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### ***Ecosystem conservation and artisanal fisheries in the Mediterranean basin***

Around 40% of the EU artisanal fishermen live in the Mediterranean Sea, providing 100,000 direct jobs in the EU alone. Although declining, they are still highly relevant. In the three Mediterranean countries involved in the ECOSAFIMED project (Tunisia, Italy and Spain), artisanal fishing activity represents a strong subsector: 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%).



*Italian fishermen*

Artisanal fisheries represent our greatest hope to achieve sustainable catches and, at the same time, to preserve marine ecosystems and fish population. Understanding and reducing the impacts of artisanal fishing on marine ecosystems is a rapidly emerging priority for marine conservation. At the same time, a proper management of the benthic habitats will

redound to the benefit of all regions, just as the 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.

#### ***The project***

ECOSAFIMED aims to promote sustainable artisanal fisheries practices in a compatible manner with the conservation of the marine biodiversity of the Mediterranean basin.

During the two years of the project (2014-2015), an evaluation of the status of the vulnerable benthic communities and a quantitative evaluation of some of the most impacting artisanal fishing *métiers* have been conducted in cooperation with fishermen and other national and international organizations.

The study areas are Cap de Creus and Minorca Channel in Spain, Pontine Archipelago and Gulf of Patti in Italy, Esquerquis benches and Galite Archipelago in Tunisia.



*Map of ECOSAFIMED study areas*

As a result of the assessment carried out, several recommendations have been developed to reduce the impact of artisanal fishing and to attain 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 subjected to special protection.

The project has been coordinated by the Biodiversity Foundation (public foundation of the Spanish Ministry of Agriculture, Food and Environment), and three partners: the Institute of Marine Sciences-Spanish National Research Council (Spain), the University of Genoa (Italy), and the National Institute of Marine Sciences and Technologies (Tunisia).



ECOSAFIMED Team

### Methodology to study benthic communities and fisheries

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 the study areas: 6 main study areas in the 60-120 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, from surveys, from 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 gear on

benthic communities. The evaluation of the interaction of *métiers* with benthic communities has been carried out by scientific observers on board of artisanal vessels that collected data on the composition of the catches obtained by fishermen.



Benthic bycatch measured on board by the observer

- 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 through the analysis of the Remotely Operated Vehicle (ROV) video footage.



ROV deployment in La Galite (Tunisia)

### Our 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. To all of them we are very thankful.

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.



Tunisian fishermen collaborating in on-board surveys

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.

### Challenges and results

Unknown impact of artisanal fisheries on the benthic communities



Characterization of artisanal fleets and *métiers*  
 Maps and reports characterizing study areas  
 List and visual guide of species common in the bycatch

Management guidelines and recommendations for sustainable artisanal fishing activities

Lack of scientific evidence in the conservation of marine areas used by artisanal fisheries



More than 120 hours of underwater images  
 57 days of oceanographic survey 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  
 4 scientific training courses on methodology, data analysis and image processing

The need for a shared Mediterranean vision on artisanal fisheries management and marine ecosystems conservation



Marine Stewardship agreements  
 ecosafimed.eu  
 Newsletters  
 Videos  
 Leaflets and posters  
 Final technical publication

### **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 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 in regard to the conclusions reached by the project.



*Bryozoan branch collected in the bycatch*

### **More information**

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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 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 as a contribution to the economic, social, environmental and cultural development of the Mediterranean region. The following 14 countries participate 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). Official Programme languages are Arabic, English and French. ([www.enpicbmed.eu](http://www.enpicbmed.eu)).

The European Union is made up of 28 Member States who have decided to gradually link together their know-how, resources and destinies. Together, during a period of enlargement of 50 years, they have built a zone of stability, democracy and sustainable development whilst maintaining cultural diversity, tolerance and individual freedoms. The European Union is committed to sharing its achievements and its values with countries and peoples beyond its border.

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