review of work performed on socio-economic indicators in the Mediterranean

- In the framework of FAO regional projects
- Studies undertaken at national level
- Other studies

3. Review of the available information on recreational and sport fisheries including the analysis of its legal framework

4. General frame for the elaboration of guidelines on the use of the socio-economic indicators in fisheries management, including for the recreational and sport fisheries

5. Definition of a minimal list of sociologic indicators for consideration in the GFCM Task 1 matrix

6. Any other matters

7. General conclusions of the Workshop

8. Adoption of the report

Annex

Terms of Reference of the Workshop

The Workshop will:

- Finalize a reference document for the elaboration of a guideline on the use of socio-economic indicators in fisheries management.

  - *Proposal of a draft document (to be prepared by Ramon Franquesa)*
  - *Contributions from participants*

- Review the information available and analyse the legal framework of recreational and sport fisheries in the Mediterranean.

  - *Work performed in the FAO/CGPM Secretariat*
  - *Studies undertaken in the context of the FAO regional project.*
  - *Contributions from participants on national case studies*

- Produce a minimal list of sociologic indicators to be considered in the GFCM Task 1 matrix.

Appendix 2

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Appendix 3

Summary of the results and recommendations of the SCESS workshops on socio-economic indicators (2001–2004)

2001

- The efforts of research must be concentrated in a short and medium term on the economic data collection for establishment of the indicators in the GFCM area.
- A particular effort should be to turn towards the analysis of these indicators and on the development of models of simulation on the basis of information already acquired.
- Regular socioeconomic data collection system should be established within the national administrations, to build the indicators.

Results:

The indicators make possible the assessment of the following aspects in the context of management fisheries:

1. Impacts on the income and the future viability of the activity of fishing as a result as :
    - A variation of the cost of the licences
    - A variation of the price of the inputs (fuel)
    - A variation of taxes on the activity (work, port, production...)
    - A variation of the average price of the production
2. Impacts on the employment and the investment of the variations above in the medium-term
3. Short-term impacts on the income, the viability and the geographical distribution of the segments as a result as:
    - a reduction of the days or times of fishing
    - a reduction of the fishing effort (a number of boats)

2002

- Definition of local operational units.
- Definition of a minimal list of the social indicators: average age, activity period, participation in the capital structure.

2003

- The need to establish a common methodology and fleet segmentation among the GFCM Member States.
- The need to consider the individual vessel as the unit for economic analyses. From the economic information of each fleet segment, it would be possible to estimate the effort levels in different fisheries and to evaluate the impacts of different fleet segments in the various fishing grounds.
- The data collection unit for the sociological analysis is the individual: each person working in different fleet segments or in different fishing grounds, as function of wages and their professional capacities. Given a data base developed on the scale of the individual, it would then be possible to estimate the social characteristics (at the household, community, and regional levels) of each fleet segment.

Follow-up action to be considered:

- Analysis of the financial situation and distribution of the fleets
- Evaluation of the total costs of investments made in the sector
- Knowledge of the movement trends of fishers into and out of the fisheries
- Knowledge of the food contribution to local populations by fishery
- Analysis of the price structures of the various fisheries

2004

- Various work on the socio-economic indicators produced in the Mediterranean Sea within the framework of the SCESS (SAC/GFCM) showed:
    - the viability of the data collection;
    - the viability of the production of the economic indicators;
    - the approval of the fleet segmentation proposed by the SCESS for the SAC;
    - the capacity of the indicators to compare between the different fleet segments, the different ports and the different countries;
    - the facility to interpret the results and the relatively limited cost to obtain the information needed to build the indicators;
    - that the data collected can be used for the bio-economic models of simulation (exp. MEFISTO); and
    - the need for launching a programme, possibly co-financed by the regional projects and the governments, to install a regular data collection system necessary to produce economic indicators was recommended.

Activities carried out within the framework of the SCESS in relation to the socio-economic indicators

- Study on the socio-economic indicators in the Alboran Sea (Spain and Morocco);
- Study on the socio-economic indicators of fishing in the gulf of Gabès (Tunisia);
- Study concerning the Tyrrhenian Sea (Italy);
- Manual on Sampling Methodologies for Socio-economic Indicators ;
- Three sociological surveys had been completed: 1) Personal Data, 2) Maritime district characteristics and relations, and 3) Crew working conditions and fishing strategies. (Albania) ;
- Study of the socio-economic indicators of fishing in the Algerian Mediterranean Sea, situation and prospect
- Study of the socio-economic indicators in the North and East of Tunisia;
- Case study on the fishing of bluefin tuna in the area of Ksar Sghir in the Moroccan Mediterranean Sea;

Appendix 4

Summary outline of the guidelines of the handbook on the use of socio-economic indicators

1. Fleet segments: GFCM segmentation, use of census and stratification.

2. National Indicators: description, international sources of data, and interpretation.

3. The Enquiry process: sampling plan, description of questions, field work at harbours, introduction of data and revision. The alternative use of other sources.

4. The calculation of outcomes: files, reports and graphics and time series.

5. Fleet Segment indicators: description and interpretation.

6. The use of the statistical procedures to evaluate the validity of the outcomes.

7. The improvement of the quality of the enquiries distribution. The proposal for next period enquiries distribution.

8. The use of reference points: interpretation and potential modification in the reference levels.

9. The use of the bio-economic models to produce simulations. Routine to export data to MEFISTO.

10. The structure of the software. Mechanisms to modification.

Appendix 5

Summary Statement by CIPS

1. Definition

It would be necessary to set an identical definition to the whole of the international organizations to refer to the various activities.

Based on the French Larousse Dictionary, the most appropriate wording for the whole of this type of fishing is AMATEUR, as already defined by ICCAT (doc. PA2 103F/2006) and the European Community. Amateur fishing would then be split into Entertainment/leisure fishing and Sport fishing.

2. Sport fishing

Sport fishing is well structured through the International Confederation of Sport Fishing (CIPS) representing 126 national federations or organizations (64 nations). It is a member of the General Association of the International Federations of the Sports (GAIFS) where it represents sport fishing. This association is close to the UNESCO/IOC. National Federations or National Sport Organizations members of the CIPS are for the majority members of their National Olympic Committee.

The fishermen get a sporting licence with the related obligations (medical examination, anti-doping). They are all members of a federation or a national organization, therefore identifiable. The sport fisherman usually knows the minimal sizes as well as the rules managing amateur fishing. He practises fishing in competition.

About fishing regulations (competition), FIPS-M, member of the CIPS, laid down rules which are applied in all the international events, organized under its aegis. It is the same for national events and competitions when those are prepared by recognized national federations or organizations.[1]

Some federations count the data of the catches carried out in these competitions. The data are then transmitted for information to the scientists.

3. Entertainment or leisure fisherman

The entertainment or leisure fisherman is hardly identifiable (except when a fishing permit is obligatory in the area where he practises its leisure). He is often badly informed of the regulations. Sometimes he belongs to a nautical association, if he is owner of a boat.

A recent study carried out by the French government on sport and entertaining fishing noted that the retained fish by amateur fishers is about 2.5 percent of the taking away carried out by the commercial fishing: 600 000 tonnes for the commercial fishing and 14 500 tonnes for entertaining and sport fishing. Other studies in European countries (England, Spain), announced similar figures. Thus, for the time being, the retained fish volumes of the amateur fishing might have a limited influence on the resource.

[1] Such as: Gibraltar Federation of Sea Anglers (Gibraltar), Federación Española de Pesca y Casting (Spain), Federazione Italiana Pesca Sportiva (Italy), Federazione Sanmarinese Pesca Sportiva (San Marin), Fédération Française des Pêcheurs en Mer (France), Zveza za Sportni Ribolov na Moru Slovenije (Slovenia), Hrvastski savez za Sportski Ribolov na Moru (Croatia), Zavez za Podvodne Aktivnosti i Sportski Ribolov (Montenegro), Hellenic Federation for Underwater Activities (Greece), Egyptian Angling Federation (Egypt), Israeli Sportfishing Association (Israël), Fédération Tunisienne de Pêches Sportives (Tunisia), Malta Fishing Association (Malta).

4. Fishing permits (amateur)

If fishing permits are established, it is advisable that:

- Its issue is at very low price (not to taken as an additional tax).
- It is used to provide information to its holder concerning the regulations in force and the minimal sizes to respect as well as the duties of the holder of the permit.
- Associations must be participants in permit provisions. In addition, they are also able to count data on retained fish values.
- Sport fishermen who already get federal licences do not pay additional tax, the federal licence being used as permit (this sign allowing the Federations or national organizations to reinforce their actions near their members).

5. Sale of the catches carried out by amateur fishing

Catches coming from amateur fishing should not be marketed. They must be intended only for the family consumption of the fisherman. Out of the family circle the catches cannot be given, nor exchanged.

Products from competitions and other events have to be intended (if it is not given to the participants) for charitable institutions. Its sale, if necessary, must be subject to agreement of the local authorities or with the fishing professionals and the revenues must be transferred to identified institutions.

6. Minimal sizes as defined by the EU for the countries being part of the Community and by the Governments for the others are not severe enough. Any fish which did not reach its maturity of reproduction should not be taken.

7. Limitation of the means of fishing and quotas – limitation of catches

The number of the fishing tackles being used for amateur or leisure fishing should be limited. They should not be similar to those used by the commercial fishing.

Weight limitations should primarily be set for the catches carried out on the large pelagic - bluefin tuna, “germon” (thunnus alalunga), swordfish, etc - as on species whose stock is recognized as in danger.

8. Lawful legal framework of fishing charter

If the differences in amateur fishing are finally not very significant in the various Mediterranean countries, it is not the same with regard to the statutes and the activities of the boats charters. Almost no country has identical laws to manage this profession yet it is significant for local tourism. It would be good that a statute well defined and adapted to this profession is created and adopted by the whole of the countries.

9. Control and monitoring of amateur fishing

It is necessary to reinforce controls at sea and ground, especially to apply measurements taken to protect the species and to prevent any sale of the amateur product fishery. In addition, penalties are not very severe enough in certain countries, they are little and not applied in others.

Appendix 6

Definition proposed for recreational/leisure fisheries

The Workshop recommended that SAC adopt the following definitions:

Leisure/Recreational fisheries – non-commercial (i.e. not for sale, barter, or trade) fisheries motivated by personal uses for recreation, tourism or sport. Leisure/recreational fisheries comprises three sub-categories:

Amateur fishing – unorganized hobby fishing not associated with specific events or competitions. Catches from amateur fishing are either released (catch & release) or are retained for private consumption.

Sport fishing – organized fishing involving free competition between fishermen to catch the largest fish of certain species, the largest number of specimens or the largest total weight depending on the rules of each particular competition.

Tourism fishing – fishing conducted by commercial fishermen ("pesca-turismo") or by recreational fishing professionals ("charter") and can be understood as a fishing activity carried out by a third party who organizes a fishing expedition for tourists.