

Annexe 1

ESUSG FISHERIES WORKING GROUP

Report of the Workshop on the Ecosystem Approach with a Focus on the Mediterranean Sea

Brussels

François Simard began the Workshop by discussing its purpose. The Malaga Centre of IUCN had been created to develop regional and thematic programmes for the Mediterranean. It was apparent that the ecosystem approach is very important to the future development of fisheries management. A key question was how to implement the ecosystem approach in the Mediterranean. The purpose of this Workshop was to consider the important issues and to decide which projects could be embarked upon to ensure implementation of the approach.

Tony Hawkins introduced the general context of an ecosystem approach to fisheries. Over the last twenty five years there had been much discussion of the application of the ecosystem approach in the exploitation of natural resources. The concept was now firmly embedded in a number of key international documents and legal instruments. Nevertheless, the concept had not been well explained. The definition had been adopted by the Intermediate Ministerial Meeting (Bergen Declaration March 2002) and the Køge Stakeholders meeting (December 2002) was that the ecosystem approach is "*the comprehensive integrated management of human activities based on best available scientific knowledge about the ecosystem and its dynamics, in order to identify and take action on influences which are critical to the health of the marine ecosystems, thereby achieving sustainable use of ecosystem goods and services and maintenance of ecosystem integrity*". This definition may have been clear to those who prepared it, but it was not easily understood by stakeholders and others that it will affect. The ecosystem approach was really a political and societal concept rather than a scientific one. Essentially, the approach aims to manage the human activities that have an impact on the environment and its life forms. The approach recognizes that humans are a part of the ecosystem and aims to make both economic activities and the environment more sustainable, in terms of their capacity to absorb stress without fundamental change.

The European Community had firmly endorsed the ecosystem approach, and had sought to apply it as part of its plans for the reform of the Common Fisheries Policy. The new European Council Regulation 2371 states that the objectives of the reformed CFP are "to ensure sustainable exploitation of living aquatic resources". For this purpose it will "apply the precautionary approach" and "aim

at progressive implementation of an ecosystem approach” while “following principles of good governance”. In practice, however, few steps had yet been taken towards implementing an ecosystem-based approach in the management of the European fisheries.

Much work had been undertaken by FAO in preparing for the introduction of an ecosystem approach to fisheries. The “Basic Principles of Ecosystem Management” are set out in the FAO Fisheries Atlas. Also, in the United States, the Ecosystem Principles Advisory Panel, in its 1995 Report to the US Congress, had considered how to implement “ecosystem principles” and subsequently the Ecosystem Approach Task Force of the United States Marine Fisheries Advisory Committee had defined the essential elements of the ecosystem approach. Within the European Community, a Working Group on Ecosystem Approach to Human Activities (EAM) had prepared a draft ‘Roadmap’. Although all these organizations may have carried out valuable groundwork the principles they had outlined had yet to be adopted in the management of real fisheries.

One of the few fisheries which were widely regarded as sustainable is the Western Rock Lobster Fishery managed by the Western Australian Department of Fisheries. A series of guidelines had been drawn up and followed for the ecologically sustainable management of the fisheries by its managers. The guidelines consisted of a series of principles, supported by more detailed objectives. Emphasis was placed upon a reduction of by-catches, reduction of damage to endangered, threatened or protected species and the avoidance of impacts on threatened ecological communities. The fishery was conducted in a manner that minimised the impact of fishing operations on the ecosystem generally. Such a simple approach provided a model which should be emulated.

One of the difficulties which stood in the way of adopting an ecosystem approach was the weakness of the different concepts being applied by international agencies. Some of those agencies had failed to realise that ecosystems themselves could not be managed. Management can only be applied to human activities. There were problems in defining the ecosystem approach itself, and wide use had been made of terms like “ecosystem health” or “ecosystem integrity”, which were difficult to analyse. It was almost impossible to delimit the extent of large marine ecosystems, and most ecosystems themselves were made up of smaller ecosystems. A search had begun for “ecosystem indicators” but these were likely to be affected by other factors such as climate change and might therefore have limited utility in the management of real fisheries. Finally, the so-called “precautionary approach” was often invoked, but again was of limited value unless it was carefully defined.

Given these difficulties with the concept of an ecosystem approach it was not surprising that little progress had been made in introducing an ecosystem approach under the Common Fisheries Policy. The concentration on a single

species approach adopted in areas like the North Sea, together with the strong political control of management, might also have contributed to this failure.

Tony Hawkins suggested that the new Regional; Advisory Councils proposed by the European Commission might be of great assistance in introducing a pragmatic version of the ecosystem approach. As they were regionally based, they offered scope for defining particular ecosystem features which might be protected. The involvement of stakeholders and a wide range of other interest groups gave the RACs real scope for introducing a more inclusive and holistic approach to the management of fisheries. The RACs would be able to identify and adopt agreed measures to protect vulnerable habitats, species and biological communities. They would be able to introduce measures to promote biological diversity, identify feeding links between species and take account of the life histories of different organisms in developing more balanced harvesting strategies. They would be able to investigate climate change and its effects. The RACs, and other systems of regional management provided an opportunity to introduce a new and inclusive approach to fisheries management.

Fisheries management bodies, including the RACs would need the support of scientists in achieving an ecosystem-based approach. A wide range of research priorities had already been identified. They included two key elements. The first was a need for greater understanding of marine food webs, and the development of management models which included all the species affected by the fishery, whether directly or indirectly. The second was a need for ecosystem objectives, indicators and reference points which might indicate adverse effects from the fisheries and be used to trigger management action. A promising approach was the development of Ecological Quality Objectives (EcoQOs), although it would be necessary to define these objectives in terms which stakeholders could understand and endorse.

In discussion, it was agreed that an ecosystem approach could be best implemented in a regional context. However, in the Mediterranean, a region where EU countries are limited in number, where several different ecosystem sub-regions exist and where the political situation is different, the RACs would not necessarily offer the best solution. RACs themselves would only be advisory and their adoption of a full role in management was likely to be controversial. They were European Community bodies only and could not involve third party states. There were other regional management bodies like the autonomous General Fisheries Commission for the Mediterranean (GFCM) which had a wider role to play, and which involved all the interested parties.

Matthew Camilleri considered the implementation of an ecosystem approach in Mediterranean fisheries. Some progress had already been made. The Scientific Advisory Committee (SAC) of the GFCM had introduced and developed a series of new management options and tools. These had included the definition of geographical management units, geographical sub-areas, operational units, and

fleet segmentation expressed in terms of biological and economic criteria. These had finally been defined in political terms. The SAC had also looked at the setting of reference points in the context of the adoption of a precautionary approach and had considered a number of socio-economic indicators. An independent appraisal of the achievements of the (SAC) had emphasized the need to adopt a task-oriented advisory process, driven by GFCM management objectives. An enhanced capacity to formulate management advice was required, based on multi-species assessments and using multidisciplinary reference points, compliant with an ecosystem approach to fisheries. Until now, the SAC had adopted a “traditional” structure, with disciplinary sub-committees. Although this had strengths it stood in the way of implementing the multi-species and multidisciplinary elements that characterize an ecosystem approach. It would be important in the future to focus on the assessment of the impact of the fisheries instead of assessing individual fish stocks.

Until now, the GFCM, with its limited budget, had relied upon the contributions of its members and FAO sub-regional projects to fund and coordinate its scientific activities. Two of these projects had particular relevance to the introduction of an ecosystem approach. COPEMED had focused on environmental variability and its impact upon fisheries for small pelagic species in the western Mediterranean Sea and particularly in the Alboran Sea. MEDSUDMED had been designed to assess and monitor the fishery resources and ecosystems of the Straits of Sicily and adjacent parts of the Mediterranean Sea.

COPEMED, is an FAO Project financed by the Spanish Government through the AECI (Spanish Agency for the International Cooperation) from 1996. The COPEMED area covers the Western and Central sub-regions of the Mediterranean. Morocco, Algeria, Tunisia, Libya, Malta, Italy, France and Spain have adhered to the Project. COPEMED had developed a conceptual model aimed at elucidating the relationships between the different components of the pelagic ecosystem. Indicators were being sought, both as vehicles for the organization of information and as descriptors of the ecosystem. Such indicators would allow the responses of the ecosystem to environmental and other drivers to be examined. A programme had been developed to collect the information required for each indicator. The project was collaborative and involved scientists from different countries in the Mediterranean Sea. A Workshop on Environmental variability and small pelagic fisheries in the Mediterranean Sea was held in Palma de Mallorca in June 2001. The main objective of the WG was to assist in sustainable fisheries management. The workshop provided an opportunity to stimulate scientific thinking on this topic, to evaluate the existing tools and to address correlations between environmental variables and the variations of fish populations in the Mediterranean¹

MEDSUDMED is an FAO trust fund regional project funded by the Italian Ministry

¹ Agostini V and P. Olived (Eds) 2002. Environmental variability and small pelagic fisheries in the Mediterranean Sea. Informes y Estudios COPEMED nº 8:78 pp.

of Agriculture and Forestry Policies (MiPAF). The Project operated in the Southern part of the Central Mediterranean. It promoted scientific cooperation at a regional level between the participating countries (Italy, Libya, Malta and Tunisia) for standardization of the methodologies used in fisheries research. The project focused on the interactions between fisheries resources and the environment. The research themes were intended to provide the elements required for the implementation of an ecosystem approach to fisheries in the Central Mediterranean. An additional objective was also to strengthen national and regional expertise.

The MEDSUDMED project was investigating the spatial distribution of demersal resources in relation to environmental parameters. Several life stages of the main target species were being considered, along with biotic and abiotic factors in the area. The use of Marine Protected Areas for fisheries management was being investigated as such areas might have particular relevance to fisheries management in the Mediterranean. The oceanographic processes influencing abundance and distribution of small pelagic fish were being examined, together with the reproduction, concentration and transport of eggs and larvae, and ultimately the presence and abundance of the fish stocks. The development of a regional database and information system for the fisheries of this region was seen as an important aspect of the project.

Another Mediterranean initiative was the MEDFISIS project, aimed at creating a Mediterranean Fishery Statistics and Information System, which would contribute to the sound management of living marine resources of the Large Marine Ecosystem of the Mediterranean. The Project, financed by the FAO and the EU would create an internationally compatible system, and would serve as a vital tool for monitoring the state of fisheries resources and the well-being of the whole ecosystem in the Mediterranean. The Project, although not having ecosystem components will facilitate the implementation of the ecosystem approach based on standardized statistical data on national fisheries, taking into account the operational unit components of the Mediterranean fisheries.

Thus, the ecosystem approach in the Mediterranean was currently being developed through a series of collaborative projects. It was accepted that it would be difficult to implement management measures for the whole Mediterranean. Instead, it was important to bring together the countries, which shared a particular resource and then to devise management measures for the corresponding fishery, rather than imposing a global approach which would not be implemented. It was accepted that the various stakeholders needed to be part of the process of setting management objectives, and various mechanisms were being considered.

During discussion it emerged that a number of other projects were either underway or being planned. A pilot project on the fisheries for small pelagic species, shared between Morocco and Spain, had been drafted for the Alboran

Sea, a new regional project named EASTMED was being planned for the eastern Mediterranean Sea and a project named ADRIAMED was underway in the Adriatic Sea. The project-based approach had initially developed as a consequence of the lack of funding for the GFCM. The success of the November 2003 Venice Inter-Ministerial Conference had now led to a new independent GFCM and a strengthened multi-lateral framework, which might provide stronger support for such projects in the future. Steps are now being taken to strengthen the fisheries sector by establishing a pan-Mediterranean fishers' organization to promote responsible fishing. There was also considerable scope for developing local management regimes, like the one agreed for Malta. What was needed was for countries to provide evidence of responsibility and progress in local management, and above all to provide evidence of adequate control over fishing.

A number of themes were raised during the extended discussion. There was further reflection on the role of Marine Protected Areas. These had undoubted advantages, both in protecting the environment and for fisheries management purposes. However they needed to be properly evaluated. There was a case for developing proposals for experimental MPAs, for further examination and assessment as part of the ecosystem approach. The European Commission representative pointed out that it was open to member States to come forward with proposals. There was already a VIth Framework Programme initiative to evaluate MPAs in the Mediterranean and North Seas, and another to evaluate sensitive habitats in the Mediterranean.

One important step to be taken in implementing an ecosystem approach was to integrate fisheries management within an overall programme for environmental management. A platform was needed to promote co-operation between fisheries managers and those responsible for overall protection of the marine environment from all of man's activities. Implementation of the ecosystem approach must be done at a regional level, but within the context of an overall centrally driven marine strategy. The institutional platform might be a Regional Advisory Council, or it might be another regional fisheries organization like the GFCM. It was for the member states concerned to decide how they should work together to implement an ecosystem approach.

Some guidance on how to implement the ecosystem approach to managing human activities in the marine environment was provided in the draft Roadmap produced by the Working Group on Ecosystem Approach to human activities (EAM) of the European Commission. The draft Roadmap was already developing a series of strategic goals. Fundamentally an ecosystem approach aimed to manage all the human activities and demands that have an impact on the marine environment. It recognized that humans are a part of the ecosystem and is not about managing the ecosystems. Although the Roadmap recognized that its marine strategy would have to be developed at a regional level, its wish to involve all users, and not just fishers, requires new institutional structures in order to achieve this. It was pointed out during discussion that we would have to wait a

very long time for new structures to be put in place. Yet important elements of an ecosystem approach could be implemented now, through a fishery-based approach.

Fishery-based projects, like those already described, could also be used a vehicle for implementing an ecosystem approach. The current projects were self contained and had existing objectives. But there was no reason why future projects should not incorporate ecosystem objectives. This could not be achieved through the application of rigid rule-based management frameworks but required adaptive management – management based on a pragmatic approach where measures could be tested by practical application and amended as necessary.

Fisheries management in the Mediterranean Sea had to be seen against the background of a changing regime. The Parliament was about to express its opinion on the Commission's draft Regulation on Mediterranean Fisheries, which introduced new management measures. Political debate on the Regulation would take place during May/June. The Commission believed the Regulation to be a wise one, and would press for its adoption. It would be for the Dutch Presidency to decide how it would be handled. There would be continued consultation with stakeholders, and discussions had already taken place on the formation of a Mediterranean RAC and these would continue.

The question of the scale of large ecosystems was discussed. A number of examples were given of the difficulty of setting boundaries to ecosystems. The preparation of the draft pilot project in the Alboran Sea has shown how influential events were in the Atlantic upon ecosystems within the Mediterranean. Such environmental events had an especially effect upon small pelagic fish larvae and eggs and probably the fisheries for them.

At Durban, a network had been established to define Large Marine Ecosystems and a Large Marine Ecosystem programme had been established under the Intergovernmental Commission on Oceanography of UNESCO (<http://www.edc.uri.edu/lme/default.htm>). It had been proposed that clear biological criteria needed to be set. It was agreed, however, that ecosystems could not simply be defined in biological terms. In implementing an ecosystem approach it would perhaps be more pragmatic to consider a fisheries-based approach and perhaps to define ecosystems in terms of management units, or as areas over which particular management regimes were in place.

IUCN's niche in implementing an ecosystem approach would be to create platforms to bring together the interested parties, perhaps through the development of further fishery-based projects and case studies, each with an ecosystem component. The existing projects do not concentrate on an ecosystem approach, but could be modified to do so.

A particular scheme was put forward for developing an ecosystem approach through fishery-based projects within the overall framework of the GFCM. An overall strategy was needed which would embed an ecosystem approach within all the projects being undertaken. This strategy is to break down the different programme elements into sub-sets, within which the ecosystem approach could then be applied. These sub-sets would be based on the GFCM Geographical Sub-Areas, the FAO Sub-Regional Projects, and the Operational Units that had already been defined. Each scenario for introducing the ecosystem approach would then have its geographical area and operational units defined, and the scientific background, the necessary databases and other possible factors would all be corralled together. This proposal could be developed further and put forward to the GFCM SC on Marine Environment and Ecosystems for further discussion. As an example, a breakdown of a particular area is given below

Implementation of the ecosystem approach for Mediterranean fisheries			
Existing Instruments	COPEMED	ADRIAMED	MEDSUDMED
Sub Area	Alboran Sea		
Operational Units involved	Fishing for small pelagic fish		
Gears involved	Purse seine Beach seine Mid-water Trawl?		
Ecosystem	Pelagos		
Other Human Activities to consider	Transport Tourism Etc		
Threats to the Environment	Pollution Urbanisation		
Effects	Socioeconomic Management		
Expected results for the ecosystem	Protection of nursery areas, mortality control,		
Countries involved			
Management plan / national regulations			

The organization of future regional or fishery-based projects in the Mediterranean is a matter for the autonomous GFCM to consider. Some of the existing projects are nearing their end, although many elements within them would continue. New projects will be established to achieve the objectives of the new GFCM. Data collection within all these projects would help to create a database and information system for GFCM, assisted by the European Community's Data Regulation.

In conclusion, we had to acknowledge that fisheries management in the Mediterranean Sea is a complex and difficult task. The multi-species nature of many fisheries and their great diversity, the concentration of fisheries within territorial water, the important fisheries in international waters, and the large number of countries involved all make management a difficult task. Much could be achieved in term of an ecosystem approach simply by bringing some of the fisheries under closer control. Much development work was taking place globally to facilitate the introduction of an ecosystem approach. However, we should not wait for the advent of new institutional structures specifically designed to implement an ecosystem approach to marine resources, and incorporating wider interests. It was already possible to take forward an ecosystem approach by setting clear ecosystem objectives within existing arrangements. Regulations from the Commission can already be used to impose particular management measures, like MPAs. The new RACs, which brought stakeholders into the equation, could also play an important role in introducing the approach, especially in areas like the North Sea where most of the participants are from Member States. In the Mediterranean Sea the new GCFM could take the lead. The approach would need to be regionally based, and ideally should focus on particular fisheries or fisheries management units. The important step was to identify key regional projects from an ecosystem standpoint. Some of these projects should ideally have links with other seas, like the Black Sea and the contiguous Atlantic waters. These existing and future fishery-based projects within the framework of GFCM could then be broken down into subunits to facilitate the ecosystem approach. It would be important to adopt an adaptive system of fisheries management, where experimental measures could be adopted for testing, and successful management regimes subsequently adopted and extended. IUCN can play an important role in organizing jointly with GFCM the project and case studies.

It was agreed that papers on applying the ecosystem approach to European Community fisheries would be prepared and presented as contributions to the IUCN Congress in Bangkok.