

# Interreg Atlantic Area Programme 2014-2020

*Delivering results  
for the Atlantic regions*



December 2022

**Interreg**  
Atlantic Area



Co-funded by  
the European Union

# About

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# Introduction

*Project results are our greatest asset.  
This publication presents the results  
of the 71 projects co-funded by  
the Interreg Atlantic Area programme.*

The Atlantic territory is characterised by social, cultural and economic diversity, having the Ocean as its common element. But diversity also implies asymmetries.

The Interreg Atlantic Area Programme provides a framework to support cooperation between actors from these different territories, with the ultimate goal of reducing existing regional and local disparities and increasing the well-being of European citizens.

This publication presents the cooperation work carried out by public authorities, institutions and private companies in applying their potential and joint efforts to strengthen skills, share good practices and create new business opportunities.

We address here the results of the investment of around 140 million euros of European funds in 71 projects, achieved since 2017, in innovation and competitiveness, resource efficiency, territorial risks, and natural and cultural heritage.

These results are the best testimony of the importance of our Programme as an efficient instrument of the cohesion policy in the Atlantic regions.

**Sandra Tavares da Silva**  
Executive Manager, Managing Authority

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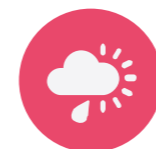
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# Programme in numbers

**185** MILLION EUROS TOTAL FUND

**140** MILLION EUROS ERDF

Priorities

**4**

Specific objectives

**7**

Financing rate

**75%**



**71**

PROJECTS



**1147**

PROJECT PARTNERS  
(Associated partners included)



**3**

CALL FOR PROJECTS



**100%**

FUNDS ALLOCATED

# Projects in numbers

**5**  
COUNTRIES

**36**  
REGIONS

## Funds allocated per priority



**27**

PROJECTS

**65.4**

M€



**15**

PROJECTS

**42.3**

M€



**9**

PROJECTS

**21.6**

M€



**20**

PROJECTS

**55.4**

M€

# 01

## Innovation and Competitiveness



### Stimulating innovation and competitiveness

Projects in this priority contribute to accelerate intelligent growth by supporting the creation of the right environment to stimulate innovation and promoting interventions in the common sectors identified in the Regional Smart Specialisation Strategies (RIS3) and in which the area shows comparative competitive advantages.

\* Data from project partners includes associated partners





## 4H-CREAT



INNOVATION AND COMPETITIVENESS

**Lead Partner: Glasgow Caledonian University (UK)**

**Duration: 2017-2020**

**Total budget: 1.30 M€**

**www.4hcreat.com**

## Quadruple helix to stimulate innovation in the Atlantic cultural & creative SMEs

The Cultural and Creative Industries (CCIs) face several challenges arising from the need to adapt to new consumption patterns and new audience niches. The incorporation of new digital services that can bring economic returns to this sector, is also a relevant challenge to consider.

The 4H-CREAT project improved cooperation between public, private and research institutions to promote innovation skills, capacity building and knowledge in Small and Medium Enterprises (SMEs) in the CCIs. The project brought together industry, academia, government and civil society at regional level, to stimulate and advance innovation and growth. The 4H model has put the civil society as innovation users at its heart to drive these innovation processes.

Within the framework, 4H-CREAT developed transnational knowledge transfer models, enhancing the transfer of research and technological development results from research institutions to the CCI SMEs, and developed innovative products through cooperation approaches (end-user-involvement & co-design).

The project identified new audience niches, new products, services oriented towards new market demand trends (i.e. transmedia), exploring new Information and Communication Technologies and the digital economy to initiate and encourage interactivity.

The main results of this project were achieved through workshops, lab sessions, coaching, personalised support, case studies, pilot training actions to enhance entrepreneurship and innovation skills and pilot demonstration actions to test market readiness.

4H-CREAT thus contributed to the implementation of measures designed to nurture the spill-over effects of CCIs on the wider economy & society.

*“We owe it to ourselves to innovate with ambition and intelligence, taking into consideration our impact on life, on nature and on health. Our emotions, our shared moments, our lifetimes, are our most precious possession”*

**François Delaroziere**  
Artistic Director of La Compagnie de la Machine

**15 partners**

10 regions  
(PT, ES, FR, IE, UK)

**175**

companies impacted

**700**

end-users

**16**

podcasts  
#Let's Foster Innovation



## ACCESS2SEA



INNOVATION AND COMPETITIVENESS

**Lead Partner: Fundación Bahía de Cádiz para el Desarrollo Económico (ES)**

**Duration: 2019-2023**

**Total budget: 1.87 M€**

**www.access2sea.eu**

## New opportunities for more competitive and sustainable blue growth in Atlantic Area

Marine aquaculture (fish, shellfish, algaculture) is a leading sector of the Atlantic Area Blue Economy and is very relevant in many of its coastal areas. As only 10% of Atlantic shore seafood is aquaculture-sourced there is a great opportunity for raising aquaculture production in a sustainable way.

ACCESS2SEA improves the attractiveness of the Atlantic shore for aquaculture SMEs by enabling new business opportunities and providing sustainable and easier access to it.

The objective is to enhance the exploitation and preservation of the natural assets by unlocking the existing barriers, facilitating terrestrial production, disseminating solutions, and providing support to aquaculture SMEs, to strengthen or attract them to settle on the Atlantic shore.

ACCESS2SEA integrates a market approach to the development of SMEs by supporting their generic productive investment, technology transfer and university-enterprise cooperation, business development, and support to social enterprises. The project provides SMEs access to tools to identify investment opportunities and space for the implementation of aquaculture farms in the Atlantic Area.

It also promotes the improvement of business models, by supporting the creation of new businesses, providing training and information about the legal and regulatory framework. It supports the development of pilots with new investments for aquaculture and new models of intelligent facilities, creating more productive aquaculture companies.

In the end, the project facilitates more social acceptability, as consumers are more receptive to products coming from aquaculture.

ACCESS2SEA contributes to boosting economic development and job creation in the seafood sector by the sustainable exploitation of the Atlantic Area natural assets, as creating new sustainable farms is a key element for the blue economy in the region.

*“Within the ACCESS2SEA project I have been participating in the Local Follow Up Committee that edited a guide to indicate the steps to set up an aquaculture project. This guide is very useful, both for coastal communities in the development of their aquaculture sites, but also for Blue Valley® as such, in its work of assisting aquaculture companies to find the right location, adapted to their specific activity.”*

**Joy Toupet**  
Coordinator of Blue Valley®

**13 partners**

7 regions  
(PT, ES, FR, IE, UK)

**1**

Ocean Hackathon  
organised in San Fernando 2021

**5**

pilot projects implemented

**144**

beneficiaries of project activities so far



## ADSA



- Lead Partner: Technopôle Brest Iroise (FR)
- Duration: 2017-2023
- Total budget: 2.40 M€
- [www.atlanticdigitalstartups.eu](http://www.atlanticdigitalstartups.eu)

## Atlantic Digital Start Ups

For digital startups, the Atlantic Area can be the first step to discover new markets, benefit from training to test their offer and start doing business.

ADSA project works on encouraging digital startups by helping to develop and launch their offer in international markets. Through a support programme including mentoring, training, networking, and events the Academy companies research new markets, test their products, develop know-how, and form partnerships that will be fundamental to successful selling in overseas markets.

More than a hundred start-ups have been supported in developing and launching their offer on international markets. By following the fifty ADSA workshops, including mentoring, training and networking, the start-ups were able to acquire the essential tools for internationalisation and prepare for international events such as the Web Summit Lisbon or Dublin Tech Summit.

These companies in the Academy are now ready to look for new markets, test their products, develop know-how and form partnerships that will be fundamental to successful sales, particularly in the Atlantic Area markets.

The ADSA project has been achieving its ambition to implement international into digital start-ups and business organisations of the Atlantic Area.

The collaboration between the business support organisations has resulted in a selection of best practices for startups internationalisation's guide, which highlights practices such as preparation for fundraising or building a network in the foreign ecosystems.

The partners with this experience form a concrete network accessible to any digital start-up wishing to become international: they will continue their actions of supporting through new ADSA actions like workshops, softlanding, events and study visits.

*“As a fast-growing company, we are looking for new markets in which to develop our business. We wanted to participate in the ADSA program because we are particularly interested in the Irish and Northern Irish markets. They are ambitious markets and have a high demand for the latest web technologies.”*

**Romain Schiano Lomorello**  
CEO of BeAble

**14 partners**

9 regions  
(PT, ES, FR, IE, UK, BE)

**5**

bootcamps

**47**

startups supported to go on Atlantic Area startup dedicated trade fairs

**88**

participations of business support organisations in study visits



## AHFES



- Lead Partner: Asociación Clúster Alimentario de Galicia (ES)
- Duration: 2019-2023
- Total budget: 1.45 M€
- [www.ahfesproject.com](http://www.ahfesproject.com)

## A quadruple helix Atlantic Area healthy food ecosystem for growth of SMEs

With a growing global population and the need to efficiently use our natural and economic resources, it is critical to work together for better diets and food processing, reduce waste and the environmental impact. Food SMEs need facilitated access to knowledge and support services to make the adjustments required to remain competitive and grow, while respecting the environment.

AHFES contributes to improve competitiveness and growth of SMEs in the value chain of sustainable healthy food & lifestyles by fostering a transnational interaction between industry, government, academia and civil society (quadruple helix), and raise awareness about the importance of the green transition for environmental, commercial, and social (health) challenges. This project helps SMEs to access knowledge, partners, and markets, to align products and services to consumer needs and expectations, and improve the adoption of environmental sustainability practices.

The project developed a training programme with 35 modules and 4 languages, entitled “Developing & launching successful products in the healthy food and drink sector”.

Also 10 SMEs competitiveness support services were designed, encompassing a service catalogue in categories: networking for innovation, innovation for product development, business development, and market building and internationalisation. The provision of these services has already benefited over 250 companies.

AHFES also developed an ecosystem mapping that includes almost 400 organisations in all the partners' regions, representing an inventory of actors particularly involved in healthy food.

The comprehensive training programme, the support services portfolio to SMEs and the recommendations for future use are important contributions to the Atlantic organisations of the food sector.

*“We hope to encourage other SMEs to consider implications and possible opportunities from sustainability for their companies. The project adopts a practical approach and highlights both the benefits and challenges that need to be considered. We hope that it will be the first point of reference for SME's who are looking at building their business to reflect the new ecofriendly and sustainable approach.”*

**Michael Bell**  
Executive director Northern Ireland Food and Drink Association

**10 partners**

10 regions  
(PT, ES, FR, IE, UK)

**1**

training programme with 35 modules

**10**

competitiveness support services for SMEs

**250**

companies benefiting from support



## ALERTOX-NET



- Lead Partner: Universidad de Santiago de Compostela, Facultad de Veterinaria (ES)**
- Duration: 2017-2022**
- Total budget: 2,91 M€**
- [www.alertox-net.eu](http://www.alertox-net.eu)**

### Atlantic Area network for introduction of innovative toxicity alert systems for safer seafood products

The main seafood toxins are emerging, unregulated toxins that have proliferated in the Atlantic Area as a consequence of climate change and are very harmful to public health.

The ALERTOX-NET project aimed to facilitate the market delivery of safer seafood products. For that, the project worked to put at the disposal of the affected industries a new toxicity alert system for prevention strategies/processes across the value chain. This system consisted of cost-effective, easy-to-understand, detection and alert methods, which will facilitate its adoption by the industry. This replicable alert system of toxicity levels in seafood producing companies ensured the involvement of all stakeholders along the value chain within the Atlantic Area and beyond. It was piloted in 10 industries located in 7 different regions to validate its usefulness and feasibility.

ALERTOX-NET also created a database with species incorporated into the food chain in high-risk products, to facilitate easier identification of toxicity by regulatory authorities, as well as further elaboration of public toxicity

risk maps. This detection and alert method is proved to be effective, feasible, and easy to understand and will benefit industries providing a new and marketable service related to toxicity detection and prevention, namely the marine food processing companies on the Atlantic coasts, thus increasing their competitiveness.

ALERTOX-NET also developed guidelines for the use and adoption of Prevention and Toxicity Detection Methods in the Atlantic Area Seafood Industry.

Furthermore, the project recommended a regulatory framework addressed to public agents regarding emerging toxins, including tetrodotoxins, palytoxins, and cyclic imines, due to their risks.

*“The ALERTOX-NET project delivers scientific, technical services and provides advice to regulatory authorities, which will underpin development in the aquaculture sector. In this way, the project will help to maintain international excellence in seafood safety research in order to gain a better prediction of risk and provide scientific advice to meet the needs of stakeholders”*

**Luis Botana**  
project coordinator

**14 partners**

8 regions  
(PT, ES, FR, IE, UK)

**55**

scientific publications in high impact journals

**21**

new detection methods

**1**

catalogue of methods and procedures on toxin detection



## ATLANTICFOODEXPORT



- Lead Partner: Chambre d'Agriculture de la Dordogne (FR)**
- Duration: 2017-2023**
- Total budget: 2.09 M€**
- [www.atlanticfoodexport.eu](http://www.atlanticfoodexport.eu)**

### Business cooperation to increase Atlantic food products exports

The food sector is one of the priority sectors across the Atlantic Area, and one of the region's largest employers and exporters. It has strong innovation potential and has a significant influence on preserving the natural environment and enhancing the Atlantic rural economies. Most of this sector is composed of family-owned SMEs that produce for local markets and face special difficulties in accessing international markets, as well as mass distribution networks.

The ATLANTICFOODEXPORT project helps food sector SMEs from the Atlantic regions to develop innovative strategies and improve their competitiveness in international markets.

The activities carried out by the project aim to make knowledge transfer as effective as possible and to have a real impact on policy and the business environment, contributing to strengthening the resilience of the agrifood sector and providing the necessary scope for crisis management.

Through the project, 112 companies improved their competitiveness and exported skills and capabilities, and 92 companies delivered their international and Business

Cooperation Strategic Plans. These companies were also involved in Business Cooperation Meetings to identify cooperation partners and access external markets.

The project also established 7 business cooperation initiatives and more than 20 companies entered into cooperation agreements for internationalisation, leading them to adapt or develop new products. A technical analysis of the opportunities and barriers to transnational business cooperation for internationalisation was also produced.

ATLANTICFOODEXPORT is thus contributing to organisational innovation and the improvement of support schemes, and therefore the result indicator 'Comprehensiveness' of public policies in the development of the Atlantic Area innovation systems.

*“In exporting, you have to arm yourself with patience and perseverance. It's a medium-long job term. The return is not immediate. The AtlanticFoodExport project provided us with a methodology in the choice of countries and on the prospecting method. Being able to understand more quickly how to approach a country under the cultural aspect and business organisation.”*

**Jean-René LAPIE**  
Maison Vaux, France

**18 partners**

8 regions  
(PT, ES, FR, IE, UK)

**112**

companies impacted

**7**

business cooperation initiatives

**92**

strategic export plans





## ATLANTIC-KET-MED



INNOVATION AND COMPETITIVENESS

- Lead Partner: National University of Galway (IE)
- Duration: 2017-2022
- Total budget: 2,77 M€
- [www.atlantic-ketmed.eu](http://www.atlantic-ketmed.eu)

### Establishing a transnational advanced pilot manufacturing ecosystem for future biomedical products

Before ATLANTIC-KET-MED there was no biomaterials pilot manufacturing ecosystem for translating concepts from the research-bench to pilot production readily accessible for SMEs and micro-enterprises within the Atlantic Area.

ATLANTIC-KET-MED has brought new, high tech, pilot production capacity to the SMEs and start-ups of the Atlantic Area, using the Key Enabling Technologies (KETs) to produce next generation medical devices.

A network of KET experts works directly with companies and other stakeholders to develop both a large scale strategy for the Atlantic regions, as well as case by case specific product development strategies for novel biomed products.

This project offers direct support to companies with high potential to bring new KET-enabled products to market, to enhance their innovation management through innovation audits, product-specific value chain analysis, and assistance with product development case studies.

Broader support also includes new training and knowledge in KETs, Industry 4.0 and scalable innovation, tailored matchmaking, and a comprehensive review and

reimagining the Education Policy impacting the needs of regional companies.

The project will continue to work toward the enduring growth and expansion of this ecosystem having mapped all relevant facilities in the area to define a strategy for future development of an integrated and complementary technical infrastructure, capable of realising the high potential of the KETs in next-generation medical devices.

ATLANTIC-KET-MED had established and enacted a new type of interregional cooperation to enable the most cutting edge developments directly improving the quality of life for citizens and increasing the competitiveness of Atlantic Area enterprises.

*“Manchester BIOGEL was delighted to be one of the companies selected to take part in the Value Chain Analysis (VCA) process. Talking through our company's product and process portfolio with the consortium definitely helped us assess our innovation practices. This led us to expand the application and reach of our peptide hydrogel products which is beginning to lead to enhanced revenue generation. The outcome from the VCA process also identified a significant number of potential new customers and collaborators across the full network, and beyond.”*

**Aline Miller**  
CEO, Manchester Biogel

**7 partners**

7 regions  
(PT, ES, FR, IE, UK)

**50**

innovation audits

**25**

new product value chain analyses delivered

**25**

open access procedures for using the KETs in the pilot ecosystem



## ATLANTIC-SOCIAL-LAB



INNOVATION AND COMPETITIVENESS

- Lead Partner: Ayuntamiento de Avilés (ES)
- Duration: 2017-2023
- Total budget: 1.83 M€
- [www.atlanticsociallab.eu](http://www.atlanticsociallab.eu)

### Atlantic cooperation for the promotion of social innovation

Emerging social issues and challenges are requiring new responses as institutions are finding increasingly difficult to provide solutions based on traditional methods. We are now facing a challenge responding to emerging needs as a consequence of renewed social preferences and structural changes (as demography, staff shortages or technological innovations) in a context of severe budgetary constraints.

ATLANTIC-SOCIAL-LAB aims to develop and promote social innovation approaches and methods to give response to key growing social issues of the Atlantic Area, both within citizens, third sector and social enterprises, as well as the public sector.

Through an intensive transnational cooperation, the partners are implementing and testing small probing interventions to finally scale them up in several areas, such as social innovation and welfare services, active public engagement, green inclusive economy and social responsibility in the private sector.

The project thus is assessing the creation of new solutions in the welfare services to bring innovative partnerships based on private and non-governmental resources to complement state funding.

In addition, green inclusive economy interventions are being developed to take advantage of the green opportunities to rebuild smart cities. Moreover, social economy and social responsibility in the private sector are supported to strengthen its role as an engine for social innovation.

Various actions for the dissemination and capitalisation of results have taken place, with around 900 participants, such as the Atlantic Social Innovation Conference, many local dissemination events and the regional working groups.

Insights and results will nourish the creation of Expression of Interest of the Atlantic Social Innovation Action Plan that will provide transferrable solutions to other Atlantic Area regions.

*“With the experience we have had and the legislative improvement from the European board until the adaptation of the law in Spain, which has been a huge help, it has given us the experience and I think this can go beyond employment and start an improvement in the social sustainability through meeting goals in the environmental or male and female equality fields, and now, thanks to this experience, other unexplored ways can be explored.”*

**Marivi Monteserín**  
Alcadesa de Avilés

**19 partners**

10 regions  
(PT, ES, FR, IE, UK)

**7**

pilot actions

**1**

Atlantic Social Innovation Action Plan

**1**

Atlantic Monitoring Observatory on Social Innovation



## AT-VIRTUAL



**Lead Partner: Centro Europeo de Empresas e Innovación del Principado de Asturias (ES)**

**Duration: 2019-2023**

**Total budget: 1.89 M€**

**www.at-virtual.eu**

## Open innovation to improve response in maritime security and safety in the Atlantic Area

The Maritime Security Training Centers (MSTCs) in the Atlantic Area have not yet widely adopted digitisation processes and solutions offered by the new potential of cutting-edge technologies to respond to their needs of maritime security and safety.

AT-VIRTUAL aims to improve the operability and performance of MSTCs by enabling businesses to develop emerging technology-based solutions to answer these centres' needs to improve their maritime security simulations and operations.

The project created an advanced platform to speed-up digitalisation processes through open innovation and hybridisation, carried out in three phases (diagnosis of digital status and needs, selection of the most appropriate solutions and prototyping of the solutions).

Up to now, two calls were launched addressed to innovative companies that have technological solutions to answer the challenges proposed by the MSTC, in the fields of BigData/Analytics (BDA) and the Internet of Things (IOT).

In the call related to the BDA, 3 challenges were included, 10 proposals were presented by 6 startups and finally 2 startups (UPIntelligence and Stat & More) were selected to collaborate with the 3 MSTCs to design and implement the proposed solutions.

In the IOT-related contest, 7 startups submitted 8 proposals. Of these, 2 startups were selected (PibiCo and Casualmaneuver). The solution proposed by PibiCo, in collaboration with Centro Jovellanos, has been implemented and is now operational.

AT-VIRTUAL thus contributed to the introduction of new emerging technologies related to Industry 4.0 in training systems, based on simulation, capacity, preparedness, resilience and response to maritime incidents and emergencies in Atlantic waters.

*“Participation in AT-Virtual project represented a new challenge in pibiCo’s activity. It was an opportunity to meet and collaborate with the Maritime Safety Training Centers. Meeting the challenge boosted us to evolve our tools and gain new knowledge in areas not available with our experience. It opened up new horizons for possible future collaborations and a greater field of development for the pibiCo business.”*

**Emilio Seoane**  
CEO of PibiCo Inteligencia de Negocio  
(Winner of the Centro Jovellanos IOT challenge)

**10 partners**

7 regions  
(PT, ES, FR, IE)

**1**

Maritime Safety Training Centres diagnosis tool

**2**

calls for innovative solutions

**4**

start-ups selected to collaborated with MSTCs



## AYCH



**Lead Partner: Devon County Council (UK)**

**Duration: 2017-2022**

**Total budget: 4.23 M€**

**www.aych.eu**

## Atlantic Youth Creative Hubs

The Atlantic Area faces high rates of youth unemployment and under-employment while at the same time, there's a market failure in providing youth services and start-up support to young people, who channel their imagination and creativity in creating new products and services.

AYCH is dedicated to youth up to 30 years old seeking a career or self-employment in the creative sector, open both for young people with lower education and for post-graduated and offers help in building on their creative ideas. The project role is to encourage entrepreneurship, enterprise and employment skills by connecting people, ideas, skills and technologies across a network of international hubs.

The project established this collaborative network of multidisciplinary centres, the Atlantic Horizon Hubs, in the fields of creativity, technology and social enterprise, allowing young people to jointly stimulate new ideas and identify market opportunities, in transnational teams and with the support of a team of international experts, as well as through residencies and internships.

All skills, technology and knowledge have been shared through virtual and physical workshops, seminars and the commercial and global challenges that young entrepreneurs

respond to through Local or International Creative Jams. This network is the result of both formal and non-formal educational settings for youth in the Atlantic Area, giving a body of very active young ambassadors the opportunity of successful self-realisation and to change their lives.

To support the connections and transnational collaboration, the Atlantic Horizon Hubs are embedded into youth service provision in each partner area and beyond, where they have created local ecosystems of entrepreneurship, supporting the adoption of the model across the Atlantic regions.

AYCH thus supports local economic growth, job creation by connecting employers to talent and in the longer term, reduces youth unemployment.

*“Becoming involved in AYCH allowed me to understand on a professional and personal level, the importance of everyone’s participation towards a sustainable planet. I feel now more engaged in my actions for a sustainable future. I’m currently involved in IKEA, inspiring people to live more sustainably in their homes and no matter what professional direction I take, there won’t be a path that doesn’t align with the vision AYCH gave me during my participation in the project”*

**Danae Vélez de León**  
AYCH Ambassador

**17 partners**

8 regions  
(PT, SP, FR, UK)

**362**

young people at a Business incubation programme

**185**

direct jobs created

**72**

enterprises supported to introduce new to market or firm products



## BLUEHUMAN

- Lead Partner: Universidade do Minho (PT)
- Duration: 2018-2021
- Total budget: 2,37 M€
- [www.bluehuman.cetmar.org](http://www.bluehuman.cetmar.org)

### Blue biotechnology as a road for innovation on human's health aiming smart growth in Atlantic Area

The BLUEHUMAN project has focused its activities on finding new ways to add value to marine resources and fisheries by-products through blue biotechnology, combining the know-how and experience of several research groups and companies from different regions in the Atlantic Area.

BLUEHUMAN adopted three research lines. The first one, focused on marine biomaterials, highlighted the potential of hydrogels and aerogels based in marine origin collagen as biomaterials for the regeneration of cartilage and wound healing.

The second research line explored different approaches for developing marine based medical devices, with promising results in the 3D bioprinting of in situ mineralised blue shark collagen for the engineering of mineralised tissues or the use of marine biomaterials for the treatment of bone cysts.

The last workpackage was focused on identifying marine bio compounds with potential interest for well-being and cosmetics markets; for example, several molecules isolated from cyanobacteria and halophytes showed interesting bone anabolic molecules for nutraceutical and/or pharmaceutical applications.

The completion of prototypes of products and solutions corresponded to society's needs and had a good market receptivity, replicable and transferable outside the Atlantic Area.

BLUEHUMAN focused on influencing other actors in the region with the ultimate objective of increasing highly-skilled jobs and strengthening the economic tissue, including new technology-based SMEs.

Through the capitalisation activities and with the cooperation of the partners with commercial activity, some key ideas were also highlighted, for example, the need to promote early collaboration between industry and academia, to develop schemes that encourage and facilitate the flow of know-how between both sides, or the vulnerability of SMEs and spin-offs to significant changes in European regulations affecting the medical devices market.

*“BLUEHUMAN represents a good example of how, through collaboration, synergies can be generated to create new, safer and more effective health products and biomolecules that contribute to a better quality of life for the population.”*

**Jesús Gamallo**  
Director General of Foreign and EU Relations of the Xunta de Galicia

**14 partners**

8 regions  
(PT, ES, FR, IE, UK)

**3**

prototypes of medical devices for bone therapies

**10**

new bioactive marine extracts

**2**

cosmetic formulations



## Big Open Data Atlantic Heritage

## BODAH



- Lead Partner: Información e Comunicación Local, S.A. (ES)
- Duration: 2019-2022
- Total budget: 1.57 M€
- [www.bodah.eu](http://www.bodah.eu)

### Big and Open Data for the development of new processes towards Atlantic heritage management

Tourism is a major engine of economic development, but it also creates a burden difficult to bear among the inhabitants. Mass tourism is promoted for destinations of great cultural, historical and heritage importance, some of them also classified as World Heritage sites by UNESCO.

BODAH aims at strengthening the sustainable development of tourism and citizens flows and socio-economic impacts redistributions thanks to the use of data and smart technologies.

The project is developing new tools, solutions and knowledge in line with the current sectoral changes and characteristics of smart destinations, able to transform information into behavior changes and decision making processes.

The improvement of cooperation and joint planning to better manage conflicting interests will improve the management of two kinds of cultural destinations that can benefit, as well as be affected, by tourism and the pressure of local citizens: old-historical city centres and sites of particular cultural or heritage interest. BODAH takes advantage of technology and innovation in management tools (Smart Cities), for the collection of existing data from different sources and transform them into practical knowledge.

The project has already managed to establish its own indicator system that determines which data should be measured and used for pilot schemes in four cities: Santiago de Compostela and San Sebastian in Spain, Pau in France, and Cork in Ireland. The main purpose of this indicator system is to determine what aspects need to be measured and assessed to develop suitable tourism and people flow management practices.

Thus, new alternative offers can be created and adapted to the interests of visitors to better distribute their crowd flows, and redistribute impacts on these cultural destinations.

The project also developed a pilot strategy to stimulate processes in tourism and heritage management, as well as a web based transnational platform to share data management services for public organisations managing tourism and heritage sites.

*“The Compostela Catering Association (Hotels and Restaurants) believes that BODAH, thanks to the monitoring and analysis of tourist flows in the city, and especially the Old Town, is very important for us, since it enables us to adapt our members' services to such flows. It is also a significant project because it proves, with objective data, that Santiago does not have a problem with mass tourism in its public spaces”*

**Thor Rodríguez Carbón**  
President of the Compostela Catering Association

**11 partners**

9 regions  
(PT, ES, FR, IE, UK)

**5**

audiovisual clips

**17**

dimensions indicators

**500**

surveys



## CEPH&CHEFS



- Lead Partner: National University of Ireland Galway (IE)
- Duration: 2017-2021
- Total budget: 2,58 M€
- [www.cephsandchefs.com](http://www.cephsandchefs.com)

### Octopus, squid, cuttlefish, sustainable fisheries and chefs

The Atlantic economy has a strong maritime dimension, with a traditionally strong fishing industry. However, the sector is under pressure due to stock depletion, economic fluctuations, and changing regulations and markets. Opportunities exist to develop targeted fisheries for squid, octopus and cuttlefish in northern Europe for sale in new markets.

The CEPH&CHEFS project developed new market initiatives and products based on cephalopods (squid, octopus, cuttlefish), increasing the profitability of the value chain, helping to make fishers more competitive and aiming for better prices for cephalopods from the Atlantic Area.

The project also developed tools and strategies to ensure that fishing is sustainable. It is the case of a sustainability toolkit and roadmap to achieve long-term sustainability in fished species, targeted at the fishing industry.

CEPH&CHEFS improved knowledge of the value chain ("from sea to table") and of eating habits and acceptance of new cephalopod food products by consumers in Northern and Southern Europe. Chefs in the Atlantic Area were involved in diversifying seafood offerings in restaurants and teaching materials were developed for trainee chefs.

The "Market Opportunities for Octopus in the Atlantic Area" provides a summary of the main results obtained during the CEPH&CHEFS project with regard to trade, market initiatives and consumer choices.

Biological and socioeconomic sustainability were carefully audited throughout the project, assessing status of Atlantic cephalopod stocks, fisheries and ecosystems, based on biological and socioeconomic indicators. Results were presented at the International Council for Exploration of the Sea (ICES) working group on cephalopods and at ICES Annual Science Conferences.

A policy brief including scientific information to help managers and policy-makers make informed decisions about the sustainability of cephalopod fisheries was made available to fishery governance bodies.

## 13 partners

9 regions  
(PT, ES, FR, IE, UK)

## 1

recipe book  
(octopus, squid & cuttlefish, in 4 languages)

## 1

toolkit and roadmap for sustainability in fished species

## 1

webtool with specific information on cephalopod consumption habits, catch, trade and consumption



## CONSORTEX



- Lead Partner: Foro Marítimo Vasco (ES)
- Duration: 2017-2021
- Total budget: 1,68 M€
- [www.consortex-project.eu](http://www.consortex-project.eu)

### European Internationalisation Maritime Consortia

The high importance of the economic and social shipbuilding industry and services related to the sea in the Atlantic regions has a significant tractor effect on a set of complementary activities carried out, in most cases, by SMEs. These firms do not have size enough to address international markets in a good negotiation position and cannot complete a whole value chain on their own regions. So, collaboration with other companies from other European Atlantic regions becomes strategic.

The CONSORTEX project aimed to set up export consortia formed by European SMEs specialised in providing solutions for vessels and maritime structures. Six consortia have been established and started up: Vessel design, Deck, Accommodation, Engine Room, Bridge, and Offshore energy.

All of them are composed of companies from different European Atlantic regions. They address international markets of a certain type of shipbuilding, such as offshore vessels, marine power plants, cruise ships, and scientific vessels, offering specialised built-in packages which cover their value chain.

The project partners thus committed to bringing together SMEs in the shipbuilding sector of the Atlantic Area, promoting collaboration among themselves. By being part of an export consortium, the companies maintain their autonomy, share knowledge and financial means, and grow in size and in negotiating power in international markets, where there is fierce competition from Asian companies.

The maritime industry in each of the European Atlantic regions has been reinforced by the new shared capacities of the participant companies.

*“Obeki Electric Machines is a company specialised in the design, manufacturing and sale of electric engines for vessels deck, offshore and maritime cranes, ships propulsion and other related applications. We have participated in the CONSORTEX project incorporating our company into Deck Consortium. The project has allowed us to know other complementary to us companies from other regions of the Atlantic Area with which we have shared experiences. The possibilities of carrying out joint projects in the future remain open, being therefore the final assessment of the project positive.”*

Javier Múgica  
Obeki Electric Machines SL

## 7 partners

7 regions  
(PT, ES, FR, IE, UK)

## 6

European interregional export consortia

## 36

European SMEs participating in the export consortia

## 20

European SMEs signing the consortia's agreements



## DAIRY4FUTURE



- Lead Partner: Institut de l'Elevage (FR)
- Duration: 2018-2022
- Total budget: 3.90 M€
- [www.dairy4future.eu](http://www.dairy4future.eu)

### Propagating innovations for more resilient dairy farming in the Atlantic Area

The Atlantic Area has many territorial assets for dairy production: ideal soil and climatic conditions, landscape, infrastructure and processing capacity, large and skilled agricultural population, supported by efficient research and innovation organisations.

From Scotland to the Azores, DAIRY4FUTURE aims to increase competitiveness, sustainability, and resilience of dairy farms in the Atlantic Area. Its objective is to identify, evaluate and then widely propagate innovative practices to European dairy technicians and farmers through transnational seminars or farm open days, publications, videos, or training tools.

DAIRY4FUTURE focuses on four key issues: analyse the strengths and weaknesses of the dairy sector, foster dairy sector economic resilience, improve resource use efficiency, and determine sustainable dairy systems for the future.

The project puts innovative farmers at the centre of practice-based research work and combines several methods (SWOT analysis, research activities, economic simulations) to adapt and develop scientific knowledge, which will lead to technical solutions and recommendations to be shared across the network. DAIRY4FUTURE project involves 12

Atlantic regions from 5 countries, representing 20% of EU-28 milk production and 100 000 farmers working in a wide diversity of milk production systems.

The project is on a course to reduce production costs for dairy farmers (-10%), to reduce the carbon footprint of milk (-20%), and better fitting civil society's needs and market strategies. As a result, the project is contributing to regional public policies with increased impact on value chain efficiency and improved regional cohesion.

*“ Since the beginning of DAIRY4FUTURE, our group of French pilot farmers has had the opportunity to meet on several occasions to discover or learn more about the dairy sector in the different regions of the Atlantic Area. Our meetings allowed us to visit our respective farms, present our breeding systems, and share our work methods, and even to transfer or test practices on our respective farms. We were also able to visit the experimental farms involved in the project, discuss the trials conducted and most importantly present our expectations and needs”*

**Jean-Pierre Morille**  
Dairy farmers in Pays de la Loire – Representing the French Pilot Farms Network of the Dairy 4 Future Project

**31 partners**

13 regions  
(PT, ES, FR, IE, UK)

**10**

cases studies focusing on differentiation strategies on dairy farms

**100**

pilot farms

**1**

synthesis based on a survey concerning the economic success of dairy farming



## EMPORIA4KT



- Lead Partner: Universidade Nova de Lisboa – Faculdade de Ciências e Tecnologia (PT)
- Duration: 2019-2023
- Total budget: 2.80 M€
- [www.emporia4kt.com](http://www.emporia4kt.com)

### Empower academia for knowledge transfer for value creation in the Atlantic Area

The commercialisation of technological innovations is a key driver of long-term economic growth and sustainable management of our ocean and sea resources, but Early Stage Technologies (EST) developed through academic research often do not reach the market. To drive sustainable growth of the EU Blue Economy, better links are needed between academia, business, and government (triple helix), sectors that often have different motivations.

The project developed a Joint Action Plan together with an Academia Innovation Enhancer operational tool - the EMPORIA4KT Blue Economy Technology Transfer Programme - to enhance knowledge transfer and innovation capacity to foster Blue Economy competitiveness at regional, interregional and transnational levels.

The project developed a Joint Action Plan together with an Academia Innovation Enhancer operational tool - named EMPORIA4KT Blue Economy Technology Transfer Programme, to enhance knowledge transfer and innovation capacity to foster Blue Economy competitiveness at regional, interregional and transnational levels.

The action plan and operational tool, which included training and innovative co-developed methodologies

and tools to Early Stage Technologies, were successfully implemented in the 5 participating countries of the project. It is now being improved for new pilot implementation, in this case, to revitalise and enhance the competitiveness of the Canary Islands, through blue economy technologies and knowledge valorisation.

The developed tools and their improved versions will be available online to other research institutions that wish to upgrade skills in Knowledge Transfer and Innovation.

EMPORIA4KT expects thus to positively influence public policy through assessment and resulting recommendations of regional RDI capacity and funding tools to mature Early Stage Technologies for commercialisation and value creation and competitiveness in the Atlantic Area.

The project will finally publish a report that identifies key Blue Economy areas and funding support required for each Atlantic Area region.

*“ EMPORIA4KT programme was my first real contact with the tech transfer world, and where I was able to complement my scientific knowledge with essential skills that allow me to further investigate products and concepts focused on a sustainable society evolution.”*

**Virginia Carvalho**  
Ph.D. researcher and participant in the EMPORIA4KT programme

**17 partners**

10 regions  
(PT, ES, FR, IE, UK)

**1**

Academia Innovation Enhancer-Blue economy Technology Transfer Programme

**1**

Joint Action Plan

**1**

White Paper: recommendations on public policies and funding mechanisms



## ENHANCEMICROALGAE



- Lead Partner: ANFACO-CECOPECA, Asociación Nacional de Fabricantes de Conservas de Pescados (ES)
- Duration: 2017-2023
- Total budget: 3.50 M€
- [www.enhancemicroalgae.eu](http://www.enhancemicroalgae.eu)

### High added-value industrial opportunities for microalgae in the Atlantic Area

European Atlantic Area has a long tradition in the exploitation of marine resources for different food and feed applications. Microalgae revolutionised the food and feed ingredient industry because of their productivity and possibilities, but also the biotechnology industry with the production of phytochemicals to be used for cosmetic and pharmaceutical purposes.

EnhanceMicroAlgae helps to secure a continuation of that tradition with high value-added products and long-term sustainable growth through microalgae exploitation. The project programme has included an in-depth review of the existing Atlantic Area microalgae sector including strengths and weaknesses, level of expertise, industrial development opportunities, and regulatory and legal frameworks.

Also, innovative research activities and innovation transfer from laboratories and research platforms to the industrial sector have been carried out promoting the launch of new products, services and processes.

In order to properly address these strategic objectives, 8 work packages engaged researchers and companies in a dynamic of expertise, communication, training sessions and dissemination.

The main results of the EnhanceMicroAlgae project include microalgae information dissemination, also through comics and illustrations. Spin-off and start-up support programmes were implemented, as well as a decision support tool to help SMEs decide on culture system. Training sessions and workshops were also developed to foster skilled employment. The project created an online database of stakeholders and other key experts in the Atlantic microalgae sector, as well as a virtual marketplace as a platform for exchanging services and interests, supported by project partnerships. The innovative research results were presented in several scientific publications.

ENHANCEMICROALGAE foresees in the medium term the creation of decision support tools for the development of new entrepreneurial initiatives, or to enhance existing ones, devising product-driven strategies that ensure economic and environmental sustainability.

*“At uFraction8, we develop novel biomass harvesting instruments to help microalgae producers to harvest the biomass more efficiently and cheaper than currently used filters and centrifuges. Support received from the EnhanceMicroAlgae project enabled us to perform the technology test of the improved uFraction8 prototype in the near to real environment at the mini-industrial scale. This was a crucial step in the development of uFraction8 technology and enabled further company growth. We are very thankful for the received support and we aim for future collaborations with EnhanceMicroAlgae project stakeholders.”*

**Monika Tomecka**  
Co-founder and CEO of uFraction8 PL

**13 partners**

8 regions  
(PT, ES, FR, IE, UK)

**1**

decision support tool to help SMEs decide on culture system

**1**

microalgae strain catalogue

**1**

virtual marketplace platform for the exchange of services and interests



## FANBEST



- Lead Partner: Universidade de Santiago de Compostela (ES)
- Duration: 2019-2023
- Total budget: 2.66 M€
- [www.fanbest.eu/web/en](http://www.fanbest.eu/web/en)

### Funding Atlantic Network For Blue Economy Technology Transfer

The Atlantic Area business environment is composed mainly of SMEs whose innovation capacity is undermined by the disconnection between the business environment and the innovation systems. Companies linked to the maritime economy have difficulties in accessing external financing to undertake innovative projects and develop value products. These factors can block their possibilities to grow and become more competitive in a global market.

The FANBEST project aims to support SMEs in blue biotechnology and the exploitation of marine resources by creating a network of public and private entities focused on the fundraising to make possible the start and scale-up phases.

Access to funds and investors can help technologies and innovations “made in Atlantic regions” to reach the market and be turned into successful business projects.

Thus, to increase the offer the project created a portfolio of funds and available financial instruments, a training programme and a handbook for coaches aimed to support innovative start-ups and new enterprises. It also

provided more availability of funds outside banks such as venture capital, business angels or equity loans, suitable for operating in the transnational blue technology market.

FANBEST also improved the ecosystem for future beneficiaries by creating a “Stock Market” platform, updated with technology and innovations with potential for industrial use of marine and maritime resources.

Furthermore, a joint coaching programme was launched giving support to 13 innovation projects at selected SMEs.

Finally, the creation of a Helpdesks Network specialised in supporting blue economy aimed to bring together diverse stakeholders such as agents and investors. These platforms will be a lasting result making the project have a wider impact.

*“The programme helped HydroWing Ltd simplify our business model and create materials and methods that allow us to communicate more compellingly to investors. It definitely increased our success in this endeavour and we were delighted to raise approximately £ 2 million of investment”*

**Bevan Wray**  
Project Engineer at HydroWing

**15 partners**

9 regions  
(PT, ES, FR, IE, UK)

**100**

participants in transnational training programmes

**269**

SMEs impacted

**13**

SMEs and entrepreneurs with innovative projects coached by the network



## iFADO



- Lead Partner: Instituto Superior Técnico (PT)
- Duration: 2017-2023
- Total budget: 4,21 M€
- [www.ifado.eu](http://www.ifado.eu)

## Innovation in the framework of the Atlantic deep ocean

The Atlantic Action Plan aims to revitalise the Marine and Maritime Economy and set up sustainable strategies for natural resource exploitation while promoting innovation and regional strategies that secure and enhance the marine and coastal environments.

The European Atlantic Region has the largest potential for "blue growth" due to its size, maritime tradition, and vast deep-sea areas available for exploitation.

In this context, the iFADO project aims to create marine services on a regional and subregional scale using the European Atlantic waters as a case study.

iFADO uses the Marine Strategy Framework Directive (MSFD) implementation to demonstrate the application of innovative products, by combining traditional monitoring with cost-effective, state-of-the-art technologies: remote sensing, numerical modeling, and emerging observation platforms such as gliders and oceanic buoys.

Through international collaboration, the project achieved the extension of some monitoring programmes to observe deeper areas in the Atlantic Ocean through shared efforts and methods, thus contributing to the MSFD.

International glider missions were carried out, connecting the westernmost part of the Atlantic Area (Azores) and the southernmost area (Canary Islands), testing methods for the intercomparison of the numerical models and the integration of data obtained by different methods, such as remote sensing, in situ, gliders and numerical modeling.

iFADO collaborated with other institutions and projects performing monitoring activities in the Atlantic waters, providing visibility to their activities and sharing methodologies for indicators calculation.

The project is involving citizens to obtain more effective ways to collect data in offshore waters by promoting the use of existing mobile apps for ocean data collection with a special focus on the sailing for pleasure community. Citizens are also approached by ocean literacy events in the five participant countries.

*“Through traditional means of ocean monitoring, researchers take point data. Through new vehicles (iFADO gliders), it is possible to continuously obtain data in real time along a trajectory, which allows us to have a vertical idea of the ocean. Some of these vehicles make trajectories in the ocean between 200m and 1000m, mapping vertically some of the oceanographic parameters that are very important for studies of oceanography, climate change, etc.”*

**Ana Martins**  
Full Professor and Researcher at University of the Azores

**21 partners**

14 regions  
(PT, ES, FR, IE, UK)

**8**

international  
glider missions

**4**

mini boats  
launched

**42**

international participation  
in research cruises



## IN4.0



- Lead Partner: Diputación Provincial de Pontevedra (ES)
- Duration: 2017-2022
- Total budget: 2,55 M€
- [www.in40.depo.gal](http://www.in40.depo.gal)

## Adaptation of Industry 4.0 model to the naval sector

IN 4.0 aims to enhance the competitiveness of companies of the naval sector through their adaptation to the production model of Industry 4.0. In this way, the sector is granted the participation in an increasingly demanding market, where innovation is a key factor for its strategic positioning.

The project thus made a diagnosis of the main barriers that the sector faces in adapting their business to a 4.0 model and determined the level of maturity of the existing technologies likely to be implemented in SMEs of the sector of the regions involved. It also devised innovative strategies to reduce costs in the implementation of these technologies and identify new marketing methodologies for the naval sector.

The activities carried out thus aimed to transform the organisation systems of work, knowledge, and commercialisation toward a 4.0 industry, being also necessary to provide training to the staff of the naval sector for new jobs and tasks towards a 4.0 model.

As the main results, IN4.0 produced a catalogue with 20 existing potential technologies to be implemented, set up a web system for shipbuilding open knowledge, and developed a tool to match and map more than 100 business sectors in Europe.

IN4.0 also invested in the dissemination of the pilot projects, mentoring programmes, and business plans aimed at reaching the highest number of SMEs of the sector in the Atlantic Area, and increasing their interest in planning the change process.

Finally, an external evaluation allowed the identification of 50 quantitative and qualitative indicators to measure the growth of the SMEs after adopting the Industry 4.0.

*“The shipbuilding sector is very traditional, but also global, so the only way for it to survive and stay competitive is to apply technologies that make the difference”*

**Cynthia Gómez**  
Shipbuilding engineer at Ghenova Naval & Defensa

**10 partners**

7 regions  
(PT, ES, FR, IE, UK)

**20**

existing potential  
technologies  
identified

**5**

top key enabling  
technologies  
recommended

**9**

mentoring  
projects



## KETMARITIME



- International Iberian Nanotechnology Laboratory (PT)
- Duration: 2017-2021
- Total budget: 0.98 M€
- [www.ketmaritime-project.eu](http://www.ketmaritime-project.eu)

## Transfer of Key Enabling Technologies to the maritime industries

Key Enabling Technologies (KETs) have the potential to impact many aspects of society, enhancing industrial competitiveness in Europe. The maritime sector still needs a transformation from a traditional one to a high-value one, that embraces innovation and new market opportunities.

In this context, the KETMARITIME project's main goal was to build a cooperative network and strengthened the KETs transfer of innovation results to facilitate the emergence of new products, services, and processes across the Atlantic Area.

The KETMARITIME network created awareness about KETs in maritime industry competitiveness and growth by mapping the R&D+I ecosystem, creating a database of relevant projects, and undertaking five different case studies.

A KETMARITIME Roadmap was also developed, containing actions for all stakeholders to animate and stimulate cooperation within (and outside) the network, which in turn supported innovation and knowledge exchange across the Atlantic region.

Four KET application cases were defined for the implementation phase. The pilot project definition for each application case was elaborated, as well as the guidelines for the deployment of the selected KET solutions, successful case flyers, business cases and demo seminars.

The KETMARITIME network created increased knowledge, identified and exchanged good practices and sustainable solutions based on KETs for the marine economy and resources, thus improving the socio-economic situation through innovation and transnational cooperation.

The expected long-term results of the project are linked to the development of new business, private ventures, and large research consortiums in the frontiers of KETs and maritime research. It is important to mention the relevance that Information and Communication Technologies also have, together with the KETs, in order to achieve the long-term effects initially expected.

*“This pilot was about the development of antifouling surfaces for the prevention of the adhesion of microorganisms. Several microtopographic features and chemicals were explored at lab scale and the most promising strategies were validated under real conditions in the Estuary of Figueira da Foz (Portugal) for 2 months with excellent results.”*

**Cinthia Gómez**  
Shipbuilding engineer at Chenova Naval & Defensa

**7 partners**

6 regions  
(PT, ES, FR, IE, UK)

**4**

KET application pilots with SME

**5**

case studies for creating awareness about the KET's in the maritime sector roadmap

**1**

KETMARITIME roadmap



## NEUROATLANTIC



- Lead Partner: Fundación Sanitaria Santiago de Compostela (ES)
- Duration: 2019-2022
- Total budget: 1,77 M€
- [www.neuroatlantic.eu](http://www.neuroatlantic.eu)

## An Atlantic innovation platform on diagnosis and treatment of neurological diseases and ageing

Neurological diseases are disorders that affect the central nervous system and can impair the brain, spinal cord, peripheral nerve or neuromuscular function. Most of these diseases are directly related to ageing, with Alzheimer's Disease and stroke being especially relevant due to their incidence and the economic burden they carry.

The NEUROATLANTIC project will contribute to address this challenge by proposing new standardised clinical protocols, innovative diagnostic and treatment methods and ensuring technology transfer to enterprises to favour the uptake of innovations in real settings.

Specifically, NEUROATLANTIC acts on the clinical and preclinical capabilities in neurological diseases to accelerate the uptake of innovations that are expected to revolutionise how these diseases are handled.

The project is exploring the best clinical practices to elaborate a green paper for improved clinical management (diagnosis and treatment) of Alzheimer's Disease and stroke patients.

Moreover, a preclinical translational research platform with all the elements needed (animal models, nanostructures synthesis, assessment of exploitation potential) was set up to bring innovative theragnostic agents and nanobiosensors (to be used to enhance diagnosis and treatment) to real settings.

NEUROATLANTIC is also developing a technology roadmap and exploitation plans, defining a governance structure to select new projects to be developed in the platform and developing R&D mission-oriented guidelines to define a strategic agenda to address neurological diseases in the future.

**9 partners**

6 regions  
(PT, ES, FR, IE)





LIR  
LUSITANIA INSTITUTE FOR RESEARCH  
TEST FACILITY

## PROTOATLANTIC



- Lead Partner: Asociación de Empresas Tecnológicas Innovalia (ES)
- Duration: 2017-2023
- Total budget: 2,40 M€
- [www.protoatlantic.eu](http://www.protoatlantic.eu)

### Development and validation of a program for the prototyping and exploitation of innovative ideas.

PROTOATLANTIC has developed a model for the prototyping and exploitation of innovative ideas in the maritime sector with a focus on three well-defined sectors: renewable energy, marine robotics, and blue biotechnologies.

This project aims to identify product innovation capacity in the maritime sector willing to address emerging markets in a co-creation model with start-up communities, research centres, universities, and Local Authorities. This acceleration program has allowed the creation of a path from idea to market access where a structured process is used to manage product innovation.

Based on the development of products, mentoring, and funding these programs have attracted innovative ideas, creating a unique ecosystem. At the end of the process, 12 companies were selected to pitch in front of a pool of investors from the Atlantic Area.

In addition, the project provided 10 companies with the possibility to take advantage of the experience and

expertise of the most important testing facilities in Europe, where they were able to test and prototype their technology.

On the other hand, this project has validated an international methodology to offer the scientific community a tool to develop new products, startups and spinoffs in the maritime field. It has also trained teams to high capacity to develop projects and start-ups ready to scale in a viable and sustainable business model, with a high social impact.

Finally, PROTOATLANTIC has delivered an updated guideline with existing policies, investors, and business support entities in the Atlantic Area, shaping the entrance door to develop maritime prototyping and startups development in the Atlantic Area.

*“PROTOATLANTIC is a valuable platform that has enriched our development efforts, facilitating a straightforward route for gaining access to the facilities and expertise required to grow. The whole experience was both educational and constructive, setting a solid milestone on the road towards commercialisation”*

Chrysostomos Zakheos  
SWEL

**14 partners**

7 regions  
(PT, ES, FR, IE, UK, MO)

**113**

startups supported

**10**

companies tested and prototyped their maritime technologies

**10**

startups participated in an international bootcamp



## SAFER



- Lead Partner: European Regions Network for the Application of Communications Technology (IE)
- Duration: 2017-2023
- Total budget: 2.24 M€
- [www.saferatlantic.eu](http://www.saferatlantic.eu)

### Smart Atlantic Seafood Clusters

The Atlantic countries have a strong stake in the growth of the seafood sector, both in terms of production and consumption. The growing demand for aquaculture products, while balancing with sustainability goals and the preservation of natural heritage, require innovative solutions to respond to the different challenges and opportunities.

The SAFER project aims to increase the technology adoption and collaboration within the seafood sector, giving response to the challenges of a sector identified as high-potential for the smart growth of the participant regions.

One of the main achievements of this project is the establishment of a Transnational Smart Atlantic Seafood Network. Initially formed by 5 nodes and supported by a digital platform, this network targeted over 60 seafood related organisations, to illustrate the benefits of the innovative technology and its potential to be replicated by seafood actors across the Atlantic Area and beyond. As a result, 6 living lab pilots have been implemented and 1 additional one tested to be ready for implementation.

The exchange of knowledge carried out has enabled the recipient regions to import and locally provide the services to the sector. During this process, they receive the support of the exporting regions to guarantee a correct implementation.

SAFER has also produced recommendations for the Regional Innovation Smart Specialisation Strategies, in order to help and support other businesses and local actors with great potential for blue growth in the Atlantic regions. The project plans to extend its model and services to other interested regions, helping the seafood sector to become more sustainable, resilient and competitive.

*“SAFER, through the implementation of Industry 4.0 solutions on a transnational basis, has demonstrated the benefits that technology, innovation and cooperation can bring for a more effective and sustainable seafood industry”*

Jose Manuel San Emeterio  
Programme Manager at ERNACT

**12 partners**

6 regions  
(PT, SP, FR, IE, UK, CA)

**80**

innovation services

**6**

living lab pilots

**1**

Atlantic Project Award



## SEAFOOD-AGE



- Lead Partner: Agencia Estatal Consejo Superior de Investigaciones Científicas (ES)
- Duration: 2019-2022
- Total budget: 2.93 M€
- [www.seafoodage.eu](http://www.seafoodage.eu)

### Smart and eco-innovative seafood processes and products for healthy ageing

The ageing of population is a common challenge in the Atlantic Area. Healthy ageing requires a healthy diet and seafood products provide valuable nutritional properties, not always accessible to older adults. However, the efficient and sustainable use of marine resources poses further challenges.

SEAFOOD-AGE project has exploited the maritime dimension of the Atlantic regions and has adopted circular economy concepts to design sustainable, healthier, safer and high quality ready-to-eat marine products, with a special focus on meeting the needs of adults over 65 years of age and reduce food loss.

Strategies have been designed to optimise the production of functional ingredients with high nutritional and healthy properties from underexploited biomass, to be incorporated into ready-to-eat seafood-based products in the form of fish fillets, fishballs or any other shape.

Eco-innovative packaging solutions from marine resources or by-products of the food industry were also developed, as edible and biodegradable sachets for sauces or coatings that prevent decomposition of the product by microbial growth.

Another action of SEAFOOD-AGE was the development of a smart predictive label (based on tracking the temperature through the value chain and working with algorithms on the cloud that can predict the actual shelflife of the product) to help retailers reduce food waste while optimizing product quality and safety and support consumers to make better-informed seafood choices.

SEAFOOD-AGE promoted the collaboration among research centres and industrial partners across the Atlantic regions and also promoted competencies for innovation to increase SMEs competitiveness and accelerate the pace of embedding the circular economy principles into the seafood sector.

*“The 30 volunteers over 65 years of age who participated in the tasting held in Ourense, were really excited to be part of an innovative experience and to taste this food for the first time. Their satisfaction at participating in a tasting-test as potential consumers were unanimous, most of them asking when the product would be on sale to the public so that they could consume it”*

Juan Ramón Álvarez Blanco  
President of the Fundación Dorzán

**20 partners**

10 regions  
(PT, ES, FR, IE, UK, FI)

**1**

new ready-to-eat seafood product for the older >65

**2**

tastings organised with more than 60 older people

**2**

eco-innovative packaging solutions using algae as araw materials



## SEATRACES



- Lead Partner: Agencia Estatal Consejo Superior de Investigaciones Científicas (ES)
- Duration: 2018-2022
- Total budget: 3.53 M€
- [www.seatraces.eu](http://www.seatraces.eu)

### Smart traceability and labelling toolbox for a sustainable seafood production

Illegal fishing, fraud and mislabeling pose a serious risk to this important economic activity in the Atlantic Area regions. The main actors, producers, industry, markets and consumers must be aware of these threats and know the available tools that will empower them to adopt a responsible attitude towards the production, marketing and buying of seafood.

The overall objective of SEATRACES is to demonstrate to stakeholders and consumers that Labeling and Traceability are essential to protect and enhance fisheries and aquaculture in the Atlantic Area.

By carrying out case studies in different regions, SEATRACES is demonstrating how innovative implementation of traceability and labeling instruments facilitate and increase marketing and revenue, thus acting as a driving force to inspire other companies to adopt similar strategies. In addition, pilot actions are being carried out to demonstrate how traceability benefits producers and consumers.

Being the proper analytical tools essential for compliance with the latest labeling regulations, the project is developing, testing and validating new tools for verification of Labels.

The Administration, Control and Research Labs are the main actors involved in the analysis and control of labels. To help official control labs, SEATRACES has developed a new online tool (FISH-FIT) with the methodology used for species identification of seafood.

Consumer studies carried out in six countries showed that traceability and sustainable certification are indeed important, however, these studies also conclude that price is a relevant factor in buying decision process.

SEATRACES also assessed the level of compliance with European labeling regulations in these countries, demonstrating that there are specific needs to improve compliance throughout the supply chain.

*“SEATRACES explored the use of radio-frequency identification tags for tracking oysters in the farm: from seeds until they are sold to consumers. That is traceability like no other”*

Nuno Ferreira  
Exporsado

**20 partners**

14 regions  
(PT, ES, FR, IE, UK, DE, BE)

**47**

videos about seafood labelling and traceability

**1**

network tool for experts created

**1**

FISH-FIT online tool to provide specific methodological support



## USER-FACTOR



INNOVATION AND  
COMPETITIVENESS

**Lead Partner: Cardiff Metropolitan University (UK)**

**Duration: 2018-2022**

**Total budget: 2.09 €**

**[www.userfactor.eu](http://www.userfactor.eu)**

## Design for user-driven innovation

Small and medium enterprises (SMEs) are the backbone of the EU economy, representing a high share of businesses in the EU and providing a substantial source of jobs and economic growth. Design is an accessible tool of user-centred and market-driven innovation that can improve SMEs competitiveness thus having a great impact on the economy. However, it is still necessary to pave the way for most companies to start using design as a key business driver.

This is the field in which the USER-FACTOR operates, that is, strengthening innovation in SMEs by supporting them to use design as a user-oriented tool. Through a knowledge exchange process and using a service design method, the partners developed pilot programmes to support SMEs to use design and involved users in concept development and prototype testing.

In a series of knowledge exchange workshops, USER-FACTOR identified good practices in innovation and design support, developed pilot programmes using service design methodology, and implemented them with 246 small and medium businesses. The consortium evaluated their performance and shared the learning with business support organisations and policy-makers to ultimately mainstream design support for businesses and ensure long-term impact.

The pilot programmes showed that once introduced to design approach SMEs find it very useful and effective in improving business operations and customer orientation, bringing about new usercentred products and services which leads to the opening of new markets or increase in profitability among other benefits.

Furthermore, USER-FACTOR publicised a Handbook of Good Practices and Design Impact Report, carried out 24 case studies of good practices and 3 technical publications (Evaluation of By Design Grant, Resulting journal paper and A Design Toolkit).

**8 partners**

8 regions  
(PT, ES, FR, IE, UK)

**246**

SMEs involved  
in pilot actions

**8**

design  
support pilots

**24**

case studies of  
good practices

# 02

## Resource Efficiency



### Fostering resource efficiency

Projects in this priority support the development of renewable sources of energy, especially those deriving from the sea, and promote the transition to a resource-efficient society.

A low carbon economy is a key issue for territorial sustainable development and for EU objectives and the mitigation of climate change that has strong consequences in Atlantic regions.

\* Data from project partners includes associated partners



## ARCWIND



RESOURCE EFFICIENCY

- Lead Partner: Instituto Superior Técnico (PT)
- Duration: 2017-2023
- Total budget: 4.19 M€
- [www.arcwind.eu](http://www.arcwind.eu)

### Adaptation and implementation of floating wind energy conversion technology for the Atlantic region

The Atlantic Area countries have the world's best offshore wind resources, which creates a huge opportunity to develop a viable industry supporting thousands of jobs, and to meet targets for green energy production.

However, their deep waters are not suitable for fixed turbines, so the development of floating offshore wind technologies is needed. The floating wind turbine sector has experienced great development with many concepts approaching commercialisation.

ARCWIND contributes to the transition from fixed to floating wind platform systems for use in deeper waters and more exposed sites in the Atlantic Area. The project evaluated the wind resource of the Atlantic Area, identifying the most promising areas for sitting floating offshore wind farms.

A multicriteria approach for selecting the locations of the wind energy farms was applied to the Atlantic countries, meaning the feasibility and appropriateness of having different types of floating wind turbines installed in the various locations, according to the specific features of the sites and the main types of floating structures.

Three floating concepts were developed and evaluated based on numerical tools and experimental tests, having in mind their optimisation and cost reduction.

ARCWIND developed designs for high power turbines and the mooring system of the concepts was adapted and optimized for the selected locations and the environmental conditions.

Six wind farms were also designed, TWO with each of the platform concepts, in a total of 2.6 gigawatts production capability. Maintenance, logistics, costs and risk assessment have been planned for these designed wind farms.

ARCWIND is thus contributing to a stage where floating offshore wind technology is approaching commercial scale.

*“ARCWIND project has helped Saitec floating technology to move a step forward in the process of reaching a technology maturity required for a market entry, enabling the effective handling of the energy needs and energy security in Atlantic region.”*

**PhD. Carlos Ariel Garrido-Mendoza**  
R&D Manager

**23 partners**

14 regions  
(PT, ES, FR, IE, UK)

**3**

concepts of  
floating wind

**130**

promising areas for  
sitting floating offshore  
wind farms

**6**

wind farms  
designed



## BLUEGIFT



RESOURCE EFFICIENCY

- Lead Partner: European Marine Energy Centre (UK)
- Duration: 2019-2022
- Total budget: 2.47 M€
- [www.bluegift.eu](http://www.bluegift.eu)

### Blue growth and innovation fast tracked

The development of a world leading Marine Renewable Energy (MRE) industry in the Atlantic regions represents a fantastic opportunity to stimulate economic development in more peripheral areas.

MRE represents a substantial asset that can help to combat climate change, secure energy supply, and reduce greenhouse gas emissions.

BLUEGIFT is helping Atlantic Area companies test the next generation of MRE technology in real sea environments and prove power can be economically generated from the ocean.

The test sites involved provide a range of marine energy resource types at their facilities. Access to test sites to perform tests and validation was granted through a series of competitive calls.

BLUEGIFT will deliver at least 8 technology demonstrations of floating wind, wave, tidal or solar technologies, resulting into over 24,000 hours of operations, work with over 20 SME's, sustaining 30+ jobs and helping to leverage 15 million euros of investment into MRE companies.

To complement technology being tested in real sea conditions, the project is also focussing on increasing technical collaboration. The Optimisation work package will collaborate with developers to ensure methodologies are consistent for test planning and verification. In order to benefit developers and the entire community in the medium to long term, BLUEGIFT partners agreed to specify and implement a joint R&D programme. The objective is to improve knowledge, methods, and tools to support MRE sea trials in the Atlantic Area.

Each test site will hold the test results for at least three years past project close, supporting long-term impact and spin off research where appropriate. Furthermore, the project foresees a series of strategic capitalisation tasks aimed at the long term roll out of MRE technology across all the Atlantic regions.

*“Thanks to the BLUEGIFT project, financed with ERDF funds, we will have new access to the testing site of PLOCAN, to continue the development of our innovative W2Power technology.”*

**Ana Mayorga**  
COO of EnerOcean

**15 partners**

10 regions  
(PT, ES, FR, IE, UK, BE)

**1**

collaborative  
network of  
MRE test sites

**8**

technology  
demonstrations

**24,000**

hours of operations  
in real sea  
environments



## BLUEPORTS



- Chambre de Commerce et d'Industrie Métropolitaine Bretagne Occidentale (FR)**
- Duration: 2017-2022**
- Total budget: 2.96 M€**
- [www.blueportservices.com](http://www.blueportservices.com)**



## CIRCULARSEAS



- Lead Partner: Leartiker S. Coop. (ES)**
- Duration: 2019-2022**
- Total budget: 2 M€**
- [www.circularseas.com](http://www.circularseas.com)**

### Atlantic Blue Port Services - Discharge polluted water in port, not at sea

The EU Port Reception Facility directive obliges ports to provide adequate port reception facilities for ships waste. The International Maritime Organisation Ballast Water Management Convention entered into force. The Water Framework Directive engages all parties including ports to monitor sea water quality. Despite regulation maritime transport is still a source of marine pollution, hardly assessed in ports. What could be done beyond regulations?

The BLUEPORTS project concentrated the question on ports. It aimed to provide practical support to policy makers, at all levels, using the Atlantic Area as a platform and its maritime community as a resource to design, prototype, test and demonstrate attractive port services. The overall goal was to raise awareness and motivation of all concerned parties to act.

With that purpose, the project created a cooperation framework for all parties by addressing users, providers and policy makers. The result is a "Blue Ports" Network of 270 members. It implemented a series of pilots: a mobile port facility for treatment of ballast water, an innovative oily

water treatment process, digital applications for risk and quality assessment in ports, baselines of business plans for investors, a knowledge database and e-training tools.

BLUEPORTS has managed a strong sensitization of the maritime community, through events and demonstrations organised in partner ports. The consortium delivered its recommendations during a working session organised by the European Parliament and the Conference of Peripheral Maritime Regions with representatives of the European Commission, the European Maritime Safety Agency, public, private and scientific actors. Further cooperation actions and programmes were born from this meeting.

The Atlantic is now a leader area of the "Blue Ports" spirit and brand.

*"Our objective is to build a reliable, efficient and sustainable service network to process ship residues, and contribute to preserving marine water quality and biodiversity"*

**Mériadec Le Mouillour**  
General Director of the CCIMBO, General Director of the port of Brest and General Coordinator of the BLUEPORTS project

### Turning ocean plastic waste into green products for maritime industries

Atlantic Area maritime industries can become front-runners in the Green Growth economy by embracing new manufacturing technologies for the delivery of greener products, a challenge that requires a shared vision and strategy.

The CIRCULARSEAS project promotes the development of eco-innovative products, parts, and components for the maritime industries, using recycled ocean plastic waste and biodegradable, renewable, and high-performance polymers.

Through the use of 3D printing technologies, the project increased the value of marine plastic waste that results from maritime industries, or that is left on beaches (pollution), to convert them into useful products for the economic activities of these industries, such as spare parts for freezers or thermoplastic molds for boats.

It also encouraged the community to collect plastics from the oceans promoting their depollution, to improve the waste management in the ports, and reduce the use of plastic-based parts in the maritime industry, namely for the fishing and shipyards sectors, and diversifying economic activities linked to green growth.

The consortium is carrying out six pilot tests of business cases to collect evidence about the economic, technical

and environmental viability of 3D printing technology in the manufacturing of green parts using green materials.

CIRCULARSEAS will also deliver policy briefs to the public authorities with recommendations to update the Smart Specialisation strategies, to promote the 3D technologies, as well as the long-term sustainability of business cases. As the main results, CIRCULARSEAS contributed to the increased recollection of the maritime plastic waste for recycling and fostered the closing of the circular economy loop by using recycled materials for components for the Maritime Industries, reducing the spillover of plastic into the Atlantic Ocean. Thus, there was a diversification of the economic activities linked to Green Growth by the introduction of 3D printing and new materials, bringing new market opportunities and jobs.

*"The fishermen association of Ondarroa (Onare) has benefited from the project through the revalorisation of used nets, contributing to better waste management in the port. The development of the price tags as the green product of Ondarroa has been advantageous to this association by making the local fish more recognisable in the fish shops. Naberan, as a net seller, will also benefit from the results, because the recyclability of their product has been demonstrated at the pilot level. Birziplastic, a recycling company in the Node, is working on scaling up the process of recycling fishnets to an industrial level, which will help broaden their business. Indart, the 3D printing company, has seen that recycled materials based on maritime waste show potential for the technology and the interest of the maritime industries for the green products will help their economic activity as well."*

**Eli Aranbarri**  
CEO fish trader federation of Ondarroa, ONARE

**28 partners**

16 regions  
(PT, ES, FR, IE, UK, NE)

**5**

demonstrations of the port based ballast water treatment system "InvaSave"

**1**

pilot digital application for sea water monitoring in ports

**270**

members of the BLUEPORTS Network

**14 partners**

8 regions  
(PT, ES, FR, IE, UK)

**1**

portfolio of business cases

**6**

policy briefs

**6**

pilot tests



## DURABLE



RESOURCE  
EFFICIENCY

-  **Lead Partner: Ecole Supérieure des Technologies Industrielles Avancées (FR)**
-  **Duration: 2019-2022**
-  **Total budget: 3.88 M€**
-  **[www.durableproject.eu](http://www.durableproject.eu)**

## Drones and Maintenance Robots for the Promotion of Renewable Energies

“Drones and Maintenance Robots for the Promotion of Renewable Energies” is born as an ambitious project to tackle the needs of the Atlantic Area in terms of competitiveness in renewable technologies and resilience against climate change. Overall, it is an ambitious project whose goal is to reduce the pollution generated by the current methods for producing energy in the wind and solar farms in the Atlantic Area.

Partners in DURABLE are working on the validation and demonstration of aerospace technologies such as aerial robotics or additive manufacturing and their application to organisation and maintenance.

With the technologies developed within the project, improvements such as the automation of inspection and repair tasks or the rapid replacement of parts are achieved, reducing costs, and improving the productivity of the new plants.

Some of the most promising technologies developed by the partners are the following: intelligent navigation technology using drones for high-precision damage assessment and reporting; novel technologies for the inspection of wind turbines with a fleet of drones; a methodology of ultrasonic inspection for wind blades; portable low-power Radio Emission Spectroscopy technology; unmanned Ground Vehicles (land robots equipped with advanced sensing and actuation technologies); and an immersive 4D virtual cockpit for remote operations.

The last step of the project will be to implement these technologies into two pilot sites in Portugal and France for their validation.

*“Any technology that will allow industry to remotely check wind and solar farms, and indeed do so on aerial systems that are themselves based on sustainable rechargeable battery technologies, will be a huge bonus in developing Europe's Green Economy in the Atlantic Area”*

**Dr. Alessio Di Liberto**  
Electronic Engineer at DCU

**19 partners**

7 regions  
(PT, ES, FR, IE, UK)

**1**

robotic  
technology  
catalogue

**1**

virtual cockpit  
proof of  
concept

**2**




pilot  
demonstrations



## EERES4WATER



RESOURCE  
EFFICIENCY

-  **Lead Partner: Fundación Corporación Tecnológica de Andalucía (ES)**
-  **Duration: 2019-2022**
-  **Total budget: 3.02 M€**
-  **[www.eeres4water.eu](http://www.eeres4water.eu)**

## Promoting energy-water nexus resource efficiency through renewable energy and energy efficiency

In line with the priorities set out in the Research and Innovation Strategies for Smart Specialisation (RIS3), sustainable solutions are required for the technological advancement of the water-energy nexus. Technological solutions should be adapted to the different scenarios that typically exist in the Atlantic Area, especially in coastal and inland areas.

EERES4WATER is enhancing the institutional, technical and social framework to promote the direct use of renewable energy sources and energy efficiency in the water cycle by influencing related policies and introducing new technologies.

The project partners are working on a bundle of technologies to make water management and energy related processes more efficient. Some of these technologies are low-cost wave-driven energy generation, wastewater decontamination and desalination systems powered by renewable energy, and pump used as a turbine. The project has developed a software application to predict water storage, pumping requirements, and variable water treatments operation, as well as an Artificial Intelligence model to predict faecal indicator organisms and detect poor water quality in real-time.

The partners are working on an energy efficiency labelling standard for processes and facilities of the water cycle. This will allow policy makers to support more efficient installations and better decision making when investing in goods and services.

Thanks to all the know-how generated, the partners have provided three transnational services on innovative energy and water technologies in the fields of desalination and renewable energy.

These improvements will contribute to provide citizens with cheaper and more sustainable access to water in the Atlantic Area thanks to better local and regional policies and strategies, and the consolidation of new technologies.

*“In the Canary Islands region there is not much water. Low rainfall and a volcanic aquifer. The energy dependence of the water cycle is very high. The water used in the main islands is desalted water from the sea and complex pumping is required due to the orography and deep wells. Besides, the tourist pressure requires a high freshwater provision to accomplish the quality standard. The Canary Islands Government expects to bring to the islands some of these new technologies and results from EERES4WATER project and include them in the water cycle to reduce the huge dependence on the energy that currently exists on the water-energy nexus in the region”*

Canary Islands Government

**11 partners**

11 regions  
(PT, ES, FR, IE, UK)

**1**

test rig demonstrator  
for pump used as  
turbine technology

**1**

pilot prototype of  
a solar reactor for  
water treatment

**3**

services on innovative  
energy and water  
technologies



## GEOATLANTIC



RESOURCE  
EFFICIENCY

Lead Partner: Concello de Ourense (ES)

Duration: 2017-2022

Total budget: 2.46 M€

[www.geoatlantic.eu](http://www.geoatlantic.eu)

### High added-value industrial opportunities for microalgae in the Atlantic Area

The new directive on renewable energy proposes as a binding target for the UE that at least 27% of its energy comes from renewable sources by 2030. Many of the changes that this transition involves will be noticed in cities and municipalities. An ecosystem for the promotion of the energy transition and geothermal energy in the local communities of the Atlantic Area is necessary.

The GEOATLANTIC project aims to promote the use of geothermal energy in the communities through the joint development of tools and methodologies that make possible the creation of favorable local ecosystems, both for heat and power.

To achieve this objective the project is promoting the knowledge of initiatives, technologies, and the latest advances to boost local ecosystems in favor of the energy transition, as well as the most appropriate solutions for the Atlantic regions.

Thus, an interactive Tool of Reference was implemented, and a pool with best practices, methodologies and tools applicable to local communities, available in different languages to facilitate the knowledge and exploitation of geothermal resources.

The project is also promoting activities for research and transfer of skills, as well as providing local policy frameworks and joint support instruments among the different agents and stakeholders in the Atlantic Area, to strengthen the geothermal energy sector chain and energy transition.

Furthermore, GEOATLANTIC is also providing training and advice at different levels to communities and local authorities to give an effective response to the threat posed by climate change and to the construction of a new energy model.

The project also acts in the transfer of technology to the market, through the creation of a portfolio with the technologies to be transferred to energetic companies as well as to support local entrepreneurship and SMEs related to geothermal energy. As pilots, four technology transfer experiences to boost innovation in geothermal energy were carried out.

*“GEOATLANTIC has helped the city of Ourense to discover its real potential in the field of geothermal energy. Undoubtedly, this renewable energy is one of the great energy engines of the city, and this project has been the exceptional starting point to turn Ourense into the thermal capital of Europe.”*

**Jorge Pumar**  
Councillor for the Environment of Ourense

**17 partners**

10 regions  
(PT, ES, FR, IE, UK)

**1**

interactive tool  
of reference

**1**

geothermal  
energy map

**4**

technology transfer  
experiences



## HYLANTIC



RESOURCE  
EFFICIENCY

Lead Partner: Universidad de Cantabria (ES)

Duration: 2017-2023

Total budget: 2.77 M€

[www.hylantic.com](http://www.hylantic.com)

### Atlantic network for renewable generation and supply of hydrogen to promote high energy efficiency

The ability to create a deployment strategy for power generation with H2 that can create employment and regulatory policies promoting commercialisation is a major global challenge for the Atlantic regions.

The HYLANTIC project addresses global energy issues and focuses on the challenge of ensuring a sustainable and efficient energy supply with low carbon emissions. The idea is to establish an excellent transnational network for the implementation and commercialisation of hydrogen as an energy vector for future power generation.

The environmentally friendly outputs will thus provide energy-efficient solutions to strategic sectors such as transport, marine, ultra-low energy building supply, and/or portable and stationary devices.

The design of safe storage systems and efficient and low cost energy systems through an innovative fuel cell and H2 combustion engines and their implementation in prototypes are also included in the research programme of the project.

The partnership was organised in different working groups focusing on obtaining more storage efficient and safe hydrogen from renewable energy, to develop technologies for obtaining energy that combines both fuel cells and hydrogen combustion engines, with application in the maritime sector. Finally, the partnership was dedicated to the search for new markets and the environmental and carbon footprint assessment of the developed technologies.

HYLANTIC has gathered senior public sector representatives, politicians, public and private entities, and communities to ease the understanding of hydrogen technologies within the marine and coastal environment.

These discussions were useful for policymakers to better understand the benefits of hydrogen, as well as the actions to support the absorption of renewable hydrogen in the marine and coastal regions of the Atlantic Area.

*“Hydrogen combustion in marine, particularly if it can be retrofitted to existing vessels and port equipment, will be a very important part of the solution we need going forward if we are to deliver a cost-effective transition away from conventional fuels. The technologies investigated in these projects have helped us as an operator, understand what is needed to implement our plans for net-zero.”*

**David Hibbert**  
Technical Superintendent, Marine Services, Orkney

**26 partners**

13 regions  
(PT, ES, FR, IE, UK, BE)

**2**

photocatalytic  
reactors to produce  
hydrogen from  
industrial waste  
effluents and water

**1**

ship powered by  
hydrogen through  
fuel cell technology  
and combustion  
engines

**1**

High-performance  
and safe systems  
for hydrogen storage  
in high-pressure tanks





## INTEGRATE



- Lead Partner: Fundación Centro Tecnológico Acuicultura de Andalucía (ES)**
- Duration: 2017-2023**
- Total budget: 2.39 M€**
- www.integrate-imta.eu**

### Integrate Aquaculture: an eco-innovative solution to foster sustainability in the Atlantic Area

Aquaculture is a major maritime industry in all five of the Atlantic Area countries and a sector highlighted in the EU Blue Growth Strategy. The Integrated Multi-Trophic Aquaculture (IMTA) systems are a circular economy paradigm, that contributes to making Atlantic aquaculture more sustainable and competitive, thus unlocking green growth within the European aquaculture sector.

Despite IMTA being encouraged by EU policies such as the Blue Growth Strategy, the Atlantic Action Plan, and the RIS3, there still are socio-economic, administrative, and legal bottlenecks hampering its development to its full potential.

To overcome these barriers, INTEGRATE facilitated the industrial transition towards IMTA by supporting meaningful cooperation between academia, the corporate sector, and relevant authorities.

This project had as main goals to strengthen IMTA collaborative networks around eco-efficient aquaculture techniques, to communicate the principles and benefits of IMTA, to achieve market consolidation of EU sustainable

food, and to fulfill Atlantic Area and EU regional goals as the industry transition to resource efficiency technologies, promoting green and blue growth in aquaculture.

As main results, INTEGRATE has found consensus on a definition of IMTA relevant for the industry and policymakers in the Atlantic Area, and harmonised cultivation approaches and IMTA implementation techniques through the freely available technical manuals and implementation guides.

The partners also developed technical knowledge of macroalgae cultivation for species of high economic value and potential for novel and early-stage species.

*“INTEGRATE project boosted the technical innovation in aquaculture systems/methodologies, diversification strategies and materialising this novel concept of aquaculture, IMTA. Estero Natural S.L. links aquaculture and eco-tourism activities, thanks to IMTA this company have been benefited from both subjects. For aquaculture, new culture systems have been developed, among them, oyster cultivation installation which even nowadays is still been implemented. In the case of eco-tourism, the enterprise has increased the subjects of interest for visitants and show a higher gastronomy diversification.”*

**Macarena Algarin**  
Founder member / Project Manager Estero Natural Company

**23 partners**  
12 regions  
(PT, ES, FR, IE, UK)

**20** IMTA roundtables

**52** questionnaires

**40** definition events



## MONITOR



- Lead Partner: Swansea University (UK)**
- Duration: 2017-2022**
- Total budget: 2.13 M€**
- www.monitoratlantic.eu**

### Multi-model investigation of tidal energy converter reliability

Marine renewable energy from tides is a significant potential growth industry for the Atlantic Area. But there is a barrier to growth due to uncertainty around device reliability, resulting in tidal energy converter (TEC) technology that is too expensive and risky to attract financial investment.

MONITOR's goal was to investigate the forces acting on TEC blades and structures, to help TEC developers improve device reliability and thereby encourage the growth of the tidal energy sector.

The project identified critical parameters for the blades and support structure to design a monitoring system for two specific TEC devices (Magallanes' ATIR and Sabella's D10) and develop a generalised monitoring system that can be applied to any TEC. This data was supplemented with an extended programme of laboratory-scale tests and numerical simulations at several levels of fidelity.

MONITOR thereby sought to combine the 'gold standard' of measurements on real full-scale devices at sea with the greater control possible in lab and computational models. From these multi-model sources of technical

data, a general reliability model of TECs using variation mode and effects analysis (VMEA) was developed.

As a new-to-the-market product that increases certainty regarding blade/structure reliability, the VMEA model will accelerate Blue Growth. It is applicable to any TEC design, to de-risk TEC development, improve reliability and increase capacity factor (i.e. power generated as a proportion of theoretical capacity), and lower capital and operating expenditure.

The outputs of this reliability tool are used in conjunction with technoeconomic modelling to predict the impact of reliability improvements on the cost of tidal energy: this is fundamentally the most important output of the project and it will have the strongest long-term impact on the development of the tidal energy sector in the Atlantic Area.

*“Our work during the project has highlighted the common challenges that are faced by all tidal stream devices in achieving an commercially viable standard of reliability, and the effect this has on their ability to generate renewable energy economically. We hope that the work of MONITOR will be useful to everyone in tidal stream energy who is looking to improve the reliability of their devices.”*

**Michael Togneri**  
MONITOR project lead

**9 partners**  
9 regions  
(PT, ES, FR, IE, UK)

**2** pilot actions for deployment of novel condition monitoring systems

**6** scientific publications

**1** new reliability model integrated into partner's service portfolio



## NASPA



RESOURCE  
EFFICIENCY

Lead Partner: Bangor University (UK)

Duration: 2017-2022

Total budget: 2.99 M €

[www.bionaspa.com](http://www.bionaspa.com)

## Natural fungicides against air & soil borne pathogens in the Atlantic Area.

Most Atlantic regions are characterised by high rainfall and high humidity, conditions that increase crop fungal infection and leaching of inputs from the soil.

Crop growers counter these problems by applying high levels of synthetic fungicides and fertilisers. However, many fungicides are toxic and face EU bans due to residue accumulation in food.

The NASPA project developed a new generation of products based on bioactive compounds from seaweed/ fish waste/aquatic plants combined with key plant micronutrients. The improved plant health makes crops less prone to diseases via better nutrition and biostimulation.

The project outputs were based on the wide adoption of new business models, demonstrated by the sustainable use of unexploited marine resources and fish discards, to produce eco-products that counteract fungal crop/tree diseases.

This new generation of products thus provided an increased marketable crop yield, the quality and shelf-life of fruits and vegetables, converted into a return on investment for crop growers and retailers.

NASPA also promoted the market pull of novel eco-products and contributed to an increase in exports, employment, and competition, whilst meeting regulatory requirements regarding food residues and environmental run-off.

Moreover, NASPA contributed to policy information for further development of EU objectives of circular economy, territorial social cohesion, and rural economic development.

**15 partners**

10 regions  
(PT, ES, FR, IE, UK)

**6**

field biofungicide trials

**5**

enterprises supported to introduce new to the market products



## NEPTUNUS



RESOURCE  
EFFICIENCY

Lead Partner: Universidad de Cantabria (ES)

Duration: 2019-2022

Total budget: 2.31 M€

[www.neptunus-project.eu](http://www.neptunus-project.eu)

## Water-Energy-Seafood nexus: eco-innovation and circular economy strategies in the Atlantic Area

The transition to a circular economy provides lots of opportunities for the seafood sector. It is important to balance environmental influences with social and economic gain in policy and decision making, to overcome obstacles influencing producers and consumers behaviour in order to consider the importance of natural resources.

The NEPTUNUS project aims to promote the sustainable development of the seafood sector in the Atlantic Area by supplying a consistent methodology for products eco-labelling and defining eco-innovation strategies for production and consumption under a circular economy approach. The consortium thus worked to deliver green economy strategies to the seafood sector to minimise environmental impacts while incorporating competitive products into green markets.

The approach also involved developing strategies and policies based on circular economy and cradle-to-cradle principles that deliver new products and working systems to the seafood sector, to reduce the resources used in processes by recycling and valorising the waste outputs into production and consumption systems.

As main results, NEPTUNUS published 15 scientific papers and has built a robust database for seafood supply chains, introduced technical, environmental and nutritional criteria under the life cycle inventories, promoting a continuous improvement of the environmental performance of seafood throughout their life cycle. Besides, an analytic tool is being developed to support stakeholders to estimate the impact of their activity (fishing, aquaculture, or processing).

All these results will benefit industries by means of a new green eco-labelling, public authorities by providing pilot studies to contribute to the economic cohesion of involved regions, research organisations by participating in an ambitious strategy and consumers by informing them about the environmental benefits of sustainable products.

*“The perpetuation of fishing practices from an environmentally, socially, and economically sustainable approach is essential to guarantee not only the future of coastal populations, but also the supply of seafood to society and the safeguarding of cultural heritage. Reconciling all of this with the protection of marine biodiversity, which is an unavoidable duty in any society, as set out in the United Nations 2030 Agenda for Sustainable Development.”*

Sandra Ceballos  
Researcher

**32 partners**

12 regions  
(PT, SP, FR, IE, UK, SW)

**15**

scientific papers

**4**

technical reports

**1**

analytic tool



## PORTOS



RESOURCE  
EFFICIENCY

- Lead Partner: Faculdade de Engenharia da Univ. do Porto (PT)
- Duration: 2019-2022
- Total budget: 2.63 M€
- [www.portosproject.eu](http://www.portosproject.eu)

## Ports towards energy self-sufficiency

Seaports need high-energy supplies and are a source of air pollution. Considering the convergence of resources, infrastructures and facilities in ports, marine renewable energy arises as a promising alternative to minimise those environmental problems.

PORTOS aims to assess, develop and promote the integrated use of renewable energy resources in the Atlantic Area ports and increase their energy efficiency, establishing a roadmap to a more competitive and sustainable sector.

As each port has unique characteristics (e.g., different industrial activities, infrastructures, available resources), the possible renewable energy/ marine renewable energy solutions differ. Thus, to provide useful solutions to the general ports system, this heterogeneity needs to be considered by analysing different representative case studies ports throughout the Atlantic Area, which is one of the PORTOS' objectives.

The project thus developed exploration plans, implemented pilot actions, developed roadmaps and guidelines to achieve self-sufficiency in the ports' systems, and tested devices and hybrid technologies to allow the exploitation of marine renewable energy resources in those ports. Based on the results obtained, case study ports will launch and implement the developed marine renewable energy exploitation plans.

The port and transport sectors will have a detailed knowledge of the current scenario to improve and/ or develop their environmental policies. There is a firm compromise from the port authorities to include the energy self-sufficiency principles in their strategic plans for the next decade, and to take advantage of the renewable energy resources locally available.

Organisations operating in the marine renewable energy sector, such as energy suppliers, the industrial sector and energy agencies, as well as the scientific community, will benefit from the results of PORTOS. Last but not least, all of the society will benefit from the improvements made to the sustainable energy ecosystem.

*“The PORTOS project has empowered the Port of Vigo to develop a holistic strategy for an impending energy transition to a renewable energy supply of the port's electricity demand, based on detailed and precise information regarding our port and the available marine renewable resources in our jurisdiction areas. This is considered an important contribution to advance in our commitment to be a zero emissions port”*

**Carlos Botana Lagarón**  
Head of Sustainability Department, Port of Vigo

**18 partners**

13 regions  
(PT, ES, FR, IE, UK, BE)

**3**

marine renewable energy harvesting technologies

**3**

multi-parameter characterisations of case-study ports

**8**

proof-of-concept of emerging technologies through physical and numerical tests



## REDAWN



RESOURCE  
EFFICIENCY

- Lead Partner: Action Renewables (UK)
- Duration: 2017-2022
- Total budget: 2.66 M€
- [www.redawn.eu](http://www.redawn.eu)

## Reducing energy dependency in Atlantic Area water networks

The water industry is the fourth most energy intensive sector in the Atlantic Area, responsible for significant contributions to climate change and reductions in competitiveness due to associated costs.

At present significant potential exists to save energy and reduce the environmental impact on water networks, but the existing barriers prevent the proper exploitation of this resource.

The REDAWN project aims to develop an adequate institutional, social and technological environment to improve energy efficiency of water networks through the installation of innovative micro-hydropower technology.

This technology will recover wasted energy in existing pipe networks across irrigation, public water supply, process industry, and waste-water network settings.

The consortium completed a resource assessment for energy recovery from micro-hydro, compiling an extensive assessment for drinking water, irrigation and wastewater sectors. At this stage, they completed the data collection, resource assessment and extrapolation of total resources for these three sectors.

In total, data on 8560 sites has been compiled which included the location of existing infrastructure with excess pressure, and corresponding historical flow and pressure readings.

REDAWN thus had an impact at several levels. It enabled the reduction in the energy consumption of water distribution systems and in the energy costs for water utilities, large industrial users, and agricultural producers. It has also contributed to improve competitiveness of SMEs and industry through reduced water-related operating costs, as well as to improve the environment for food production through cheaper and less energy intensive irrigation capacities. REDAWN also enabled the reduction in the cost of water supply to socially disadvantaged people.

*“The nature of this project challenge required an integrative response that crossed many boundaries and borders – discipline, practice, industry and national. REDAWN enabled the engineering, environmental science and business researchers to interact directly with practitioners from European industry. Together, these partners are committed to bringing their established expertise to the table and open to learning with, through and from each other”*

**Prof Paul Coughlan**  
Trinity College Dublin Business School

**16 partners**

12 regions  
(PT, ES, FR, IE, UK, IT)

**4**

demonstration sites

**4**

policy and institutional support tools

**34**

publications



## SEAFUEL



RESOURCE  
EFFICIENCY

Lead Partner: National University of Ireland Galway (IE)

Duration: 2017-2022

Total budget: 3.50 M€

[www.seafuel.eu](http://www.seafuel.eu)

### Sustainable integration of renewable fuels in local transportation

One of the main objectives of the European Green Deal is to increase the use of clean vehicles and alternative fuels, in order to reduce greenhouse gas emissions in 90% by 2050.

According to the European Hydrogen Strategy, fuel cells can play a significant role in the decarbonisation of the transport sector by the implementation of hydrogen.

SEAFUEL supports the production of green hydrogen using renewable energy available, such as solar, wind and marine, as an alternative fuel in remote Atlantic regions. In these regions there's the challenge of the high cost of electricity and fuel and their dependency on mainland infrastructures. The goal is to demonstrate the feasibility to power local transportation networks and hence support the transition towards a low-carbon economy.

SEAFUEL is demonstrating for the first time the production of hydrogen using solar energy and seawater, used to power a fleet of fuel cell vehicles in Tenerife. These SEAFUEL fleets are supplied in a fuelling station settled on the Institute of Technology and of Renewable Energies in Tenerife. The station and vehicles prove the

technological, social and economic viability of using green hydrogen in transport. The next step is to scale-up both the green hydrogen production and the amount of fuel cell vehicles on the roads in Tenerife, and ensure the transfer of this pilot to other Atlantic regions.

SEAFUEL enhances the green growth and blue economy and paves the grounds for common renewable energy policies to promote clean and sustainable transport systems.

*“A project like SEAFUEL stands in a prominent place in our agenda and in our vision of Tenerife’s future, from which the population as a whole will benefit”.*

**Enrique Arriaga**  
First Vice-President and Councillor at the Innovation Area from Cabildo de Tenerife

**18 partners**

11 regions  
(PT, ES, IE, UK, BE)

**8**

fuel cell vehicles

**1**

hydrogen fuelling station

**5**

renewable energy roadmaps

# 03

## Territorial Risks



### **Strengthening the territory's resilience to risks of natural, climate and human origin**

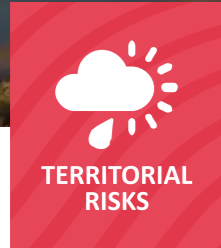
Projects in this priority promote better management of the environment so that regional authorities and relevant stakeholders are better prepared to adapt to climate change and to potential risks occurring in the Atlantic territory. They consider an integrated territorial management that includes aspects related to the prevention and management of the common risks that the Atlantic regions face, arising from both natural and human activities, including maritime economic activities.

\* Data from project partners includes associated partners





## AA-FLOODS



- Lead Partner: Agencia de Régimen Especial del Ciclo Integral de las Aguas del Retortillo (ES)
- Duration: 2019-2023
- Total budget: 2.93 M€
- [www.aafloods.eu](http://www.aafloods.eu)

### Enhanced prevention, warning, coordination and emergency management tools for floods at local scales

The occurrence of various natural phenomena, such as storms or cyclones, causes major coastal floods in several urban and rural areas with extremely violent effects in all countries of the European Atlantic region, affecting a considerable number of people.

The lack of local planning management, the difficulties in cooperation among different public bodies on planning and managing an emergency, and the accuracy of the flood modelling used are also challenges for flood management.

AA-FLOODS develops models for local action plans on flood risk management and on new methodologies for flood modelling and early warning. The ultimate goal is to reduce human and material damages due to flooding by improving the tools of prevention, alert and crisis management, and transferring regional tools and capabilities to the local scale.

Greater proximity to those affected and more precise and detailed analysis will lead to more effective prevention, preparation and protection against floods.

The project developed three pilots in spots that suffer periodical floods due to torrential rains: in five Andalusian towns and in Genil River, in Spain, and in Arade River in Portugal. The use of 3D cartography obtained with LIDAR technology in water flows modelling helped to improve the design of sanitation networks to evacuate rainwater more effectively in periods of torrential rains. It also helped to improve the management of the reservoirs when they reach the maximum capacity.

The results of these pilots are being applied to four Local Flood Risk Management Plans, in very specific points where maximum coordination and clear protocols are needed to prevent, manage or recover from a flood.

The approval of political and technical documents by Regional and Local Authorities thus guarantee long term effects in the development of new tools to prevent future floods in the Atlantic Area.

*“ All of us have to translate EU Directives on Water, but the way each Member State implemented the transposition is different and enriched (or not) by its own legal tradition, or by their political culture or social attitude ”*

**Miguel Gil Alonso**  
expert in Land Use Planning & Regional Development

**9 partners**

7 regions  
(PT, ES, FR, IE, UK)

**3**

pilots using  
LIDAR  
technology

**4**

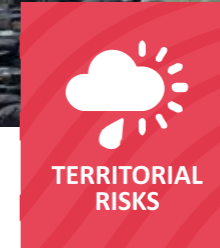
local plans for  
flood risk  
management

**270.000**

people protected  
from flood risks



## AGEO



- Lead Partner: Instituto Superior Técnico (PT)
- Duration: 2019-2023
- Total budget: 3.22 M€
- [www.ageoatlantic.eu](http://www.ageoatlantic.eu)

### Platform for Atlantic Geohazard Risk Management

The Atlantic region is exposed to a range of high-impact events and various hazard risk scenarios which, due to the high cost of mitigating action, lack the level of preparedness for effective monitoring and response.

The AGEO project aims to engage with local communities to actively participate in risk preparedness and monitoring, and incorporate local capacities into risk management systems.

The project launched several Citizens Observatory pilots on geohazards according to regional policies, to demonstrate how citizens involvement in geohazard risk prevention can strengthen regional and national risk management systems.

It encouraged the use of services provided by European Spatial Data Infrastructures, such as Copernicus or European Geological Data Infrastructure at regional level.

AGEO also created a cooperation and resource platform on Atlantic geohazards risk assessment, preparedness, mitigation and prevention. The delivery of concrete case studies confirms the capacities of Citizens Observatories in improving risk management systems. Five pilots were organised in several Atlantic regions, in order to test the capacities of Citizen Observatories in geohazard management.

AGEO also promoted the interlinking of coastal and ocean observation, maritime safety, coastal structures and their forecasting models, through the development of methodologies, technologies, procedures, evaluation and compensation of damages linked to risks, with practical 'on-the-ground' demonstrations.

The experience gained during the implementation of the Citizens Observatory pilots will be used to formulate recommendations for the creation of future observatories in response to the widest range of hazards (both natural and human-induced) in the Atlantic region.

*“ The AGEO project allows to raise awareness and inform participants of the Local Civil Protection Unit, as well as the rest of the community, about hydrogeomorphological and geological risks, using tools such as the community seismograph, involving citizens in monitoring the geological phenomenon, promoting curiosity about these risks. This results in participatory citizenship in which the citizen seeks a greater risk literacy, avoiding situations of alarmism, recognising the existence of these risks and the safe behaviors to adopt.”*

**Ana Peixoto**  
Núcleo de Proteção Civil do Funchal

**13 partners**

6 regions  
(PT, ES, FR, IE, UK)

**5**

Citizens  
Observatory pilots

**1**

Citizens  
Observatory app

**1**

strategic  
recommendation



## AGRITOX



- Lead Partner: Universidad de Santiago de Compostela (ES)
- Duration: 2019-2023
- Total budget: 1.95 M€
- [www.agritox.eu](http://www.agritox.eu)

## Prevention and mitigation of the mycotoxin contamination of food and feed caused by climate change

Mycotoxins are compounds produced by filamentous fungi, some of which are known to be toxic to humans and animals. Mycotoxin contamination impacts, not only human health, but also farm businesses, and this constitutes a growing challenge due to climate change and the increase of temperatures it brings with it. Food and feed industries need innovative analytic toxicity prevention strategies to produce safer food products for humans and animals.

The AGRITOX project aims to provide these Atlantic Area industries with information and technical solutions to avoid the contamination by mycotoxins.

The project is focused on the entire value chain considering the presence of regulated, emerging and modified mycotoxins in food and feed. Partners have been working on developing toxicity alert systems and risk management plans that are at the industry's disposal.

They also developed studies on the different strategies for detoxification, such as the efficacy of binders, technological treatments, and nanotechnology. In this way, specific mitigation measures will be adopted.

Different partners have developed new methods for the detection of mycotoxins, while others have advanced by performing a literature review of existing analytical techniques. The project created a database with different detection methods that can be used by the industry, according to their needs. Current detection and detoxification methods are being improved in order to guarantee the highest level of food safety.

AGRITOX will result in alert methods and risk management plans that will be available to the industry, effective and feasible. It will facilitate the adoption of safer uses by the companies, not only for better and safer cultivation, harvest and storage of human food and animal feed, but also for achieving safer food products for the final consumer, thus covering the whole value chain.

*“The Agritox project is conveying to all the agents involved in the food chain the need to establish mycotoxin analysis protocols and, at the same time, a mycotoxin alert network is being built. In this way, the quality standards of food produced in the Atlantic Area will be highly increased avoiding health risks to consumers.”*

**Luis Botana**  
Universidad de Santiago de Compostela

**11 partners**

7 regions  
(PT, ES, FR, IE, UK)

**2**

catalogues with different detection and detoxification methods

**3**

strategies for detoxification

**12**

scientific publications in high impact journals



## MyCOAST



- Lead Partner: Fundación AZTI - AZTI Fundazioa (ES)
- Duration: 2017-2023
- Total budget: 3.16 M€
- [www.mycoast-project.org](http://www.mycoast-project.org)

## Coordinated Atlantic coastal operational oceanographic observatory

The EU has been funding large-scale initiatives and programmes with the main objective of protecting, securing, and developing the potential of marine and coastal environments. MYCOAST fills the gap between products at regional scales and the end-users while addressing transnational handling of coastal observatories.

MYCOAST aims to build a coordinated Atlantic Coastal Operational Observatory joining capabilities from all the five countries and existing cross-border cooperation activities. These activities are targeted toward the improvement of coastal monitoring and forecasting tools to support threat and emergency response, such as extreme weather events, maritime safety, or coastal pollution prevention and mitigation.

The project has integrated the coastal observing systems by sharing data, experiences, and resources of the diverse systems used. It has also optimised, validated, and compared nine forecasting coastal and local tools connected to the Copernicus system, developing standardised and interoperable data systems that deliver real-time observations and model outputs.

The actions on data management promote open and free information sharing and interoperability between coastal observatories and the common European data systems (EMODnet, Copernicus INSTAC, SeaDataNet), ensuring replicability and transferability along with the Atlantic Area.

To ensure effective implementation, the tools have been jointly developed and validated together with key actors involved in managing and preventing coastal risks such as flooding or coastal erosion, water quality issues, and those responsible for managing maritime safety and response to pollution incidents.

MYCOAST is improving the awareness of these risks in the Atlantic Area and helping to identify and promote opportunities for the private sector.

*“Harmonisation, cooperation and transfer between Atlantic coastal observatories are essential to address the common challenge of coastal risks”*

**Julien Mader**  
project coordinator and IBIROOS co-chair

**22 partners**

12 regions  
(PT, ES, FR, IE, UK, BE)

**39**

dissemination and capitalisation actions

**25**

policy, strategy and operational instruments

**97**

pilot actions/case studies implemented



## NANOCULTURE



- Lead Partner: International Iberian Nanotechnology Laboratory (PT)
- Duration: 2019-2022
- Total budget: 1.47 M€
- [www.nanoculture.ciimar.up.pt](http://www.nanoculture.ciimar.up.pt)



## PRIMROSE



- Lead Partner: Marine Institute (IE)
- Duration: 2017-2022
- Total budget: 2.73 M€
- [www.shellfish-safety.eu](http://www.shellfish-safety.eu)

### Risk assessment and mitigation of the presence of engineered Nanomaterials in Atlantic aquaculture

Given the importance of the aquaculture sector for the Atlantic Area, possible adverse effects of the use of engineered nanoparticles in aquaculture should be well understood in order to ensure maximum safety of food products and the environmental-related impacts of the activity.

Therefore, the NANOCULTURE project aims to advance in knowledge, risk assessment, and mitigation of the environmental presence of two of the most-used engineered nanoparticles in market products: titanium dioxide and silver.

NANOCULTURE is being carried out primarily with real samples destined for human consumption. The selected species, which are common in the Atlantic Area aquaculture industry, are turbot, mussels, and seaweed. Since these organisms are quite distinct, responses to nanoparticle exposure (water filtration capacities, physiological effects, uptake, and elimination profiles) will also be different.

The project has studied the current situation on the presence, transformation, bioaccumulation, and effects of titanium dioxide and silver in aquaculture products. It has also evaluated the human risk of exposure by oral intake of aquaculture products containing these identified nanoparticles, taking into account the exposure route and the transformations derived from food preparation processes (cooking).

Moreover, it has developed sensors for the rapid identification and quantification of titanium dioxide and silver in aquaculture facilities, allowing decentralised monitoring and quick implementation of measures for risk mitigation. These nanoparticle sensors will enable Atlantic aquaculture to make use of the digital revolution and provide real-time on-site monitoring.

The results achieved by NANOCULTURE can be grouped into three categories: i) advancement in knowledge related to the toxicity of engineered nanoparticles to aquaculture organisms, ii) presentation of recommendations and standard operating procedures for mitigating the risk of nanoparticles in aquaculture products, and iii) the development of new analytical methods for detection, characterisation, and quantification of metallic nanoparticles in different media.

### Predicting risk and impact of harmful events on the aquaculture sector

The aquaculture industry in the European Atlantic Area is negatively impacted by the effects of harmful bloom events where the sector relies on sufficient early warning of these events so that mitigation measures can be implemented.

The PRIMROSE project has exceeded its stated aims and objectives in its deliverables, outputs and activities to strengthen risk management systems in order to grow and innovate within the aquaculture sector. The developed end products implemented have substantially improved the predictive forecasting of Harmful Algal Blooms with a transnational and regional focus in aquaculture locations from the Shetland Islands to the Canary Islands.

The end products and activities implemented are in use for these risk management and prediction systems and are available for use of policy makers, risk regulators, food safety authorities, and the seafood industry, who will exploit existing EU investment in marine observing infrastructure.

It concerns a transnational regional portal system, proof of concept geoserver, and a bulletin report generator whose national reporting procedures were standardise and partially automated so that expert evaluators have

information to make accurate forecasts. New versions of hydrodynamic models were also validated with in situ measurements, satellite images and improved knowledge of particle transport processes in offshore areas to support advice on the risk of toxicity events and microbiological contamination.

Common best practices and methodologies for risk assessment were developed and implemented, including the use of an easily understandable traffic light risk index.

The project also carried out autonomous methods of water samples monitoring and water collection at aquacultures site using autonomous boats or aircraft.

*“As shellfish growers we are, more often than not, caught up in day-to-day operational matters at sites, involving harvesting and husbandry activities. Hence, having quick access to our bulletin is treasured by the growers here in the isles, given that it provides easy to read, very important information on bloom activity and subsequent toxin status which can seriously impact business operations. We have appreciated greatly the additional input provided by PRIMROSE to bring enhanced and innovative measures to our forecasts.”*

**Kenny Pottinger**  
Chair of Seafood Shetland shellfish growing committee

**8 partners**

5 regions  
(PT, ES, FR, IE, UK)

**5**

first generation  
sensors

**3**

policy  
recommendations

**10 partners**

9 regions  
(PT, ES, FR, IE, UK)

**1**

transnational data  
portal with numerous  
data layers

**62**

responses from  
an online survey about  
the aquaculture sector

**12**

peer reviewed  
publications in  
the research topic





## RISKAQUASOIL



- Lead Partner: Association Climatologique de la Moyenne-Garonne et du Sud-Ouest (FR)
- Duration: 2017-2023
- Total budget: 2.31 M€
- [www.riskaquasoil.eu](http://www.riskaquasoil.eu)

## Atlantic risk management plan in water and soil

The Atlantic regions present high exposure to climate change. The increased intensity and frequency of storms has altered the hydrological cycle, temperature and precipitation patterns, with implications for the agricultural sector. However, there are still uncertainties in how climate change, directly and indirectly, affects agricultural and food systems.

The RISKAQUASOIL project aims to develop a comprehensive management plan for risks in soil and in water to improve the resilience of the Atlantic rural areas. Through transnational cooperation, the project partners fight the adverse effects of climate change, especially on agricultural lands.

This integral plan entails three stages. First, the early warning and diagnosis which consists in testing new low-cost techniques to measure and forecast the local impact of different meteorological phenomena. These techniques provide accurate data that will result in a better early detection system.

Diagnosis activity will be enlarged with climate scenarios and forecasts and the improvement of climate information services to farmers. Second, the implementation and adaptation, which consists in developing several pilot

actions in agricultural lands that permit better soil and water management taking into account the risks associated with climate change. Third, the capacity building and dissemination, which consists of training and commitment of local communities and farmers for an increased capacity building, information and cooperation in risk management and damage compensation systems.

The RISKAQUASOIL is thus contributing to better coordination for the detection, risk management and rehabilitation for rural territories, associated to natural, climate and human origin. The project also ensures articulation with national, regional and local policies.

*“The Syndicat mixte ouvert Epidropt was able to benefit from support under the RISKAQUASOIL project. A weather and water level warning station was installed on the river Andouille, a tributary of the Drop. This river had not been monitored although it has experienced exceptional flooding events in the past. This information was coupled with erosion maps, which allowed us to better understand the functioning of our catchment area, the practices and crop rotations to fight against erosion phenomena.”*

**Stéphane Jarleton**  
Director of Epidropt

**18 partners**

10 regions  
(PT, ES, FR, IE, UK)

**3**

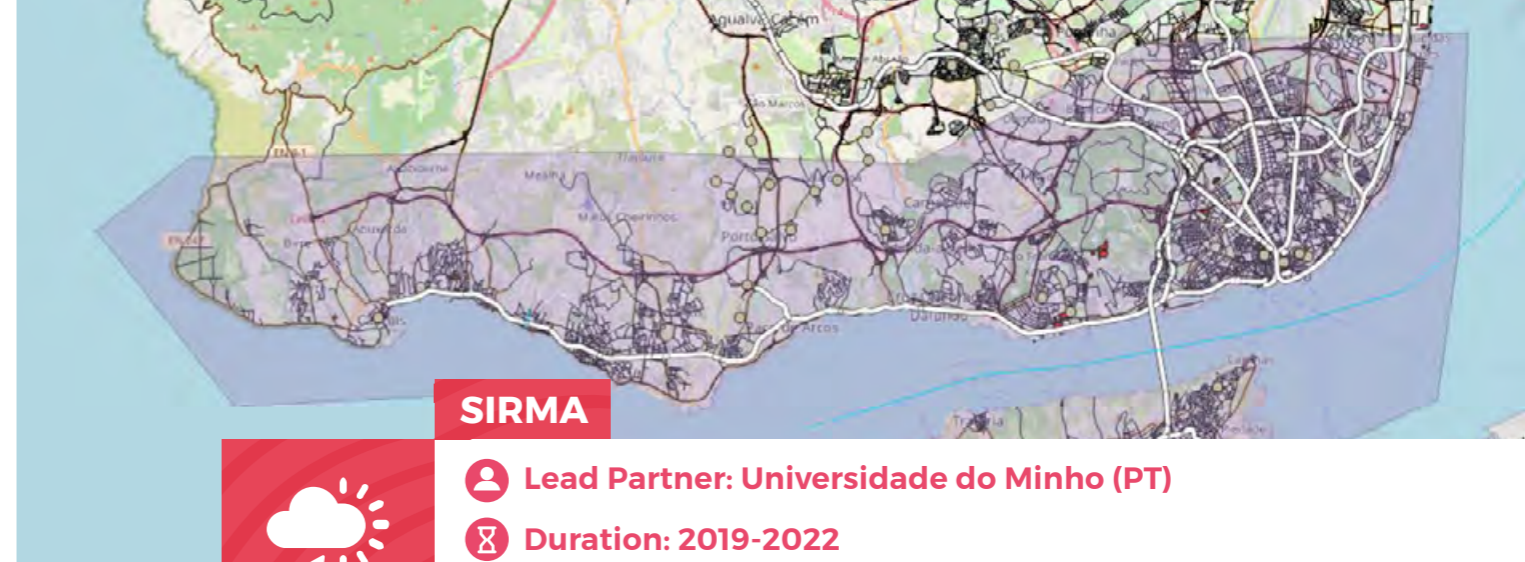
new techniques to measure meteorological phenomena

**6**

pilot actions in agricultural lands for better soil and water management

**50**

training actions in 5 countries



## SIRMA



- Lead Partner: Universidade do Minho (PT)
- Duration: 2019-2022
- Total budget: 2.02 M€
- [www.sirma-project.eu](http://www.sirma-project.eu)

## Strengthening infrastructure risk management in the Atlantic Area

Most of the transportation of people and goods in the Atlantic Area is made through rail and road. The performance of this infrastructure is directly affected by extreme natural events and the strong corrosion processes that result from its proximity to the Atlantic Ocean.

SIRMA project aims to develop a robust framework for the management and mitigation of such risks, by implementing immediate, medium, and long-term measures, thus increasing the resilience of transportation modes, which consider both road and railway infrastructure networks.

SIRMA is implementing an innovative infrastructure risk management system, able to anticipate the occurrence and impact of extreme events, as well as to integrate knowledge about short-term actions (management of emergencies) and medium to long-term actions (strategic measures to improve the structural response of critical assets). With this framework, it will be possible to take optimal risk mitigation measures and this way strengthen the territory's resilience to several types of risk.

A database of relevant climatic indicators was compiled to allow natural events forecasting. Likewise, a database of risk mitigation measures is being prepared to support the decision-making process. A tool integrating all this information is under development and it is expected that transportation managers using it would find risk-based management a feasible process to increase transportation networks' resilience.

In the long term, it is expected that, for the selected test beds, the developed and implemented risk mitigation measures will reduce the consequences of extreme natural hazards, such as floods and fire, for people and the local and national economies.

Such framework should then be generalised and implemented in other countries (inside and outside the Atlantic Area) and extended to other stretches of rail and road infrastructure in Ireland/UK and Portugal.

**10 partners**

9 regions  
(PT, ES, FR, IE, UK)

**1**

climate indicators database to be used by researchers and decision-makers

**1**

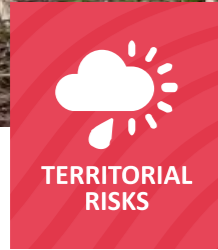
methodology for vulnerability assessment of coastal infrastructures

**1**

database of risk mitigation measures



## TRIPLE-C



 **Lead Partner: Association Climatologique de la Moyenne-Garonne et du Sud-Ouest (FR)**

 **Duration: 2019-2023**

 **Total budget: 1.81 M€**

 **[www.triplecproject.eu](http://www.triplecproject.eu)**

## Capitalising climate change projects in risk management for a better Atlantic Area resilience

In the past, communities have mainly operated in isolation from each other when dealing with climate change and disaster management. Greater cooperation would increase the effectiveness of reducing people's vulnerability to rising insecurities and strengthen the Atlantic Area resilience.

The TRIPLE-C project responds to the urgent need of achieving a closer collaboration between the different climate change-related initiatives carried out across Europe, thus contributing to strengthening the territory's resilience to climate and risks of natural origin.

The project is focused on the analysis, evaluation and capitalisation of successful EU projects and on the prevention and management of risks associated with climate change, aiming at disseminating and transferring the best practices and results identified into policy making.

Through its platform and the compendium of capitalised projects, TRIPLE-C shared these best practices and results across Europe. This platform, allows practitioners, local,

regional and national authorities to attain access to continuous learning.

Research missions, knowledge events and networking activities were carried out, creating synergies among projects and partners and building up a network to reinforce and enlarge the capacities in management action plans and strategies of the Atlantic territories.

So far, TRIPLE-C has identified and capitalised 259 different EU projects, from which 129 good practices have been extracted and studied in depth. Moreover, TRIPLE-C partners have carried out over 40 bilateral interviews with capitalised projects representatives in order to obtain first-hand information about the initiatives.

*“ Although climate change is already having negative consequences for the growth of the agriculture and forestry sectors, among others, at the same time it also represents a very powerful a driving force for research and innovation as well as to start working on the right direction, that is, advancing towards a more sustainable way of life.”*

**Carlos Garbisu**  
Scientific Director, NEIKER  
(Basque Institute of Agricultural Research and Development)

**27 partners**

14 regions  
(PT, ES, FR, IE, UK)

**1**

long-lasting platform

**259**

projects identified and capitalised

**129**

best practices identified

# 04

## Biodiversity, Natural & Cultural Assets



### Enhancing biodiversity and the natural and cultural assets

Projects in this priority address the need of protecting the environment and promoting cultural identity in order to make the Atlantic region a more attractive place for local communities and visitors. Securing its vast natural heritage and the richness of the existing natural resources, as well as further protecting the cultural heritage gives the Atlantic Area its unique character is the key to promote a sustainable economic and territorial development.

\* Data from project partners includes associated partners





## 3DPARE



- Lead Partner: Universidad de Cantabria (ES)**
- Duration: 2017-2023**
- Total budget: 2.17 M€**
- [www.3dpare.eu](http://www.3dpare.eu)**

## Artificial reef 3D printing for Atlantic Area

Natural reefs in the Atlantic are disappearing due to a combination of factors such as overfishing, pollution, pathogenic diseases, or even the effects of human activities. These have an impact on marine ecosystems such as loss of population and species, migration and establishment of invasive species.

The use of artificial reefs on the Atlantic coast might be the answer to help increase populations of organisms associated with natural reefs, as many commercial fish or invertebrates, and can create an attractive environment for activities such as diving.

The 3DPARE project develops innovative artificial reefs for the sustainable management of the marine ecosystems of the Atlantic Area. The artificial reefs' design has a high impact on the ecological effects.

So, to increase the affinity of marine organisms and promote biodiversity, biodiversity-oriented reefs have been built with sustainable and innovative techniques using 3D printing technology and natural and renewable raw materials to stimulate colonisation.

By assessing the impact of the immersion of artificial reefs in the Atlantic coast the project will deliver several ecological and technological results, as well as strategic reports and guidance to influence public authorities, environmental bodies and policy-makers to adopt 3DPARE technology.

This project also plays an important role in raising stakeholders' awareness of the capabilities of 3D-printed reefs as environmentally friendly infrastructures.

*“3DPARE is a clear example of how multidisciplinary teams (biologists & engineers) and organisations can work together to meet a common goal: study the potential of using artificial reefs made with 3D printing to enhance biodiversity in impoverished habitats while promoting social awareness on marine ecosystems protection through diffusion activities”*

**Christian Manrique**  
Head of Infrastructures, Public Property and Environment at Santander Port Authority

**17 partners**

6 regions  
(PT ES FR UK)

**26**

international experts

**36**

artificial reefs fabricated through 3D printing

**9**

monitoring campaigns



## ALICE



- Lead Partner: Universidad de Cantabria, Environmental Hydraulics Institute (ES)**
- Duration: 2017-2023**
- Total budget: 3.40 M€**
- [www.project-alice.com](http://www.project-alice.com)**

## Improving the management of Atlantic landscapes: accounting for biodiversity and ecosystem services

An integrative landscape management approach incorporating future scenarios is critical to meet EU biodiversity targets and sustainable development in the Atlantic region. However, there is a lack of common methodologies and integrated policies for assessing biodiversity patterns and ecosystem service fluxes across coastal, freshwater and terrestrial ecosystems.

In this context, ALICE project has advanced in the characterisation of biodiversity and the evaluation of ecosystem service at the land-sea interface in order to assess the delivery of benefits from investments in Blue and Green Infrastructure Networks (BGINs) in the coming decades.

The project is focused on the development of participative learning and modeling approaches by engaging stakeholders and policy makers since early steps of implementation, in order to identify the barriers to the delivery of implementation of BGINs across 4 case studies in Portugal, Spain, France and UK-Ireland.

As main achievements, the highlight goes to the development of a multi-model platform capable of integrating terrestrial and aquatic ecosystem models into demonstrative exercises of BGINs. This enables designing resilient landscapes with regard to global change effects in different socioecological scenarios, opening a public debate of their efficient implementation.

Another major contribution is the identification and classification of barriers that slow down or even prevent the implementation of BGINs globally, contributing to a participatory culture that will be maintained and remain stable in the long term. ALICE is assessing landscape functioning in an integrated manner and moving cutting-edge science towards the local economy and stakeholders' perception, connecting what is simply desirable from an environmental point of view to what is actually possible to undertake in real socioecosystems.

*“The whole project is very interesting and the opportunity maps is something that we have certainly thought about within ourselves in targeting areas across Northern Ireland and wider European areas (...) certainly shown how you can do that in practice and then possibly targeting those areas with different levels of funding. The project is very encouraging”*

Local policy maker

**16 partners**

8 regions  
(PT, SP, FR, IE, UK, NE)

**4**

case studies

**12**

BGINs deployed for present and BAU scenarios

**3**

strategies to fight climate change



## ATLANTIC CULTURESCAPE



BIODIVERSITY,  
NATURAL &  
CULTURAL  
ASSETS

Lead Partner: Newry, Mourne and Down District Council (UK)

Duration: 2019-2022

Total budget: 2 M€

[www.atlanticculturescape.eu](http://www.atlanticculturescape.eu)

## Intangible cultural heritage inspired by designated land and seascapes in the Atlantic Area

The Atlantic Area regions have a rich intangible cultural heritage. The AtlanticCultureScape project enhances the tourism offering through the sustainable integration of Intangible Cultural Heritage (ICH), thereby stimulating increased economic gain, which improves the lives of those who live, work or visit the Atlantic regions. The aim is to offer visitors a truly unique and regional experience reflective of the Atlantic culture, heritage, and identity.

The project delivers creative and innovative solutions to maximise common opportunities, by encouraging networks and entrepreneurs working in this field to collaborate with each other, and assist them in bringing these products to market.

Thus, AtlanticCultureScape carried out an inventory of ICH entrepreneurs, which received guidance and integrated the management of destinations and their governance.

A Marketing Plan was also prepared to promote the recognition of ICH as an economic asset worthy of protection by key policymakers at local, national, and Atlantic area levels.

The aim is thus to achieve greater value by the local community of cultural assets and enhanced community cohesion. In terms of tourism, it is expected an enhanced enjoyment of authentic cultural experiences leading to return visits and enhanced integration of ICH sector into the destination and its management, resulting as well on enhanced confidence in ICH entrepreneurs. The delivery of an Atlantic Area Route allows thus to raise the profile of the sector through transnationally organised marketing, including publicising the ICH inventory and seeking the involvement of several entrepreneurs across the Atlantic Area.

*“Three years ago I had been happily making lace amongst a small group of local Lace-makers and yet I was also acutely aware of the need to do something more and possibly something different to safeguard this beautiful craft from dying out in the locality. The Atlantic Culturescape project couldn't have been timelier. I knew I was on the right pathway pretty much straight away as the ethos of the programme really spoke to me in terms of the importance of sharing the story of a place through the traditions and the customs of her people”*

**Rosie Finnegan-Bell**  
Lace, Love & Forget-me-nots

**19 partners**

10 regions  
(PT, ES, IE, UK)

**50**

fully trained ICH  
entrepreneurs

**7**

training  
programmes

**1**

Atlantic Area  
Route



## ATLANTIC-GEOPARKS



BIODIVERSITY,  
NATURAL &  
CULTURAL  
ASSETS

Lead Partner: Universidade de Trás-os-Montes e Alto Douro (PT)

Duration: 2017-2022

Total budget: 1.95 M€

[www.geotourismroute.eu](http://www.geotourismroute.eu)

## Transnational promotion and cooperation of the Atlantic Geoparks for sustainable development

Tourism is one of the economic sectors with the greatest potential to generate future growth and employment in the EU, although it is facing a competitive and changing global scenario.

The ATLANTIC-GEOPARKS project aims to promote territorial development linked to Geotourism, and to enhance UNESCO Global Geoparks and aspiring territories as a means of sustainable development, conservation, and geodiversity throughout the Atlantic Area.

The main objective of this project is the promotion of the Atlantic Geoparks as a unique, leading tourist destination through the right balance between the protection of the environment and the development of economic activities.

The development of Geotourism in several destinations in the Atlantic Area through the creation of the European Atlantic Geotourism Route, is one of the main outputs of this project. This route includes diverse territories, countries, habitats, languages and cultures, providing visitors with the highest quality experiences,

helping to power local economies and cultural activities and, in so doing, protecting these breathtaking and unique natural landscapes.

As main results of this project are the increase of tourist flows and an upturn in economic activity, the creation of new businesses with a direct positive impact on employment, the cataloging of new territories as UNESCO Global Geoparks and the contribution to the comprehensiveness of public policies valuing the cultural and natural assets, in view of local economic development.

ATLANTIC-GEOPARKS also works to raise awareness of the public authorities about the need to legislate and manage the geological areas, under economic and environmental sustainable criteria supported by European policies and the recommendations of UNESCO.

*“The Atlantic-Geoparks enabled the North Pennines team to do some of the interpretation and education projects we've wanted to do for some time, but link them to other work across our network”*

**Chris Woodley-Stewart**  
Director of North Pennines AONB & UNESCO Global Geopark

**13 partners**

11 regions  
(PT, ES, FR, IE, UK)

**1**

European  
Atlantic  
Geotourism Route

**2**

aspiring  
UNESCO Global  
Geoparks

**1**

Geopark  
Management  
Toolkit



## ATLANTICONBIKE



BIODIVERSITY,  
NATURAL &  
CULTURAL  
ASSETS

- Lead Partner: Conseil départemental des Pyrénées-Atlantiques (FR)
- Duration: 2017-2023
- Total budget: 5.48 M€
- [www.atlanticonbike.ie](http://www.atlanticonbike.ie)

### The EuroVelo 1, a unique cycling-tourism destination for a green growth

Europe is the world's leading destination for cycle tourism. Cycle tourism represents a great opportunity for green growth and the blue economy.

The ATLANTICONBIKE project aims to develop and promote EuroVelo 1 - Atlantic Coast Route, one of the fifteen long-distance European cycle routes and the longest route of the EuroVelo network, running along the continent's coastline from the north of Norway to the south of Portugal totalling over 11,000 km.

The project developed a transnational cycle tourism strategy based on the natural and cultural assets of the EuroVelo1, thus contributing to a low carbon tourism development (car-free tourism), to generate and monitor economic benefits at territorial and transnational levels.

ATLANTICONBIKE created a touristic marketing strategy based on co-creation, and created joint transnational touristic products (such as cycling and gastronomy, biking and fishing, suitable circuits) accessible to a wide public within a sustainable design. It also ensured consistency of services provided along the route (as accommodation, rental, and tourist sites) to customers, by establishing a common method for evaluating

touristic visits and economic benefits, and by creating a transnational platform for data sharing and proceeding.

ATLANTICONBIKE enhanced the emergence of EuroVelo 1 ambassadors' cities network that will foster the development of local policies in favor of cycling mobility, and the creation of a bicycle community for the dissemination of cycle tourism and trips.

For the partnership, the project is the guarantee of a capitalisation of best practices and a training program implemented for and by all the involved stakeholders.

This project is then generating positive impacts on the local economy by increasing visits, boosting the local economy, and creating new activities and new jobs in this sector, by providing new touristic offer access to a large range of the population.

*“The Atlantic coast route is a response to the new expectations of citizens. Indeed, this unprecedented health crisis has revealed an awareness of the ecological transition, particularly through bicycle mobility. It has also accelerated the need for sustainable tourism, which is one of the main objectives of this project”*

Jean -Jacques Lasserre  
President of Conseil Départemental des Pyrénées-Atlantiques

**26 partners**

19 regions  
(PT, ES, FR, IE, UK, BE, NO)

**1**

EuroVelo1  
network

**67**

news touristic  
pack

**80%**

of the route  
is signed



## ATLANTIC-POSITIVE



BIODIVERSITY,  
NATURAL &  
CULTURAL  
ASSETS

- Lead Partner: Fundación Centro de Estudios Eurorrexionais Galicia-Norte de Portugal (ES)
- Duration: 2019-2023
- Total budget: 2,35 M€
- [www.atlanticpositive.eu](http://www.atlanticpositive.eu)

### Conservation of Atlantic pollination services and control of the invasive species *Vespa velutina*

Invasive species do not understand political boundaries and spread through territories depending on their biological capacities and environmental factors. *Vespa velutina* is a great predator of bees and other pollinators. It was accidentally introduced into Europe, is found in most Atlantic regions and poses a threat to biodiversity. The ecosystems of Spain, France and Portugal have suffered irreversible damage and it became necessary to sustain the spread of the pest so that it does not affect the ecosystems of the United Kingdom and Ireland.

The ATLANTIC-POSITIVE project aims to contribute to the preservation of pollination services through the development and test of new methods for the control of *Vespa velutina*, to minimise the impact of this invasive species on ecosystems and on the socioeconomic development of the Atlantic Area. The project created protected areas in rural and peri-urban natural environments to fight against the species in highly affected areas and prevent the spread of these invasive species.

To achieve this goal it was created a transnational cooperation network to devise new control methods for the implementation of joint activities. The synergistic collaboration between scientists and technologists from various disciplines helped curb the spread of this pest, especially, in the natural ecosystems most sensitive to changes caused by it and the consequent reduction of pollinators.

The techniques researched and implemented in the project are expected to have a clear benefit on ecosystem protection. In addition to this research process, awareness and training campaigns were carried out throughout the project.

A Strategic Atlantic Plan was developed to protect biodiversity and ecosystem services against this scourge. This common strategy, with its own guidelines and procedures, was created for the entire region thus improving the economic situation of a productive sector heavily affected by this pest.

*“This is a project of great social and economic interest for the entire Atlantic area”*

Manuel Joaquín Reigosa Roger  
chancellor of the University of Vigo

**30 partners**

12 regions  
(PT, ES, FR, IE, UK)

**1**

international  
congress

**4**

training  
sessions

**1**

strategic  
Atlantic plan



## ATLAS.WH



- Lead Partner: Câmara Municipal do Porto (PT)
- Duration: 2017-2022
- Total budget: 1.73 M€
- [www.atlaswh.eu](http://www.atlaswh.eu)

### Heritage in the Atlantic Area: Sustainability of the Urban World Heritage Sites

These studies served to inform the Management and Sustainability Plans whose elaboration and implementation is one of the main objectives of this project. Each plan is used to effectively manage the site, taking into account current challenges and to protect, sustain and enhance the Site's Outstanding Universal Value.

The transnational partnership publicised the results for the Atlantic Area cities and beyond, which could be replicated and adapted, spurring heritage-led economic development.

*“The Atlas World Heritage project has benefited the city of Edinburgh and the Council greatly by sharing the latest best practice and learning across international boundaries in sustainable heritage management research - providing frameworks, principles, methods and forums for discussion on how to shape the next management plan for our World Heritage Site off the back of the expertise afforded by the project.”*

**Christina Sinclair**  
Director, Edinburgh World Heritage

The urban World Heritage Sites (WHS) represent an important cultural value in the context of the Atlantic Area.

ATLAS.WH project aims to create a network of urban WHS by addressing common challenges related to the protection of their identity, while enhancing their cultural assets, in order to stimulate heritage-led economic and cultural development. Each of these WHS faces challenges related to tourism, population, risk management, climate change, energy efficiency, among others.

This long-lasting network facilitates the dissemination of good practices, the development of strategies, public policies, governance models and the strengthening of cooperation with a view to urban sustainability and the social well-being of populations.

Throughout ATLAS.WH, several studies were carried out to better understand the reality of each WHS and to develop a common approach to the identified challenges, namely: “Diagnostic Study”; “Thematic Study on Common Challenges”; “Methodology” and “Firenze, Santiago de Compostela, Edinburgh, Porto, Bordeaux: mind the map”.

**5 partners**

5 regions  
(PT, ES, FR, UK, IT)

**5**

management and Sustainability Plans

**4**

studies

**1**

cartographic atlas with 60 comparative maps



## CABFISHMAN



- Lead Partner: Fundación AZTI - AZTI Fundazioa (ES)
- Duration: 2019-2023
- Total budget: 2.48 M€
- [www.cabfishman.net](http://www.cabfishman.net)

### Conserving Atlantic biodiversity by supporting innovative small scale fisheries co-management

CABFISHMAN also developed an operational tool to assess the impact of the small-scale fishing gear on the marine environment by considering physical, biological and chemical issues. Moreover, estimations of the net economic value and the carbon footprint spatial distribution across small-scale fishing grounds have been produced.

Small-scale fisheries represent an important sector of many Northeast Atlantic fleets and are receiving growing attention as part of the Common Fisheries Policy reform and Maritime Spatial Planning initiatives. Several recent studies have highlighted the need to improve available knowledge of small-scale fisheries to secure their sustainable development.

A multidisciplinary team gathered data on small-scale fisheries cultural heritage in France, Ireland, Portugal, the United Kingdom and Spain, registering a total of 1,233 references and documents, including printed materials, films/videos, web pages, inventories, leaflets, posters, etc. This new knowledge was updated and mapped, shared to the small-scale fisheries platform using a Geotool prototype.

CABFISHMAN aims to improve the protection of the marine environment and marine resources in the Atlantic Area by establishing an ecosystem-sensitive approach to the management of small-scale fisheries and promoting a collaborative approach between stakeholders, where fishers work confidently alongside managers, government officials and scientists.

By proposing measures for the implementation of an ecosystem approach to small-scale fisheries, CABFISHMAN is contributing to the goals of the EU Biodiversity Strategy and the Maritime Strategy for the Atlantic Area.

To enhance knowledge of best-practice methods of data collection in small-scale fisheries, enabling their effective management, CABFISHMAN produced a comprehensive overview of the various methodologies, census and sampling approaches available for use, with an evaluation of the advantages and disadvantages of each, and recommendation of best practices.

*“To ensure Small Scale Fisheries remain sustainable we need to understand how to manage their impacts on marine ecosystems”*

**Dr Mark James**  
University of St Andrews

**28 partners**

15 regions  
(PT, ES, FR, IE, UK)

**1**

small-scale fisheries stakeholders platform

**1**

geotool prototype for the Atlantic Area

**1**

operational tool to assess the SSF fishing gears impact on marine environment



## CAPITEN



BIODIVERSITY,  
NATURAL &  
CULTURAL  
ASSETS

Lead Partner: Région Bretagne (FR)

Duration: 2017-2022

Total budget: 2.93 €

[www.capiten.eu](http://www.capiten.eu)

## Atlantic cluster for the technology and economic innovation in nautical sector

The nautical industry offers significant potential for job creation and is a vector for economic development and wealth for the Atlantic Area territories. The CAPITEN project aims to foster the tourist economy, and promotes a sustainable approach in the nautical industry in its various activity sectors.

CAPITEN operates in three innovation clusters: design of innovative marine leisure products, innovations in yachting and technological and industrial innovations.

This project has two main goals: first, to promote economic development and jobs by enhancing the local natural and cultural heritage, and second, to create an industry cluster to organise its concerted development, promote the emergence of innovative products and services, bolstering the attractiveness of the destination resorts, and the wellbeing of the local residents while attracting a new tourist clientele.

For these purposes the project implemented a series of actions related to innovative products, integrating new technologies or suggesting new activities to marine leisure users looking for a change.

The conceptualised products were mostly presented and tested at mainstream events and adjusted to best meet the needs identified and the targeted audience. These were aimed at boat clubs that seek to diversify their range of activities.

For example, it designed three prototypes of navigation supports with ecological design and improved the specifications for new services for boaters and the general public, as well as the creation of ten Atlantic Destinations routes between territories.

CAPITEN also created a database of the main processes currently used by the industry's manufacturing sector, in order to move towards a more eco-responsible industry. This database will allow to view and compare processes that have been selected for the manufacture and recycling of boats, according to environmental criteria with convincing technical results.

**19 partners**

14 regions  
(PT, ES, FR, IE, UK)

**3**

innovation clusters

**10**

Atlantic destinations routes

**3**

prototypes of eco-designed navigation supports



## CLEANATLANTIC



BIODIVERSITY,  
NATURAL &  
CULTURAL  
ASSETS

Lead Partner: Centro Tecnológico del Mar - Fundación CETMAR (ES)

Duration: 2017-2023

Total budget: 4.17 M€

[www.cleanatlantic.eu](http://www.cleanatlantic.eu)

## Tackling marine litter in the Atlantic Area

As a result of human activities, marine litter has become a serious pollution threat with environmental, human health, safety and socio-economic impacts, requiring regional collaboration.

The CLEANATLANTIC project addresses these challenges and aims to protect biodiversity and ecosystem services by improving marine debris prevention, monitoring and removal capabilities in the Atlantic Area. With these goals, the project analysed the current situation, compiling the knowledge, data and existing initiatives in the Atlantic regions. The results of this comprehensive exercise are accessible through user-friendly online products.

The project assessed data management, monitoring and recording systems and studied marine litter impacts on fauna, through desk, field and laboratory studies, thus developing new monitoring methodologies and tools. The harmful effects of butts and cotton buds and the role of marine litter as vector of non indigenous species were investigated, as well as their economic impact.

A model was developed to predict the fate of marine litter, assess the influence of river, land and ocean based sources and deliver global, regional and local maps of accumulation areas.

To prevent and remove marine litter, the project organised training and awareness-raising activities, developed pilot actions, proposed best practices for reducing inputs from the fishing and port sectors and delivered guidance for the cleaning of beach litter by local authorities.

Efficient coordination was established with competent authorities and key regional and EU stakeholders facilitating the capitalisation of results, the implementation of the Marine Strategy Framework Directive and the achievement of tangible impacts in the Atlantic Area.

CLEANATLANTIC has strongly contributed to the strengthening of EU initiatives to protect and improve the environmental state of the seas, having been recognised in a resolution adopted by the EU Parliament and awarded with the Atlantic Project Award 2021 in the Healthy Oceans and coast Category.

*“The CLEANATLANTIC project has been a key partner for OSPAR's Regional Action Plan, helping the Contracting Parties to develop and implement a range of collective actions. The CLEANATLANTIC team have led on some of OSPAR'S actions such as on the evaluation of harm from specific products, best practice on beach cleaning, and their database of measures and actions. The outputs have been integrated into OSPAR's dissemination of the Action Plan, ensuring an effective transfer from science to policy”*

**Philip Stamp**  
OSPAR Commission Secretariat Deputy Secretary

**19 partners**

12 regions  
(PT, ES, FR, IE, UK)

**9**

apps and interfaces to record or manage marine litter data

**6**

pilot actions for prevention or removal of marine litter

**26**

training and awareness raising





## COCKLES



- Lead Partner: Centro Tecnológico del Mar, Fundación CETMAR (ES)
- Duration: 2017-2022
- Total budget: 3,62 M€
- [www.ckles-project.eu](http://www.ckles-project.eu)

### Cooperation for restoring cockle shellfisheries and its ecosystem-services in the Atlantic Area

Cockles have meaningful environmental, societal, cultural, as well as economic benefits to coastal Atlantic communities, they're a delicacy of the Atlantic gastronomy and an asset for tourism. In terms of protected areas, the cockle is a key species for many top predators, such as finfish or waders.

The COCKLES project produced outcomes and tools that can be used to restore and increase cockle production and the services it provides in the Atlantic Area. It was possible to assess the health, diversity, and inter-relationships of cockle populations across the Atlantic regions by characterising population dynamics, genetic diversity, and larval transport.

Genetics research provided the basis for resistant strains and for the conservation of the genetic diversity of the populations, both at macroscale and with a case study at a lower scale in Galicia. Major threats were identified and characterised, such as diseases and invasive species. A comprehensive set of guidance, data tools, and documents gathering also best practices for producers, administrations, and environmental agencies were produced.

The knowledge on such products was capitalised and disseminated to key stakeholders, especially represented by the associated partners. They increased their capacity to exploit the available scientific knowledge and to manage this valuable resource under more sustainable patterns. The societal and cultural benefits from ecosystem services provided by cockles were assessed, quantified, and transformed into a user-friendly spreadsheet tool.

COCKLES partners were also able to deliver guidance and knowledge sharing through mutual learning, especially happening through project meetings, stakeholder workshops, training, and conferences.

Joining research efforts, sharing best practices and knowledge across the Atlantic partners, involving stakeholders, led to more sustainable management and enhanced the appreciation of the cockles within the Atlantic Area regions.

*“The project is an excellent example of the contribution that scientific analysis can make to the protection of biodiversity”*

extract of the report from the visit of the European Court of Auditors to the COCKLES project

**22 partners**

10 regions  
(PT, ES, FR, IE, UK)

**1**

GIS viewer

**1**

educational kit

**17**

publications



## DiadES



- Lead Partner: Institut national de recherche pour l'agriculture, l'alimentation et l'environnement (FR)
- Duration: 2019-2023
- Total budget: 3.01 M€
- [www.diades.eu](http://www.diades.eu)

### Assessing and enhancing ecosystem services provided by diadromous fish in a climate change context

Diadromous species (e.g. shads, lampreys, eel, salmon, and mullet) suffer a continuous decline across their Atlantic distribution, causing ecological and socioeconomic impacts on local communities. Despite significant conservation efforts, the situation remains critical because the management of these shared and migratory resources is mostly organised at the local scale, not considering interconnections between river basins. Additionally, these species are vulnerable to climate change. Therefore, a shift in their distributions would render their management an even more complex problem.

In consequence, a transnational approach is needed to enable common management for the conservation and enhancement of the ecosystem services associated with these species in the Atlantic Area that includes the explicit long-term and large-scale issues related to climate change.

To achieve this goal, DiadES aims to create innovative and collaborative tools to ignite transnational management under present and future climatic conditions. Since 2019, the project partners are working to increase the capacity of policy makers and other key stakeholders to make efficient and informed management decisions.

DiadES is finalising the development of an Interactive Web Atlas to present changes in diadromous species distributions and trends in relevant ecosystem services under climate change, promoting emerging benefits provided by these species. A Serious Game is almost ready to bring together target groups to imagine alternative management strategies in a globally changing environment.

Policy guidelines will then be formalised for a large-scale and long-term management of diadromous species, in the form of a Parliament Magazine article to reach European deputies about this critical biodiversity issue.

For three years, DiadES has demonstrated the intensity of the transnational cooperation between researchers in natural sciences and environmental economists and the increasing engagement of related managers.

*“Thanks to DiadES, the people working on the ground with diadromous species in the rivers of Gipuzkoa have been able to exchange experiences and knowledge with other stakeholders from all over the Atlantic Area. I am sure that the contacts they have made will be the basis for future collaborations”*

Estibaliz Diaz  
AZTI, Head of Sustainable Fisheries Management for ICES species

**29 partners**

14 regions  
(PT, ES, FR, IE, UK)

**1**

interactive web Atlas

**1**

serious game of a role-playing form

**1**

policy guidelines published in the Parliament Magazine in 2022



## EBB



BIODIVERSITY,  
NATURAL &  
CULTURAL  
ASSETS

- Lead Partner: Universidade de Vigo (ES)
- Duration: 2017-2022
- Total budget: 2 M€
- [www.bluebiobank.eu](http://www.bluebiobank.eu)

## European Marine Biological Resource Centre Biobank

Europe's most important marine biobanks are located in the Atlantic Area and are part of a globally distributed reference research infrastructure for fundamental and applied marine biology and ecological research, the European Marine Biological Resource Centre.

Biobanks provide marine biological resources to academic and industrial researchers, becoming the backbone for the search for unique marine genes, bioactives and biomaterials with potential for commercial development and job creation.

The EBB project contributes to ensuring the long-term practical transnational coordination of marine biobanks through the creation of the European Blue Biobank. This innovative initiative increases the diversity and quality of Marine Biological Resources made available to user communities, facilitating their biotechnological enhancement.

EBB developed electronic tools to harmonise the database structure and client-server architecture across all biobanks involved, improving overall operational standards. The project implemented standardised procedures across all biobanks for providing Marine Biological Resources samples and associated information to third parties, ensuring their traceability and compliance with the EU Access and Benefit Sharing Regulations.

The European Blue Biobank is the first project to develop and apply Good Practice Guidelines on Access to Marine Biological Resources for Commercial Research in accordance with Access and Benefit Sharing legislation, by testing flagship practical use-cases proposed by end-users.

In close collaboration with the relevant national competent authorities, the project also launched the procedure to include biobanks participating in the EBB project in the EU Register of Culture Collections.

The EBB project thus expects to lead to the establishment of a world reference marine biobank in the European Atlantic Area, promoting the blue bio-based economy in peripheral maritime regions in Europe.

*“As responsible of the transnational service provision scheme of the Plentzia Marine Station, EBB has been very useful in providing us with tools, standards and operating procedures to provide marine genetic resources either from the environment or from our samples Biobank and Microalgae Culture Collection to internal and external users in compliance with national and international ABS regulations.”*

**Ibon Cancio**  
Associate Professor in Cell Biology, University of the Basque Country

**20 partners**

14 regions  
(PT, SP, FR, IE, UK, NO)

**1**

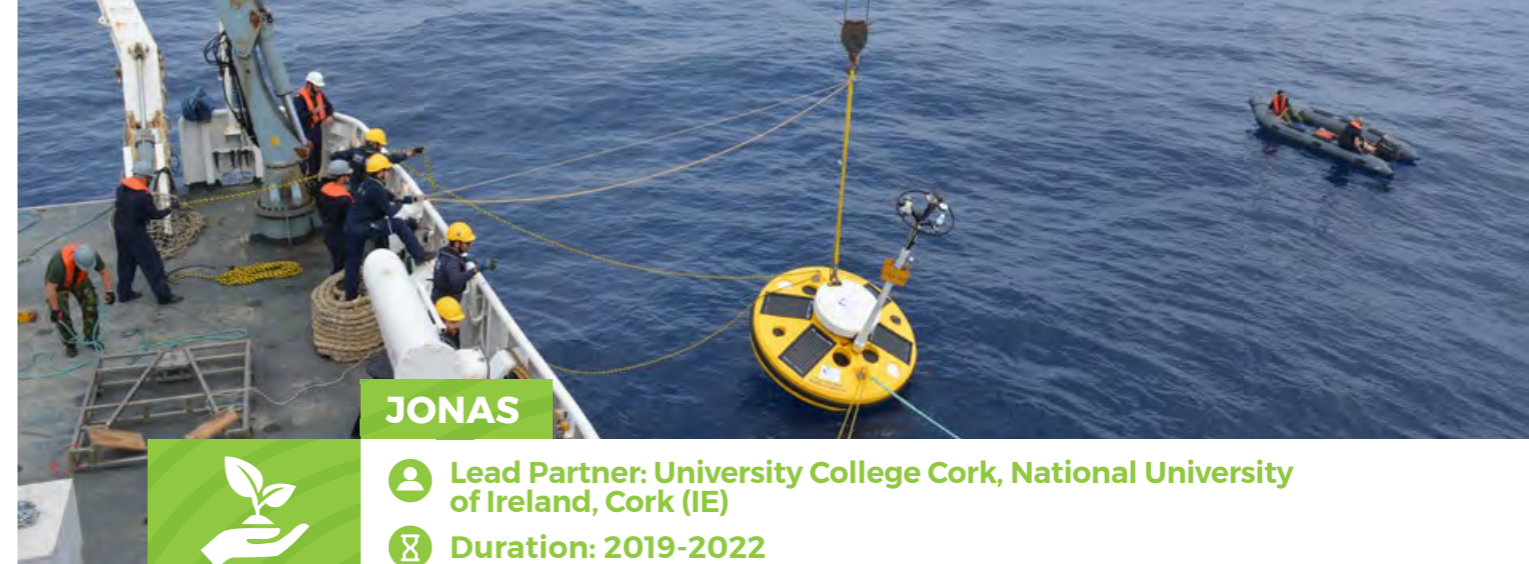
e-tool for database organisation, TRACK

**1**

centralised integrated biobank database, TRACE

**1**

practical guide for users



## JONAS



BIODIVERSITY,  
NATURAL &  
CULTURAL  
ASSETS

- Lead Partner: University College Cork, National University of Ireland, Cork (IE)
- Duration: 2019-2022
- Total budget: 2.80 M€
- [www.jonasproject.eu](http://www.jonasproject.eu)

## Joint framework for ocean noise in the Atlantic seas

Increasing human pressure on the ocean and its impact on biodiversity is a major concern to policy makers, scientists and citizens. Marine activities such as shipping offshore surveys, and construction produce continuous and impulsive noise that can adversely affect marine species.

Marine noise knows no frontiers and therefore needs to be addressed jointly and cost efficiently among the Atlantic regions, as required by the Marine Strategy Framework Directive. Pooling of knowledge, data and expertise, as well as common and harmonised methodologies, are needed to achieve effective balanced regional assessment.

JONAS addresses the risks of these acoustic pressures on marine biodiversity by improving ocean noise monitoring and risk prediction. To better examine the effects of noise on sensitive species in the North-East Atlantic Ocean, JONAS is producing monthly noise and risk maps to support better planning and decision-making in EU Member States. These maps are based on the spatial modelling of noise characteristics and the distributions of key sensitive species.

By carrying out five case studies, the project analyses the impacts and effects of acoustic pollution, including ship quieting methods, seismic survey operations, offshore wind energy devices, and acoustic deterrent devices in aquaculture.

JONAS is also developing an online noise visualisation platform, a communal workspace designed to make technical material more accessible and transform it into user-friendly tools and services for use by policymakers and researchers.

Through research and outputs, JONAS aims to support European nations in meeting the requirements of the Marine Strategy Framework Directive, the EU's legally-binding framework for protecting Europe's marine environment.

*“An underwater noise distribution map to assess the influence of shipping noise on protected species within the area was generated, from a successful collaboration between JONAS and two other Interreg projects, MarPAMM and COMPASS. This map was a benefit not only for the projects involved, but also for the stakeholders concerned with the utilisation of marine resources with consideration to key species who live in the region between Ireland and Scotland.”*

**Dr Naomi Wilson**  
MarPAMM Project Manager, AFBI, Fisheries & Aquatic Ecosystems

**14 partners**

12 regions  
(PT, ES, FR, IE, UK)

**1**

online virtual research environment platform for noise visualisation

**2**

acoustic analysis software tool

**3**

sound maps and Risk maps



## MMIAH



BIODIVERSITY,  
NATURAL &  
CULTURAL  
ASSETS

Lead Partner: Ayuntamiento de Ferrol (ES)

Duration: 2017-2022

Total budget: 3.17 M€

[www.mmiah.eu](http://www.mmiah.eu)

## Recover and valorisation of maritime, military and industrial heritage of the Atlantic Area coast

One of the main features of the Atlantic Area is its maritime dimension, which gives this territorial area a strong cultural identity. The proximity to the sea has led to an economic and urban development pattern in coastal cities, closely linked to the sea, the maritime industry, and military settlements, by the geostrategic position of many of these cities.

The crisis of the industrial activity linked to the sea and the reduction of military presence have led to the degradation of many of these facilities, which have fallen into disuse and generated in their surroundings an urban landscape of environmental and heritage degeneration.

The MMIAH project committed to the value enhancement of the urban coastal edge of the Atlantic Area through the recovery and rehabilitation of abandoned military or industrial heritage sites relating to the sea for tourism and the benefit of local communities.

Besides promoting the participation of civil society in the “ownership” of the new uses of maritime, military and

industrial heritage, MMIAH has also developed cultural tourism through historical reenactment, promoting the identity around these abandoned assets including them as an essential part of the cultural and tourism offer of the cities.

One of the main results of this project was the delivery of a White Paper presenting best practices to inform heritage regeneration within the European region and beyond for the development, interpretation, and presentation of these heritage sites. It included the existing challenges and opportunities, examining the interrelationship between the work packages and their effectiveness in delivering the project outcomes, as well as drawing final recommendations and conclusions.

The project focussed therefore on the recovery of the historical memory of Atlantic cities and established a joint model of sustainable management that can be transferable to other Atlantic cities.

*“Historically the buildings need to be preserved, but it needs to be done in a way that they can still be used. That is what the MMIAH project pursues”*

**Clare Philips**  
Visitor Services Manager at Plymouth City Council

**10 partners**

(PT, ES, FR, IE, UK)

**1**

White Paper

**9**

best practices

**1**

documentary on “Living on the Edge”



## MONITOOL



BIODIVERSITY,  
NATURAL &  
CULTURAL  
ASSETS

Lead Partner: Dublin City University (IE)

Duration: 2017-2023

Total budget: 2.48 M€

[www.monitoolproject.eu](http://www.monitoolproject.eu)

## New tools for monitoring the chemical status in transitional and coastal waters under the Water Framework Directive

The protection of waters in Europe is regulated by the Water Framework Directive, mandatory for all European Union members. Detecting and monitoring the level of contaminants in seawater and inland waterways is a key element of this Directive.

In many cases it is very difficult by traditional techniques (spot sampling) to determine metal concentrations, particularly for estuarine and coastal waters, and so there is an urgent need to find accurate, reliable, easy and cost-efficient alternatives. Passive sampling devices have several advantages compared to conventional monitoring methods, since this methodology can provide time weighted average concentrations integrated over a period of time.

The aim of the MONITOOL project is to adapt existing metal water Environmental Quality Standards for passive sampling devices (Diffusive Gradient in Thin-films: DGT-type), thus allowing their use to evaluate the chemical status of waters under the Water Directive.

In MONITOOL common guidelines were produced and followed by all partners to ensure the comparability and

reproducibility of data obtained in different partner regions. Two successful campaigns for sampling and analysis were conducted. In fact, this has been the first broad geographical scale study using this methodology, covering a variety of environmental conditions across the Atlantic and Mediterranean marine regions.

Laboratory analysis results have provided a robust MONITOOL dataset. After a statistical process, MONITOOL has successfully adapted the existing metal water Environmental Quality Standards for the passive sampling devices for cadmium, nickel and lead, as well as for the other metal ions that were studied. These results may improve the quality of the overall assessment in dynamic marine waters to comply with the European Water Framework Directive, allowing a better assessment of the sampling sites, in terms of spatial comparison and their evolution over time.

*“I am very impressed with the amount and quality of data obtained in the project. The extensive data set of 6500 concentrations of metals by DGT and spot sampling provides a solid foundation and a big step towards adopting DGT as an accepted routine monitoring tool in the Water Framework Directive.”*

**Professor Hao Zhang**  
Lancaster University, UK, and member of the MONITOOL scientific advisory board

**17 partners**

10 regions  
(PT, ES, FR, IR, UK, IT)

**2**

broad geographical-scale sampling campaigns

**6**

scientific publications

**1**

Good Practices Guide for the use of DGTs



## MOSES



BIODIVERSITY,  
NATURAL &  
CULTURAL  
ASSETS

Lead Partner: National University of Ireland, Galway (IE)

Duration: 2018-2021

Total budget: 2.20 M€

[www.mosesproject.eu](http://www.mosesproject.eu)

### Maritime, ocean sector and ecosystem sustainability: fostering blue growth in Atlantic industries

In the last decade, Europe's ocean economy has received an unprecedented level of policy attention, resulting in the implementation of strategies aimed at fostering the sustainable development of the EU's marine resources.

With this in mind, MOSES project was set up to examine the blue growth path for the sustainable development of the major Atlantic Area ocean economy sectors, such as marine and coastal tourism, shipping, marine energy and aquaculture. To do so, MOSES went beyond using key indicators of economic growth such as turnover, value added and jobs created by marine industries to assessing the impact of each activity on the marine environment and the physical vulnerability of marine and coastal areas and ecosystems to such activities.

The methodology employed contributed to the joint implementation of integrated marine industry sustainability assessment toolkits across the Atlantic region. The project also examined the possible integration of these issues into sectoral and regional development policies.

Visualisation tools such as heat maps for the vulnerability of Atlantic regions in achieving blue growth while preserving the marine environment were developed. The

project also generated activity-specific pressure indicators and cross-sectoral pressure indicators used to implement a sustainable blue growth management regime.

This permitted active collaboration between different local stakeholders and regional authorities where they can use the primary indicators and vulnerability index to gauge the relative risks faced by each coastal region and, as a result, better design appropriate policies for their coasts' protection.

MOSES thus resulted in the development of integrated marine sustainability assessment toolkits and sustainable transition plans for the marine sectors across a number of case studies.

*“ I would like to recognise the highly-relevant input from MOSES which helped us to develop different aspects of our economy analysis on the EU Blue Economy report. This project, led by SEMRU at NUI Galway, was extremely useful in terms of providing guidance on how to go beyond just recording economic indicators of the ocean economy industries to examining how the industries might transition to more sustainable forms of operation. The marine ecosystem service indicators, sustainable pathways analysis and the focus on the development of marine ocean accounts are influencing what we report on in our annual EU Blue Economy reporting series”*

**Angel Calvo Santos**  
Deputy Head of Economic Analysis, Markets and Impact Assessments Unit,  
DG MARE Directorate-General Maritime Affairs and Fisheries

**8 partners**

5 regions  
(PT, ES, FR, IE, UK)

**4**

marine industry  
sectoral analysis

**5**

case  
studies

**1**

special issue of the  
Journal of Ocean  
and Coastal Economy



## OCEANWISE



BIODIVERSITY,  
NATURAL &  
CULTURAL  
ASSETS

Lead Partner: Direção-Geral dos Recursos Naturais, Segurança e Serviços Marítimos (PT)

Duration: 2018-2022

Total budget: 2.85 M€

[www.oceanwise-project.eu](http://www.oceanwise-project.eu)

### Wise reduction of EPS marine litter in the North-East Atlantic Ocean

Foamed polystyrene products are a major and worrying source of marine litter in the Atlantic Ocean. These products, Expanded polystyrene (EPS) and Extruded polystyrene (XPS) are plastic foam materials used globally in the composition of several products, such as drinks cups or single-use food boxes that end up in floating structures in the sea, threatening the oceans and marine wildlife.

The OCEANWISE project aims to develop long-term measures to reduce the impact of EPS in the Atlantic Ocean. Based on resource-efficiency participatory methods and circular economy principles, OCEANWISE is generating new and best practices within sectors considering the use, manufacturing, recycling and uptake of foamed polystyrene, working together with people who produce and/or design products with these materials or manage foamed polystyrene waste.

The project has collected and disseminated best practices, created new information for producers and designers of EPS applications, as well as public authorities, within more circular models of specific products' waste cycles.

OCEANWISE provides tangible and concrete results on EPS applications, and whilst it focuses on a very specific type of material, it is hoped that such findings give rise to new knowledge and methodologies suitable for use with other similarly complex challenges.

The project also carried out various case studies including mapping existing knowledge gained from participatory events called Living Labs of eco-innovation to address the EPS litter challenges.

Their conclusions and mutual findings were used to generate a catalogue of EPS applications guidelines to be submitted to OSPARs technical committee on Environmental Impacts of Human Activities for the approval of measures across the North-East Atlantic region.

**14 partners**

8 regions  
(PT, ES, FR, IE, UK)

**17**

findings on Expanded  
Polystyrene Products

**1**

catalogue of Expanded  
Polystyrene Products  
applications

**2**

Living Labs of  
eco-innovation



## TIDE



BIODIVERSITY,  
NATURAL &  
CULTURAL  
ASSETS

Lead Partner: ERNACT EEIG (IE)

Duration: 2019-2023

Total budget: 2.46 M€

[www.tide-atlantic.eu](http://www.tide-atlantic.eu)

## Atlantic network for developing historical maritime tourism

Throughout history, the sea has powerfully influenced the way of life of many different generations, and in the case of the Atlantic regions, these share significant links related to historical eras. The Atlantic Area has a very attractive cultural and historical identity, with a unique stock of historical marine assets, a very valuable resource that can be used as a vehicle for transnational collaboration, solidarity and knowledge.

The TIDE project aims to develop and market new types of multi-regional historical maritime niche tourist packages and visitor attractions for the Atlantic by sharing cultural assets across regions, supported by new technologies and transnational collaboration tools.

TIDE combines virtual reality with archaeology and submarine exploration and records to recreate maritime experiences that enrich visitor interactions and introduce an exciting new dimension to tourism and cultural heritage of the Atlantic regions.

The pilot projects relate to shipwrecks, ports, battles, emigration, trade, forts, migrations, invasions and castles. The cultural assets are based in existing cultural attraction buildings, such as museums, shipwreck sites or forts.

The newly created attractions present cultural content from other regions, as well as their own, connect visitor centres to real underwater sites that contain shipwrecks or submarines, and create a richer visitor experience by introducing new technologies focused on historical niches that have left a cultural footprint across the Atlantic regions.

The project outputs will aid organisations and practitioners in the Atlantic region tourism sector in developing tourism products that respond to a new generation of maritime cultural visitors.

*“The possibility of making our naval history known, is exciting. We can use the enhancement of these shipwrecks and the history that frames them as a resource for environmental awareness and education, and it can be a great tool for the management of the natural space. The TIDE project has several aspects of interest, but one of the most interesting is its participative nature, a meeting place for Universities, Natural Space Managers, Underwater Activities Federations, Public Administrations, etc”*

**Jorge Serradilla**  
Director-Conservator of the Strait of Gibraltar Natural Park  
(Parque Natural del Estrecho)

**18 partners**

8 regions  
(PT, ES, FR, IE, UK, CA)

**24**

good practices  
of tourism in  
maritime sites

**8**

virtual  
experiences being  
implemented

**1**

toolkit for European  
Maritime and Underwater  
Cultural Heritage



## TRAILGAZERSBID



BIODIVERSITY,  
NATURAL &  
CULTURAL  
ASSETS

Lead Partner: Donegal County Council (IE)

Duration: 2019-2022

Total budget: 2.58 M€

[www.trailgazers.eu](http://www.trailgazers.eu)

## An analytical and technical framework to measure returns from trail investment

The Atlantic Area sparsely populated regions rely heavily on the economic spin-offs from tourism to generate employment and wealth for their communities. This results in a significant investment in the development of trails infrastructure that capitalises on the region's rich natural and cultural heritage.

However, there has been limited research into quantifying the economic and social return from such investments or policy on how to promote and sustainably manage these assets for future generations.

The TRAILGAZERSBID project measured socio-economic impacts from investing and promoting trails through Trail User Surveys and this data will be used to inform the trail multiplier. A trails dashboard will also inform policy makers with real time data in relation to future development options.

The project has developed digital marketing and virtual tourism materials to encourage both domestic and overseas walkers, cyclists and outdoor enthusiasts to these sites and surrounding catchment areas. It has

also developed bottom up Community Trail Plans and Community Trail Ambassadors to ensure a better future trail management and protection of its environmental assets, and Business to Consumer Initiatives to encourage visitors to explore the surrounding towns and villages.

Several events have taken place on each pilot trail to engage with the local communities and key stakeholders. A series of informative Trail Care Packs were produced and the Lost Stories of each trail were captured for future generations in an interactive consumer facing app.

TRAILGAZERSBID impacted policy makers with a framework that identifies the required levels of investment, programming and management required to assist trails to become more economically and socially driven, thus increasing and attracting more visitors to the Atlantic regions.

*“From collating and designing our Lost Stories app, Trail Care Packs, capturing vital data from Trail User Surveys, development of a trail's dashboard giving real time data, to the development of key actions for our Community Trail Plans, a lot of work has been done to revitalise the Atlantic trail sites*

**Mary McBride**  
Donegal County Council

**14 partners**

9 regions  
(PT, ES, FR, IE, UK)

**8**

Atlantic  
trail sites

**8**

Destination  
Management  
Plans

**1**

Virtual Tourism  
Best Practice  
Toolkit

Interreg Atlantic Area Programme  
Managing Authority/ Joint Secretariat

[www.atlanticarea.eu](http://www.atlanticarea.eu)



@AtlanticArea

