

Report of the Transversal Workshop on Ecosystem Approach to Fisheries

Salammbô (Tunis), Tunisia, 22 and 23 May 2007

Opening and arrangement of the Workshop

1. The Transversal Workshop on Ecosystem Approach to Fisheries (EAF) was held in the INSTM, Salammbô (Tunisia), from 22 to 23 May 2007. The meeting was attended by 17 participants from Albania, Libya, Morocco, Tunisia and Turkey as well as by representatives from IUCN, Sanctuary Pelagos, UNEP/MAP-RAC/SPA and WWF. The list of participants is provided in Appendix B.

2. Mr M'Rabet, Director General of the INSTM, opened the workshop and welcomed the participants. Mr Srouf, Deputy Executive Secretary of the GFCM thanked the INSTM for hosting the meeting and the participants for their support to the GFCM activities.

3. Mr Bradai, coordinator of the SCMEE, recalled the main objectives of the workshop and made reference to the previous meeting on EAF held in the same venue in 2005.

4. Ms Bianchi was designated facilitator of the meeting and Mr Leonart rapporteur.

Adoption of the agenda

5. The draft agenda was introduced by Mr Bradai and it was unanimously approved (Appendix A).

General presentation on the Ecosystem Approach to Fisheries

6. Ms Bianchi introduced the EAF, including its background and the most recent developments in FAO as well as at international level.

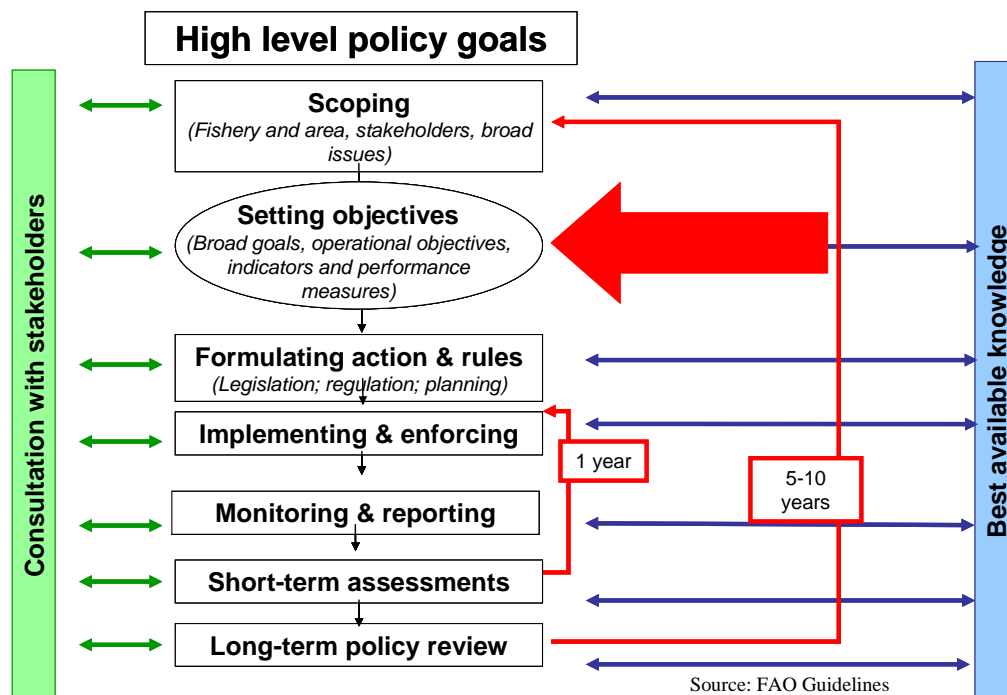
Abstract: Almost six years have passed since the Reykjavik Conference on Sustainable Fisheries in the Marine Ecosystem took place. That conference resulted in a Declaration and commitment by FAO's member countries to the principles underlying an Ecosystem Approach. This was adopted by the FAO Committee on Fisheries in early 2003. Since then, the main challenge has been its actual implementation. Apart from the difficulty in translating high level policy goals into practical fisheries management, there has been uncertainty in member countries as well as fisheries management organizations on what an ecosystem approach actually implies. The year 2006 can probably be designated as the year of 'demystification' of the EAF. Two important international events have taken place: the United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea (UNICPOLOS, June 2006) and the Bergen Conference on Implementing an Ecosystem Approach to Fisheries (September 2006). Both resulted in the recognition that perceptions and understanding of the principles underlying the EAF are now converging. However, there are still a number of common misconceptions, as for example that the EAF is still an abstract concept, not applied anywhere in the world or that there is insufficient scientific information to apply an EAF.

Applying the EAF equals operationalizing the Code of Conduct for Responsible Fisheries and therefore the principles that are fundamental to the EAF are the same as those for the CCRF. The principles that characterize EAF can be grouped according to the three main frameworks, the normative, the operational and the cognitive. Examples of these underlying principles include maintenance of ecosystem integrity (maintenance of biodiversity in all its aspects and maintenance of ecological processes that support biodiversity and productivity), ensuring equity, both the intra-generational, i.e. fair

distribution of rights of various sections of society at present and intergenerational equity, application of the precautionary approach, the use of best available knowledge, inclusion of stakeholders in the management process and the use of incentives.

There are a number of approaches related to EAF that are currently in use. While many are very similar in basic principles and approaches, two main categories can be recognized: those applying to a given region / ecosystem, that simultaneously deal with all sectors (e.g. fisheries, mining, shipping, tourism etc.) that may exploit a given area. As a result of cross-sectoral approaches, global strategies are developed for a given region, rights to different user groups are allocated and conflicts between various users reconciled. Sectoral approaches, such as the EAF deal with management issues within a given sector and make sure that there is consistency with the framework provided by the global strategy. Collaboration with other sectors would also apply at this level.

A thorough implementation of EAF entails revision of fisheries management plans to take account of ecosystem considerations and to make sure that all priority issues to be dealt with by management are identified in close collaboration with relevant stakeholders. The figure below shows the main steps and elements of developing and implementing a fisheries management plan. It is essential that these plans are developed within a policy environment consistent with the EAF principles.



The process of evolution from conventional management towards EAF has started and is gaining momentum. The introduction of the EAF framework has probably helped in attracting attention to the need for change. Valuable experience is already available and valuable action can be readily taken. The implementation can only be incremental and adaptive. However, broadening the scope of fisheries management will also require a process of reprioritization, particularly in relation to resource use in management and research. Guidance can be provided by FAO and other institutions, but the actual application of EAF can only take place with the main actors on the ground taking responsibility for the needed changes.

7. The discussion that followed stressed the importance of participatory approaches in fisheries management and a few examples were given by participants of successful cases of co-management in the Mediterranean. The various challenges that participatory approaches entail were however commented. These include the costs involved, the difficulty of identifying valid stakeholders, the differences in cultural background and level of influence among stakeholder groups, which may affect equity. Ms Bianchi noted the importance of

incentives for applying the EAF and the interest shown by the industry in many places to trade only certified products.

Follow-up of the recommendations of the workshop on EAF organized in Tunis in September 2005

8. Mr Lleonart introduced this agenda item by recalling the conclusions of the transversal Workshop on Ecosystem Approach to Fisheries held during 2005 in Tunisia. The workshop identified some actions which could be considered as a follow-up for the main recommendations made during the above mentioned workshop :

- continue the work on indicators, considering that these should be robust and reflect ecosystem properties, including the human component of the ecosystem; they should be linked to management objectives and be acceptable and easily understood by stakeholders (addressed to the 4 Sub-Committees)
 - Status: no specific actions reported by national scientists.
- reinforce the transversal collaboration in order to produce integrated advice for management, in particular through intercommittee activities
 - Status: progress regarding the increasing number of transversal meetings
- invite to test and discuss the use of the two ecological indicators presented at the meeting: %PPR-TLc and synthetic trend indicator (MEDITS) with the final objective to obtain adequate tools for EAF in GFCM (addressed to SCMEE and SCSA)
 - Status: no specific actions reported by national scientists
- review and consolidate information and classification of bottom habitats in the Mediterranean basin (addressed to SCMEE)
 - Status: The SAC workshop on MPAs (Tunis, 24-25 May) was scheduled to address this issue among others. This workshop convened to consider the work being done by RAC/SPA to produce a complete classification of benthic habitats¹.
- improve knowledge on and characterization of essential fish habitats
 - Status: progress regarding the identification of some essential fish habitats, in particular stable hake nurseries, in the south of Sicily.
- promote that assessments also incorporate ecosystem considerations (e.g. predator-prey considerations, bycatches, impact of the environment on the

¹ <http://www.rac-spa.org/telechargement/SDF/LCHM%20ENG.pdf>

stock, description of the environment, biotic and abiotic, in which the fishery is developed etc) (addressed to SCSA)

- Status: assessment forms used by SCSA include some cells to present some of the mentioned aspects
- No other action reported by national scientists
- produce a reference document on the environmental impact of the different gears and explore the possibility of implementing mitigation measures, where relevant
 - The GFCM ATSELMED working group is progressing in this topic
- revise the global strategic objectives for the region so as to ensure consistency with the principles of EAF
 - Status: Mr Leonart noted that recommendation GFCM/2005/1 prohibiting the use of towed dredges and trawlnets fisheries at depth beyond 1000 meters was of utmost of importance, but was not part of a strategic framework
 - Ms Bianchi informed that strategic objectives were already defined by UNEP (Athens meeting, February 2007) for the Mediterranean and will be discussed at political level in December 2007.
- organize consultative meetings with stakeholders in the Geographical Subareas (GSAs) with the aim of sensitising/informing on the ecosystem approach and jointly identify priority issues to be dealt with. This work could start in selected regions that would serve as case studies
 - Status: no information on possible national initiatives made available

Review the results of the available pilot studies with the view of giving further consideration to methodologies and identifying EAF indicators in the Mediterranean

9. The following presentations were made to the workshop:

- Identification of Sensitive Marine Areas in the Gulf of Gabes (GSA 14) using GIS (M. Belhassine)

Abstract: The objective of this study is the identification of marine protected areas along Tunisian coast in particular in the Gulf of Gabès (GSA 14). The overall objective is to identify areas that may benefit from closure to fishing. The work is based on a large multidisciplinary collection of coastal data collected in the framework of different national research projects, from public domain databases or compiled from literature. All collected datasets were geo-referenced and GIS was used as platform for this database because of the helpful functionalities it offers such as the overlaying of information layers, spatial data modelling and querying tools which permit to highlight the likely relationships between mapped parameters.

The collected multidisciplinary dataset is related to biological parameters (distribution of fish and discards). The bionomic data include information on Posidonia seabed meadows spatial distribution and the associated fauna and flora. Sedimentary data, representing different sediment size fractions are also integrated. Moreover, this database includes hydrological data representing distribution of common parameters such as temperature and salinity; they are associated with CTD profiles representing the vertical distribution of these parameters. These data are overlaid to the surface general water circulation in this area. All these data are coupled to information on fishing effort and on the human activities in the studied region.

The crossing of these information layers permits the identification of different sensitive areas characterized by the presence of protected biocenoses or the presence of likely nursery areas. Different protection statuses are proposed taking into account a balanced situation between the fishing effort and the other activities in this region [taking into account constraints related to the fishing effort and other human activities in the region].

This study illustrates how areas to be protected can be identified when availability of specific data is limited. It led to a large scale delimitation of MPAs and should be considered as a first step towards a greater effort of investigation aiming at obtaining a high resolution mapping of protection zones.

10. A long discussion followed the presentation. GIS was considered a very important tool for EAF implementation, both because it provides the possibility of spatial representation of key features of the fisheries and the ecosystem, which improves the interface between science and stakeholders, but also because it allows multidimensional analyses that are not otherwise easily obtained. Most of the following discussion dealt with the communication of the results to stakeholders (mainly decision makers and fishers), and the identification of valid stakeholders. The advantages of co-management approaches as compared to conventional top-down approaches were discussed. Several ways were mentioned, as the fora of administration, scientists and fishing sector, active in some countries. It was noted that the stakeholders should be deeply involved in EAF, with responsibility in its implementation. The use of non-scientific information and the examples of successful management programmes (Plan Castellon or Golfo di Castellammare) are useful for stakeholder commitment.

11. The group was informed of a project being developed in the south of Tunisia (gulf of Gabes) with stakeholders participation.

12. Regarding the mechanism to identify valid stakeholders, it was noted that often informal ways and common sense can be used, but guidelines are also available for 'mapping' the stakeholders.

➤ Spatial pattern of fisheries demersal resources, environmental factors and fishery activities in GSA 15 (T. Bahri)

Abstract: A study focused on waters around the Maltese Islands (GSA 15) with the aim of providing a comprehensive overview of the spatial distribution of the different life stages of demersal fisheries resources in relation to the type and distribution of fishing activities as well as oceanographic factors characteristic to the area.

Critical zones were investigated using species abundance data disaggregated by life stage. The application of spatial analysis and GIS techniques allowed the identification of preferential habitats (nurseries, feeding areas and spawning areas) for *Merluccius merluccius*, *Mullus barbatus*, *Parapenaeus longirostris*, *Raja clavata* and *Raja miraletus*. The impact of fisheries activities was assessed, in particular with the characterization of fish assemblages. Transport patterns of early life stages were also hypothesized on the basis of oceanographic factors typifying the area.

The results reveal that the spatial distribution of the main fisheries resources overlaps the limits of the current GSAs. The analysis of oceanographic factors shows that some fish stocks are sustained by young individuals transported from adjacent GSAs. The results also demonstrated that the spatial distribution of the main demersal fisheries resources in the Mediterranean GSA 15 straddle other GSAs, in particular as regards nursery and spawning areas, evidencing shared stocks. This reflects that harmonized fisheries management measures should be applied at a larger spatial scale. Finally, the study evidenced how data provided by different disciplines could be integrated to enhance the value of available scientific information in a data-limited situation.

13. The group underlined the valuable work carried out and, even though not illustrating implementation of EAF, it provides important and useful background information. The study still needs to be complemented with additional knowledge (for instance on vulnerable habitats), however, it can be considered as part of a scoping phase, i.e. reviewing available information prior to developing a management plan.

Progress in defining methodologies for EAF across the output of international organizations (ACCOBAMS, IUCN, WWF, RAC/SPA, PELAGOS)

- Recent developments by WWF regarding the promotion and implementation of Ecosystem Based Management in marine fisheries (Susana Sainz-Trápaga and Sergi Tudela)

Abstract: WWF is contributing to the international debate on Ecosystem Based Management in marine fisheries (EBM) since its early days. Then, in 2002, WWF published its policy proposals and guidelines to encourage and inform about EBM. This policy framework identifies EBM principles, elements required for EBM to be successful, operational steps for its implementation, and proposals for action. A brochure calling for action to accelerate the uptake of EBM to benefit fisheries was simultaneously published. Recently, in 2007, WWF published "Implementation of Ecosystem Based management in Marine Capture Fisheries", in which 12 case studies of the application of EBM to fisheries from the WWF's marine ecoregions are presented. Each case study outlines how a specific EBM operational step was put into practice, who was involved, and the role that WWF played in the process. These case studies show that moving towards EBM in many parts of the world is an evolutionary process from existing political and economical realities, with the right elements already in place for some of the EBM steps and more work to be done on others. These experiences could now be adapted to the specific ecological, social and cultural conditions of any particular fishery. Although not in the publication, WWF is also working in many EBM related activities in the Mediterranean, such as in the incorporation of EBM in current and future management and recovery plans, and in the establishment of fisheries management zones and other spatial and temporal schemes for the management of fishing effort. It is also working for the reduction of the ecological impacts of fishing practices associated with fisheries bycatch and discards. A training course to encourage EBM implementation at Mediterranean level was also carried out early this year. Work related to the implementation of MSC certification as a strategy for achieving objectives and targets of EBM is also evolving in the region. A WWF goal in the Mediterranean for the coming years is the development of a network of EBM pilot sites.

14. The group debated about the definitions and comparison between EAF and EBM; it seems that they have no substantial difference in the definitions of the two.

- Presentation by IUCN on EAF to Mediterranean Aquaculture (F. Simard).

(abstract to be provided by the author)

15. The group noted that the different approaches are strongly convergent. There are not many differences in our understanding of the EAF. No big conflict or divergence. There is convergence in the understanding of what is EAF and its implementation. There are different ways of implementing EAF: thorough analysis of all steps, but also very valid to start at very

local scale. Case studies at smaller scale are valuable, as long as there is a global view/strategy on the goals to achieve.

Analyze potentials and limitations of the implementation of the ecosystem approach to fishery

- development of a regional database for Mediterranean Cartilaginous fishes (Daniel Cebrian)

(abstract to be provided by the author)

16. A discussion about the appropriateness of the MEDLEM system to become the standard database, under GFCM umbrella, followed the presentation.

17. It was also noted that the FAO IPOA Sharks matches well with this proposal and that the issue should be evaluated by the FAO. However it was also stressed that the main weakness of the system is not the database but the recording and reporting of information.

18. The FAO Species Identification and Data Programme, has published a field guide for sharks and rays in the Mediterranean that could constitute an adequate tool to facilitate the shark identification.

Set a common framework and methodology to implement EAF.

19. Most of the Mediterranean is high seas. Furthermore, coastal countries are characterized by narrow shelves (fishing grounds close to the coast) with few shared stocks. Application of EAF will therefore be most relevant at the national level while for the high seas appropriate governance systems will have to be identified. GFCM has already proposed several recommendations in line with EAF, such as the prohibition to fish below 1000m, and the establishment of 3 protected areas in high seas.

20. The workshop stressed the importance of the collaboration between scientists, managers and fishermen, however also noted the limited collaboration between regional organisations and between ministries.

21. It was proposed that an appropriate common framework for the application of EAF in the Mediterranean, the model proposed by the FAO guidelines could be adopted. This scheme was developed on the basis of best practices worldwide² and was also endorsed by COFI in 2003. According to these, the EAF should be applied at the most appropriate scale, following the steps below:

- a. For a given fishing activity, start with the scoping exercise, i.e. put together available information on the fishery, its history (including management), location, stock status, etc.
- b. Identify stakeholders (including all interested user groups).

² The ecosystem approach to fisheries. *FAO Technical Guidelines for Responsible Fisheries*. No. 4, Suppl. 2. Rome, FAO. 2003. 112 p.

- c. Identification of issues and problems perceived by stakeholders, that should be addressed by management. These should be identified through a thorough process and deal with ecological, socio-economic and governance issues.
- d. Prioritize the issues based on risk analyses. In the lack of sufficient quantitative information, qualitative or semi-quantitative risk assessments can be performed.
- e. For each priority issue develop management objectives, identify information gaps, indicators (and relative reference points) and decision rules.

22. The need for a political commitment to the principles underlying the EAF was stressed. Also, a process of sensitization of stakeholders and of the public at large was emphasized, including younger generations and school children.

23. The process of developing and implementing management plans consistent with EAF should be lead by fisheries administrations.

Develop the case studies in particular through integrating socio-economic aspects and aspects related to the ecosystem functioning

24. No specific presentation was made in connection with this agenda item.

Any other matters

25. The Workshop noted the feeble participation to this workshop in particular from the countries of the North of the Mediterranean.

Conclusions and recommendations of the workshop

26. The Workshop made the following conclusions and recommendations:

- Conclusions :

- The workshop noted that there are still challenges in terms of sharing a common understanding of the principles and the actual application of the ecosystem approach. In particular, it was noted that there is a prevailing perception that application of the EAF is primarily a scientific concern, while the meeting stressed the importance of commitment at political, administrative and sector level. Furthermore, the importance of adopting participatory mechanisms at all steps in the application of EAF was stressed, as a precondition for its success.
- The meeting noted that the case studies presented were good examples of the changes that are taking place, sometimes implicitly, in a direction that is fully consistent with the ecosystem approach. These case studies provide useful background information for planning under an Ecosystem Approach framework and were therefore found to be very useful in this context. However, it was noted that they could not be considered as examples of application of EAF.
- The workshop underlined the need for training initiatives that could lead to both sensitize and familiarize stakeholders, at all levels (fishermen, managers, scientists, decision makers, NGOs, etc), in concepts, principles and implementation of EAF.

- The framework for application of the ecosystem approach by WWF (called EBM) appears to be very similar in terms of basic principles and implementation to the one adopted by FAO (FAO, 2003).
- The workshop recognized the importance of the regional database for Mediterranean cartilaginous fishes as a useful tool for decision makers.
- The meeting agreed that the framework provided by the FAO guidelines for the Ecosystem Approach to Fisheries should be a basic reference for guiding implementation. It was noted that the use of this framework entails consideration of ecological/biological, socio-economic and governance issues and the adoption of participatory processes.

- Recommendations.

- Undertake feasibility studies for the application of the EAF, as outlined in the FAO guidelines, in selected case studies. The process could include the following steps:
 - Identification of countries/areas to be the object of the case study. The volunteering countries could be selected to test the feasibility of implementing EAF, including the process of developing a management plan within an EAF framework for a given fishery (potential candidate countries were suggested during the workshop, e.g. Morocco, Tunisia, Malta).
 - Ways should be identified as to ensure that neighboring countries will be able to benefit from the experience and training opportunities that will be associated with the case study.
 - Identify ways of how support can be provided by FAO/GFCM and other organizations in the implementation of the case studies.
- Collaborate with RAC/SPA in the creation of a regional database for Mediterranean cartilaginous fishes. Analyze the possibilities of MEDLEM and SIRENO databases to be the reference.
- Reinforce cooperation with relevant partners (e.g. UNEP, ACCOBAMS, WWF, IUCN, PELAGOS etc.) in various aspects related to the implementation of EAF.

Agenda

1. Opening and arrangement of the Workshop
2. Adoption of the agenda
3. General presentation on the Ecosystem Approach to Fisheries
4. Follow up of the recommendations of the workshop on EAF organized in Tunis in September 2005
5. Review the results of the available pilot studies with the view of giving further consideration to methodologies and identifying EAF indicators in the Mediterranean
6. Progress in defining methodologies for EAF across the output of international organizations (ACCOBAMS, IUCN, WWF, RAC/SPA, PELAGOS)
7. Analyze potentials and limitations of the implementation of the ecosystem approach to fishery
8. Set a common framework and methodology to implement EAF
9. Develop the case studies in particular through integrating socio-economic aspects and aspects related to the ecosystem functioning
10. Any other matters
11. Conclusions and recommendations of the workshop

Terms of reference

1. Under the SCMEE agenda item Ecosystem Approach to Fisheries, two presentations were given on:
 - a case study on waters around the Maltese Islands (GSA 15) with the aim of providing a comprehensive overview of the spatial distribution of the different life stages of demersal fisheries resources in relation to the type and distribution of fishing activities as well as oceanographic factors characteristic to the area;
 - a case study on the use of GIS to integrate environmental and biological data on the Gulf of Gabès (GSA1b) with the view of selecting marine areas of conservation interest to be proposed as MPAs.
2. While discussing, participants noted that:
 - there is a slow progress in defining methodologies for EAF;
 - the EAF is of common interest to all the Sub-Committees;
 - this topic should be addressed during transversal sessions; the SCMEE will however pursue its coordination role concerning the SAC's works on EAF.
3. Therefore the SCMEE recommended organizing in 2007 a SCMEE/SCSA/SCCESS/SCSI transversal Workshop on EAF, including relevant GFCM partners (ACCOBAMS, RAC/SPA, IUCN, PELAGOS and WWF), to:
 - review the results of the available pilot studies with the view of giving further consideration to methodologies and identifying EAF indicators in the Mediterranean;
 - develop the case studies in particular through integrating socio-economic aspects and aspects related to the ecosystem functioning;
 - analyse potentials and limitations of the ecosystem approach to fishery;
 - set a common framework and methodology to implement EAF.

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