



## **MEDITERRANEAN ISSUES: TOWARDS EFFECTIVE FISHERIES MANAGEMENT**

**Clare Coffey<sup>1</sup>**  
**Institute for European Environmental Policy**

### **Introduction**

The EU's Member States bordering the Mediterranean – France, Greece, Italy and Spain - have important and often locally significant fisheries sectors, operating in an environment that is characterised by high biological diversity. Despite the existence of an otherwise 'common' EU fisheries policy, Mediterranean fisheries have traditionally been subject to separate EU fish stock management measures to those applied in the north east Atlantic and Baltic regions. This situation can be explained on a number of grounds, including the particular geo-political situation in the Mediterranean region<sup>2</sup>, and the fact that jurisdiction has generally not been extended out to fisheries or exclusive economic zones (EEZ) as is typical of the rest of the EU. The Mediterranean (excluding the Adriatic Sea) also has a narrow continental shelf such that about 90 per cent of fishing in the region is described as coastal. In effect this means that the majority of the surface area of the Mediterranean falls within international waters where there are important tuna and swordfish fisheries. Most Mediterranean fisheries nevertheless fall within coastal territorial waters.

For these reasons, EU fisheries management in the Mediterranean tends to focus on coastal fisheries, with EU measures regulating or prohibiting certain fishing practices, alongside regulations initiated at national, regional and local levels. The EU has also made efforts to strengthen international cooperation, notably within the General Fisheries Commission for the Mediterranean and the International Commission for the Conservation of Atlantic Tunas. However, there are continuing concerns over the effectiveness of these initiatives and the impact of the EU fisheries sector on the Mediterranean environment. The EU clearly has an interest in ensuring coherent and

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<sup>1</sup> This paper is clearly from a 'Brussels' perspective and does not purport to be based on a detailed knowledge of Mediterranean fisheries or environment. It is nevertheless designed to highlight the role of the EU policies, how these impact on fisheries and the environment in the region, and how EU involvement might be improved in the future. The author is grateful for extensive comments provided by Stefano Moretti (Italy) and Giorgos Payiatis (WWF Greece) on an earlier draft. As ever, the contents of the paper nevertheless remain the sole responsibility of the author.

<sup>2</sup> Decisions by some States to extend territorial waters originated from fisheries management issues. However, the only State to have declared a (partial) fishing zone is Spain, to counter large pelagic fishing in international waters by vessels of non-ICCAT countries.

responsible management of EU fleets operating in the region, in order to protect the environment, flora and fauna. It can do so by strengthening its own policies and by supporting the activities of national or local actors. It can also make a more coherent and coordinated contribution to international fisheries management efforts.

This CFP briefing paper is the third in a series of five papers prepared by IEEP as part of a joint IEEP/English Nature project<sup>3</sup>. The paper outlines the environment of the Mediterranean Sea, followed by an overview of the fisheries sector of the Mediterranean EU Member States. It then sketches out the main management framework applicable to EU Mediterranean fisheries sector, notably within the CFP and also under the General Fisheries Commission for the Mediterranean, a body of the UN Food and Agriculture Organisation. It ends with an outline of key issues that could be considered in order to improve management and conservation of marine resources of the region. Like the other papers in this series, it is thus intended to provide a constructive contribution to the debate on the future of the CFP beyond the year 2002, as well as broader discussions on integrating environmental considerations within the CFP, in line with Treaty requirements.

The other briefing papers in this series cover:

- Integrating Environment into the Common Fisheries Policy
- Fish stock conservation: a role for strategic fisheries management planning?
- Good governance and the CFP
- Socio-economic issues: the use of taxes and charges

### **The Environment of the Mediterranean Sea<sup>4</sup>**

The Mediterranean Sea is a semi-enclosed sea with a total surface area of approximately 2.5 million square kilometres. The Sea has an average width of approximately 3,800 kilometres east to west, and an average depth of 1.5 kilometres. The Narrow Strait of Gibraltar connects the Sea to the Atlantic Ocean. It is also connected to the Black Sea by the Strait of Canakkale, and to the Red Sea through the Suez Canal.

The Sea is divided into two main basins, the western and the eastern basins, which are separated by the Italian peninsula and connected through the Sicilian Channel. The western basin is relatively flat and at most 2.7 kilometres deep, whereas the eastern basin is characterised by deep depressions and morphological highs, submarine valleys and steep slopes (EEA 1999).

Overall, the Mediterranean Sea is poor in nutrients, with the supply of nutrients gradually declining towards the east, away from the Straits of Gibraltar. For this and

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<sup>3</sup> For further information about the project, contact Clare Coffey at IEEP: tel +32 2 740 0923 / email [ccoffey@ieeplondon.org.uk](mailto:ccoffey@ieeplondon.org.uk); or Paul Knapman at English Nature: tel +44 1733 455229 / email [paul.knapman@english-nature.org.uk](mailto:paul.knapman@english-nature.org.uk)

<sup>4</sup> For a more detailed discussion of the environmental aspects of the Mediterranean, see State and Pressure of the marine and coastal Mediterranean environment, European Environment Agency, 1999.

other reasons, primary production in the Sea is low. Fauna and flora is nevertheless rich in diversity, with 10,000 to 12,000 marine species having been recorded. These represent about seven per cent of known world marine fauna and 18 per cent of world marine flora, of which 28 per cent are endemic to the Mediterranean Sea. This is disproportionately high, given that the Sea represents less than one tenth of the total area of world oceans. The distribution of species varies, however, with greater numbers occurring in the western part of the Sea (EEA 1999).

Mediterranean Posidonia seagrass (*Posidonia oceanica*) is typically identified as a significant species of flora for the region. Meadows develop to depths of 25 to 40 metres in the western as well as eastern basins of the Mediterranean, although in Greece and Cyprus beds develop in waters less than 5 metres in depth. Posidonia meadows are significant because they provide nursery areas for young fish, supporting 25 per cent of the region's flora and fauna and providing essential feeding grounds for turtles, waterfowl, cephalopods, crustaceans, shellfish and finfish (Delbaere 1998). They also act as natural protective walls against beach erosion.

The Mediterranean Sea is similarly noted for its fauna, including endangered species such as the Mediterranean Monk seal (*Monachus monachus*), large and small cetaceans, for example, sperm whale (*Physeter macrocephalus*) and bottlenose dolphin (*Tursiops truncatus*), red coral (*Corallium rubrum*), sea turtles (*Caretta caretta* and *Chelonia mydas*) (see box) and seabirds.

#### **Mediterranean population of loggerhead sea turtle (*Caretta caretta*)**

The loggerhead sea turtle uses a large area of the Mediterranean for foraging and growth but as in other parts of the world, populations have been decreasing steadily with the turtle increasingly restricted to fewer and fewer coastal areas.

The overall Mediterranean population is now between only 2,000 to 4,000 individuals, with the largest nesting population in Zakynthos in Greece. The population is considered threatened for a number of reasons, including the destruction of nesting beaches, degradation of breeding habitats (ie in shallow coastal areas), marine environmental pollution, entanglement or ingestion of fishing tackle or waste, death or injury from boats and deliberate killing by fishermen.

A revised Action Plan for the Conservation of Mediterranean Marine Turtles was adopted in 1999, within the framework of the Barcelona Convention (see below). The Plan outlines a series of measures to conserve and enhance populations of Mediterranean marine turtles and their habitats. Reductions in incidental catch and mortality of turtles is to be achieved by applying appropriate fishing restrictions and by modifying fishing gear and methods, for example, by using Turtle Excluder Devices (TEDs). Education and training is also needed to ensure that incidentally caught turtles are handled, released and recorded properly.

Source WWF, 2000

#### *Environmental impacts of the fisheries sector*

High diversity eco-regions such as the semi-enclosed Mediterranean Sea are considered to be particularly vulnerable to environmental change such as that induced by over-exploitation of marine living resources, pollution, habitat erosion, climate

change and the introduction of non-indigenous species. Most of these impacts are also associated with the activities of the fisheries sector.

*Capture fishing* reduces the abundance of the target species, and often other species, either through the direct removal of individuals or indirectly by altering food chains. Fishing also imposes selective pressure on determinate age classes. In the Mediterranean, overexploitation of marine living resources has led to a situation whereby demersal stocks are in certain cases fully or over exploited, with a trend towards smaller individual sizes of fish. Small pelagic species are not considered fully exploited, with the exception of anchovies which are increasingly overexploited (GFCM 1998). However, large pelagics, notably bluefin tuna and swordfish, are generally over exploited. The effects of heavy exploitation are also evident among target species such as red coral in the western basin (EEA 1999).

Fishing activity in the Mediterranean is concentrated along coastal areas, where biodiversity is greatest. Its impacts are evident not only in the local disappearance of species but also in the reduction of coastal/marine habitats (EEA 1999). There are further particular impacts on monk seals, cetaceans and turtles as they can be susceptible to entanglement in fishing gear, and may also suffer from competition with fishermen (see box). However, following the EU prohibition of certain drift nets, entanglement of monk seals and cetaceans in EU owned nets is now believed to be rare (Payiatis 2000).

#### **Decline of the monk seal population**

The monk seal is classified as *critically endangered* on the IUCN Red List, with an estimated 500 individuals remaining in the eastern Mediterranean and on the coast of northern Africa. The seal has abandoned most of its original habitat in the Mediterranean due to human encroachment but its decline is also attributed to a number of other factors. According to the Action Plan for the Management of the Mediterranean Monk Seal, adopted under the Barcelona Convention (see below), another major threat to the monk seal is the deliberate or accidental killing of adults mostly by fishermen. This has increased as fishermen and seals compete for increasingly scarce resources, caused by overfishing and a lack of inshore fisheries management.

Measures have been taken to improve protection of the monk seal in Greek waters, notably involving information and public awareness campaigns targeted at fishermen and the general public. The Sporades Marine Park has also been established to provide an extensive refuge for monk seals. Unfortunately, however, the creation of the Marine Park does not mean that the necessary measures have been implemented on the ground, since there is currently no body in place to oversee management. The same applies to proposed Sites of Community Importance in Greek waters which have been selected in accordance with the EC Habitats Directive (92/43). The sites are not currently subject to any conservation management (Payiatis 2000).

Source UNEP, RAC/SPA, 1999; WWF, 2000

Fishing can result in damage to the seabed and habitats, a problem that is particularly associated with the use of bottom towed gear that impacts on benthic marine fauna and flora. A key issue here is the frequent destruction of Posidonia meadows as a result of illegal trawling activities. Rocky and coral bottoms are similarly threatened. The impacts of trawling on sandy bottoms are different but can still be disruptive, affecting grain size distribution, sediment porosity and chemical exchange processes,

as well as increasing levels of suspended sediment. In addition to trawling, there are also reports of explosives being used in some areas to catch fish, with consequent severe impacts on the environment.

*Aquaculture* - while extensive, low nutrient methods (eg for bivalves) may cause little environmental impact, intensive fish farming generates significant waste, organic and/or chemical, with consequent impacts on the surrounding environment. These kinds of aquaculture are contributing to increased nitrogen and phosphorus loads in the Mediterranean due to the release of uneaten food and faeces. This can induce severe eutrophication associated with algal and fungal blooms, particularly in enclosed areas. The use of chemical treatments in some fish culture can also have long term effects on the environment, resulting in bio-accumulation in benthic organisms and sediments (EEA 1999). Notably, it is becoming apparent that problems such as these can arise in relation to intensive aquaculture installations whether they are small or large.

Another equally serious risk from human activity along the coast is posed by the introduction of new organisms or species that potentially take-over and occupy the ecological niche of native species. The impacts are illustrated by the Asian clam (*Tapes philippinarum*) that was intentionally introduced in the beginning of the 1980s and has almost completely taken the place of the native clam species along the Italian coast. Molluscs, bivalves and gastropods have also been introduced accidentally with ballast waters and have damaged local populations. Other alien species are being introduced as a consequence of trade in live molluscs and fish that bring parasites or algae. These are often restocked without undergoing quarantine procedures, prior to marketing. Recent sanitary measures are being taken to address this growing problem.

#### *Conservation framework for the Mediterranean Sea*

International efforts to protect Mediterranean Sea flora and fauna are pursued through two main channels. EU Member States are of course required to apply the whole body of EC environmental law. In particular, the conservation of habitats and species is to be secured through the implementation of the Habitats (92/43) and Birds Directives (79/409) which are gradually leading to the establishment of the Natura 2000 Network of Special Areas of Conservation (SACs) and Special Protection Areas (SPAs). Member States are to take appropriate steps to avoid deterioration of Natura 2000 sites and any significant disturbance to those species for which areas have been designated. Specific provision is made for the designation of marine sites under Article 4(1) of the Habitats Directive. This specifies that, for widely ranging aquatic species, sites should only be proposed where there is a 'clearly identifiable area representing physical and biological factors essential to their life and reproduction'.

Member States are also required under Article 12 of the habitats Directive to establish a system of strict protection for several animal and plant species. In the case of animals, deliberate killing, disturbance or destruction of eggs or breeding and resting sites is to be prohibited. It is to be noted, however, that no Mediterranean marine *fish* species are covered by this part of the Directive although other Mediterranean marine species are covered.

EU law also requires additional controls on development projects, both within and outside Natura 2000 sites. Any plans or projects likely to have an effect on a Natura 2000 site are to be subject to assessment. More broadly, the EU environmental impact assessment Directive 85/337 requires prior environmental assessment of all aquaculture projects that are likely to have a significant impact on the environment.

At the regional level, the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean Sea (Barcelona Convention) aims to protect and enhance the marine coastal environment of the Mediterranean area. All EU Mediterranean coastal States are parties to the Convention, as is the European Community. A 1995 Protocol concerning 'Mediterranean Specially Protected Areas and Biodiversity' entered into force in 1999, amending an earlier Protocol. The 1995 Protocol is closely aligned to the UN Convention on Biological Diversity (CBD). Parties are called upon to protect, preserve and manage areas of particular natural or cultural value, notably by establishing specially protected areas and by protecting endangered species in waters subject to national sovereignty or jurisdiction. The Protocol is therefore a potentially important tool for biodiversity conservation in the Mediterranean region although its impact is ultimately likely to depend on implementation on the ground. Several Action Plans have been adopted under the Protocol, covering the Mediterranean monk seal, marine turtles, cetaceans and marine vegetation.

A separate Convention on the conservation of migratory species of wild animals imposes obligations on parties that are 'Range States' to secure strict protection for several species of cetacea and the monk seal. An Agreement under the Convention – the Agreement on the Conservation of Cetaceans of the Black And Mediterranean Seas (ACCOBAMS) - was concluded in 1996. It calls on parties to protect dolphins, porpoises and other whales, and to establish a network of protected areas important for their feeding, breeding and calving. Once it enters into force, members will be required to implement a comprehensive conservation plan, to enforce legislation to prevent the deliberate taking of cetaceans in fisheries by vessels under their flag or within their jurisdiction, and to minimise by-catch.

## **The Mediterranean fisheries sector**

### ***Catch and landing patterns***

Mediterranean fisheries are characterised by high diversity, a factor that is reflected in the composition of catches and the structure of the fisheries sector. As many as 115 species make up commercial catches, including demersal fish, crustaceans, shellfish and cephalopods, and pelagic species. The latter are dominated by small pelagic species, mainly sardines and anchovies, but also include bluefin tuna and swordfish.

According to FAO data, the total marine capture from the Mediterranean Sea (including EU and non-EU States) amounted to 1.3 million tonnes in 1996, an increase of approximately 17.5 per cent on 1984 figures. Landings of marine finfish amounted to more than 0.9 million tonnes, following a peak in 1994. Landings of the second main group, molluscs, were below 0.3 million tonnes in 1996 and the remaining catches were made up of crustaceans and diadromous fish (EEA 1999).

Due to changes in distribution and consumption patterns, there is a growing tendency for fishermen to high grade their catches, so that landings are restricted to a relatively small number of high value species, including hake, whiting, red mullet, anchovy and sardine. Due to the very mixed nature of fisheries, the fact that only a small proportion of the catch is landed means that, in order to land the same quantity, overall fishing effort and catch levels will increase, adding to pressure on targeted and non targeted species, and habitats. This highlights the important role that markets play in determining the environmental impacts of the fisheries sector. It also highlights the potential for using market based instruments to influence consumption and demand patterns, and thus to help mitigate environmental impacts.

### ***Structure of the capture sector***

Most of the fisheries are found along the narrow continental shelf and in the territorial waters of the Mediterranean States, although the majority of demersal and pelagic stocks also straddle national or international boundaries. Both Mediterranean and non-Mediterranean States also prosecute high seas fisheries in the Mediterranean, mainly targeting bluefin tuna and swordfish. Apart from the pelagic fisheries, fishing fleets are dominated by small multi-purpose vessels prosecuting different fisheries. The shape of the coastline and the types of fishing vessels means that large numbers of small and a few larger fishing ports are dotted along coastlines.

The four EU Member States bordering the Mediterranean - Italy, Greece, Spain and France, account for the majority of vessels operating in the region. Fleet technology is sometimes very advanced, where there has been a shift from labour intensive to more capital intensive vessels, such as larger trawlers and multi-purpose vessels. In terms of numbers, 'passive' gear vessels have generally increased while trawler numbers have remained steady since 1992, as a result of the EU fleet reduction programmes. The exception is France where the number of trawlers is increasing. This has been matched by more substantial decreases in trawler numbers in Spain and Italy.

It is noteworthy that the number of trawlers has risen substantially in some non-EU Mediterranean countries, with a 170 per cent rise in Moroccan trawler numbers (EEA 1999). This increase is thought to be linked to the transfer of EU capacity to third countries, particularly with respect to drift net vessels.

### ***Aquaculture production***

Aquaculture contributes a much higher percentage of total fish production in the Mediterranean Sea compared to the north east Atlantic, with the most important commercial species being sea bass, sea bream and mussels. Aquaculture production has increased three-fold between 1986 and 1996, from almost 80,000 tonnes to almost 250,000 tonnes. This trend is expected to continue in the future. The main increase is in farms producing bivalve molluscs and finfish production in sea cages, with increases particularly attributable to favourable weather conditions in recent years, as well as improved technologies. In Italy, there is also a historical reliance on brackish man-made lagoons or *valli* in the Venetian region, although production from these lagoons has not increased as much as production from cage systems.

Overall, most fish produced in the region is intended for human consumption and is sold at relatively high prices, often directly to retailers or consumers. This has maintained the economic importance of the Mediterranean coastal fishing sector despite stable or declining fish resources. But knowledge on prices and incomes, as well as other aspects of the sector is poor due to a lack of data, particularly data that is comparable between one country and another. There are particular discrepancies between registered and actual activities caused largely by under-recording of landings, as well as under-recording of part time activities and practices where individuals frequently combine fishing with farming and tourism.

### **The EU framework for managing the fisheries sector**

This section briefly outlines the existing EU and international fisheries policy framework, including policies pursued through the General Fisheries Commission for the Mediterranean. It is followed in the concluding section by an overview of key options for improving the effectiveness of EU fisheries policy in the Mediterranean Sea.

#### ***Background to the Common Fisheries Policy***

The Common Fisheries Policy (CFP) sets out the main framework for managing the fisheries sector in the EU. Although the policy is itself based on articles of the EC Treaty, detailed provisions are set out in a large number of individual items of legislation covering fish stock management, structural adjustment of the sector, marketing and trade, and external relations.

The Community's involvement in fisheries matters began in the early 1970s and by 1983 it had developed a relatively comprehensive policy covering markets in fish and products, structural adjustment of the sector, external affairs and fish stock management. Two of the founding States of the EEC, France and Italy, have Mediterranean borders and additional Mediterranean States joined the EC in 1981 (Greece) and 1986 (Spain and Portugal). In response to the particular challenges facing Greece, Spain and Portugal, all three countries received considerable financial assistance to support their primary production sectors, including fisheries. The EC's external fisheries policies were also adapted in response to the particular nature of fisheries interests, notably in Spain which was and continues to be responsible for significant long distance fishing activities. But it was not until the early 1990s that EU initiatives were taken to improve fisheries management in the Mediterranean.

Measures were particularly needed to counter the impacts of successive funding programmes that had greatly increased the fishing capacity of several segments of the fleet. Additional technical rules were agreed in 1994, primarily aimed at enhancing resource protection and harmonising different national rules that existed at the time, in accordance with available scientific studies. Today, EU conservation measures represent the most significant fisheries policy instruments applicable to the Mediterranean.

In general, EU catch limits or quotas are not applicable in the Mediterranean, with the exception of limits on bluefin tuna that have been introduced in response to recommendations by the International Commission on Conservation of Atlantic Tuna



(ICCAT). Apart from the general absence of catch limits, in all other respects the region is subject to the same type of EU management measures as the rest of the EU, including requirements relating to the EU vessel register, licensing, monitoring and control arrangements, and new data collection measures.

### *Fisheries management measures*

The core of EU Mediterranean fisheries management measures are set out in the EU technical conservation Regulation 1626/94 which establishes basic standards to support the conservation of fisheries resources in the Mediterranean. The Regulation applies to EU Mediterranean waters and to EU vessels operating on the high seas in the Mediterranean. It does not prevent Member States from taking additional or complementary measures, although if such measures are introduced then they should also have regard to the conservation of certain fragile or endangered species and habitats, including marine species listed in the Berne and Bonn conventions<sup>5</sup>.

The Regulation introduces a combination of approaches, ranging from complete prohibitions on using certain gears, to restrictions on gear use, minimum mesh sizes and minimum landing sizes. Among the methods or gears *prohibited* are the following:

- St Andrew's crosses or similar towed gear for collecting corals;
- toxic substances and explosives;
- from 1 January 2002, shore seines, although in practice these have already been banned in many areas.

*Restrictions* are imposed on the way in which gear is used, for example:

- prohibiting the use of encircling nets within 300 metres of the coast, or within the 30 metre isobath where that is closer to the shore;
- no fishing with bottom trawls, seines and similar nets is allowed above Posidonian beds;
- the use of trawls and seines is permitted within three miles of the coast until the end of 2002, as long as these fisheries are covered by special fishing permits and do not compromise the protection of Posidonian beds.

Regulation 1626/94 has to be read in conjunction with Article 11 of Regulation 894/97 (as amended by Regulation 1239/98) that sets out technical conservation measures for the north east Atlantic. The north east Atlantic Regulation prohibits the use of drift nets and, for these measures, the Regulation also applies to the Mediterranean.

A further set of technical *gear standards* is also introduced, for example, establishing a maximum four metre breadth for permitted dredges, apart from those used for sponge fishing.

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<sup>5</sup> The Regulation refers to all marine species of mammals, birds, reptiles and fish that are indicated in Annex I and II to the Convention on the conservation of migratory species of wild animals and/or Annex II to the Convention on the conservation of European wildlife and natural habitats. It also refers to coastal wetlands and beds of marine phanerogams.

An interesting feature of the Mediterranean technical measure Regulation 1262/94 is that Member States are to draw up a list of 'protected zones' in which fishing activities are restricted for biological reasons specific to those zones. The competent authorities of the Member States are to fix a list of fishing gear that can be used in these areas, as well as appropriate technical rules, based on the conservation objectives for each area. However, while numerous protected areas have been designated under both national and EU legislation, no protected zones have been notified to the European Commission in compliance with provisions under Regulation 1262/94.

The failure of Member States and individuals to properly apply conservation measures is a major area of concern throughout the EU. In terms of the Mediterranean, the issue is believed to be particularly challenging and likely to receive some attention in the Commission Green Paper on the 2002 CFP review. In the past, some EU fisheries funding has been made available specifically to support the implementation of new technical rules restricting the use of drift nets. Thus, aid was made available to compensate vessel owners and crew that ceased fishing, or to help vessel owners convert to other fishing methods. In principle, aid under the Financial Instrument for Fisheries Guidance (FIFG) continues to be made available to encourage the adoption of more selective fishing gear. However, there is no explicit link between aid and compliance with the technical conservation rules.

### *EU structural and market measures*

Conservation measures are needed in part to counter growing fishing effort and increasing use of more intensive or invasive fishing methods. Although not wholly responsible for these developments, the use of aid under the EU Structural Funds has been an important factor contributing to this trend. In the absence of appropriate EU or international management framework, aid under the FIFG has supported increased fishing capacity of several segments of the Mediterranean fleet in a way that has been in conflict with responsible fisheries management and environmental objectives. In particular, funding has been used to build up driftnet fleets targeting large pelagic species, with significant impacts upon those species and on populations of marine mammals and turtles. FIFG and its predecessor funds have also been instrumental in supporting the rapid development of the region's aquaculture sector, in the absence of appropriate EU environmental safeguards.

While significant funding is still targeted at increasing the production and supply of fish to European markets, there has been a gradual shift during the 1990s to redirect FIFG aid towards fishing capacity reduction and conservation. Fleet capacity reduction has been pursued through a set of legally binding multi-annual guidance programmes (MAGPs) which set out national and fleet segment reduction targets. Targets for each country are highly variable, calculated on the basis of the state of stocks targeted by the fleet segments. As the preparations for the Commission mid term review of MAGP IV (1997-2001) illustrate, however, data on the Mediterranean is insufficient to provide a general overview of the state of stocks (CEC 2000). Nevertheless, in the case of Italy and Greece, fleet power reduction targets for the period 1997-2001 were set at nine and three per cent, respectively.

In addition to structural measures, the CFP contains a fairly extensive markets policy that is applicable to Mediterranean producers. The policy sets out common marketing standards and provides for the setting up of Producer Organisations, the introduction

of compensation or carry over aid in the case of some fish being withdrawn from the market, and the establishment of individual trade agreements with non-Member States. In the past, the markets policy has largely favoured recognised Producer Organisations and these have been generally ill-suited to the multi-species, artisanal nature of Mediterranean fisheries and the generally high prices already paid for fish in the region. At the same time, increased and often illegal low cost imports into the EU are believed to be placing growing pressure on incomes in the fisheries sector, and consequently may have contributed to increased fishing.

### ***External policy – the General Fisheries Commission for the Mediterranean (GFCM)***

Due to the straddling and migratory nature of some significant Mediterranean fisheries, particularly given the limited extent of national fisheries zones, there is clearly a role for regional effort to manage and conserve Mediterranean fisheries. This is particularly the case for high seas fisheries targeting large pelagic stocks.

The GFCM is the main institution for fisheries cooperation in the Mediterranean. GFCM is a regional agency of the FAO that was created in 1949 although it has been subject to several reforms since then<sup>6</sup>. EU Mediterranean Member States have a long history of participation in the GFCM. In addition, the Community adhered to the GFCM in 1998 and now participates as a full member at its annual meetings. The European Commission has provided impetus for reform of the GFCM, with the aim of bringing GFCM more closely into line with other regional fisheries organisations. Among the changes introduced in 1997 was a new scientific fisheries committee to support the work of the GFCM. The committee is able to draw upon an already extensive literature on fisheries and aquaculture in the Mediterranean.

The GFCM's work to date has focused on shared or straddling stocks, particularly those involving demersal and large pelagic species. A key focus has been on international collaboration on research, improving information exchange and determining the state of resources. Most fisheries management measures adopted since 1997 have related to tuna, in coordination with recommendations of ICCAT. In turn, these measures have been transposed into the EU law. A key issue facing the GFCM, however, is the need to review and evaluate the extent to which recommendations and decisions have in fact been adopted (GFCM 1998). Practical implementation of GFCM recommendations at the national level is believed to be a particular issue (see box) and should be a major focus of future evaluation work.

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<sup>6</sup> see Breuil 1999 for a fuller discussion of the GFCM

## **Implementation of ICCAT Recommendations**

Fisheries targeting Mediterranean populations of swordfish and bluefin tuna fall under the jurisdiction of the International Convention for the Conservation of Atlantic Tuna. The main objective of the Convention is to maintain the populations of tunas and tuna like fish in the Atlantic Ocean at levels which will permit a sustainable catch. The EC adhered to the Convention in 1997. The only other Mediterranean contracting parties are Morocco and Libya.

A long list of ICCAT Recommendations on annual catch quotas, minimum size limits and other conservation measures have been adopted to control and monitor fisheries. Decreasing annual catch quotas have been set for contracting and non-contracting parties fishing in most ICCAT areas. However, reported catch levels of swordfish and bluefin tuna show significant increases in fishing pressure. Actions by contracting parties to enforce quotas and minimum size limits have had little effect on their fishing fleets or landings in their ports.

The Spanish longline fleet reports landing more swordfish than any other ICCAT party. Spain is also a major player in the Mediterranean bluefin fishery. Conclusions of a study on Spain's compliance with ICCAT Recommendations states that the Mediterranean stands out as an area where minimum size limits for bluefin tuna are seemingly flouted. The relatively poor level of compliance with minimum size limits in the Mediterranean underlines the need for ICCAT provisions specifically dealing with management in the Mediterranean Sea. The report goes on to recommend ICCAT management of the swordfish fishery in the Mediterranean, including no fishing zones and programmes to record discards and bycatch. Furthermore, according to the report, an EU regulation 'should urgently be prepared and adequate measures adopted to manage the Swordfish fishery of Member States in the Mediterranean, particularly that of Italy'.

Source Raymakers et al, 1999

## **Improving Mediterranean fisheries management**

It is clearly important that EU policies are developed to reflect the national and regional variations in EU fisheries sectors and management structures. The particular characteristics of the Mediterranean Sea, namely its narrow continental shelf, rich cultural heritage, abundance of small, marginal and fisheries dependent communities, and the geo-political circumstances in the region call for particular care in further imposing a 'common' EU fisheries policies on the region. At the same time, it is critical that these differences are not used as an excuse for failing to take the necessary measures to secure agreed EU environmental or nature conservation objectives. Rather, policy measures should aim to meet these objectives without compromising the specific needs of the local communities.

There are several key issues that could usefully be pursued as part of the review of the CFP in 2002, in order to support environmental integration and sustainable development of the sector. These are discussed below.

### *Capture fisheries*

The implementation of existing EU technical conservation measures and fishing capacity reduction targets in the Mediterranean, as noted above, is an area where there is scope for improvement. As elsewhere in Europe, it is also an area that presents some challenges. Efforts should nevertheless be made in the short term to strengthen the implementation of existing rules, including the requirement for Member States to draw up a list of protected zones and technical rules on gear permitted within these areas, under Regulation 1262/94.

Some of the prohibitions and restrictions in Regulation 1626/94 are also currently subject to time-limited derogations, notably concerning the use of shore seines, and trawling and seining within three miles of the shore (Article 3(1)). The deadline for Member States to implement these provisions has been progressively extended from the end of 1998 to January 2002, further delaying the implementation process and thereby weakening the protection they afford. Rather than delaying action further, preparations could now be made to start implementing these measures from 2002.

Additional management measures going beyond those set out in existing legislation, including Regulation 1262/94, should also be considered to help protect spawning and juvenile stock, as well as other non-target species and habitats including those listed in EU and international biodiversity laws. New measures to manage the Mediterranean swordfish fishery have also been identified as being particularly urgent. The Commission, in close cooperation with relevant national and international stakeholders, including environmental, social and economic interests, could initiate discussions on appropriate additional rules.

### *Aquaculture*

The trend towards increased aquaculture production in the Mediterranean may be economically or socially beneficial, but needs to be accompanied by better research on the effects of aquaculture on the environment, as well as stronger regulation concerning the selection of aquaculture sites and the eventual approval of farming activities. New research could usefully focus on prevention or the monitoring and assessment of impacts associated with the introduction of alien species and/or pathogens into Mediterranean waters, via fish farming. It could also support the development of simplified and readily applicable models for prior environmental assessment of even small projects (see next paragraph). In all cases, research findings, including those resulting from EU funded research, should benefit from widespread dissemination among target groups both within the region and outside it. This has not always been the case and may have contributed to poor implementation of environmental measures in the past.

Work on developing a Code of Conduct for responsible aquaculture in the Mediterranean has been taken forward within the framework of GFCM. However, appropriate legal restrictions on aquaculture production should be explored further. For example, since it is becoming evident that installations of all sizes can have potentially detrimental impacts, there is a clear need for a more comprehensive application of environmental impact assessment (EIA) to aquaculture projects. Indeed, there are strong arguments for placing aquaculture within Annex I of the EIA

Directive, such that *all* proposed aquaculture projects would have to be accompanied by an assessment. Furthermore, the link between environmental impact assessments and eligibility for EU funding could be strengthened, for example, making FIFG funding conditional on the positive results of an EIA.

Project level controls on environmental impacts are important, but the importance of adopting a more strategic approach should not be forgotten. The activities of the aquaculture sector, either in one Member State, the Mediterranean region, or the EU as a whole, should where possible be analysed within a broader strategic context. A requirement for regional and/or Member State level aquaculture plans would provide a longer term and more coordinated approach to the future development of the sector. Under EU proposals currently with the Council, such plans would also be subject to prior environmental appraisal to assess their compliance with environmental objectives.

#### *Structural and market based instruments*

In addition to direct conservation measures for fishing and aquaculture, the Member States could draw on new opportunities arising under the FIFG to support more environmentally sensitive practices. For example, these could encourage the voluntary application of stricter technical measures, particularly within inshore waters and sensitive areas. The creation and management of ‘protected zones’ under Regulation 1262/94 could similarly be supported, making a potentially important contribution to local management structures. Finally, and outside the remit of FIFG, there is also scope to encourage the use of financial measures such as taxes and charges to discourage certain production systems or practices.

Apart from using financial incentives to encourage or discourage certain practices, implementation could also be supported by strengthening the links between compliance with environmental standards and eligibility for EU funding. Not only would this act as an incentive to implement legislation, but it could also benefit those aspects of the sector that are already environmentally more benign. This approach has been introduced in recent Common Agricultural Policy reforms; it is also being used to strengthen implementation of the habitats and nitrates Directives<sup>7</sup> by linking compliance with expenditure under the other Structural Funds (ERDF, ESF and EAGGF) in designated regions.

The tendency, noted above, for market demand to be focused on a smaller number of species is believed to be adding to pressure on the Mediterranean environment. Market instruments have not thus far been invoked in order to redress the balance. Possible options to reverse this trend include the introduction of policies to increase the relative price of certain species, in favour of more environmentally benign fisheries. There is similarly scope to introduce labelling schemes to increase information and choice among consumers and/or to develop niche markets in order to add value to products of environmentally friendly systems. These and other market-based instruments could be explored in an attempt to address not only undesirable patterns of demand, but also to support improved implementation and enforcement in the Mediterranean.

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<sup>7</sup> Directive 92/43 on the conservation of natural habitats and of wild fauna and flora; Directive 91/676 concerning the protection of waters against pollution caused by nitrates from agricultural sources

### **Reducing the level of discarding**

Due to the extremely mixed fisheries that are typical of the Mediterranean, it is almost impossible to avoid catching individuals of some species that are undersized. Furthermore, with interest tending to focus on a smaller number of commercial species, a large number of individuals are now caught which have relatively low, if any, market value.

In order to reduce discarding, it is possible to improve the selectivity of fishing gear, for example by the use of square mesh panels or by increasing minimum mesh sizes. This needs to be accompanied by minimum corresponding landing sizes, building on the recent introduction of minimum landing sizes. New research could also be undertaken to support the protection of spawning stocks, potentially followed by suitable technical measures to close areas during critical seasons.

In addition to such 'technical' measures, however, it may also be possible to introduce market based instruments to help raise the relative value of other species so that a greater proportion of the catch is landed and sold. Apart from reducing discarding this would also reduce pressure on the target species.

### *Monitoring, evaluation and capacity building*

A recurring theme in many reports concerning Mediterranean fisheries is the need for better information and data on populations, different production techniques, fishing activities, landings and discards, mortality rates, impacts on non-target species and habitats, emission levels, etc. Data needs apply not only to the natural resource itself but also the structure and capacity of the sector, including statistics on fleets and farming installations. Particular data needs relate to the small-scale sector as the importance of this sector, in terms of employment, production and environmental impacts, is thought to be greatly underestimated in official data. Other data needs are specified under EU and international biodiversity instruments.

In fact, a key problem is often that data is not collected or presented in a way that allows comparisons between the EU Member States, and between the Mediterranean countries. That is, there need to be improvements in the methods and reporting systems for data collection, the scope of data and the approach to data analysis. In turn, this should support information sharing both within the Mediterranean region and within the EU. Furthermore, data needs to be sufficient to allow an evaluation of the effects and effectiveness of national and EU policies in the sustainable development of the sector.

The new EU data collection framework could make an important contribution to this process and will need to be supported by substantial funding to ensure its proper application. In addition, opportunities presented under the EU's existing and forthcoming framework programme on research should be focused more heavily on the Mediterranean region, not least to support joint research activities and data sharing. The results of such research should also be disseminated more widely both within and outside the Mediterranean Member States, to generate a better

understanding of issues facing the region and to encourage the adoption and application of appropriate conservation measures.

Problems of implementation are related in no small way to a widespread lack of appropriate resources at the local level to manage fisheries, including technical, human and financial resources. Efforts could thus be targeted at improving this capacity, for example, by supporting the establishment and/or running of local management or producer organisations, developing information and training schemes and by the employment of fisheries-environment extension officers to advise and exchange information on practices and problems. Meaningful participation by the sector in management or monitoring committees could also be supported and facilitated. In principle, many of these activities could already be funded under the new FIG although in practice, national priorities and the availability of matched funding will determine the use of aid. Additional EU support and guidelines for conservation management could potentially also be useful.

## **Conclusions**

The environment of the Mediterranean Sea is facing increased levels of pollution from human activities, coastal degradation, overexploitation of certain stocks and a variable, sometimes absent, fisheries management framework with implications for both target and non-target species and habitats. There consequently appears to be scope for developing more effective policies to manage the EU Mediterranean fisheries sector, both by fine-tuning and applying existing regulatory measures, as well as by introducing a range of economic incentives and voluntary agreements to encourage compliance with conservation measures.

If applied in an integrated way, these options could provide a positive and comprehensive input into Mediterranean fisheries management, without imposing a management style that is ill-suited to the needs of this and other regions. The prospect of enlargement of the EU to include new countries such as Slovenia, Malta, Cyprus and potentially Turkey gives the EU a greater role and responsibility to ensure appropriate management of its EU fisheries sector in the Mediterranean. In the absence of such measures, it is difficult to foresee how Mediterranean fisheries can be sustained in a way that is complementary to EU fisheries, environment and nature conservation objectives.

While pursuing its own chosen management objectives within the EU, there is also a need for the EU to contribute and support wider regional and national management efforts, within the framework of the GFCM and ICCAT, and through bilateral relations with non-EU Mediterranean States. The GFCM provides an important opportunity for the EU to display a progressive leadership role on the international stage, not least by ensuring the proper integration of EU and international nature conservation objectives. To do so effectively will require proper investment in the process, including capacity building within the GFCM and with disadvantaged partner States. It will also require more effective coordination between GFCM and activities pursued under the Barcelona Convention. Without stronger regional management, national and local management will only be of limited benefit.



In its preparation for the 2002 review of the CFP, the Commission has identified Mediterranean issues as one of the key areas that need to be reviewed. It will be critical that this opportunity is taken to raise the profile of the Mediterranean Sea and Mediterranean fisheries issues, and to ensure that a future CFP is designed as much for the benefit of this region as any other. Stakeholders from the four relevant Member States, as well as from the three accession States, should be engaged in the CFP reform debate from the very beginning to ensure local and environmental interests and issues are fully reflected in any new CFP measures that result.

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