



# OCEAN HEALTH: PROJECTS THAT INNOVATE

A sample of the  
projects funded  
between 2014  
and 2019



European Commission  
Directorate-General for Maritime Affairs and Fisheries  
Directorate A: Maritime Policy and Blue Economy  
Executive Agency for Small and Medium-sized Enterprises  
Unit C.2 Administration

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EUROPEAN COMMISSION

# Ocean Health: Projects that Innovate

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October 2019

Publication prepared jointly by the European Commission's Directorate-General for Maritime Affairs and Fisheries and the Executive Agency for Small and Medium-Sized Enterprises



# EUROPEAN MARITIME AND FISHERIES FUND

As the name suggests, the European Maritime and Fisheries Fund does not just support fisheries, but also maritime policy. It is mainly national administrations who decide how to use the amounts they receive to support both fisheries and the blue economy.

The European Commission also manages a small percentage of the Fund (4.5%), which goes to innovative projects and sustainable

activities and helps coordinate maritime cooperation across borders.

Over the years, this “direct funding” has supported many new ideas all over Europe.

What follows is a snapshot of some of the most intriguing projects that emerged in recent years thanks to the European Commission's direct funding.

# AMALIA

01/02/2017-31/03/2019

Invasive seaweeds can cause environmental and economic problems. But what if we could put them to good use?

Amalia's idea is to detect and eradicate invasive seaweeds, but also to screen them for active compounds to use in food, feed and cosmetics.

This protects the marine ecosystem and also exploits an otherwise untapped marine resource sustainably – which is what the blue economy is all about.

Amalia plans to produce:

- aquaculture feed for shrimps and edible film to reduce plastics and increase the shelf life of seafood products in supermarkets (within 2 years);
- a multi-sensor underwater monitoring device and new food products from seaweed (within 4 years).



© Amalia project | Nuno Vasco Rodrigues Underwater Photography

*Turning  
threats into  
opportunities*

## EU CONTRIBUTION

€ 465,130

## COUNTRIES

Spain

Netherlands

Austria

Portugal

# Solutions for innovation in renewable energy



It assessed innovative corrosion solutions for wave, tidal and offshore wind equipment, creating 3 investable business cases for anti-corrosion demonstrators in the North Sea basin.

It encouraged cross-sector knowledge transfer and published studies on best practices. It showed that, by adopting corrosion solutions and strategies, the industry could save up to € 84 billion.

Another €82 billion could come by 2050 from supply chain opportunities in the wave, tidal and offshore wind sectors across Europe.



© NeSSIE project | Sime Atlantis

## EU CONTRIBUTION

€ 676,684

## COUNTRIES

- Belgium
- Spain
- Italy
- Sweden
- United Kingdom

## NESSIE

01/05/2017-30/04/2019

Everything changes and nothing stays still. This is especially true for marine structures for renewable energy. One of the biggest challenges these structures face is corrosion. NeSSIE decided to investigate the economic potential of anti-corrosion solutions.



© LitterDrone project

The drones can map, detect and classify all kinds of debris cluttering the coast, whether it is glass, plastic or metal. They can reach and check otherwise inaccessible areas and this saves a lot of time for clean-up as well as for prevention and mitigation.

## EU CONTRIBUTION

€ 312,998

## COUNTRY

Spain

# LITTERDRONE

01/02/2017 - 31/01/2019

Beach litter is not only an eyesore, it can also cause injuries, affect the tourism business and be fatal for countless marine species that mistake it for food.

The LitterDrone project has equipped drones with high-resolution cameras and image recognition software.

*Scanning litter for a cleaner future*



© LitterDrone project

# ARCHEOSUB

01/02/2017-31/01/2019

*Preserving valuable  
underwater sites.*

Because of the murkiness and high viscosity of saline suspensions, communication mediums such as radio waves do not work well in seawater.

That is why the Archeosub project has designed underwater robots that communicate like whales or dolphins – using acoustic signals. Shaped as manta rays, these robots can reach otherwise inaccessible places and collect myriads of data.

Meanwhile, through an underwater tablet, divers can check and exchange the data in real time. While diving they can also chat, take notes, request equipment from the surface, take geo-located pictures and design detailed 3D maps of underwater areas.

A mobile app even helps them plan surveys and follow paths - like a sat nav, but for underwater environment.

This project has already created 23 jobs. A real game changer, ArcheoSub may not only transform the work of divers and the face of marine archaeology, but also find a wide range of applications in marine tourism and environmental monitoring.



© ARCHEOSUB project

## EU CONTRIBUTION

€ 496,652

## COUNTRY

Italy

Imagine a system of autonomous robots that live underwater, and whose job is to discover and protect vulnerable marine sites, ancient shipwrecks and sunken cities.

Imagine sensors protecting, say, mariculture sites from intruders, or finding objects lost at sea. Imagine an Internet of things underwater. All this has been developed by ArcheoSub.

# EASYFEED

01/01/2019 - 31/12/2020

100%  
*sustainable  
fish farming*

## EU CONTRIBUTION

€ 438,563

## COUNTRIES

Spain

Portugal



The aquaculture sector depends on marine resources.

To avoid depleting them, it has to find new, sustainable farming methods.

That is the mission of EASYFEED, which has shown that an innovative fish-feed formula based on locally grown quinoa and spirulina can do the trick.

EASYFEED is about to bring the idea to market by building a spirulina production plant and a quinoa-growing greenhouse.

# GREENING THE BLUE

01/01/2019-31/12/2020

*Using free wind  
to move our vessels*

But, what if we could go back to wind and sails?

By using wind for propulsion, GREENing the BLUE has designed a system that reduces fuel consumption and pollutant emissions by up to 40%.

The groundbreaking feature: it is more like an airplane wing than a conventional sail.

Like a sail it is both lightweight and completely foldable; neither does it affect cargo space or crew composition.

It can be retrofitted onto existing vessels, ensuring a payback period of less than 5 years.



Over 90% of worldwide transport is seaborne. Today, maritime transport faces two major problems: a huge fuel bill (up to 4 tons of fuel per hour, amounting to 80% of the vessels' operating costs) and a giant ecological footprint.

## EU CONTRIBUTION

€ 810,151

## COUNTRIES

Germany

Spain



# AFRIMED

01/01/2019-31/12/2021

## *Restoring underwater forests in the Mediterranean*

Sea life strongly depends on macroalgal forests. Without them, ecosystems can no longer provide suitable habitats for life and the sea turns into dead water.

Their ability to sequester carbon dioxide drops, and so does their resilience to climate change. That is why the rapid loss of macroalgal forests in the Mediterranean is cause for concern.

The AFRIMED project aims at developing new restoration techniques in damaged

and degraded macroalgal forest.

This will be done through a combination of spatial analyses, laboratory and field studies and awareness-raising activities for relevant stakeholders (e.g. blue growth sectors, academia, and decision makers)

It will also undertake pilot restoration projects in the Adriatic-Ionian region and develop a framework for transferring the approach to other regions.

### **EU CONTRIBUTION**

€ 1,486,108

### **COUNTRIES**

Greece

Spain

France

Italy

United Kingdom

Albania

Morocco

Tunisia

# BLUENET

01/01/2019-31/12/2020

*Locally wasted,  
locally recovered*

BLUENET intends to reduce marine litter from sea-based sources by 20-40% in the Bay of Biscay (Spanish Basque Country).

To do that it organises training activities for fisheries and aquaculture professionals, prevents the disposal of nets and ropes at sea and facilitates their recovery by fishermen. The collected gear is then recycled under the motto "locally wasted, locally recovered".

It also plans to reduce by 5% the environmental impact associated with new gear manufacturing.



© BLUENET project

## EU CONTRIBUTION

€ 550,691

## COUNTRIES

Spain

Italy

A direct descendant of the EU's recent plastics strategy and circular economy package, BLUENET sets up a programme to retrieve lost fishing gear and recycle it as secondary raw material to produce new fishing and fish-farming gear.





© SpilLess project

## First-line response to oil spills

### EU CONTRIBUTION

€ 294,540

### COUNTRIES

Spain

Portugal

Norway

## SPILESS

01/02/2017 – 31/01/2019

Oil spills are one of the most serious causes of maritime pollution. They endanger several marine species and often turn into environmental disasters.

SpilLess offers a fast and cheap first-line response to clean up oil spills. How?

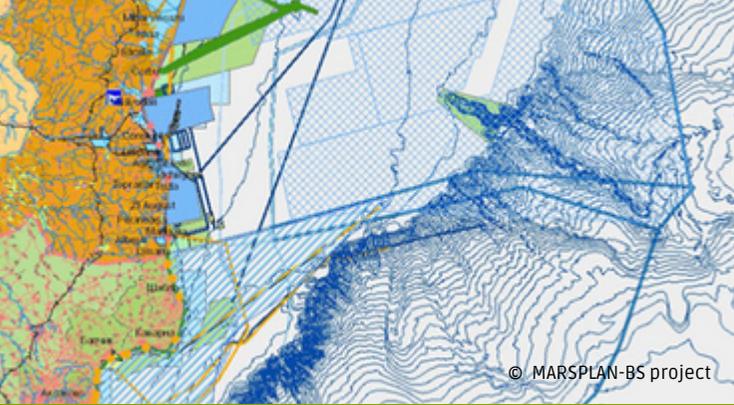
An innovative laboratory grows and multiplies a cocktail of microbes with bioremediation capacity, i.e. capable of degrading the oil naturally and without



© SpilLess project

chemicals. It then freeze-dries them and, when needed, drones and autonomous vehicles dispatch and spread the lyophilised microorganisms onto the contaminated area.

As the vehicles are equipped with monitoring sensors, the system also provides valuable data before, during and after the mission. SpilLess is being used in the Atlantic Ocean but can be potentially replicated anywhere.



© MARSPLAN-BS project

# *Initiating cross-border cooperation on maritime spatial planning in the Black Sea*

## **EU CONTRIBUTION**

€ 1,639,212

## **COUNTRIES**

Bulgaria  
Romania

## **MARSPLAN-BS**

14 /08/2015 - 13/02/2018

MARSPLAN-BS was the first project helping Bulgarian and Romanian national authorities and researchers work together on the transposition of the EU's Maritime Spatial Planning Directive (2014/89/EU).

By encouraging dialogue and information exchange, the project has helped the two countries find common solutions to shared problems, inaugurating cross-border spatial planning in the Black Sea.

A common vision and common strategic goals for both countries have emerged, the end goal being to develop a sound marine ecosystem and boost economic growth in the region.



# OCEANMETISS

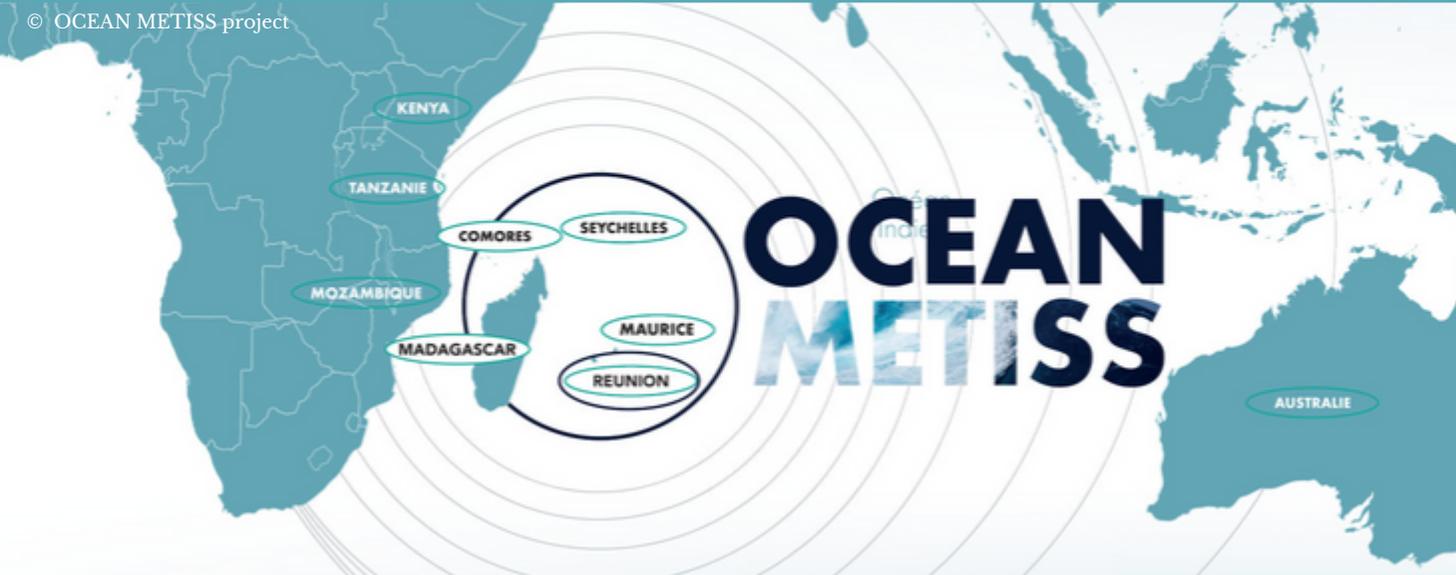
01/02/2018-31/01/2020

*Boost economy,  
preserve biodiversity*

Nestled in the Indian Ocean, Réunion is a French overseas department and an outermost region of the European Union. Its waters are refuge to sea turtles and dolphins. Coral reefs ring its west coast.

To preserve this rich biodiversity while boosting the economy, the Oceanmetiss project custom-builds maritime spatial planning tools to fit the local territory.

By bringing in international expertise on blue economy matters and by pooling scientific and technical resources, it aims to develop an innovative methodology for spatial planning and develop the right skills and training for sea-related trades.



## EU CONTRIBUTION

€ 963,211

## COUNTRY

France



# MENTOR

01/03/2017-28/02/2019

## *Mentoring for the sea*



### EU CONTRIBUTION

€ 551,810

### COUNTRIES

Bulgaria  
Greece  
Cyprus  
Romania

Job seekers are not always aware of the many career opportunities that the blue economy offers. Attracting them, especially young people, and offering them new training methods is the goal of the Blue Career Centre of Eastern Mediterranean and Black Sea - MENTOR.

Based in Cyprus, MENTOR does more than raise awareness about blue job opportunities in the Eastern Mediterranean basin.

Through courses, conferences and other tools, it increases knowledge and employability of both junior and senior workers in key sectors such as transport (shipping, ports, shipbuilding and repair), cruise and nautical tourism and aquaculture.

MENTOR also produces material for career guidance, mobility and harmonisation of requirements across countries. The Centre has representations in Greece, Bulgaria and Romania. There are plans to extend activities to Egypt, Lebanon and Jordan.

Some of MENTOR's activities in figures:

- 8 blue careers fairs;
- 202 school visits to provide guidance and mentoring to students aged 15-18
- 9 e-learning courses;
- e-mobility initiatives for 39 students and 26 teachers to visit other education institutions.

