ECOSAFIMED

Project funded by the EUROPEAN UNION

ENPI CBCMED
CROSS-BORDER COOPERATION IN THE MEDITERRANEAN

Towards Ecosystem Conservation and Sustainable Artisanal Fisheries in the Mediterranean basin

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Ecosystem conservation and sustainable artisanal fisheries in the Mediterranean basin

Fishing activities may represent important sources of disturbance for marine environments in terms of overfishing, habitat damage or benthic bycatch. Among all the different types of fishing activities, industrial ones, carried out by large, powerful vessels are doubtless the most impacting, while artisanal fisheries, carried out locally, by small vessels and professional fishermen with broad experience in their territory, are more efficient, selective, easier to manage and, overall, less damaging with respect to benthic environments. For all these reasons they represent our greatest hope to achieve sustainable catches and, at the same time, preserve marine ecosystems. Understanding and reducing the impacts of artisanal fishing on marine ecosystems is a rapidly emerging priority for marine conservation; at the same time, proper management of the benthic habitats will redound to the benefit of all regions, just as artisanal fishing contributes to the socio-economic, environmental and cultural development of many populations in general and to the creation of local employment in particular.

Around 40% of EU artisanal fishermen lives in the Mediterranean Sea, representing roughly 86% of the approximately 42,000 existing fishing boats, and providing around 100,000 direct jobs in the EU alone. Although in decline, they are currently still highly relevant. Thus, in the three Mediterranean countries involved in the ECOSAFIMED project (Tunisia, Italy and Spain), artisanal fishing represents a strong subsector, namely: in Tunisia, the artisanal fleet comprises about 11,000 vessels (around 90% of the national active fleet); Italy has 5,474 vessels dedicated to artisanal fishing in the Mediterranean Sea, 44% of the current active fleet; and in Spain there are currently 5,742 artisanal fishing vessels (60% of the national active fleet), and 1,679 of them operate in the Mare Nostrum (29.24%).

What is the legal framework?

In the Mediterranean basin, the main instrument for protecting biodiversity is the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean Sea (the Barcelona Convention), which seeks, among other important aspects, to "take all appropriate measures to protect and preserve biological diversity, rare or fragile ecosystems, as well as species of wild fauna and flora which are rare, depleted, threatened or endangered, and their habitats…" (art. 10).

At a European level, the Natura 2000 network is also highly important. It intends to maintain or, where appropriate, restore to a favorable status certain habitats and animal and plant species, including those in the marine environment. Its legal basis is founded on:

- Directive 92/43/EEC of the Council of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (DO L 206 de 22.7.1992), known as the Habitats Directive, and
- Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds (DO L 20/7 de 26.1.2010), known as the Birds Directive.

Both directives have been included in Spanish and Italian national legislation through Law 42/2007, of 13 December, on Natural Heritage and Biodiversity (Spain) and Italian laws (DL 375/1997, 120/2003, 157/1992).

Tunisia has ratified, among others, the Convention of Barcelona (described above), the CBD of Rio de Janeiro 1992 (which is the legal international framework for the creation and management of protected areas) and the Agreement on the Conservation of Cetaceans of the Black Sea, the Mediterranean and adjacent waters (ACCOBAMS). The purposes of nature and diversity conservation in the marine and coastal environment and the use of natural resources within the framework of sustainable development and the creation of marine and coastal protected areas are included in Tunisian legislation through Law 49-2009.

CHALLENGES	OBJECTIVES
Lack of scientific evidences in the conservation of marine areas used by artisanal fisheries	To provide sound scientific evidences to sustain an artisanal fishing industry in areas protected from trawling pressure
Unknown impact of artisanal fisheries on the benthic communities	To assess the richness and composition of marine habitats and the impact of artisanal fisheries To ensure fishermen's involvement in the characterization of fishing grounds and their activity
The need for a shared Mediterranean vision on artisanal fisheries management and marine ecosystems conservation	To engage local stakeholders, conservation managers and international organizations

ENPI CBCMED Programme: promoting cross-border cooperation

The 2007-2013 ENPI CBC Mediterranean Sea Basin Programme is a multilateral Cross-Border Cooperation initiative funded by the European Neighbourhood and Partnership Instrument (ENPI).

The Programme's objective is to promote the sustainable and harmonious cooperation process at the Mediterranean basin level by dealing with the common challenges and enhancing its endogenous potential. It finances cooperation projects such as the contribution to the economic, social, environmental and cultural development of the Mediterranean region. The following 14 countries are participating in the Programme: Cyprus, Egypt, France, Greece, Israel, Italy, Jordan, Lebanon, Malta, Palestine, Portugal, Spain, Syria (participation currently suspended) and Tunisia. The Joint Managing Authority (JMA) is the Autonomous Region of Sardinia (Italy). The Official Programme languages are Arabic, English and French (www.enpicbcmed.eu).

During the ECOSAFIMED project, Spain, Italy and Tunisia benefited from international cooperation in terms of scientific exchange, the transfer of methodology, collaboration in the development of oceanographic surveys, unknown and highly valuable habitat identification, agreement on scientific conclusions and recommendations. The transnational approach has facilitated the exchange of good practices and methodologies among partners, as well as the elaboration of common results.

What is the ECOSAFIMED project?

The project "Ecosystem conservation and sustainable artisanal fisheries in the Mediterranean basin (ECOSAFIMED)", carried out in Spain, Italy and Tunisia, aims to promote sustainable artisanal fisheries practices in a compatible manner with the conservation of the marine biodiversity of the Mediterranean basin.

For this purpose, an evaluation of the status of the sensible benthic communities and a quantitative evaluation of some of the most impacting artisanal fishing métiers were conducted in cooperation with fishermen and other national and international organizations.

As a result of this evaluation, several recommendations have been developed to reduce the impact of artisanal fishing and achieve the preservation of the habitats, with the purpose of being implemented by fishermen and other stakeholders. The study has also provided an opportunity to identify areas of high ecological value that may be subject to special protection.

ACTIONS	RESULTS
Oceanographic surveys in 6 marine areas of Spain, Tunisia and Italy Scientific cooperation between partners	• More than 120 hours of underwater ROV videos. • 57 days of oceanographic surveys across the Mediterranean Sea. • More than 150 transects surveyed with Remote Operated Vehicles • 6 environmental and bionomic maps of the study areas with information on benthic communities' distribution and conservation. • Management guidelines and recommendations for sustainable artisanal fishing activities. • 4 scientific training courses on methodology, data analysis and image processing.
Interviews to fishermen Onboard surveys on fishermen boats Marine Stewardship agreements Environmental assessment and characterization of study areas	Characterization of artisanal fleets and métiers Maps and reports characterizing study areas List and visual guide of species common in the bycatch Marine Stewardship agreements
Informative sessions with fishermen and local actors Development and dissemination of communication materials Capitalization with other ENPI CBCMed projects	• Website: ecosafimed.eu • Newsletters • Videos • Leaflets • Electronic publications • Scientific communications

How have our sea and fisheries been studied?

A three-phase methodology has been implemented in order to carry out the study related to the benthic communities and fisheries in Spain, Italy and Tunisia:

- Selection and characterization of study areas: 6 main study areas in the 50-200 m depth range were identified; all characterized by the absence of trawling activities, which required obtaining vessel monitoring system (VSM) data from the corresponding government, surveys, interviews with fishermen and carrying out a GIS analysis.
- Selection of fishing métiers and assessment of the impact of artisanal fisheries on benthic communities: the métiers were selected by the partners, based on the most commonly used gear and the most common species in the study areas, and taking into account the potential impact of the gears on the benthic communities. The evaluation of the interaction of métiers with benthic communities has been carried out by scientific observers on board artisanal vessels that collected data on the composition of the catches obtained by fishermen.
- Development of oceanographic surveys: with the aim of determining the richness and composition of benthic communities in the study areas, oceanographic surveys have been carried out followed by the analysis of the ROV video footage.

Who are the main stakeholders?

Several stakeholders have been involved in the development and implementation of the ECOSAFIMED activities, namely: local communities, fishermen associations, municipalities, policy makers at local, national and Mediterranean level, the scientific community, national and international management bodies working on fisheries management and marine conservation and NGOs.

The artisanal fishing fleet collaboration when executing this project has been essential since they were asked to provide information about fishing areas, methods, etc. and to collaborate with onboard observers; their cooperation has been also essential when implementing the results and assuming the adoption of best fishing recommendations, as well as the scientific outcomes derived from the project.

Also, the entities involved in the management of fishery resources and the conservation of the biodiversity of the Mediterranean Sea are particularly relevant to the assumption of the results of the project, given their importance on continuity in time and the fact they are incorporated into the policies relative to the management of the Mediterranean Sea environment and the fishing activities.

What are the principle results?

As a result of the status assessment of the benthic communities and the study of the impact of some fishing métiers, several recommendations have been developed with the purpose of being implemented by the fishermen and other stakeholders after the ECOSAFIMED project.

The recommendations have been reflected in a final report on the project and are mainly focused on the continuity of fishing activities, always bearing in mind marine ecosystems' preservation, thereby contributing to increasing the sustainability of Mediterranean artisanal fisheries and reducing their impact.

After two years of scientific studies and collaboration with fishermen, these are the main recommendations to reduce the fisheries' impact on the seabed and make it more sustainable:

- To return benthic discards to the water in less than 30 minutes, in the same location the gear has been hauled and to avoid crushing as much as possible.
- To avoid fishing in areas where fragile communities have been detected.
- To promote the use of more selective gears and more efficient materials.
- To decrease the fishing impact by reducing the number of sets in the same site in a season.
- To decrease the fishing effort by reducing the length of the fishing sets.
- To promote the regular mending of fishing nets.
- To promote best fishing practices with easy, straightforward video footage.
- To reduce the fishing impact by implementing benthic ground truthing.
- To avoid fishing in nursery areas.
- To involve fishermen in exploration and monitoring scientific surveys.
- To use georeferenced records of fishing debris for cleaning operations of the sea bottom.
- To support artisanal fisheries' best practices with appropriate local management plans.
- To prohibit fishing in shallow waters when the weather forecast is unfavorable.
- To support the maintenance and creation of no-trawling areas.
- To promote the use of plotters and high resolution maps of the seafloor.
- To promote the presence of a marine biologist within fishermen cooperatives.
- To support the use of gears that better matches commercial productivity and a reduced impact.
- To promote the inclusion of fishermen's knowledge in scientific studies and monitoring activities.
- To pursue the establishment of Marine Protected Areas or fishing restriction zones in the identified valuable ecosystems.
- To promote Marine Protected Areas as focal points for monitoring the fishing impact.

How have the results been disseminated?

The results have been made public in accordance with a previously drawn up communication plan in pursuit of making the project more visible and transmitting its importance to both the target groups and the beneficiaries of the project. According to this plan, the following activities were developed:

- Creation of a four-language (English, Arabic, Italian and Spanish) website with information on the project's activities and results.
- Organization of informational sessions for fishermen, with the aim of transmitting the characteristics and long-term benefits of the project to them, and of course the great importance of active participation from their side.
- Elaboration and distribution of communication materials to make the transmission of basic information easier concerning the project and to help enhance public awareness: monthly newsletters, documentary videos, leaflets, posters, T-shirts and caps. Presentations have been prepared for relevant events, including international workshops and congresses, and articles published in relevant scientific journals or magazines, as well as press releases, training materials and protocols.

And after ECOSAFIMED?

In order to keep on with the preservation and optimization of the management of marine resources, so that the civil liability of fishermen can be generated, the ECOSAFIMED project calls for the promotion of the signing of voluntary marine stewardship agreements between scientific entities or NGOs and fishermen. These agreements are organized as a complement to the protection of threatened or endangered marine habitats and species, through the participation in the sustainable management of specific sites with ecological values in need of preservation.

In addition to these agreements, it is crucial that the results of the project have continuity and are incorporated in the future practices used to manage the environment of the Mediterranean Sea; to this end, administrations and management bodies at a regional level have been contacted to transmit several recommendations to them in regard to the conclusions reached by the project.

TOWARDS ECOSYSTEM CONSERVATION AND SUSTAINABLE ARTISANAL FISHERIES IN THE MEDITERRANEAN BASIN

ECOSAFIMED

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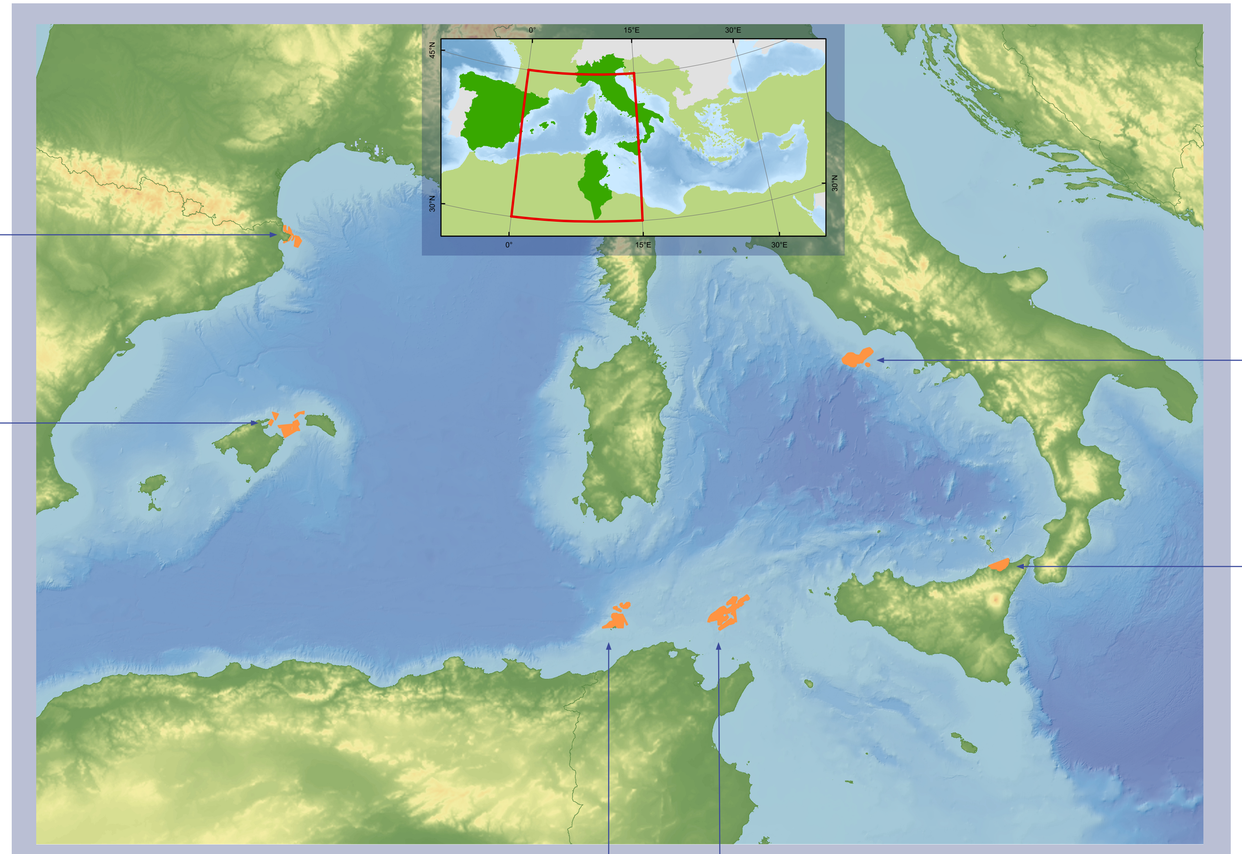
ENPI CBCMED

ECOSAFIMED STUDY AREAS

With the aim of assessing the impact of artisanal fisheries in the three regions preselected by the ECOSAFIMED project, the first step was to choose study areas, namely: the Pontine archipelago and Gulf of Patti in Italy; Esquerquis benches and La Galite archipelago, in Tunisia; and Cap de Creus and Minorca Channel in Spain. Characterizing these study areas, in order to ensure the project could be properly undertaken, was one of the most decisive aspects of ECOSAFIMED during the first year.

The selection of the study areas has been made by taking into consideration the use of three main tools: Vessel Monitoring System (VMS) data, where available (only in Spain); contact with local fishermen and field interviews to gather information on trawling and artisanal activities; and bibliographical research, useful for comparing and redefining results.



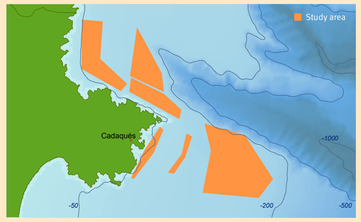
Eunicella cavolini

Cap de Creus, Spain

Cap de Creus is located in the easternmost part of the Iberian Peninsula, at the bottom of the Gulf of Lions geographical region. Its coastal waters were given the status of a land-marine natural park in the 1980s due to its highly diverse and rich benthic communities. In recent years, a large portion of the continental shelf and its adjacent submarine canyon has been designated as a Natura 2000 Network Site of Community Importance (SIC).

The scientific research developed on the continental shelf has also revealed the existence of some very diverse benthic habitats, consisting of structure-forming species that act as hot spots of biodiversity. These communities are mainly formed by engineering species such as gorgonians or erect sponges, which serve as nursery areas for other organisms to reproduce. The mud and sandy bottoms of the continental shelf have also been found to hold very dense patches of soft-bottom organisms, such as sea pens and sea lilys, which contribute to the overall diversity of community types for this region.

Furthermore, the presence of two submarine canyons very close to shore raise the ecological importance of the marine area as a whole. The strong bottom currents that flow along the canyon walls increase the concentration of organic particles that are transported from surficial layers, benefiting the planktonic community and, consequently, the benthic organisms. Some very dense patches of cold water corals, mostly dominated by the white coral *Madrepora oculata*, have been identified in the southern wall of Cap de Creus canyon. These corals provide shelter for different larvae species, acting as nursery grounds for various fish species, some of high commercial value.



In the case of the continental shelf, areas that are not directly affected by benthic trawlers were identified within the frame of the project. Information gathered from artisanal fishermen allowed for a more detailed characterization of such areas, where high and low artisanal fishing activities could be determined.

Most of the artisanal fishing fleet in Cap de Creus consists of medium-sized boats measuring between 6 to 12 metres in length. The activity of these boats is related to 4 main harbours: Roses, Cadaqués, Port de la Selva and Llançà. The number of fishermen that develop their activities in the region is 78, belonging to a total of 34 boats. Around 45% of their activities usually take place within the waters of the Natural Park.

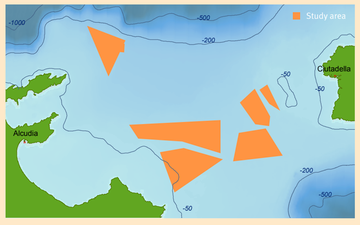
Coralligenous bed

Minorca Channel, Spain

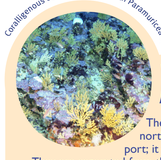
This is a marine area approximately 36 km wide, located in the northern part of the Archipelago of the Baleraic Islands. With large heterogeneous fishing grounds, this is one of the most important marine areas in the Balearic Islands. The Minorca Channel is a Site of Community Importance under the EU Habitats Directive. The coastal shelf between the two islands has a maximum depth of 100 m and is one of the main areas of maerl beds in the western Mediterranean, with high environmental heterogeneity due to the occurrence of rocky beds, sandy shores, and detrital and gravel beds. These fishing grounds show well-preserved benthic communities, as a result of the nature of the fleet and the use of multiple métiers around the year. Although there is still some trawler fishing, most fishing activity is carried out by an artisanal fleet.

Six areas were selected in the Minorca Channel for the study. Three areas were selected as a high fishing effort, all of them quite close to the coast of Majorca. The low effort areas are in the middle of the Minorca Channel, and off the north coast of Majorca. Distance to harbour is obviously a key factor in the use of the areas. There are two main fishing ports in Minorca (Ciutadella and Maó), and three main ports in the northern part of Majorca.

In terms of the number of boats registered, 87% of the fleet worked in artisanal fishing, 120 boats and 170 fishermen. The average total boat length is 7.96 m, with an average weight of 2.57 tons. The average age of the vessels was calculated at approximately 30 years in 2014.



A total of 24 fishing métiers were identified; the main gear used by artisanal fishery is trammel nets, longlines and gillnets. Trammel nets are mainly used to catch cuttlefish (*Sepia officinalis*) in winter and early spring, and spiny lobster (*Palinurus elephas*) and red scorpionfish (*Scorpaena scrofa*) in summer. Gillnets are generally used to catch John Dory (*Zeus faber*) in spring/summer, younger specimens of greater amberjack (*Seriola dumerilii*) in late summer and autumn, and red mullet (*Mullus* sp.) in autumn. Bottom longlines are traditionally used to catch mainly sparidae species in autumn and winter, and groupers (*Epinephelus* sp.) in summer-autumn, though they are used by some vessels throughout the year, or as a fishing method between seasons for the main target species described above. Jigs for squids are also used as a common complementary fishing method in both summer and winter. Other gear, such as boat seine net for dolphinfish (*Coryphaena hippurus*) is used in autumn only in the waters of Majorca.



Coralligenous outcropping rock with Paramuricea sp.

Esquerquis benches, Tunisia

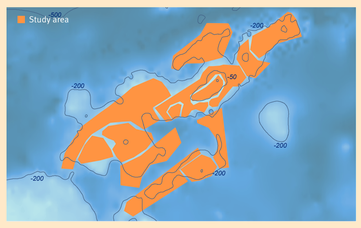
The Esquerquis benches is located at 51 nautical miles north-east of Bizerte and 45 nautical miles from SidiDaoud port; it is an extension of Bizerte and Ghar El Melh chains. They are separated from the shallows of the north-eastern region of Bizerte by a channel with a depth of 200 m.

The selected study area, chosen on the basis of information provided by fishermen and the General Directorate of Fisheries and Aquaculture of the Tunisian Agriculture Ministry, is located in the central part of the Esquerquis benches, between 50 and 120 m in depth.

The majority of fishing boats acting in this area are from Kelibia harbour and a reduced number from Bizerte and Tabarka.

Ten associations species/gear or métiers were identified as mainly used. The most important is the gillnet targeting bonito (*Sarda sarda*) from March to June and from October to December. In second position we find longlines targeting swordfish (*Xiphias gladius*) in winter, spring and summer. This métier is followed by the boat seine net for dolphinfish (*Coryphaena hippurus*). In fourth position we find two métiers: longlines targeting the red porgy (*Pagrus pagrus*), the common dentex (*Dentex dentex*) and the red scorpionfish (*Scorpaena scrofa*), all year round; and longlines targeting various species of grouper (*Epeniphelus* sp.) with predominance of speckled grouper (*Epeniphelus marginatus*) in spring, late summer, autumn and early winter. The métiers using trammel nets are not very practiced but the one targeting spiny lobster (*Palinurus elephas*) is the most practiced from March to September.

In Esquerquis benches, ROV analy ses showed a total of 129 mega-fauna species. This mega-fauna is especially represented by the group of Echinodermata followed by the Porifera, Algae and Bryozoa. Among Echinodermata the most important species is *C. cidaris*, which could reach a density of about 3.5ind/m2 and is mostly associated with maerl beds. Among Porifera the most structural species is *Haliclona* sp., which could reach a high density of around 13 ind/m2 and the biggest measured specimen reach 14.8 cm. *Haliclona* sp. is mainly associated with maerl beds.



Forest of Paramuricea larix from Palmarola

Pontine archipelago, Italy

This volcanic archipelago is located on the west coast of Italy, around 40 nautical miles from the gulf of Gaeta coastline, in the Tyrrhenian Sea. It is composed of six islands: Ponza, Palmarola, Zannone and Gave to the north east, and Ventotene and Santo Stefano to the south west. Also, six miles south west of Ponza, there is a solitary rocky outcrop known as the Scoglio della Botte.

In regard to the marine ecosystems, the islands of Ponza, Zannone and Palmarola have a predominance of detritic, rocky and maërl habitats, hosting large black coral and sea fan forests, hydrozoa and sponges, among other species. The seabed is therefore of high ecological value.

In collaboration with the fishermen who work around these islands, eight artisanal fishing areas were identified, two with a high fishing effort, three medium and two low. Most port activity is found on Ponza Island, specifically at the port of Molo Musco; the island has a fishing fleet of 36 boats, among them 20 artisanal boats that use various methods in each season, depending on the target species, and 12 multi-use boats that work with fixed nets, mainly in summer to catch swordfish (*Xiphias gladius*).

In the Pontine Islands, therefore, artisanal fishing features heavily, especially in the spring/summer months when there is a predominance of mesh nets and longline seabed fishing (*Merluccius merluccius*, *Lepidopus caudatus*, *Mullus surmuletus*, *Spicara smaris*), followed by seine fishing (*Engraulis encrasicolus*) and gill nets (*Sepia officinalis*, *Scorpaena* sp., *Palinurus elephas*).

Colony of Dendrophyllia cornigera from Cape Milazzo

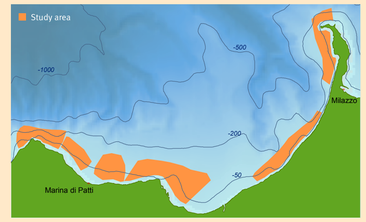
Gulf of Patti, Sicily, Italy

The Gulf of Patti is localed along the north-eatern coats of Sicily, in the province of Messina, it stretches from Cape Calavà to Cape Milazzo, along 60 km of coastline. The study area covers the full extension of the gulf, approximately 400 hectares.

The seabeds of the Gulf of Patti are mainly sandy or muddy, with wide meadows of *Posidonia oceanica* and traces of *Cymodocea nodosa*. Various shoals and rocky elevations are present in front of the major coastal cliffs. The easternmost side of the gulf, Cape Milazzo, is characterized by numerous habitats of significant scientific interest. The cliff is high and rocky, bordered by vermetid trottoirs, caves and *Posidonia* meadows extending down to depths of 30 m, where the bed is detritic. The sandy bed is fragmented by rocky boulders, which are home to numerous fish species.

Some very interesting coral communities were reported and the most dominant species included soft-bottom gorgonians, sea pens, hydroids, black corals and the scleractinian *Dendrophyllia ramea*.

Six different fishing areas were identified following specific interviews with fishermen. There are a total of 152 registered fishing boats, exclusively artisanal, divided into demersal fishing and pelagic fishing (small, medium and large pelagic), and characterized by a high variability of fishing activity throughout the seasons.



Dredo maerl bed with dense facies of Paramuricea sp. and Pentapora fascialis

Galite Islands, Tunisia

The Galite Archipelago is located at about 52 nautical miles from Bizerte, in north-west Tunisia. It includes six islands: Galite, the largest one, Gallo, Pollastro and Gallina to the east and the Galiton and La Fauchelle to the west. The total surface is about 19 km² (4.5 km² of marine area and 14.5 km² of ground area).

This area is considered one of the richest in the Mediterranean Sea. In order to preserve some marine species, the Galiton Island surrounding zone was classified in July 1980 as a Marine Protected Area under the mention "Specially Protected Areas of Mediterranean Importance" by a ministerial decree. Its natural treasures include a unique marine geological formation such as the intertidal vermetid platforms and the subtidal *Cystoseira* forests.

The selected study area is located over the continental shelf of La Galite, between 50 and 120 m in depth. A total of 9 artisanal fishing areas outside the trawl boundaries have been chosen; amongst them, different fishing impact levels were identified (high, medium and low impact).

Most boats working in the Galite Archipelago are from the harbours of Bizerte and Tabarka and Bizerte. The concentration of artisanal boats is higher in the port of Bizerte, with a percentage of 51% of the total fleet, followed by the port of Ghar al-Melh (18%) and the port of Menzel Abderrahman (15%).

A total of 14 different fishing métiers were identified in this area. The main fishing gear used by the coastal vessels is trammel nets followed by longlines and gillnets. Trammel nets are mainly used to target spiny lobsters (*Palinurus elephas*), red scorpionfishes (*Scorpaena scrofa*), various fish (*Mullus* sp.), little sparidae and cuttlefish (*Sepia officinalis*). The second métier, in terms of percentage of the fleet practicing it, is longlines targeting the red porgy (*Pagrus pagrus*), the common dentex (*Dentex dentex*) and the red scorpionfish (*S. scrofa*). Another type of métier specific to the region is longlines targeting the wreckfish (*Polyprion americanus*). Also there are two different types of gillnet generally employed to catch mullets (*Mullus* sp.) and bonitos (*Sarda sarda*) during autumn.

ROV analyses revealed a high diversity of mega-fauna in La Galite archipelago , higher than in Esquerquis. A total of 165 species were represented mainly by the group Porifera, followed by Octocorallia, Bryozoa and Echinodermata. Among Porifera, the most structural species are *Haliclona* sp., which could reach a very high density (about 69 ind/m2) and length (around 19.7 cm). *Haliclona* sp. are mostly associated with maerl beds. Octocorallia is represented mostly by *Paramuricea* sp. followed by *Eunicella* sp., reaching respectively maximum densities of 53.5 col/m2 and 5 col/m2. These species could be found as well as in maerl beds and rock substrate. It should be noted that in maerl beds gorgonian (*Paramuricea* sp. and *Eunicella* sp.) showed very high densities and small-sized colonies yet in rock substrate the gorgonians show low densities but very large colonies; for example, the largest colony of *Paramuricea* sp. measured a reach of 28.3 cm and the largest *Eunicella* sp. about 23.5 cm.

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ECOSAFIMED project

Title	Towards ECOsystem Conservation and Sustainable Artisanal FIsheries in the MEDiterranean basin (ENPI CBCMED ECOSAFIMED)
Objective	To promote sustainable artisanal fishing practices in benthic communities
Study areas	• Cap de Creus and Minorca Channel in Spain • Pontine archipelago and gulf of Patti in Italy • Esquerquis benches and Galite archipelago in Tunisia
Duration	2 years (31 December 2013 – 30 December 2015)
Budget	€1,915,883.30
Co-funded by	EU contribution: €1,569,235.79 (81.91%)
Beneficiary	Biodiversity Foundation (Spain) *Public foundation attached to the Ministry of Agriculture, Food and Environment that aims to contribute to the protection and preservation of our natural heritage and biodiversity, with the marine environment and international cooperation for development two of the most important working areas.*
Partners	• Institute of Marine Sciences-Spanish National Research Council (Spain) *Public research institution attached to the Ministry of Economy, specialized in marine science development, in particular oceanographic campaigns and results analysis.* • University of Genoa (Italy) *The Department for the Study of the Territory and its resources has merged in one single structure of different biological disciplinary areas such as botanic, zoology or the marine environment. It is mainly dedicated to the analysis and study of the environmental components, focused on the territorial system.* • The National Institute of Marine Sciences and Technologies (Tunisia) *INSTM is a public research institution attached to the Ministry of Agriculture, Fisheries and Water Resources and the legal representative of fisheries sciences in Tunisia. INSTM has acquired over 20 years of expertise in marine sciences, particularly in the fields of fisheries analysis and marine biodiversity.*
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