

## Newsletter no. 4

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### Information sharing and capacity building in ECOSAFIMED

Information exchange has always been an effective tool in capacity building among individuals who collaborate by sharing ideas and experiences. Being a multilateral Cross-Border Cooperation initiative at the Mediterranean Basin level, the ENPI ECOSAFIMED project will only be able to attain its full objectives if knowledge and technology are effectively shared between key institutions in the Mediterranean space. The guidelines to be drafted to support an artisanal fishing industry compatible with good environmental status of benthic communities need a prior shared assessment based on scientific evidence, a goal achieved through ECOSAFIMED training seminars and the information exchange that this framework provided.

During the kick-off meeting held in Barcelona in February 2014, project partners worked on setting the goals, the steps to follow and deadlines of the project. The establishment of common protocols and rules to implement the project actions as well as the criteria for the selection of study areas were agreed upon.



1<sup>st</sup> and 2<sup>nd</sup> technical seminars in Barcelona (February 2014) and Tunis (June 2014)

In order to evaluate the impact of artisanal fisheries on the benthic habitat within the selected areas, a large amount of different data was collected. ROV video transects of the seabed and on-board fishing surveys were carried out. Researchers from each country discussed about the relevance of analysing ROV sequences and on-board surveys parameters characterizing the species captured in benthic communities and their health status. All these data are

being processed and compiled in an integrated Geographic Information System (GIS) database to be properly analysed.

For this reason, all partners agreed from the beginning of the project upon the implementation of GIS techniques that could help the visualization of rich communities and vulnerable areas. These techniques would therefore help in the definition of management guidelines and potential protected marine areas. Standard methodologies for data compilation and data elaboration have been defined to homogenise the information. The common geodatabase will include cartography for each study area selected.

In Genoa, in April 2014, the 1<sup>st</sup> Technical workshop was held. During this event, project partners set together the methodology to study the impact of *métiers* on the benthic communities. The ROV transect selection, on-board survey protocols and the necessity to create a visual guide to identify benthic species for upcoming vessel surveys were also discussed.



1<sup>st</sup> and 2<sup>nd</sup> workshops in Genoa (April 2014) and Barcelona (November 2014)

In Tunis, in June 2014, during the 2<sup>nd</sup> Technical committee, partners revised and adjusted what was agreed upon in the 1<sup>st</sup> Technical workshop in Genoa. David Díaz and Carlos Domínguez from the Institute of Marine Science (IMS/CSIC) explained ROV operating instructions and procedures. Furthermore, the Italian team provided some insights about how to solve technical ROV tracking problems.

Having conducted oceanographic surveys in each of the selected areas, project partners met in November 2014, during the second technical workshop, at the premises of the IMS/CSIC in Barcelona to exchange information about the state of the art and to train the Tunisian scientific team on video processing and data analysis. Partners brainstormed about the variables to be analysed from the video footage (density, epibiosis, abandoned fishing gears, etc.) in order to obtain the expected results for the project.

Different contents were shared and expert training was provided in different areas:

#### *Expert training in ROV tracking*

Tunisian partner team received specific training on how to process the information obtained with the transducer placed on the ROV using ArcGIS and QuantumGIS software. Jordi Grinyó (IMS/CSIC) explained the main features of the software package ArcGIS in order to work with georeferenced data.



Jordi Grinyó (IMS-CSIC) and the Tunisian team working how to use ArcScene software

Carlos Dominguez (IMS/CSIC) explained to the participants how to process data using QGIS as a complement to the analyses done with ArcGIS. These software helps researchers to modify the maps of the study area and the ROV tracks according to the scientific results collected during the surveys. Finally, he taught partners how to measure different variables associated with the data.

#### *Expert training on ROV video sequence editing*

The Spanish team offered insights on editing ROV video sequences to obtain a clean track with useful footage by means of the software Final Cut Pro used also to take still high resolution pictures from video sequences. Participants were also trained on how to

improve video quality by using Photoshop to measure the different variables agreed upon during the seminar.

Participants also benefited from an effective training on how to obtain reliable measurements from still pictures taken from video footages using magnification software in order to evaluate the shape and size of the target benthic species.

#### *Expert training in handling database*

Jordi Grinyó and Carlos Domínguez explained how to archive the data obtained from the video using specifically designed Excel tables in order to perform subsequent statistical analyses. These Excel tables hold information about the different species observed in the videos, as well as abiotic information such as depth, substrate type and slope of the seabed. Besides other benthic communities Spanish partners introduced all the different substrate types that can be found and how to categorize them properly to perform the subsequent statistical analyses.

After each training, participants were invited to do the editing of a real video obtained during the ROV surveys within the project ECOSAFIMED.

In December 2014, Giorgio Bavestrello and Marzia Bo from the University of Genoa (UNIGE) organised a Technical Seminar in Santa Margherita Ligure (Genoa) to present the results of data processing training carried out at the previous technical seminar held in Barcelona.

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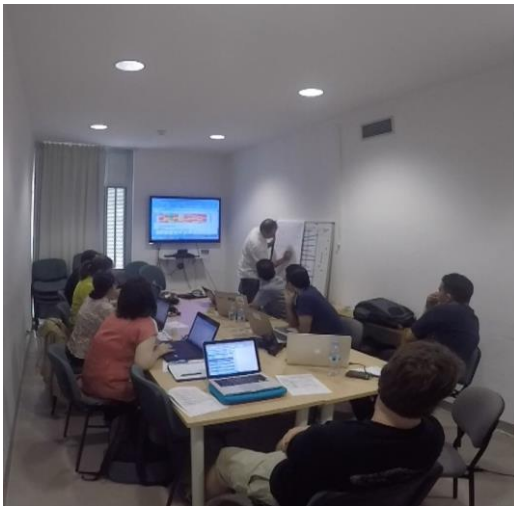


Technical Seminar in Genoa, December 2014, capitalization of results

During this meeting all partners discussed about the final variables to be used to evaluate the impact of gears on the sea bottom.

### Expert training in data analysis

Given the importance of standardizing data analysis methodologies, project partners gathered in Barcelona during 15 - 19th June 2015 at the premises of IMS-CSIC. Partners took advantage of this meeting to brainstorm about the content of the scientific article to be elaborated and the possible attendance of ECOSAFIMED in ICES international conference in September 2015.

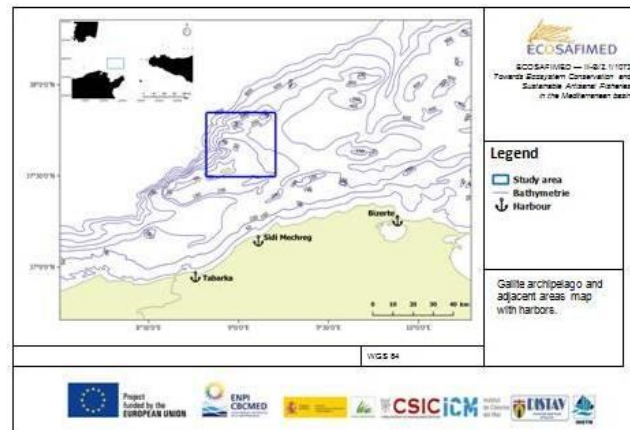


Technical seminar in Barcelona (15-19<sup>th</sup> June 2015)

during the next technical seminar in July 2015 in Barcelona.

### ECOSAFIMED study area: Galite Islands, Tunisia

The selection of study areas was the first step for the assessment of the impact of artisanal fisheries in the ENPI regions preselected by the ECOSAFIMED project. In Tunisia, one of the selected areas was La Galite archipelago.



Map of the study area of the Galite Islands developed in ECOSAFIMED

### Results

Technical seminars allowed the ECOSAFIMED team to acquire a deep knowledge on how to use specialized software to make a preliminary digital geodatabase for each area in GIS format.

Moreover, a discussion between project partners led to an agreement about the characteristics of the selected benthic target species to be analysed from the video images. In fact, they should be easily identifiable by ROV images. They should be susceptible to be captured by fishing gears and also they should be easily identified by scientific observers on board. A good target species is represented by a habitat forming species occurring with relative abundance in the surveyed area.

Besides scientific topics, a first agreement about marine stewardship was achieved: a total of 5 agreements are to be signed. More details on the format and content of the agreements will be discussed

The Galite Archipelago is located at about 52 nautical miles from Bizerte, in north-west Tunisia. This area –of about 1.5 nautical miles around the islands–has been a protected marine reserve since 2008. This archipelago represents a fishing shelter and its southern part is considered a harbour.

This archipelago includes six islands, La Galite Island, the largest one, surrounded by the islands of Gallo, Pollastro and Gallina to the east and the islands of Galiton and La Fauchelle to the west. The total surface of this archipelago is about 19 km<sup>2</sup> (4.5 km<sup>2</sup> of marine area and 14.5 km<sup>2</sup> of ground area). The whole continental shelf in the north part of the Galite Islands is considered as free trawl area due to the rocky bottom which characterizes this zone.

The selected study area is located over the continental shelf of La Galite, between 50 and 120 meters depth, and includes 2 submerged benches named L'Avandi and Mazzarilles.



Overview of Galite islands

A total of 9 artisanal fishing areas outside the trawl boundaries have been chosen; 5 of them included in the study area close to the Galite Archipelago.

Amongst them, different fishing impact levels were identified: a high artisanal fishing impact and a low level of impact. In what concerns fishing activities, most boats working in the Galite Archipelago are from the harbours of Tabarka and Bizerte. The region of Bizerte is located on the north of the country. It is a very important and strategic point as it is the opening to the Mediterranean Sea and the link to the maritime tracks of the Strait of Sicily. The fisheries of the region of Bizerte follow different operating modes: artisanal fishing, benthic trawling, purse seine and lagoon fishing. This part of Tunisia is also relevant in some fishing practices targeting especially spiny lobster and red coral.

### Ecology

The Galite Archipelago is considered as one of the richest ecosystems 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. La Galite marine area is characterized by the presence of a large number of Mediterranean protected species.



Artisanal fishing boats in La Galite Island

### Fisheries in Bizerte

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The region of Bizerte has a complete port infrastructure which includes one deep-sea port (Zarzouna) and four other coastal ports, namely Sidi Mechreg, Menzel Abderrahman, Cap Zebib and Ghar al-Melh.



Bizerte harbour

This region hosts a fleet of 1535 fishing vessels from which 1472 are artisanal vessels, 20 are trawlers and 43 are seiners. The motorization rate of the artisanal

fleet is of around 43%. The active maritime population in artisanal fisheries was around 4253 individuals in 2011.

The concentration of artisanal units 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%). As a consequence of the high concentration of artisanal fleet, the production of the port of Bizerte is one of the largest in Tunisia.

It needs to be highlighted that the active artisanal fleet included in the study areas of the ECOSAFIMED project is linked to the port of Bizerte.

The units of the port of Sidi Mechreg and Cap Zebib are small and do not fish away from their hub, while those of the port of Menzel Abderrahman are only active in the Bizerte lagoon and never go out in the open sea. With respect to the artisanal boats from Ghar al-Melh, they focus mainly on lagoon fishing in Ghar al-Melh while the rest of the fleet works in the shallows-water close to the port, rarely fishing in the ECOSAFIMED project study areas.

The artisanal fleet fishing in the areas of La Galite and Esquerquis is composed by 112 boats, involving 565 fishermen. Around 67% of the fleet uses Bizerte as homeport.

#### *Fishing Metiers' in Bizerte*

A total of 14 different fishing tactics or *métiers* were identified in the region of Bizerte.

In this region the main fishing gears used by the coastal fishery are 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 in the region of Bizerte is longlines targeting the red porgy (*Pagrus pagrus*), the common dentex (*Dentex dentex*) and the red scorpionfish (*Scorpaena scrofa*). Another type of *métier* specific of the region of Bizerte is longlines targeting the *Polyprion americanus*. There are two different types of gillnet generally employed to catch mullets (*Mullus sp.*) and bonitos (*Sarda sarda*) during autumn.

Even if less important, some other *métiers* such as longlines targeting little *Sparidae* and various species of grouper (*Epeniphelus sp.*) with predominance of

speckled grouper (*Epeniphelus marginatus*) and traps targeting the black sea bream (*Spondyliosoma cantharus*) were also found. Among all the northern regions of Tunisia this last *métier* described can only be found in the port of Bizerte.

The most striking fact is that some fishermen in the region of Bizerte tend to replace the intermediate trammel nets targeting mullets (*Mullus sp.*), the cuttle fishes (*Sepia officinalis*) and little *Sparidae* by a polyethylene monofilament net instead of the standard polyamide multifilament net.

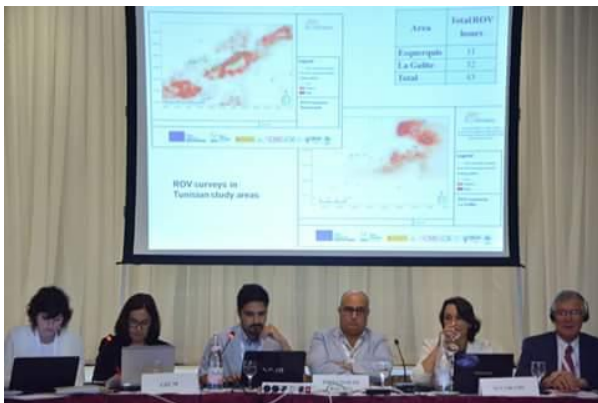
For more information about La Galite Archipelago here is a link to a recent documentary made by The Agency of Coastal Protection and Planning from Tunisia: :

<https://www.youtube.com/watch?v=aq65Ovih9BM>

#### ECOSAFIMED Events

##### **ECOSAFIMED participating to the Joint Meeting on protection of marine areas in the Mediterranean and Black Sea (9<sup>th</sup>-12 June in Gammarth, Tunisia)**

ECOSAFIMED partners have participated in The GFCM RAC/SPA ACCOBAMS joint meeting on Marine Protected Areas (MPA) in the Mediterranean and Black Sea held on 9-12th June 2015 in Ramada Plaza Hotel in Gammarth (Tunisia). A wide range of specialists (scientists, MPA managers, administration officers, etc.) along with other ECOSAFIMED associates attended the event which offered a positive step forward inter-organization collaboration regarding Mediterranean MPAs. Considering the fact that ECOSAFIMED project has been implemented in 3 MPAs in the Mediterranean: La Galite (SPAMI under the Barcelona Convention), Cap de Creus and Minorca Channel (LIC under the EU Habitat Directive), the communication Manager of ECOSAFIMED, Khalil Ellouze, introduced to all participants the project and its preliminary results in Tunisia.



ECOSAFIMED Communication manager introducing the project and its preliminary results in the joint international meeting, 9<sup>th</sup> June 2015, Tunisia

## Forthcoming ECOSAFIMED events

### Steering Committee meeting in Barcelona (Spain)

The next meeting of the ECOSAFIMED project will take place in 22<sup>nd</sup>- 24<sup>th</sup> July 2015 in Barcelona. Partners

from Spain, Italy and Tunisia will present the preliminary results of the project to the associates on the 23<sup>rd</sup> of July. Project associates include national and international institutions such as IAMC (Messina, Italy), RAC/SPA, IUCN, GFCM-FAO and MedPan among others. Considering the high potential for impact and replicability at Mediterranean basin and global level all participants will engage in a collaboration process aimed at promoting the exchange of information and experiences while contributing to the EU Directives and to the Barcelona Convention.

### More information

Webpage

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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.enpicbcmmed.eu](http://www.enpicbcmmed.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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