



PILOT ACTION

REGIONAL MANAGEMENT PLANS FOR FISHERIES

MARCHE REGION

- FINAL REPORT -



Table of Contents

The state of fisheries in the Mediterranean Area	page 3
Management Plans: a new tool for the fisheries sector.....	page 7
Conclusions and recommendations from Maremed project	page 10
Annex 1– Guidelines for the development of Fisheries Management Plans	
in the Mediterranean area	page 14
Annex 2 - Development of the pilot action	page 23



THE STATE OF FISHERIES IN THE MEDITERRANEAN AREA

The Mediterranean area has a population of approximately 450 million people, and it represents one of the most important geopolitical systems at the global level. Strong differences separate the Northern Mediterranean basin from the Southern and South-eastern one, in economic, social and cultural terms. The Mediterranean basin includes Member States of the European Union (France, Spain, Italy, Greece, Cyprus, Slovenia, Malta), countries that are on the road to EU membership (accession country: Croatia; candidate countries: Albania, Turkey) and third countries (Egypt, Lebanon, Morocco, Montenegro, Syria, Algeria, Israel, Libya, Tunisia). The third countries have a strong relationship with the EU, and all but one are members of the Union for the Mediterranean. Most Mediterranean countries depend on fisheries and aquaculture for their economy. The economic dimension of Mediterranean fisheries is represented by approximately **100.000 fishing vessels** present in the basin, which employ more than **430.000 fishermen** and produce about **1.5 million tons of fish**. Most of the Mediterranean fleet is composed of **artisanal, small-scale fishing vessels**, with total length of less than 12 meters, usually operating in fishing zones at close distance from the coast. About a half of the world food fishing resources, which amount to over 100 million tons, are produced by **artisanal fisheries, which represent the majority of production in developing countries**. Artisanal fisheries plays a fundamental role in many local communities, for its social, economic and environmental implications. It is composed of a **variety of fishing systems**, whose characteristics are often strictly connected to the morphological and ecological features of the areas where such activities are carried out. Artisanal fisheries is relevant also for its **impacts on coastal communities**, in terms of economic activities supported throughout the supply chain, and of numbers of people directly and indirectly employed, as well as for the strong mariner traditions that are rooted in the social and economic local territory. Inside Marine Protected Areas and Fisheries Restricted Zones, small-scale fisheries is often the only professional fishing activity allowed, since it has a low impact on the resources.

The **Mediterranean fleet sums up to 448.4 tons of catches**, which is the lowest amount in the EU (source: EC and Eurostat 2009). Despite catches by the Mediterranean fleet are lower than those by Atlantic fleets, however, **80% of Mediterranean fish stocks are overexploited**, that is almost twice the Northern Atlantic's overexploitation rate (47%) (source: EC and Eurostat



2009). Such data show that the sustainability of Mediterranean fisheries is compromised at least for part of the resources: on the one hand catches are reduced at minimum levels, on the other, some resources are in critical conditions. Some fish stocks are overfished especially due to the high biodiversity of the Mediterranean sea, which makes it particularly difficult to target catches on single species; in fact, catches are always multispecific in the Mediterranean sea.

Mediterranean fisheries is a concrete example of multilevel management. The peculiarities of Mediterranean fisheries, where biological resources are exploited by fleets from many different countries and are regulated by different legislative frameworks, create a strong competition between fleets that insist on the same resources but come from different countries and must respect different regulations in terms of management, monitoring and control. In particular, Mediterranean countries which are part of the EU must follow specific rules in terms of fishing effort, gear size and minimum landing size (**EC Reg. 1967/2006**), whereas the Mediterranean non-EU countries strive to increase their fishing capacity and consequently their production, following their own development programmes. **Fishing capacity**, which is associated to the concept of a fishing vessel's "gross tonnage" expressed in GT and "engine power" expressed in kW, tends to be **developed in different ways due to the lack of shared management tools for the Mediterranean area**. This is a consequence of the Mediterranean specificity in terms of shared waters; except for Morocco which has its own Exclusive Economic Zone (EEZ) since 1981, and Algeria, Malta, Spain and Tunisia which have established or requested fisheries protection areas beyond their territorial waters (12 miles offshore), **in the Mediterranean sea the management of fisheries resources beyond national territorial waters is not under single countries' responsibility**. Within the **EC Reg. 2371/2002** on the Common Fisheries Policy and in the framework of the adoption of a EU action plan for the Mediterranean, the EU encouraged Member States to discuss the possibility to create a 200-mile fishing zone, which could give an important contribution to fisheries management, since **95% of EC catches in the Mediterranean are done within 50 miles offshore**. Fisheries protected areas would make controls easier and would provide a relevant tool to fight illegal, unreported and unregulated (IUU) fishing. Conversely to what happens in other semi-enclosed basins, such as the Baltic Sea and the Black Sea, the Mediterranean basin is mainly characterised by deep-sea waters, and this creates some specific governance problems: **16% of the Mediterranean waters are territorial waters and 31% are covered by different maritime zones**, the remaining



53% of the marine space is therefore out of the single States' jurisdiction. Countries do not have any authority to exhaustively regulate human activities outside their jurisdictional waters, **they can only enforce their rules on their own citizens and their own ships operating in such areas.** Specific joint actions can be carried out in the framework of transnational conventions for the safeguard of the marine environment and the conservation and management of fisheries resources, but it is always difficult to find a solutions for the enforcement of the decisions taken, especially with regard to third countries which are not part of such conventions.

A second case of multilevel management is related to the management of Mediterranean stocks that are not only managed by the single states but also by international organisms such as the International Commission for the Conservation of Atlantic Tunas (ICCAT) and the General Fisheries Commission for the Mediterranean (GFCM). In particular, for the management of highly migratory and shared stocks multilevel management is carried out in various ways and it involves different institutional bodies, depending on the type of fisheries:

- fisheries on highly migratory stocks; management involves an international organism (ICCAT), the European Union and the national public administration;
- fisheries on shared stocks beyond 12 miles; in this case the same stock is shared among several countries, characterised by different management regimes; management levels involved are the State, the European Union and the General Fisheries Commission for the Mediterranean (GFCM);
- coastal fisheries; the fleet operates within territorial waters (12 miles) under the national administration's jurisdiction and it is regulated by management measures enforced not only by the State but also by the European Union.

The **Green Paper “Reform of the Common Fisheries Policy”** (EU COM, 2009) has launched a consultation process where stakeholders have been strongly encouraged to express their opinions on the EU fisheries policy. The final document underlines the fact that a centralized “bottom-down” approach makes it difficult to adapt the CFP to the specificities and real needs of the different EU maritime basins. For this reason, responsibility for resource management in the different fisheries segments and areas is given not only to Member States, but also to all interested parties, in accordance with the other actions carried out in each marine basin. **The subsidiarity principle clearly emerges in terms of regulations: EU regulations** should be



focused on general objectives, specific objectives, common minimum rules and results, and on time schedules required for the objectives' achievement. **Member States** should be free to take their own decisions on other fisheries management measures, under the EC control and in full respect of EU regulations. Co-management is also encouraged, especially by facilitating the **involvement of fishermen** in the development and implementation of policies and actions, thus increasing their level of responsibility and rule acceptance. **Fishermen organizations should play a more relevant role** in terms of planning and implementation of management tools, so that it is more likely to reach a sustainable exploitation of resources. Moreover, **Producers' Organizations should be active in planning fishermen's fishing activities** and in stabilizing markets, managing allotments, fishing effort and fleets, optimizing allotment use and **putting a ban on discards by managing by-catches**.

Over the last few years, the cases of **coastal resource co-management** have significantly increased at the global level, both in developed and developing countries, and this is probably due to the many failures of management strategies adopted by central authorities.

Positive examples of co-management have been developed in recent years in Europe and Northern America, as shown by the abundant bibliography (Jentoft and McCay, 1995; Nielsen and Vedsmand, 1995; Hanna, 1996; McCay and Jentoft, 1996). Co-management experiences have been carried out for longer **in developing countries in Asia, Africa, Central America**, and a wide bibliography is available also in such cases (Pomeroy and Pido, 1995; Normann *et al.*, 1998; Brown and Pomeroy, 1999).

A multilevel decision-making process causes a decrease in efficiency, due to the existence of different interests, to a differential geographic distribution of financial resources among measures aiming at different objectives, to a systematic fragmentation of competencies, characterised by the presence of a multitude of different actors participating in the governance process, and to the action of external groups interested in maintaining a condition of free access to the resources, represent only some examples of the challenges and limits associated to the introduction of a co-management system.

Fisheries and biodiversity conservation policies should progress at the same pace. **Fisheries should be managed in order to give a contribution to stopping biodiversity loss**, as indicated by **EC Reg. 1967/2006** concerning management measures for the sustainable exploitation of fishery resources in the Mediterranean Sea, where sensitive habitats to be safeguarded are



also indicated. Also in this case, however, it is clear that there is a significant difference in the intervention tools applied by Northern European and Mediterranean countries, with special regard to the involvement of scientific tools. Indeed, management systems based on the introduction of technical measures and TACs imply as a logic consequence the use of single-dimension tools. Not surprisingly, Northern European management plans are aimed at identifying harvest control rules (HCR), without any economic or social implications. Conversely, the **Mediterranean management system imposes the adoption of strongly multidimensional tools**, which are able to answer both the needs of biological resource safeguard and replenishment, and the economic and social requests through a single management scheme.

MANAGEMENT PLANS: A NEW TOOL FOR THE FISHERIES SECTOR

Management plans (art. 19 of EC Reg. 1967/2006) are a very relevant new tool that Member States are required to adopt for specific fishing activities in territorial waters. Due to the peculiar characteristics of many Mediterranean fisheries systems, the main objective of such plans is to associate a fishing effort management to specific technical measures. At present, **data are not sufficient to draw a first balance of the effectiveness of such technical and management measures on Mediterranean biological resources and fishermen incomes**. Also, it must be stressed that the EU decisions have regrettably not been followed by a harmonization of management rules among all countries which are part of the General Fisheries Commission for the Mediterranean (GFCM).

Through the “Management Plan” concept, the Common Fisheries Policy (CFP) introduces a new approach to the management of maritime areas and the conservation and sustainable exploitation of fish and marine resources. This approach aims at the conservation of the marine environment as a whole (the **ecosystem approach**), and at enhancing a **responsible fisheries management** by directly involving fishermen in the decision-making process through a bottom-up strategy. Indeed, the presence of a management plan makes fishermen lead actors in the management of a specific fishing area, and it facilitates the joint discussion of common issues, thus enhancing the outline of common and shared solutions. The main **aims of multiannual management plans are to reduce impacts on the marine ecosystem, and bring mortality rates**



to levels which are within the **Maximum Sustainable Yield (MSY) by 2015 or 2020 at the latest**, as indicated in the conclusions of the World Summit on Sustainable Development held in Johannesburg in 2002 and underlined again in the new CFP. By 2015, management plans should also include **measures aimed at the obligation to land all catches** of Mediterranean stocks which are under a minimum landing size regulation (especially small-scale and big pelagic fish species). After 2015 and by 2019, EU maritime zones which are not regulated by management plans shall adopt a **landing agenda** with detailed indications on caught species and fishing areas (**Rodust's Report**). The use of selective and low-impact fishing gears is the only effective tool for better targeting catches on species of commercial interest (considering both fish species and size). **EC Reg. 1967/2006** has already introduced some technical limits for specific gears in order to decrease impact and increase selectivity, but **multiannual fisheries management plans** should require the adoption of **more stringent technical measures** aimed at reducing fishing effort. Carrying out constant monitoring activities on fish stocks and stricter surveillance activities on fishermen can also help to develop sustainable fisheries practices.

In addition to the State and the EU, an additional management level is represented by the Regions, which in certain countries have reached full competencies in the fisheries sector following administration decentralisation (up to a level as detailed as that of Municipalities and maritime compartments). Fisheries management plans are co-management tools whose relevance is stressed also by **EU Reg. 2371/2002, 1967/2006 and 1198/2006 (EFF)**. The EFF introduces the concept of **local management plans**, where fishermen play a leading role and are fully involved in, and responsible for, the management of the fishing area. Local management plans give specific competencies to fishing enterprises registered in an area, with regard to both resource exploitation and territorial use, so that a real **co-management** (if not even “self-management”) of resources can be carried out. Local management plans are the operational tool that allows a concrete implementation of resource management through **collective territorial use rights in fisheries (TURF)**. In the framework of such rights, fishermen associations determine their own management strategies, within a sustainability and conservation rationale. The novelty of this type of plans rests in the fact that, once specific requirements are satisfied (such as the participation in the newly created Management Consortium of at least 70% of fishermen registered in a territory), it is possible to introduce self-management tools, through the **allocation of territorial rights to the Management Consortia**.



In Italy, TURF-based management systems have been applied to **Clam Management Consortia for clam fishing with hydraulic dredges** with very good results in terms of economic, social and environmental sustainability. When it comes to non-sessile coastal resources, the development of TURF-based management models with direct participation of fishermen is such a novel tool that now it is still in progress and its effects will only be apparent in the years to come. However, the **direct involvement of fishermen in setting the rules and in determining exploitation levels completes the multilevel management**, and increases the chances to realise a more responsible and sustainable management of the fishing area. With the development of local management plans in the framework of the EFF (**art. 37 of EC Reg. 1198/2006**), local communities have acquired a very innovative management tool for an effective territorial development at the local scale, which gives the possibility to develop a strategy that integrates resource conservation and socio-economic requirements. Local management plans can include measures aimed at the fleet (for example for the renewal of fishing vessels), at the fishermen and at the diversification of income; the latter measure can also be linked to strategies and interventions developed by **Fisheries Local Action Groups (FLAGs)**, and specific FLAG-related actions could be included in the management plans. FLAGs are created in the framework of Axis 4 of the EFF, and they are part of a coastal sustainable development strategy aimed at **strengthening the integration of management policies between fisheries and all other economic sectors which are relevant for coastal communities and the coastal maritime space** (e.g. fisheries supply chain, tourism).

These **two parallel and interconnected tools** (local management plans and FLAGs), which play an important role in the CFP and are likely to become even more crucial in the new CFP, are perfectly in line with the objective of enhancing an **integrated and sustainable development of coastal areas**, where fisheries areas are sustainable and competitive in the long run. Within this framework, priority should be given to initiatives aimed at strengthening the competitiveness of fisheries areas, at enhancing the differentiation of fishermen's activities, at supporting infrastructures and services for small-scale fisheries and tourism. Such interventions have been introduced by the EFF financial tool through specific measures; similar measures have not been developed by any other regulations concerning the conservation of fisheries resources. This peculiarity is an excellent indicator of the importance given by the EU to the specific management requirements of the Mediterranean coastal fisheries, but it does also highlight



the strong differences between the management tools which are appropriate for industrial fisheries (characterising Northern European areas), and those which are appropriate for artisanal fisheries (typical of the Mediterranean basin), that is nevertheless highly relevant in the EU context for both its dimension and its socio-economic impacts.

CONCLUSIONS AND RECOMMENDATIONS FROM MAREMED PROJECT

A possible definition of “Regional fisheries management” is “Regional management at a scale as local as possible, in order to directly involve fishermen communities”. The “as local as possible” concept is especially relevant in complex and multi-articulated contexts, such as the Mediterranean one. Some difficulties in managing areas characterised by various overlapping management policies have already been mentioned; another crucial factor to be taken into account is the importance of fisheries activities for the Mediterranean coastal areas: indeed, fisheries is deeply rooted in the social, economic and cultural framework of this basin. In a Mediterranean context, fisheries issues can be successfully tackled only if the local specificities are taken into account. Mediterranean fisheries is strongly related to the peculiarities of the territory of origin. So, when we talk about Regional fisheries management, this may be at a marine regional level, thus involving shared stocks and ecosystems over wide geographical areas, or it may refer to much smaller management units within each Member State (the Regions). It is of the utmost importance that the area included in the plan (the management unit) has homogeneous characteristics and peculiarities at the environmental, biological, chemical-physical, legal, cultural and social level. If the area included in the plan has homogeneous features, it will be less likely to incur in conflicts, and the various interests at stakes will aim at the same objective. Especially if a fisheries activity in a specific area can have a wider socio-economic impact on the Region concerned, it is fundamental that the management plan is developed in consultation with operators in the fishing industry, scientists, institutional partners and other stakeholders.

According to Maremed project’s results, in the Mediterranean Regions partners of the project most management plans are still in progress or awaiting for approval. Even if scientific studies and researches on fisheries management plans have been carried out over the last 10 years, since 2002 when EC Reg. 2372/2002 entered into force, the management plan tool is still poorly

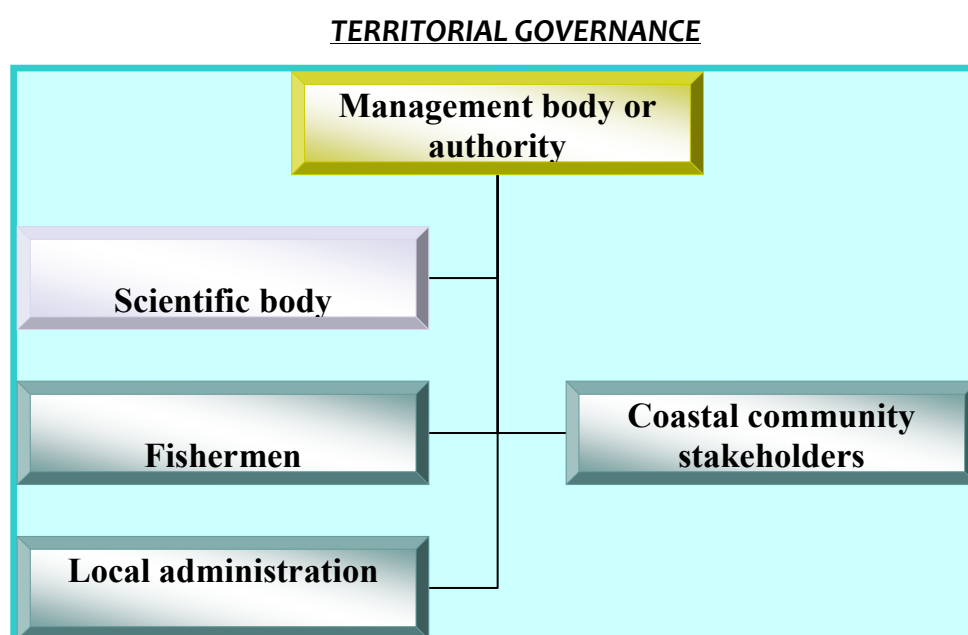


adopted both in the Mediterranean and extra-Mediterranean areas, and only in the last 5-6 years some Member States and Regions have started to set the grounds for the development of fisheries management plans within their jurisdictional competence. One of the most relevant issues is that the pressure for self-management coming from the “bottom”, that is from fishermen, can only work out if a constant and dynamic exchange process is maintained with the local administrations and authorities. Where this process has been set, a fundamental role in reaching this objective has been played by the awareness raising activities carried out by cooperatives, consortia and category associations on fishermen, in collaboration with local administrations, through technical workshops and series of meetings.

For a management plan to be effective, it must draw together and put in mutual relation all actors and stakeholders which are relevant for the safeguard, sustainable exploitation and management of a specific marine area, including:

- Fishermen, in terms of individual fishing operators, enterprises and category associations.
- Local authorities and public bodies (Region, province, municipalities, Harbour Authority, Coastal Guard, local administrations responsible for marine protected areas, etc).
- Scientific research institutes that carry out studies and surveys in the area, since fishermen should partner with scientists to answer questions of mutual interest and address relevant management issues.

For this reason, the ideal Managing Body in the Mediterranean is based on a transversal governance concept, and it is composed of all coastal community stakeholders (fishermen consortia, local organisations and bodies, scientists, etc).



Some specific recommendations can be drawn on the key requirements for developing a fisheries management plan model which is effective and finely-tuned on the Mediterranean context.

MANAGEMENT UNIT

A good **characterisation of the management unit** can highlight the peculiarities of the area and strengthen the rationale behind a management plan. Since the Mediterranean is characterised by multi-species and multi-gear fisheries, it is recommended to develop **a set of separate management plans for different fishing gears/systems and target species**. If it is not possible to develop several management plans, it is better to concentrate the efforts on a single management plan focused on the most common fishing system, representative of a relevant fleet segment, or on one or a few fish species that have good local economic value or specificity. In this way, the management plan can support traditional fisheries and the local economy, giving an added value to local products and strengthening the relationship of the plan with the coastal territory, the conservation of its resources and the valorisation of its social and economic features.

ACTIONS AND MEASURES

The part of the management plan which includes all specific actions and measures to be developed and the objectives to be accomplished by the plan, should be discussed in conjunction with all stakeholders during a series of preliminary meetings involving fishermen, public administrations, scientists, and all relevant actors.

These **joint actions are preliminary** to the preparation of a management plan and are aimed at **avoiding evaluation mistakes** in the applicability of a plan, as well as **conflicts between stakeholders** during the implementation phase. Indeed, the importance of reaching a wide consensus on the management plan is stressed also by relevant European regulations.

GOVERNANCE

The success of a management plan is related to its representativity in terms of categories of stakeholders involved: the more the categories that are represented by the Management Body, the more the aspects that can be taken into account, discussed, evaluated and compared in order to make the management plan effective and reach consensus among all stakeholders. For this reason, the ideal Managing Body in the Mediterranean is based on a **transversal governance** concept and composed of all coastal community stakeholders (fishermen consortia, local organisations and bodies, scientists, etc).

It is widely recognized that effective, sustainable fisheries are only possible if there is close cooperation and mutual acceptance between the interest groups, usually dominated by fisheries interests, and the management authority. It has also become evident that the debate between interest groups is made easier when all such groups have a real interest in the matter to be debated (that is, something valuable to lose). The authority is responsible for ensuring that only



significantly interested parties are allowed to participate in the consultation and that this consultation takes place and leads, as far as possible, to consensus and optimal decisions. This will require the establishment of the necessary structures and responsibilities within the management authority to:

- identify the valid interest groups;
- set up discussion and joint decision-making bodies, with clearly defined responsibilities relating to setting objectives and formulation of management plans, with appeal procedures and with formal communication channels, and to ensure that they meet on a regular basis;
- ensure adequate dissemination of research results, fisheries statistics, fishery plans, other rules and regulations and other relevant material to ensure that all interest groups are fully informed on fisheries issues and their management, and hence in a position to fulfill their responsibilities;
- publish and disseminate annual reports of the fisheries management authority.

CONTROL AND SURVEILLANCE OF THE PLAN

The purpose of a **Monitoring, Control and Surveillance (MCS) system** is to ensure that fishery policy in general and the conservation and management arrangements for a specific fishery are implemented fully and expeditiously.

The more the fishermen are involved in the management process, the less the need for a formal MCS system to ensure compliance with the rules. Indeed, if fishermen are strongly involved in management plans, they will infringe regulations less frequently and will also take greater surveillance responsibility.

SCIENTIFIC BODY

The research body in charge of monitoring the target species included in the plan and the impacts of the plan on the marine environment should collaborate with fishermen and relevant categories in order to obtain reliable fisheries data and information. For this reason it is recommended that the scientific body is situated in the local territory involved in the management plan, so that it has already developed a long-term relationship with subjects present in the area, and a good experience and knowledge of habitats and species living in the area.

The research body should also carry out scientific surveys aimed at monitoring and verifying data received from fishermen, and the impacts of measures on biological resources, in order to assess measure effectiveness through specific biological indicators. The outcomes should allow to give **management indications to fishermen and management plan authorities**, so that the plan itself can be improved or modified if necessary.

The mutual relationship between fishermen and scientists is often neglected due to the difficult interactions between the two worlds. It is therefore recommended to set a number of preliminary meeting between the two parts, facilitated by local territory's administrators or bodies. It would also be useful if the **scientific results could be disseminated** among all local operators, stakeholders and interested parts, during ad hoc dissemination events such as seminars or operator training courses.



COOPERATION WITH LOCAL ADMINISTRATION

*It is recommended to involve competent **local administrations** since the inception phases of development of a management plan. Indeed, bureaucratic procedures are often long, complex and not flexible, therefore an early planning of resource allocation can increase the possibility to **allocate and manage at best the financial resources available at the local territory's administration level.***

Annex 1 presents a common and shared model that could be used for the whole Mediterranean area, adapting the general principles and guidelines to the local or regional context.

Key actions and results related to the supplementary questionnaire that was submitted to Maremed project partners in the framework of the pilot action on Regional Management Plans are described in **Annex 2**.

ANNEX 1

GUIDELINES FOR THE DEVELOPMENT OF MANAGEMENT PLANS FOR FISHERIES IN THE MEDITERRANEAN AREA

INTRODUCTION

Among Maremed project partners, national guidelines for the development of management plans for fisheries have been created only by Cyprus (Fishing Effort Adjustment Plan of the Cyprus fleet, 2010) and Italy (Procedures and Implementation of Local Management Plans **Ministry of Agriculture, Food and Forestry**).

The guidelines outlined hereby are mainly based on the management plans developed by these two Mediterranean countries, but they also take into account the FAO Technical Guidelines for Responsible Fisheries (1997) in support to the implementation of the Code of Conduct for Responsible Fisheries drawn on 31 October 1995.

A preliminary draft of these guidelines was sent to all Maremed project partners and their fisheries experts in order to share the contents before final approval.

HOW TO USE THESE GUIDELINES

The following pages provide a general technical scheme for the outline of a management plan, where a number of basic concepts are suggested. Some of them are of vital importance for the development of a sound management plan for fisheries. The guidelines are articulated in three levels:



- + Main chapters,
- + Specific sections for each chapter,
- + Technical indications.

In this way, the degree of detail increases from one level to the next. The four tables at the end of this section present a summary of a typical management plan outline (source: *FAO Technical Guidelines for Responsible Fisheries*, 1997).

MANAGEMENT PLAN SCHEME

Chapter I – General part: Identification of the relevant area (management unit), scope of the management plan, description of target fish stock, marine resources and environment, subjects involved (fleet segment), legislative and operational framework.

Chapter II – Management plan structure: Definition of objectives, indication of actions and measures, definition and quantification of performance indicators.

Chapter III – Identification of the managing body and operational rules, including monitoring, control and surveillance activities.

Chapter IV – Identification of the research body in charge of scientific monitoring.

Chapter V – Financial instruments in support of the local management plan.

CHAPTER I – GENERAL PART

Characterisation of the management plan scope.

Identification of geographical limits and description of the management unit characteristics.

Territorial and environmental description of the area interested by the plan.

Description of fish and marine resources and habitats.

Description of fisheries activities and spatial distribution of fishing effort in the relevant area.

Legislative and operational framework already in place in the relevant area.

- The management unit should be a **homogeneous area** with regard to both environmental and management features, and it should be defined **at a level as local as possible**.
- A **map with specific references and coordinates** must be included, so that the area can be clearly identified from a geographical point of view.
- It is important to identify the **fishing activities** and **fleet segment** relevant for the management plan, as well as the **target species** that should be included in the



management plan. Data and information on fleet and state of resources should be described in terms of:

- ✓ Type and characteristics of fishing vessels,
- ✓ Type and characteristics of fishing gears,
- ✓ Fishing systems, catch trends in recent years in terms of landings (fishing activity production),
- ✓ Commercial/economic value,
- ✓ Costs and gains.

Data must be accurate and reliable, and as detailed as possible. They should describe fishing activity in the area both in spatial terms (fishing zones) and in temporal terms (fishing frequency and duration). If possible, data and information on fishing activity should be presented by means of **tables and graphs**, in order to increase readability and allow a more immediate interpretation of data.

Data on fish and marine resources should include all biological and ecological knowledge that could be relevant for the area.

The legislative and operational framework aims at providing an exhaustive description of the interrelation between physical, biological, socio-economic, management and regulatory features.

CHAPTER II – MANAGEMENT PLAN STRUCTURE

National management measures already in place in the area (Marine Protected Areas, fishing Quotas, etc).

Specific management measures and actions proposed for the period of implementation of the local management plan.

Definition of global and specific objectives of the management plan.

Definition and quantification of performance indicators.

- **Management objectives** should be precisely defined in order to contribute to the sustainable exploitation of the stocks and marine ecosystems
- **Measures and actions** proposed in a local management plan should be **more restrictive** than those included in the European and national regulations. In particular, the plan should include technical measures aimed at increasing fishing gear selectivity and at encouraging fishing systems able to decrease discards and by-catches, until the “zero discard” objective is reached.
- A clear definition of timeframes and safeguard mechanisms in order to face and correct unforeseen developments should be set.



- Objectives should take into account all possible **impacts** of the adoption of a local management plan: **biological, ecological and environmental**, as well as **socio-economic aspects**.
- For each specific objective, a **performance indicator** should be identified and quantified starting from the baseline data (state of the art at the moment of the plan's inception), so that a standardised assessment of results obtained and achievement of goals can be carried out at regular intervals.

CHAPTER III – IDENTIFICATION OF THE MANAGING BODY AND OPERATIONAL RULES

Identification of the Managing Body in charge of implementing the plan according to the operational rules set in the plan itself.

Identification of the Reference Authority in charge of monitoring, control and surveillance activities to verify the accomplishment of technical measures.

- The Managing Body should be **representative of subjects and categories** involved in the management plan. Its main functions are **to coordinate the actions and interventions** required by the plan and **to carry out monitoring, control and surveillance** activities, in collaboration with the reference authority in charge of controls when this is a separate entity.
- The Reference Authority, on the basis of a **monitoring, control and surveillance** programme aimed at verifying the correct implementation of the plan, should allocate all required resources and determine a **sanctioning system** for those who do not respect the rules according to the plan.

CHAPTER IV – IDENTIFICATION OF THE RESEARCH BODY IN CHARGE OF SCIENTIFIC MONITORING

Identification of a suitable and experienced research body that can be in charge of carrying out environmental monitoring, and possibly scientific studies and surveys, in the area.

- The research body in charge of scientific monitoring should have a **specific knowledge of biological, ecological and environmental characteristics** of the area included in the management plan, and should be involved in the preliminary (*ex ante*) assessment of the species and habitat status in the area.
- The scientific body should carry out monitoring activities aimed at **assessing the biological impact of the technical measures** adopted during (*in itinere*) and after (*ex post*) the plan's implementation. The assessment should be based on the performance indicators indicated in the management plan.

CHAPTER V – FINANCIAL INSTRUMENTS IN SUPPORT OF THE LOCAL MANAGEMENT PLAN

Identification of suitable financial instruments to implement the management plan.

Financial contributions in support of local management plans (EFF art. 37, point m) can be allocated for the following types of intervention:

- **Feasibility studies of the management plan**
- **Scientific consultancies**
- **Scientific monitoring of the plan**
- **Dissemination of results achieved by the plan**

SUMMARY OF A TYPICAL MANAGEMENT PLAN OUTLINE

Table 1. Desirable data and information requirements for fisheries management plans at the policy making level, according to nature and use of data.

Data type			
Related to the resource	Fishery characteristics	Social and economic information	Monitoring, control and surveillance
Summary of recent landings by fishery. Summary of potential yields by fishery, with options of possible alternative approaches. Probable inter-annual variability in yield and any likely long-term trends in resource productivity. Details on environmental constraints and sensitive habitats. Details on the implications of any international agreements which affect the fisheries.	Summary of types of fishery and fleet and gear characteristics for each fleet. Number of fishing units for each fleet, at present. Extent and importance of recreational fisheries, where applicable. Key fishing grounds and their characteristics. Summary of number and distribution of landing sites. The impact of fishing gear and practices on the environment and on the ecosystem. Details of the costs of fishery management.	Summary of existing user rights systems of each fishery and fleet. Major interest groups and their 'stakes', including gender and age sub-divisions within each interest group and likely policy implications. Any trends influencing or likely to influence fisheries, e.g. demographic changes, political changes, migrations, etc. Employment characteristics by fishery and fleet and possible alternative sources of employment.	Summary of successes or problems in monitoring and control by fishery and fleet. Financial and institutional implications of different policy options for monitoring and control. Details of existing arrangements and potential for partnerships or co-management with user or interest groups.



		<p>Contributions to national or local economy by fishery and fleet.</p> <p>Existing or likely developmental activities and their implications for fisheries.</p> <p>Details of any subsidies being paid to fishers and estimated costs of reducing over- capacity.</p> <p>Characteristics of and trends in markets.</p> <p>Implications of State macro-economic policies which could influence fisheries.</p> <p>Details on any existing international agreements on trade, cooperation, etc, which affect fisheries.</p>	
		<p>Existing institutional structures related to the fishery, including traditional institutions.</p> <p>Details on any existing or possible conflicts between fisheries or fleets, including the causes.</p>	

Table 2. Desirable data and information requirements for the formulation of management plans, according to nature and use of data. The information required for determination of the overall fisheries policy is also relevant to the formulation of management plans.

(*) = Desirable but lower priority

Data type			
Related to the resource	Fishery characteristics	Social and economic information	Monitoring, control and surveillance
<p>Historical and current catch data (in weight or numbers), including directed and by-catch and discards, for fishery and fleets.</p> <p>Size and/or length composition of catch per fleet.</p> <p>Sex and maturity</p>	<p>Gear used by different fleets and knowledge of its selectivity.</p> <p>Number of fishing units (e.g. vessels and fishers) in each fleet.</p> <p>Numbers and localities of landing sites and fishing units operating from or landing at each site.</p>	<p>Description of the types of production units in the fishery and the number of each type of production unit per fleet.</p> <p>Details of user or access rights systems related to the fishery.</p> <p>Total number of fishers employed in all fisheries-</p>	<p>Existing monitoring and control systems for the fishery and fleets within it.</p> <p>Known strengths and weaknesses of existing systems.</p> <p>Implications (personnel, costs, benefits, etc) of range of approaches for</p>



composition of catch per fleet. (*) Age composition of catch per fleet. (*) Time, date and locality of all catches (*) Fishery independent biomass estimates.	Total effort for each fleet. Relative fishing power of different fishing units. Area fished by each fishing unit.	related activities, with details on gender and age group characteristics.	monitoring and control. Potential for greater user participation.
Results of stock assessments indicating potential yields and resource status under different harvesting strategies. Annual estimates of number of recruits entering fishery. (*) Stomach contents data for knowledge of trophic relations. Data on mass of species consumed per predator type and feeding preferences of predators. (*)	Detailed characteristics on equipment per vessel which could influence efficiency (e.g. GPS, echo-sounder, etc.).(*) Mass of catch by commercial size category. (*) Implications for each fleet for range of management approaches. Comprehensive data, per catch, on effort used, exact position, depth fished and other data relevant to characteristics of the catch for each fleet. (*)	Existence of, and possible solutions to, any conflicts between fisheries or fleets. Total landed value of the catch for each fleet and any other benefits. Details on processing of catch and on markets, as well as benefits derived from these activities. Existing or potential systems (institutions) and their potential roles in shared responsibility or co-management.	Existing legislation and regulations. Additional legislation and regulations, or modifications, required for range of management approaches.
Time series of indices of environmental characteristics (e.g. sea surface temperature). (*)		Details on full costs of fishing by fleet and processing, marketing and distribution costs. Specific international trade or cooperation agreements relevant to fisheries. Details on socio-economic characteristics of national or local non-fishing activities which do or may impinge on the fisheries. Procedures for consultation and joint decision-making.	

Table 3. Desirable data and information requirements for the implementation of management plans, according to nature and use of data. The data and information required for the

formulation of the management plan are also relevant to the implementation of the management plan.

Data type			
Related to the resource	Fishery characteristics	Social and economic information	Monitoring, control and surveillance
<p>Most recent data on indices used in management procedure (e.g. commercial CPUE, estimated biomass, etc).</p> <p>Information on biological or environmental features which could affect interpretation of indices.</p> <p>Information on any unexpected event related to the stock (e.g. unusual recruitment, natural mortality, environmental conditions) which could warrant departure from management procedures.</p>	<p>Total catch and effort data for the fishery or, if heterogenous, per fleet.</p> <p>Unusual features of fishery or fleet behaviour which could influence interpretation of stock indices used in the management procedure.</p> <p>Changes in fishery or fleet composition which could impact on management procedures.</p>	<p>Unexpected social changes which could require departure from management procedure, e.g. movements, changes in patterns of access.</p> <p>Unexpected economic changes, e.g. in markets, returns or costs which could seriously impact the management plan.</p> <p>Social and economic performance of fisheries and fleets in relation to objectives of management plan.</p>	<p>Name of each fisher or licensed fishing unit (e.g. vessel).</p> <p>Address or port of registry of each vessel or fishing unit.</p> <p>Name and address of owner of each fishing vessel or unit.</p> <p>Information from each fishing unit necessary for enforcing management measures (e.g. catch, effort deployed, catch position, etc).</p>
<p>Status of the stock in relation to trends anticipated in the management plan.</p>		<p>Details on the nature and causes of any serious conflicts within the fishery.</p>	<p>In the case of vessels:</p> <ol style="list-style-type: none"> (1) date and place built (2) type of vessel (3) length of vessel (4) vessel markings (5) type of gear (6) international radio call sign <p>Incidence and causes of any serious and ongoing violations of the management plan.</p>

Table 4. Outline of possible topics to be included in a fishery management plan.

- Title
- Area of operation of the fishery and under which jurisdiction it falls
- History of fishing and management
- Particulars of the recognized groups with interests in the fishery (interest groups)
- Details of consultations leading to formulation of the management plan
- Arrangements for on-going consultations with interest groups
- Details of decision-making process or processes, including the recognized participants



- Objectives for the fishery:
 - resource
 - environmental
 - biodiversity and ecological
 - technological
 - social
 - economic
- Outline of the fishery resources including particulars of life histories as appropriate
- Outline of fleet types or fishing categories participating in the fishery
- Outline of status of the stocks as indicated by stock assessments, including a description of the assessment methods, standards, and stock indicators, biological limits, etc.
- Description of the aquatic ecosystem, its status and any particularly sensitive areas or features influencing or affected by the fishery
- Details of non-fishery users or activities which could impact on the fishery, and arrangements for liaison and co-ordination (this may be particularly important in inland and coastal fisheries)
- Details of those individuals or groups granted rights of access to the fishery, and particulars of the nature of those rights
- Description of the measures agreed upon for the regulation of fishing in order to meet the objectives within a specified time-frame . These may include general and specific measures, precautionary measures, contingency plans, mechanisms for emergency decisions, etc
- Specific constraints, e.g. details of any undesirable by catch species, their conservation status and measures taken to reduce this as appropriate
- Details of any critical environments or sources of concern and actions required to address them
- Particulars of arrangements and responsibilities for monitoring, control and surveillance and enforcement
- Details of any planned education and training for interest groups
- Date and nature of next review and audit of the management plan .

Some of the above may be of a generic nature and hence be dealt with in the general rules of fishing (e.g. a national fishery legislation), in which case these can be referred to in the plan, without repeating all the details. However, specific points or detail may be required for specific fisheries.



ANNEX 2

DEVELOPMENT OF THE PILOT ACTION

Annex 2 provides a detailed description of the pilot action starting from the planning up to the summary of the results obtained from Maremed project partners who participated in this action.

The pilot action consisted of 2 phases:

- 1) elaboration and submission of a supplementary questionnaire to all Maremed project partners and related fisheries experts;
- 2) data analysis and creation of a series of guidelines for the development of common and shared management plans at the Mediterranean level.

The timetable of the pilot action is presented below.

MONTHS 2012	I PHASE
JANUARY	Elaboration and submission to all project partners of a supplementary questionnaire, aimed at obtaining additional and more exhaustive information on point "C" (Regional Management Plans for Fisheries) of the diagnostic phase questionnaire.
FEBRUARY	
MARCH	Exchange of information and opinions, submission of completed questionnaires by project partners.
APRIL	Preliminary analysis of data and information included in the supplementary questionnaires received from project partners.
MAY	
MONTHS 2012	II PHASE
JUNE	Information gathering on existent management plans in the Mediterranean. Overall analysis and elaboration of data and information obtained.
JULY	
AUGUST	
SEPTEMBER OCTOBER	Outline of a series of guidelines for the development of common and shared management plans at the Mediterranean level.



The main activities carried out in the framework of this pilot action are described in detail below.

JANUARY-MAY 2012

I PHASE: This phase was aimed at further investigating point “C” (Regional Management Plans for Fisheries) of the diagnostic phase questionnaire, which was previously sent to all Maremed project partners (regulatory framework, achieved/expected results, difficulties/criticalities encountered during the development and/or implementation of a management plan, EFF funding obtained and related measures, and prospective funding after 2014). The aim was to obtain a more exhaustive set of data and information on territorial/local aspects that could be relevant for the development of management plans in the Regions involved as partners in the project.

The questionnaire was especially focused on the investigation of difficulties/criticalities emerged during the development and implementation of the different stages of a management plan (*ex ante*, *in itinere*, *ex post*), and on the management plan’s effectiveness in reaching biological, economic and social goals and expected benefits in the relevant area on a short, medium and long term basis.

The action was carried out by elaborating and submitting to all partners a supplementary questionnaire, which was more specifically focused on management plan issues than the diagnostic phase one. In addition, partners were encouraged to freely express their opinions and to exchange additional information on this issue, in order to obtain a more diverse and complete picture.

Subsequently, all data and information provided by project partners through the supplementary questionnaires were analysed, compared and elaborated, in order to obtain an exhaustive and in-depth assessment of the state of the art in the development and implementation of management plans for fisheries at the Mediterranean level.

The preliminary results were mainly drawn on the basis of information collected during the diagnostic phase, but some additional data were obtained from the supplementary questionnaires. Studies, papers, projects and other material available on this topic for the Mediterranean area were also considered, in order to obtain a picture as exhaustive as possible.

JUNE-OCTOBER 2012

II PHASE: The preliminary results were presented to all Maremed project partners during the Steering Committee Meeting held in Ancona (21-24 June 2012). After a thorough analysis of data and information obtained from the supplementary questionnaires, and the integration of these results with information on management plans in the Mediterranean (existent or in progress), a series of guidelines were outlined for the development of a common and shared management plan model at the Mediterranean level. Draft guidelines were shared with

Maremed partners and related fisheries experts in order to obtain critical comments and integrations.

In addition to the assessments carried out by scientists on the effectiveness of management plans in improving coastal marine area conditions at the biological and ecological level, it would be good to obtain the opinion of local stakeholders (in particular fishermen and fishing vessel owners) on social and economic benefits of management plans developed according to this common model and guidelines.

PARTNERS INVOLVED

- ✚ Conference des Regions Peripheriques Maritimes D'europe (CRPM) – Commission Intermediterranean Bretagna
- ✚ Republic of Cyprus – Department of Fisheries and Marine Research (DFMR), Larnaca District Development Agency
- ✚ Region of Crete – General Directorate of Regional Agriculture, Economy and Veterinary, Division of Programming and Fisheries
- ✚ Valencia Region – Agriculture, Fishing and Food Department, Research Centre for The Fishing Sector Development
- ✚ Region of Murcia – Region Administration, Secretary General of The Sea of The Ministry Of Environment and Rural and Marine, Spanish Institute of Oceanography
- ✚ Region of Catalonia
- ✚ Italian regions: Liguria – Emilia Romagna - Marche – Toscana – Lazio (Ministry of Agriculture, Food and Forestry, regional Administrations).
Public (universities) or private scientific institutions providing expert support.
- ✚ France regions: Aquitania, Paca (Provence-Alpes-Cote d'Azur) and Corsica (Office Environment)

QUESTIONNAIRE STRUCTURE

The supplementary questionnaire was subdivided into the following main sections:

- A. European regulatory framework
- B. Results and problems encountered
- C. Impacts on regional coastal areas



D. Critical issues

E. Current funding and future allocation of monetary resources (from 2014 on)

The supplementary questionnaire was mainly formulated using closed questions (yes/no and multiple choice questions) in order to facilitate the compilation. Corse Region participated in the questionnaire's creation and translation into French. In order to present the results of the fisheries pilot action's first phase at the Ancona Meeting (21-24 June 2012), Maremed partners were asked to return the supplementary questionnaire by mid June. The questionnaire was sent for the first time on 24 April, and the deadline for submission was set on 8 May. However, a series of reminders had to be sent to the partners in order to gather the completed questionnaires, according to the following time schedule:

- First sending of the questionnaire: 24 April 2012. Deadline for submission: 8 May 2012
- First reminder: 17 May 2012. Deadline for submission: 31 May 2012
- Second reminder: 4 June 2012. Deadline for submission: 7 June 2012
- Third reminder: 12 June 2012. Deadline for submission: 13 June 2012

Six out of fourteen partners provided additional information through the supplementary questionnaire:

- **Lazio Region**
- **Toscana Region**
- **Marche Region**
- **PACA Region**
- **Corse Region**
- **Valencia Region**

The response of project partners to the supplementary questionnaire is summarised in the table below.

SUPPLEMENTARY QUESTIONNAIRE - STATE OF THE ART			
QUESTIONNAIRE SUBMITTED TO THE FOLLOWING PARTNERS	NOT ANSWERED	ANSWERED	MAIN COMMENTS
CYPRUS	X		
Lanarca District development agency	X		
SPAIN			
CATALUNYA (ASSOCIATED PARTNER)	X		Not requested
COMMUNIDAD VALENCIANA		X	
MURCIA	X		
FRANCE			
AQUITAINE (ASSOCIATED PARTNER)			Not requested



CORSE		X	
PROVENCE – ALPES- COTE D’AZUR		X	
CRPM AND CIM			Not requested
GREECE			
KRITI	X		
ITALY			
EMILIA-ROMAGNA	X		
LAZIO		X	
LIGURIA	X		
MARCHE		X	
TOSCANA		X	

After having analysed data and information obtained during the diagnostic phase on fisheries, and especially considering project partners’ opinions and positions on the development of management plans for fisheries, Marche Region has deemed appropriate to carry out a pilot action specifically focused on this issue. Relevant aspects were thoroughly tackled through a **supplementary questionnaire** aimed at obtaining more in-depth information on management plans, also taking into account that data obtained during the diagnostic phase were not easily comparable, and tended to be either too scattered or too detailed.

Marche Region has deemed appropriate to collect more sound and accurate data on this topic also in view of its relevance in the prospective development of a common Management Plan for Fisheries for the Mediterranean area.

RESULTS

This section summarizes the “operational results”, that is the management plans which are being developed or implemented in Regions involved in the Maremed project, and it aims at assessing the state of the art in Regions or countries which are part of the Mediterranean basin.

A. EUROPEAN REGULATORY FRAMEWORK

This section aims at identifying the legal framework which forms the basis of the regional management plans for a sustainable exploitation of fisheries resources.

Regulation	Reg. EC 2371/2002 (Conservation of resources)	Reg. EC 1967/2006 (Mediterranean Action Plan)	Reg. EC 1198/2006 (EFF - European Fisheries Fund)
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Relevant articles	art. 5 art. 6 art. 9 art. 10	art. 18 art. 19	art. 21 art. 37 art. 41
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At the European level, the basic legislative tool is the EC Regulation N. 2371/2002 on the conservation and sustainable exploitation of fisheries resources under the Common Fisheries Policy (art. 5, 6, 9, 10). In particular, Chapter II, art. 6 of the Regulation refers to the adoption of Management Plans for the conservation of fish stocks within safe biological limits.

In 2006, this regulation is integrated by the EC Regulation N. 1967/2006 concerning management measures for the sustainable exploitation of fishery resources in the Mediterranean Sea. Art. 18 and 19 of this Regulation refer to Management Plans both at the Community level and within territorial waters.

The main financial instrument is the EC Regulation N. 1198/2006 on the European Fisheries Fund (EFF), and its application with EC Reg. N. 498/2007. In particular the following points make reference to management plans:

- art. 21, point a.iv (Priority axis 1: measures for the adaptation of the Community fishing fleet, scope);
- art. 37, point m (Priority axis 3: measures of common interest, collective actions);
- art. 41, point 2.b (Pilot projects) on tests of management plans.

At national and/or regional level, the main relevant legal frameworks in Regions partners of the Maremed project are:

NATIONAL LEVEL	
ITALY	
- DM 21/07/2011 - Adoption of n. 1 Management Plan for “sciabica” fishing system without temporary protection period for the following fish species: rossetto (<i>Aphia minuta</i>), bianchetto (<i>Sardina pilchardus</i>) e cicerello (<i>Gymnammodytes cicerellus</i>)	
- Decree of DG Maritime Fisheries and Aquaculture of MiPAAF of 20/05/2011 - Adoption of n. 8 National Plans for Trawling Fishing	
- Decree of MiPAAF of 27/12/2010 – Adoption of n. 1 National Management Plan for hydraulic dredges and bottom trawling	
- Decree of MiPAAF of 27/08/2012 – Procedures and limits for the adoption of technical measures included in local Management Plans	
SPAIN	
Order ARM/143/2010	
CYPRUS	
Fishing effort adjustment Plan of the Cyprus fleet targeting demersal and mesopelagic stocks in the coastal zone of the Republic of Cyprus of the Department of Fisheries and Marine Research (DFMR), 2010	



FRANCE
National Management Plan for the French Mediterranean
REGIONAL LEVEL
Valencia Region: Law 3/2001 on State Maritime Fishing
Marche Region: DGR 1850/2010 – Modalità attuative piani di gestione locale di cui all’art. 37 del Regolamento FEP1198/2006
Toscana Region: L.R. n. 66/2005

B. NATIONAL PLANS IN PROGRESS OR AWAITING FOR APPROVAL

A total of **15 national plans** have been developed throughout the Regions involved in the Maremed project. The details for each country are described below.

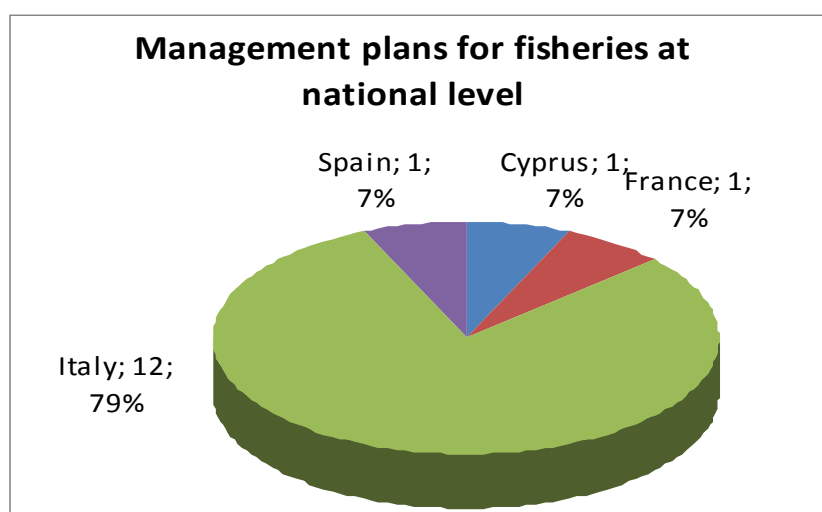
Greece - Crete: regional fisheries development programmes in accordance with national plans are operational.

Cyprus: **1** Fishing Effort Adjustment Plan (Cyprus fisheries law).

France - Paca, LR, Corse: **1** national management plan for the French Mediterranean.

Italy in totally n. 12: overall national plans for trawl fishery (**8** plans for the trawl fleet’s reduction and **1** plan for hydraulic dredge); Liguria Region: **2** national plans for “special fisheries” and Toscana Region **1** national management plan for the European eel shared with other eighth Italian regions.

Spain: Valencia Region (**1** integral management plan for the conservation of fishing resources in the Spanish Mediterranean).



Overall, 15 management plans have been developed at the national level. The figure shows the proportion for each MAREMED project partner (at the State level).

B. REGIONAL PLANS IN PROGRESS OR AWAITING FOR APPROVAL

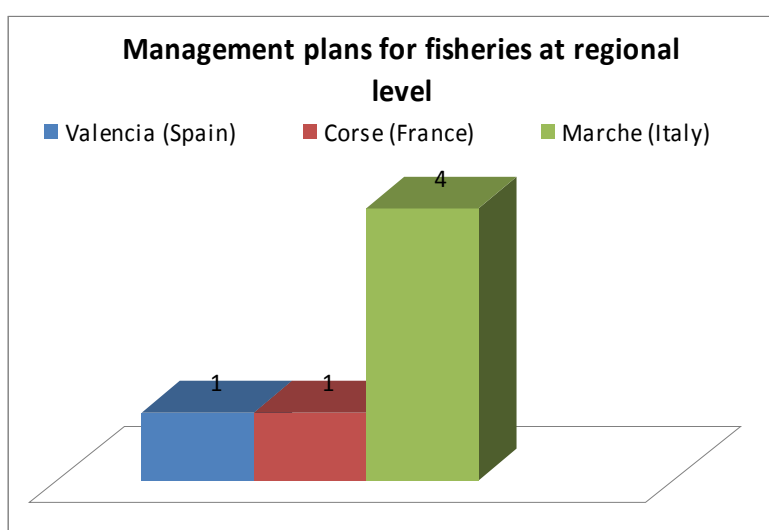
A total of **6 regional plans** have been developed throughout the Regions involved in the Maremed project. The details for each country are described below.

Spain - Valencia Region: 1 “Valencia Region bivalve mollusc farming plan”

Italy - Marche Region: 4 regional plans (1 for artisanal fisheries, 1 for hydraulic dredges, 1 for mussel fishing or farming and 1 for industrial fishing) are currently in progress.

Toscana Region: awaiting for the development of a management plan by fishermen on the basis of Reg EC n. 1198/06.

France - Corse: 1 management plan for lobsters (fishing with pots).



Overall, 6 management plans have been developed at the Regional level. The figure shows the proportion for each MAREMED project partner (at the Region level).

It is interesting to note that some management plans are related to a variety fishing systems and to many different species, whereas only a few plans are focused on specific fishing systems or on single target species.

C. IMPACTS ON REGIONAL COASTAL AREAS

This section examines the different types of impact produced by a management plan or expected, in cases where management plans have been adopted only recently. Impacts are subdivided into biological/ecological impacts, economic and social impacts.

□ Biological impacts (expected):

- Catch size increase
- Growth of total biomass
- Juvenile/undersized mortality rate reduction
- By-catch reduction
- Nursery area protection

❑ Economic and social impacts:

- Fishermen keep their employment and income
- Future opportunities for young people (expected)

Since most management plans are either in progress or have been put in place just recently, their impact on biological resources as well as on fishermen income and on number of young people employed can be outlined only as expected impacts at the moment. Conversely, technical measures included in the plans and adopted by fishermen have already given valuable results and impacts in terms of:

- Restrictions on fleet segments through limitations on number of licenses (Crete, Cyprus, Italy, Valencia);
- Restrictions on number of fishing days (Cyprus, Valencia) or on access to some fishing areas (Cyprus, Italy);
- Restrictions on use of fishing gears (Cyprus);
- Restrictions on fishing capacity (Crete, Cyprus, Valencia).

D. CRITICAL ISSUES

This section provides a detailed analysis and discussion of the critical aspects or main problems encountered in the development and implementation of management plans, according to the information provided by Maremed project partners. In particular, the following main critical issues can be highlighted:

1. Difficulties in obtaining correct and reliable data and information on fishing from fishermen, and on target species from scientists (not enough scientific data available).

This issue is especially related to the difficulties faced by Public Administrations and Category Associations in developing a management plan for fisheries, due to the lack of exhaustive and reliable data on fishing activities, both in terms of catches and of fishing effort (length and number of fishing days, costs and gains), and to the lack of scientific data on levels of exploitation for most fish stocks of commercial interest (MSY-Maximum Sustainable Yield or RP- Reference Point).

2. Difficulties in evaluating the degree of implementation of the technical measures included in the plans at the local level.

Some Regions that have already adopted management plans, point out that it can be difficult to assess whether the technical measures included in a plan are then implemented at the local level, and whether fishermen are in compliance with such measures. This issue is closely related to point 3 and point 5 below.



3. Difficulties in following the European regulations, and too many requests for derogations due to the unsatisfactory connection between rules and real needs of the fishery sector.

4. Difficulties in accomplishing the financial requirements by public administrations.

This issue is related to the difficulties faced by Public Administrations in finding suitable sources of funding in order to develop and implement management plans for fisheries.

5. Difficulties in developing effective control mechanisms for the assessment of compliance with measures included in a management plan.

Overcoming of these problems:

- ☐ Awareness raising of fishermen, through a series of seminars and meetings carried out throughout the territory and involving all fishermen and stakeholders interested in the management plan.
- ☐ Collaboration and exchange of data and information with the scientific bodies working in the territory.
- ☐ Extensive cooperation between local bodies and authorities involved in planning.
- ☐ Greater involvement of Regions both in the concertation process and in the preparation of management plan proposals to be submitted to funding bodies.

The latter point underlines the importance for local competent administrations to be directly involved in the preliminary phases of a management plan's creation, also in order to better address the allocation of funding.

The main positive impacts of management plans highlighted by project partners were:

- ☐ Fishermen are responsible for and directly involved in the management of fishing areas.
- ☐ Fishermen are forced to join in.
- ☐ Both fishermen and scientists provide a valuable contribution with their own knowledge and experience.
- ☐ Overcoming of conflicts between different types of fisheries. This aspect is very important when several fishing systems are used in the same marine area. The correct planning of a management plan should take into account the different requirements of all fishing systems adopted in the area, finding solutions that allow their coexistence without conflicts of interest.

E. CURRENT FUNDING AND FUTURE ALLOCATION OF MONETARY RESOURCES

With regard to the allocation of funding, Maremed project partners provided the following indications:

- ☐ Mostly EFF funding or regional funding with the “de minimis” system;

- ❑ Budgets assigned to management plans range from approximately € 100.000/year to € 1.000.000/year;
- ❑ From 2014 on, a similar annual budget will be provided.

The EFF measures are related to:

- Axis I
- Axis III
- Axis IV

STATE OF IMPLEMENTATION OF MANAGEMENT PLANS AT THE REGIONAL LEVEL

a) Larnaca District Development Agency – CYPRO

The national management measures employed within the territorial waters for each fishery (Cypro Fisheries Law and National Fishery Regulations 1990 – 2009), in addition to the measures imposed by the Community legislation, are mainly based on the Adjustment Plan.

The National and Community legislation provide for a number of management measures for the regulation of the Cyprus fisheries, including:

- Restrictive access to the fisheries (limited number of licenses for each fleet segment)
- Effort control:
 - Restrictions on the use of fishing gears (quantities, soaking time, depth and distance off shore).
 - Restrictions on number of fishing days.
 - Regulation of fishing capacity (scrapping, assignment for other uses than fishing, engine restrictions, ceiling of the fleet vessel register).
- Market restriction measures: minimum landing sizes.
- Technical conservation measures: minimum mesh sizes and type of nets or long lines.
- Seasonal and area closures.

b) Region Corse (Office de l'Environnement de la Corse) – FRANCE

A regional management plan has been developed by the “Office de l'Environnement de la Corse” and the national administration in the framework of the support programme MINIMIS. This plan is especially aimed to the sustainable management of the European spiny lobster through the use of selective fishing gears (traps) for a specific period of the year, and it aims at supporting the use of this type of gear instead of gillnetting.

A good number of actors have participated in the development of this management plan, including the “Direction Inter Régionale de la Mer” (at the State level), the “Office de l'Environnement de la Corse (OEC) (at the Regional level), the “Comité Régional des Pêches Maritimes et des Elevages Marins de Corse (CRPMEM)” and the 4 island fishermen organizations (“prud'homies insulaires”).



The role of the three public bodies mentioned above has been:

State: participation in the management plan development and financial support (80%) for purchasing selective fishing gears (traps).

CRPMEM: participation in the management plan development.

OEC: implementation of the funding procedure.

A positive issue is that the whole Corse Region has been involved in developing this management plan.

There have been some difficulties in gathering detailed and reliable information from fishermen, and in persuading them to adopt less performing and more constraining fishing gears (traps) than gillnets.

Specific objectives of the management plan include raising awareness among professionals, also pointing out that the use of this traditional fishing systems (traps) allows to catch European spiny lobsters as well as common lobsters, which have a high commercial value, and supporting fishermen with regard to logistical and financial aspects also beyond 2013.

A good number of fishermen have already expressed their satisfaction with regard to the results obtained with this fishing technique. In the long run, the European spiny lobster population should completely recover thanks to this traditional fishing system, thus making this type of fishing profitable as well as sustainable. It is worth pointing out that in March the only fishermen that are allowed to catch the European spiny lobster are those using traps.

Lessons learnt from this management plan include the need to carry out more studies on fish stocks in Corse, since fishing is multispecific and management plans should focus also on other species of commercial interest. It is also important to rely on sufficient funding for the development and implementation of management plans.

The European spiny lobster management plan has already allowed to increase fishermen' quality of life, due to a more effective management of the resource (stock recovery), especially considering that this crustacean represents about 70% of incomes of the whole fisheries sector.

c) Provence – Alpes - Cote D'azur - FRANCE

The Region PACA has no regional management plans. The management plan for the French Mediterranean (Region LR, PACA and Corsica) has been forwarded to the European Commission for approval (it has already been rejected once).

It covers the various activities of fishing: trawl nets, dredges (“Ganguise”), small businesses, seiners. Regions have no powers in regulation (development or control) which remain the responsibility of the state.

d) Kriti – GREECE

The national legal framework concerning management plans for the sustainable exploitation of fisheries resources is the Operational Programme “Fisheries 2007-2013”. It is in accordance with the European legislation and European Fisheries Policy and it has been validated by EC regulation 1198/2006.

The actions of the Programme and the funding are managed at the national level, so no regional quotas have been attributed.

All Regions have a General Directorate of Regional Agriculture, Economy, and Veterinary with three divisions:

1. Division of programming
2. Division of plant and animal production
3. Division of Fisheries

The Division of programming is responsible for the preparation and implementation of annual and multiannual Regional Fisheries Development Programmes, always in accordance with the National Operational Programme and the national and international legal framework. These divisions were created in December 2010 and no Regional Fisheries Development Programmes have been prepared yet.

The Regions are responsible for the local implementation of the National Operation Programme “Fisheries 2007-2013”. They inform the local shareholders (municipalities, fishermen’s associations) about the actions of the Programme. They collect applications for participation in the Programme and they control the good use of the allocated funds.

The choice of individual projects to be funded by the Programme takes place at the national level and there is no allocation of funds at the Regional level.

In order to make management plans compulsory, two main tools are used in Greece:

1. Controls and fines attributed by the coastal guard and the hygiene commissions (too small fish, fish that should not be fished, fishing without the appropriate license, fishing in protected areas, etc).
2. Aids for: fishing vessel destruction, fishing vessel change of use, use of more environmental friendly fishing techniques, improvement of fish processing activities, environmental friendly aquaculture, etc.

In general in Greece this policy is effective and the fishing fleet is decreasing, whereas the contribution of aquaculture to the fish production is increasing. More viable and steady jobs are created.

The National Operation Programme “Fisheries 2007-2013” and all the actions included pass through a consultation process at the national level. The different regional and local authorities participate in the consultation process, together with fishing associations, industry associations, NGOs, scientific teams and all interested public.

e) Regione Toscana - ITALY

In accordance with European and national regulations, Toscana Region has emitted a specific law (LR 66/2005) for the development of the fisheries sector. Such a law implies the creation of a Fishery District, the development and implementation of a number of management plans, and the creation of specific regulations finely-tuned on local specificities. A relevant aspect is the participation of all actors involved in fisheries activities, spanning from Public Administrations, to research institutes, to producers along the whole supply chain. This novel



management plan approach implies a more active participation of fishermen, which are not regarded as mere producers, but as active and knowledgeable counterparts in developing a management and conservation plan.

The Fishery District is an operational tool aimed at decentralising both management and administrative issues. The territorial area of interest for such management tools could be a “regional” area in its wider sense, that is an area which is homogeneous both at the environmental and the economic (production/supply chain) level.

A wide variety of stakeholders could take part in the Fishery District, including fishing vessel owners, fishermen consortia, transformation industry operators and fish sellers, public and private bodies, bank and financial institutes, research centres, universities, category associations, fishery technical and administrative services, ship building operators, aquaculture businesses, and all auxiliary and support activities to the fisheries sector.

The main aims of the Fishery District are:

- To ensure a sustainable use of resource and increase their productivity.
- To promote initiatives that increase integration levels between production and services.
- To implement activities aimed at reducing production costs.
- To carry out scientific and technological research project aimed at improving fish production.
- To carry out pilot projects and management initiatives at the local level.
- To provide an added value to Fishery District associates through quality labels and specific certificates of origin.
- To ensure rule accomplishment by making operators more responsible and by implementing effective surveillance actions.
- To increase economic valorisation and commercialisation of fish products.

In Toscana Region management plans are presented by fishermen with scientific support (they must represent at least 90% of the marinery in the area interested by the plan). The proposals are evaluated by a scientific committee set by Toscana Region, which verifies that the plan is in line with the financial availability and the regional targets before providing approval. As a final step, plans are approved by the Italian Ministry, which verifies the plan’s coherence with national plans. Rules and measures included in the management plan must be adopted through formal decree of the Harbour Authority in the area interested by the plan (following Ministry indication). Such a wide concertation and sharing/harmonisation of each management plan improves its successful final adoption.

At the moment, Toscana Region has not formally finalised any management plan yet. The formal procedures for the evaluation and selection of management plans are currently being developed. A number of preliminary meetings have been organised with category associations and research bodies in order to improve and promote specific initiatives by the fisheries operators.

Toscana Region has provided financial support to the project GESPET “Proposals for fisheries management in Toscana Region” carried out by CiBM (Interuniversity consortium of marine



biology). Such a project aims at charging CiBM with the elaboration of a management plan scheme for the regulation of marine fisheries activities and the definition of technical-scientific requirements for fisheries management, with special focus on bottom trawling in Mar Ligure Orientale (Northern part of Toscana maritime compartment) and Northern Tyrrhenian (Southern part of Toscana maritime compartment).

At the moment interregional management plans have not been planned, although there is a preliminary draft proposal to develop a common fisheries district for the Northern Tyrrhenian sea.

f) Regione Marche – ITALY

In the framework of the Common Fisheries Policy, the EC Regulation N. 2371/2002 represents the juridical baseline on the conservation and sustainable exploitation of fisheries resources at the European level. Chapter II (art. 6) mentions the adoption of management plans for the conservation of fish stocks within biological safe limits.

The EC Regulation N. 1967/2006 concerning management measures for the sustainable exploitation of fishery resources in the Mediterranean Sea mentions the adoption of management plans at the European and territorial level.

With regard to the funding instruments, it is necessary to refer to the EC Regulation N. 1198/2006 on the European Fisheries Fund (EFF), and in particular to the art. 37 and 41 on management plan experimentation and its application through EC Regulation N. 498/2007.

With its own Regulation N. 1850/2010, Regione Marche has requested expressions of interest in terms of proposals and ideas, in order to elaborate a local management plan model tailored on the local context and needs.

Management plans are drafted following a request by trade associations, enterprises and other organizations, in collaboration with scientific research bodies.

After their definition, management plans have to be approved by Regional Decree and validated by the Italian Ministry of Agricultural, Food and Forestry Policies (MIPAAF).

After document submission by fisheries trade associations, a series of meetings have been organized in order to draft a management plan specifically focused on trawl fisheries.

This management plan will be drafted by fishermen with the support of scientific bodies, and assessed by Marche Region. Consultation with operators from different fisheries categories and research areas is currently in progress.

The area included in the plan depends on the type of fishing activities, it is usually at maritime compartment level or at the level of a single marinery. At the moment, the elaboration of 4 different management plans is ongoing (small fisheries activities, hydraulic dredges for clams, mussel fishing/farming, bottom and pelagic trawling).

In the Mid Nineties, in Marche Region clam fishermen consortia have carried out a co-management experiment on the striped venus clam *Chamelea gallina*, which is caught using suction dredges within of each maritime compartment's territorial waters (within the 12 nautical mile zone). Clam fishermen consortia have implemented a number of technical



measures in order to rationalise catches and allow a repopulation of sea bottoms by clams. In particular, they have set quotas of daily allowable catches per fishing vessels (based on the TAC – total allowable catches – concept), during a limited number of fishing days per week. Quotas were set according to the estimated biomass of clams per fishing area, which was evaluated by means of scientific surveys. In addition, clam juveniles were seeded in low density areas, moving them from high density areas where fishing was forbidden (on a rotational basis). This has allowed a recovery of clam growth throughout the Region; the alternation of fishing among different areas has avoided overfishing and has allowed to maintained the MSY (maximum sustainable yield).

g) Regione Liguria - ITALY

Liguria Region has drafted three different management plan proposals for Bianchetto (*Sardina pilchardus* juveniles), Rossetto (*Aphia minuta*) and Cicerello (*Gymnammodites cicerelus*) using a traditional fishing gear called “sciabica”. These plans are aimed at obtaining:

- A derogation on costal distance and fishing depth (only for Bianchetto) (European Community regulations).
- A derogation on mesh size (Italian regulations).

Such proposals have been included in two (2) National Plans for the management of Bianchetto and Rossetto, which have already been sent to the EC for discussion and approval.

Regulatory Framework

As already stated, the so called “special fishing activities” like Bianchetto, Rossetto and Cicerello are made using the “sciabica”, operating in zones very close to the coast at depths of 20-30 mt below sea level, with nets of 3 mm mesh size.

Since “sciabica” is comparable to bottom trawling gears, the Community regulation foresees the following restrictions:

- The distance from the coast should not be less than 0,7 miles;
- The depth should not be less than 50 mt below sea level;
- Mesh size should not be less than 50 mm or 40 mm.

According to these restrictions, “sciabica” should not be used anymore. However, it is possible to obtain special derogations for “sciabica”, and therefore such traditional fishing activities are included in a “General Plan” with particular conditions.

In particular, the “sciabica” derogations are:

- A derogation on net-mesh size, allowed by the Italian Member State;
- A derogation on costal distance and depth, allowed by the European Union.

Consultation with private sector and scientific world:

In compliance with EC Regulation 1967/2006, a number of consultations have been carried out with the Harbour Authorities and related bodies, in order to assess the fleet consistency and to collect economic data. In this process the University of Genova has been involved in order to start a set of preliminary studies for the Management Plan drafting.

Documents and/or guidelines



At the moment, Regions rely on the document drafted by the Italian Ministry of Agricultural, Food and Forestry Policies (MIPAAF), which includes a series of guidelines to draft local management plans.

The Rossetto management plan contains the specific governance system that foresees the scientific procedures and activities of management and governance. The management plan involves Liguria and Toscana regions, Ministry, fishermen and category associations, research centres.

h) Regione Lazio – ITALY

No regional plans for fisheries have been developed yet. Lazio Region is currently preparing a call for applications according to EC Regulation N. 1198/2006 (EFF) art. 37 and to EC Regulation N. 2371/2002 (Conservation of resources).

i) Region of Murcia – SPAIN

The Region of Murcia has provided two official documents in Spanish language: one is related to a Food processing strategy Plan of the Murcia Region (2006) with an investigation of the fishery and agriculture sector in collaboration with scientist of the Murcia and Cartagena University. The other document is an official national bulletin of the Environmental, agriculture and Marine Ministry related to a Management Plan for the conservation of fishery resources in Mediterranean (2010).

j) Comunidad Valenciana - SPAIN

The Fishing Director Plan 2008-2013, aims at increasing competitiveness, modernization, promotion, production and research in the fishing sector, trying to improve the marine environment. It is also part of the measures adopted by the Regional Government for boosting the Valencia economy. In this plan basic issues for the development, growth, competitiveness and a better welfare of the fishermen are prioritized, with measures addressed at the integral enhancement of the production chain, products' optimization, the improvement of incomes and aids to reduce costs.

The central axis of this plan are (i) cost reduction, (ii) development and promotion of new markets, (iii) sustainability of fishing resources, (iv) differentiation of fishing products of the Valencia Region through the brand “Pezcológico” and quality labels of the Valencia Region.

The activities this plan is addressed to are:

1. INTEGRAL IMPROVEMENT OF FISHING PRODUCTS' PRODUCTION CHAIN, TRANSFORMATION AND COMMERCIALIZATION

- Modernization of fishing boats.
- Definitive stop of fishing boats.
- Equipment of fishing ports and commercialization at the landing harbour.
- Socioeconomic measures.
- Training of the fishing sector.



2. INDUSTRIALIZATION OF FISHING PRODUCTS

- Commercialization and transformation of fishing products.
- Transformation and canning sectors.
- Introduction and boosting of non-traditional species, of lower commercial value but with no problems of catch decrease.
- Integration of the Fishing Guilds in the industrial sector, facilitating the relationships between fishing and industrial sectors.

3. OPTIMIZATION OF FISHING RESOURCES

a. Protection of fishing resources:

- Biological monitoring of artificial reefs.
- Marine Reserve monitoring.
- Programme for shellfish fishing planning.
- Water quality control in mollusk production areas.
- Agreement between the University of Valencia and the Department of Agriculture, Fishing and Food for the study of phytoplankton in the mollusk production areas.
- Improve the studies on fishing resources.

b. Production of Statistics:

- Agreements with fishing guilds and provincial federations.

c. Fishing activities planning:

- Regulation of fishing activities. Revision, adaptation and renovation of regulations.
- Control and authorization of changes in vessels, fishing activity or base ports.

d. Biological Rest Periods, aimed at guarantee the sustainability of fisheries and the fleet profitability:

- Establishment of management plans and closure periods.
- Aids to temporary cessation of the fishing fleet.

4. PROMOTION AND COMMUNICATION OF FISHING SECTOR

- Creating of "pezcológico, la mar de natural" ("eco-fish, really natural"), a brand of the Agriculture, Fishing and Food Department that commits to the Valencia products, sustainability and fosters the responsibility and commitment with the sector.
- Presentations through the media.

5. FISHING RESEARCH CENTRE

- Research Centre for the Fishing Sector Development: creation of a mixed unit between IVIA and the Catholic University San Vicente Mártir, aimed at carrying out research and technological development projects.
- Work lines.
- Assessment of the current status of the main populations of commercial interest that are caught in the Valencia Region.
- Study of the biology, behavior and dynamics of the swordfish populations in Castellón.
- Environmental study of the exploitation areas of bivalve mollusks of commercial interest, by means of shellfish fishing activities in Valencia Province,



- Study of red shrimp fishing developed in the Ibiza Channel by the Alicante province's fleet.

6. FUEL CENTRAL PURCHASING BODY

- Measures to get fuel cost reduction for the fishermen guilds.
- Facilities for obtaining authorities from the port authorities.
- Intermediation between suppliers/concessionaires and fishermen associations.
- Information and support to the stakeholders (fishermen associations).

CONCLUSIONS

The analysis of information and data provided by MAREMED project partners and their fisheries experts on issues related to the development of management plans for fisheries at the regional level has allowed to draw the following conclusions.

- ✓ In some Member States (French, Greece-Kriti), Regions have **no legislative power on territorial waters**, and thus they cannot directly manage regional maritime areas. Management plans could only be developed and approved at the national level.
- ✓ Regional management plans can only be **applied to a Region's territorial waters**, that is within the 12 nautical mile zone.
- ✓ The existing management plans refer to fleets that use **a variety of fishing gears and systems** (e.g. bottom trawling, seining, longlines, small-scale fisheries' gears), and which are not focused on single species due to the **multi-specificity of Mediterranean fisheries**: whatever the fishing system used, catches are almost always multispecific. Indeed, management plans tend to refer mainly to broad categories, such as demersal and/or pelagic fish resources. Corse Region represents a peculiarity, since it has carried out scientific monitoring activities specifically aimed at developing a mono-specific management plan focused on European spiny lobsters caught with traps. In this case, as in the similar case of Toscana Region for the European eel, the management plan is therefore focused on a single target species.
- ✓ Specific **measures and actions** included in management plans are related to (i) an increase in net mesh size (more selective fishing gears), (ii) spatial and temporal restrictions on the use of fishing gears, (iii) restrictions in the number of fishing licences emitted, (iv) specific restrictions on bottom trawling, (v) measures for the conservation of traditional fisheries (e.g. Liguria and Toscana Regions benefit of derogations for "Rossetto" fishing by "sciabica" gears).
- ✓ The main **goals** of management plans, in the long run, are (i) to maintain fishermen incomes, (ii) to enhance a sustainable use of resources, (iii) to safeguard the marine environment, also by creating protected marine areas in sensitive zones (e.g. seagrass beds, maerl bottoms, nursery areas) where fishing is prohibited.
- ✓ It is important to carry out **regular monitoring, control and surveillance activities**, in order to verify the correct implementation of measures included in management plans.



Monitoring, control and surveillance activities should be carried out by local competent authorities (for example coastal guards), as well as through satellite VMS (Vessel Monitoring Systems).

- ✓ There is a prevalence of **coastal small-scale artisanal fisheries** both in terms of number of fishing vessels and of number of licences/fishing gears used.

