



CENTRO TECNOLÓGICO DEL MAR

ANNUAL REPORT 2024



CETMAR
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Editing, text and images
Centro Tecnológico del Mar-Fundación CETMAR

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PROLOGUE



Dear reader, this is a summary of the magnificent production developed by the great team of CETMAR's workers and addressed to the fishing, shellfishing and aquaculture sectors, public managers, organisations, associations and NGOs, and particularly bearing in mind the people who live from the sea and its resources.

More than fifty professionals from various disciplines work every day with the same goal: to promote innovation and sustainability in the marine and fisheries sector, generating real impact in Galicia and the world.

In 2024, our team led and participated in projects ranging from the fight against climate change to the growth of the blue economy, governance and resource management all with a focus on the protection and improvement of marine resources.

Collaboration is our essence: we work with universities, companies, administrations and technology centres from more than 30 countries,

sharing knowledge and building joint solutions. A magnificent example of this collaboration and the role of CETMAR is our participation in the Galician Marine Science Programme; we work both on its general coordination and on seven work packages where all the CETMAR departments are involved in a multidisciplinary way

But beyond numbers and projects, what defines our work is the commitment and passion of all the people who make up the Sea Technology Centre. Science, technology, training and international cooperation allowed us to face challenges with determination, generating new opportunities for the sector and strengthening our role as a benchmark in marine knowledge management.

We look to the future with the certainty that CETMAR's work is more alive than ever. The balance of 2024 is just a part of the journey: we keep moving forward, innovating and joining forces so that the sea and

those who depend on it have a more sustainable and prosperous future.

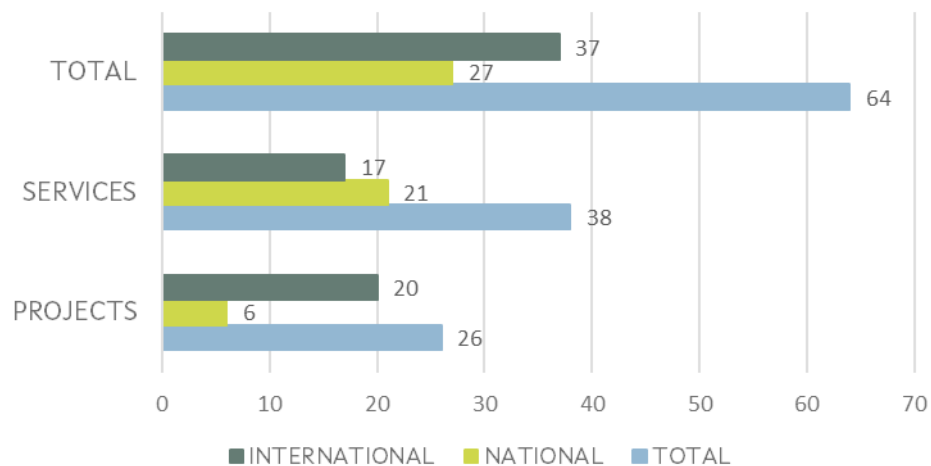
Rosa Chapela Pérez
Managing Director
Centro Tecnológico del Mar-
Fundación CETMAR



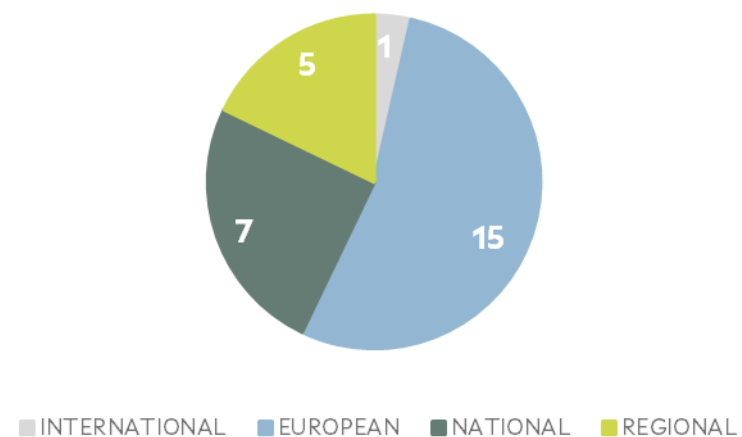


FIGURES

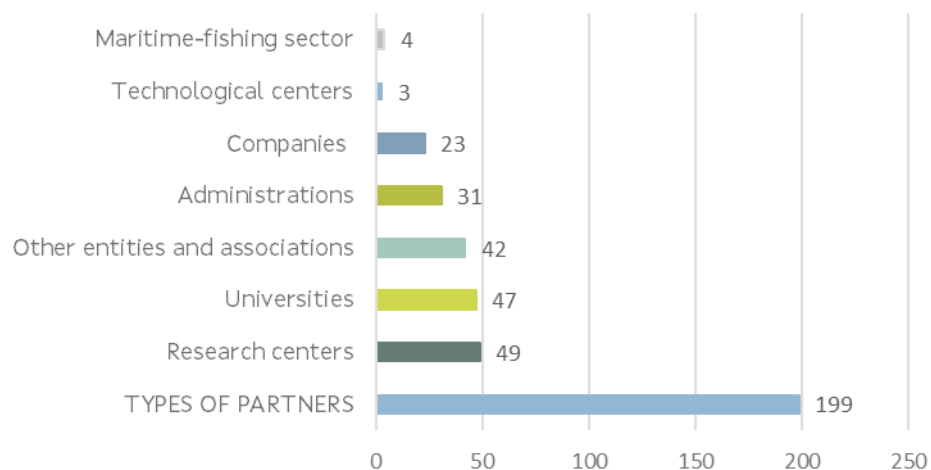
ACTIONS



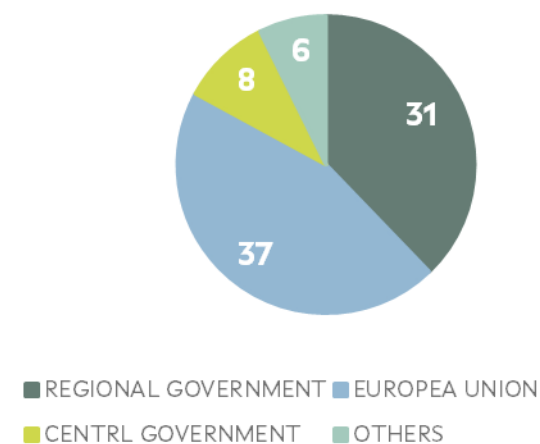
SOURCES OF FINANCING



TYPES OF PARTNERS

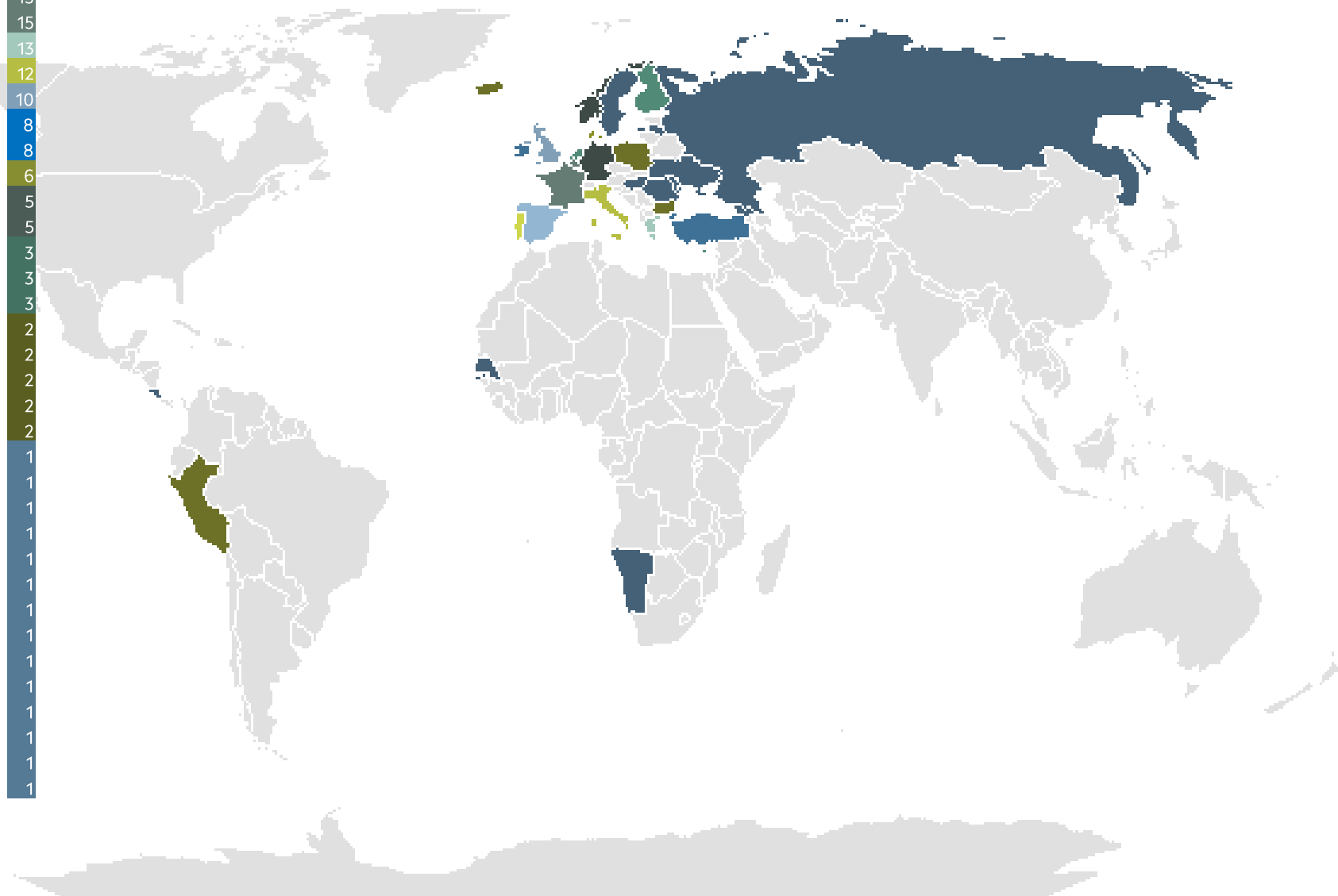


ACTIONS BY FUNDER



199 MEMBERS FROM 34 COUNTRIES

SPAIN	31
PORTUGAL	#
FRANCE	15
BELGIUM	15
GREECE	13
ITALY	12
UNITED KINGDOM	10
IRELAND	8
TURKEY	8
DENMARK	6
GERMANY	5
NORWAY	5
NETHERLANDS	3
CYPRUS	3
FINLAND	3
CZECH REPUBLIC	2
BULGARIA	2
POLAND	2
ICELAND	2
PERU	2
SAO TOMÉ	1
LATVIA	1
COSTA RICA	1
HUNGARY	1
SWEDEN	1
GEORGIA	1
SENEGAL	1
NAMIBIA	1
MALTA	1
FAROE ISLANDS	1
ROMANIA	1
UKRAINE	1
RUSSIA	1
MOLDOVA	1



PROJECTS AND SERVICES



MARINE ENVIRONMENT AND RESOURCES CONTROL AND MANAGEMENT

MANIFESTS GENIOUS

MANIFESTS Genius aims to strengthen preparedness and response capabilities for integrated management of coastal water pollution. The main focus will be on the release of HNS (hazardous noxious substances), including alternative fuels such as HVO, ammonia, methanol and LNG, which could form a toxic gas cloud and potentially drift towards the shoreline and impact local communities. Two scenarios will be considered: 1) a subsurface leak from a pipeline and 2) a leak at water surface from a port fuelling station or a coastal facility.

PERIOD: 2023/2025

BUDGET: 929.583 euros

FINANCING: European Commission's
Humanitarian aid and Civil Protection
department (ECHO).



Free-LitterAT

Free-LitterAT will achieve litter-free coastal communities by combining knowledge, tools and technology with pilot actions with multi-stakeholder engagement. It tackles marine litter, a transnational challenge demanding an integral approach involving prevention, monitoring and removal if feasible of accumulated marine litter. The objective is to protect biodiversity by implementing innovative approaches to prevent and reduce marine litter, emphasizing ALDFG and microplastics, contributing to reduce inputs, locate sources and hotspots, enhance monitoring capabilities and raise awareness. Outputs include guidance, tools and joint solutions for waste management, marine litter monitoring, modelling, clean-up and removal, and action plans transferred to the competent authorities and maritime stakeholders.

PERIOD: 2023/2026

BUDGET: 3.765.474,20 euros

FINANCING: Atlantic Area Transnational
Cooperation Program.



POEM II

Commissioned as part of the actions to improve fisheries and aquaculture management and marine spatial planning within the framework of the maritime spatial plans (POEM) designed and approved by the Ministry for Ecological Transition and Demographic Challenge (MITERD). The tasks to be carried out within the framework of this service are technical work to: provide support in the coastal maritime planning processes in which the regional administration participates, if required; update and optimize the MARPLAN tool; study the suitability of areas of the Galician coastline other than the estuaries where aquaculture activities can be developed, and mapping of marine and inland aquaculture in Galicia.

PERIOD: 2023/2026

BUDGET: 255.236,01 euros

FINANCING: Xunta de Galicia. Consellería do Mar.

MARINE ENVIRONMENT AND RESOURCES CONTROL AND MANAGEMENT

BLUEWWATER

BlueWWater aims to improve the quality of fluvial, transitional and coastal water bodies, through the control, monitoring and reduction of emissions of microplastics and contaminants of emerging concern (CECs) into the aquatic environment, through the improvement of the efficiency of urban wastewater treatment plants (WWTP) in both regions, thus guaranteeing a sustainable use of water resources and contributing to the implementation of the European regulations.

PERIOD: 2023/2026



BUDGET: 2.095.847,24 euros

FINANCING: Programa de Cooperación Transfronteriza Galicia-Norte de Portugal (POCTEP).

PT PROTECMA

Technology Platform whose aim is to develop and implement a research, technological development and innovation strategy for protection of the coast and the marine environment, as well as for prevention, response and mitigation of marine pollution caused by anthropogenic activity, and control and improvement of marine, coastal and transitional waters. This strategy intends to improve the technological capacity and competitiveness of the Spanish organizations which carry out their activity in this field and to contribute to the implementation of the environmental legislation in force and the regional and international agreements for sea and coastal protection.

PERIOD: 2020/2023



BUDGET: 80.000 euros

FINANCING: Ministerio de Ciencia, Innovación e Universidades. Agencia Estatal de Investigación.

SOL-OUXA

This project aims to increase knowledge about the presence of the fish *Myliobatis aquila*, locally known as 'ouxa', along the Galician coast. This animal is traditionally considered one of the main predators of bivalves and represents a serious concern for Galician shellfishing. Consequently, it is necessary to increase knowledge about this species present in the Galician marine ecosystem; to verify the fisheries community's view on its impact and, finally, to lay the foundations for a program of activities to allow the assessment of the impact on bivalve areas.

PERIOD: 2024/2025

BUDGET: 37.676,75 euros

FINANCING: Xunta de Galicia. Consellería do Mar.

MARINE ENVIRONMENT AND RESOURCES CONTROL AND MANAGEMENT

ENCOMENDA OSTRARIZADA

Service commissioned by the Regional Department of the Sea for the monitoring of potential populations of Gigas Oyster (*Magallana gigas*) that may establish in the coastal areas of the three southernmost estuaries of Rías Baixas (Arousa, Pontevedra and Vigo). The aim is to determine and control the populations of the species *Magallana gigas* in these areas and its natural recruitment by fixing seeds of the species. It is also planned a comparative study of the culture of diploid and triploid specimens of Gigas Oyster in rafts.

PERIOD: 2024/2026

BUDGET: 201.569,92 euros

FINANCING: Xunta de Galicia. Consellería do Mar.

REGINA

This project aims to improve the participation of regions and local authorities in the preparation of maritime spatial planning, as well as in the implementation of a comprehensive and complementary framework for such planning at national, regional and local levels. Likewise, the integration of initiatives from the different administrative levels and the stakeholders in this process will be eased, in accordance with the principles of the European Green Deal, and promoting greater cooperation at the level of marine basins. CETMAR will develop three case studies: offshore aquaculture planning; integration of tourism in the Maritime Space Management Plans (POEM) and determining the necessary information to integrate underwater noise in the POEM.

PERIOD: 2022/2024

BUDGET: 475.002,17 euros

FINANCING: Ministerio de Agricultura, Pesca, y Alimentación (MAPA).



ORDEA MAR LIMPO III

Technical support to develop a funding program for the collection of waste, including washed-up seaweed, the evaluation of the applications submitted, and the control of the collecting and the reporting actions. CETMAR is responsible for updating the MarLimpo plan to adapt it to FEMPA and providing technical support to draw up the subsidy regulation. Additionally, it evaluates the applications submitted and carries out control visits to supervise the waste collections performed by the selected associations as well as to raise awareness of marine litter.

PERIOD: 2023/2026

BUDGET: 414.646,68 euros

FINANCING: Xunta de Galicia. Consellería do Mar.



ENCOMENDA OBSERVATORIO COSTEIRO

Learn oceanographic and meteorological information relevant to the sustainable management of the Galician aquaculture within the framework of the Coastal Observatory, by improving the network of automatic stations in Galician coasts (Platform of Cortegada, Buoy of Ribeira, Buoy of Cíes, Buoy of A Guarda, Rande Station, Buoy of Muros). It will be executed through the purchase, implementation and monitoring of measuring equipment that provides data to assess the models and management support tools. CETMAR works to improve the cohesion of the Observatory: collaborating with the Technological Institute for the Control of the Marine Environment of Galicia (INTECMAR) and the General Sub directorate of Meteorology and Climate Change of the Regional Department of Environment and

PERIOD: 2022/2025



BUDGET: 499.000 euros

FINANCING: Xunta de Galicia. Consellería do Mar y Fondos FEMPA.

ENCOMENDA DXCASC

To carry out the coordination service of the actions and management of the Coastal Observatory of the Xunta de Galicia. Considering its evolution, a new stage is opened to consolidate it as a benchmark for the Galician society. It is aligned with the main international strategies: Decade of Ocean Sciences for Sustainable Development, Agenda 2030, European Union Mission: Restore our oceans and waters; and local strategies: Galician Climate Change and Energy Strategy 2050; Galician Digital Strategy 2030; Galician Artificial Intelligence Strategy 2030 or the future Galician Strategy for Blue Economy.

PERIOD: 2023/2025

BUDGET: 201.776,56 euros

FINANCING: Xunta de Galicia. Vicepresidencia Segunda e Consellería de Medio Ambiente, Territorio e Vivenda.

ENCOMENDA REFUERZO DEL OBSERVATORIO COSTEIRO

Reinforced service for the Coastal Observatory of the Xunta de Galicia to improve the assessment of coastal risks and support the sustainable management of fishing and shellfishing activities. Methods are being explored to simplify the use of data, to know the state and evolution of oceanographic parameters enabling decision-makers and Galician society the consultation and understanding. Based on data and forecasts, work is being done to create new high added-value services, and to collaborate in the improvement of the operational models of Galicia that make daily forecasts of oceanographic variables. The operational programs for monitoring the Galician marine environment will also be updated.

PERIOD: 2024



BUDGET: 49.510,23 euros

FINANCING: Xunta de Galicia. Consellería do Mar e INTECMAR.

CUI BIODIVERSIDAD

The service will focus on improving payload technologies enabling mission autonomous systems with USV. The main activity is the evolution and improvement of the payment load for the control of water quality in emergency situations by means of: Support in the definition of the biodiversity missions with the USV and Identification of the appropriate sensor for the biodiversity missions. Integration of the teams and analysis of the collected data: Inclusion of BABCOCK's multiparameter. Integration of complementary sensors. Surface water sampling system for the subsequent evaluation of biodiversity parameters, and supporting the calibration of the multiparameter measurements. Integration of CETMAR's Side Scan Sonar and evaluation of the use to distinguish different types of habitats.

PERIOD: 2021/2025

BUDGET: 147.200 euros

FINANCING: Xunta de Galicia. Axencia Galega de Innovación.



BATEAS

Support service to improve the information available on the dynamics of mussel cultivation in the Galician estuaries by collecting environmental and production information from the mussel sector. CETMAR collaborates to improve knowledge of the environmental and production conditions in the rafts and in the collection of information through the mussel associations. This action gives support to the Regional Department for the Sea to collect systematic information on mussel cultivation, considering the variability among the different cultivation areas and to detect extraordinary episodes or significant incidents in mussel cultivation.

PERIOD: 2024/2026

BUDGET: 699.000 euros

FINANCING: Xunta de Galicia. Consellería do Mar.

DELSONIC 24

The project aims to estimate the abundance of a dolphin population using mark-recapture models, using their distinctive vocalizations as a key identifying feature, in a non-invasive and freedom study. The novelty lies in the application of advanced bioacoustic techniques to collect precise data. Acoustic recording systems will be used in specific areas, capturing sounds emitted by common dolphins in the Ría de Arousa. These data will be analyzed using mark-recapture models, with the whistles acting as 'tags' to identify and track individuals. This project seeks innovative and practical alternatives, advancing understanding of common dolphin ecology and contributing to their conservation in protected marine areas.

PERIOD: 2024

BUDGET: 145.000 euros

FINANCING: Fondo Social Europeo.



CAPTA

Most human activities lead to greenhouse gas emissions, while nature offers us carbon sinks such as salt marshes or seagrass meadows known as "Blue Carbon Ecosystems". These high- biodiversity ecosystems offer traditional services such as fishing or shellfish gathering, which already today become affected by climate change. CAPTA aims to establish the basis for the development of joint policies and planning instruments to achieve climate neutrality and strengthen coastal ecosystem services, improving their resilience. CAPTA will allow the creation of a framework for cross-border cooperation, making available homogeneous procedures and comparable information on climate risks so as to define joint actions.

PERIOD: 2022/2026



BUDGET: 2.452.183,79 euros

FINANCING: Fondo Europeo de Desarrollo Regional FEDER. Programa Interreg V-A España-Portugal (POCTEP).

ENCOMENDA APROMEX

Assigned by the Consellería do Mar to give support through CIMA. Objectives: Support to the development and fine-tuning of systems for the analysis of mussel populations in rocky intertidal habitats. Use of low-cost geospatial techniques. Evaluation of the usefulness and performance of long-lines with collecting ropes in mussel production areas. Mussel production under controlled hatchery conditions for introduction into pan culture. Dissemination and extension of work and

PERIOD: 2022/2023



BUDGET: 319.808,05 euros

FINANCING: Xunta de Galicia. Consellería do Mar. Fondo Europeo Marítimo y de Pesca (FEMP).

PATRULLERAS 2024-2026

CETMAR supports the Regional Department for the Sea in the monitoring of the design and construction of two patrol boats for fisheries inspection and surveillance tasks, control and support to the Galician fishing fleet. These vessels will collaborate in maritime search and rescue operations and will participate in activities to fight marine pollution. CETMAR will give technical support to the *Subdirección Xeral de Gardacostas de Galicia*, a unit of the Regional Department for the Sea, in all the construction phases, coordinating the execution of the different stages of the making and verifying its suitability to the offer and the needs of the regional government.

PERIOD: 2024/2026

BUDGET: 68.686,20 euros

FINANCING: Xunta de Galicia. Consellería do Mar.

TECHNOLOGY PROMOTION & TRANSFER

BRIDGE

The project aims to know the situation of the Black Sea marine ecosystem, to evaluate its resilience and to create the necessary mechanisms to manage these ecosystems sustainably. BRIDGE-BS is based on a unique concept that links oceanographic dynamics to resilience, ecosystem services, multiple stressors and blue innovation. The results of the project will be intended to demonstrate how a resilient ecosystem in the Black Sea can be sustained while promoting the development of blue economy sectors. The Centro Tecnológico del Mar-Fundación CETMAR co-leads knowledge transfer activities with a special focus on the connection between science and public management.

PERIOD: 2019/2025



BUDGET: 9.000.000 euros

FINANCING: European Union. Horizon 2020.

PREP4BLUE

Framed in the "Oceans, Seas and Waters Mission" of the European Union, the objective of the PREP4BLUE project is to develop the necessary R&D implementation modalities to achieve the objectives of the Mission and facilitate a successful first phase (2022-2025). The results of the project will allow the missions to develop and pilot technological and social innovation, business models and governance; emphasizing the methodologies that will allow the co-design and joint implementation of solutions with citizens and interested agents. To this aim work will be carried out in collaboration with the fishing and scientific sectors.

PERIOD: 2021/2024



BUDGET: 4.997.690 euros

FINANCING: European Union. Horizon Europa.

LIFE CIBBRINA 2.0

The main objective is to minimize and, where possible, eliminate bycatch of priority endangered, threatened and protected (ETP) species through cross-border and cross-sectoral cooperation of industry, science, authorities and other stakeholders to establish coordinated mitigation, monitoring and evaluation programs at the regional level. Based on the review of current approaches and existing national programs a toolkit will be developed involving new pilot projects performed in a "safe environment" of mutual trust and cooperation among stakeholders, to integrate it into public policy improvements and the implementation of best practices.

PERIOD: 2021/2028



BUDGET: 12.511.544,24 euros

FINANCING: European Union. LIFE Program.

TECHNOLOGY PROMOTION & TRANSFER

RCG SECRETARIAT

Technical assistance for: Regional Coordination Groups (RCGs) North Atlantic, North Sea and Eastern Arctic (RCG NANS&EA); Baltic (RCG Baltic); Large Pelagics (RCG Large Pelagics); Long Distance Fisheries (RCG LDF); Mediterranean and Black Sea (RCG Med&BS) and Economic Affairs (RCG ECON) to support administrative, organizational and communication procedures. By planning and executing administrative tasks, developing the branding and online visibility of RCGs and developing mechanisms and proposals the intention is to establish a long-term Technical Secretariat structure.

PERIOD: 2022/2023



BUDGET: 150.000 euros

FINANCING: European Commission. DG MARE and Regional Coordination Groups (RCG).

TENDER MARE DCF

Support service for administrative and branding tasks and online visibility of the Regional Coordination Groups (GCR) to establish a long-term support structure as the GRC Secretariat. The mechanisms have been established in the SECWEB project financed by the DGE MARE (MARE/2020/08). The reliability and accuracy of data are essential for the proper functioning of the Common Fisheries Policy (CFP). For this reason, Regulation (EU) 2017/1004 (DCF) is established to oblige Member States to coordinate their data collection activities within the same marine region. In this context, the RCGs are created with the objective of developing and implementing procedures, methods, guarantees and quality control to collect and process data for further improvement of reliability in scientific advice.

PERIOD: 2023/2024

BUDGET: 55.000 euros

FINANCING: European Commission. DG MARE.

SECWEB 2.0

SECWEB 2.0 aims to develop and implement a set of innovative tools and services to improve the ability of Regional Coordination Groups (RCGs) to harmonise the collection, management and exchange of fisheries data. It will be achieved by improving the knowledge and communication management, implemented through the RCG secretariat to support these groups. There will be a particular emphasis on the CFP and the engagement of stakeholders.

This will contribute to the implementation of their aims, such as the sustainable use of marine resources, the protection of the marine environment and the promotion of a competitive and innovative fisheries sector.

PERIOD: 2023/2026



BUDGET: 345.945,98 euros

FINANCING: European Maritime, Fisheries and Aquaculture Fund (EMFAF)

TECHNOLOGY PROMOTION & TRANSFER

EUROPEAN MARINE BOARD

The EMB is a strategic pan-European marine science forum. It functions as an independent and non-governmental advisory body, which identifies scientific and technological challenges and opportunities through foresight activities and other studies to offer policy recommendations. CETMAR participates in the initiative representing the joint interests of the academic organizations of its board; in particular, the three Universities of Galicia and the CSIC and coordinating their efforts in this context with the IEO (with its own representation).

PERIOD: 2018/2023

BUDGET: 35.000 euros

FINANCING: Centro Tecnológico del Mar-Fundación CETMAR.



REDUCE

REDUCE aims to reduce bycatches of marine megafauna (birds, turtles, elasmobranchs and cetaceans) and to increase the possibilities of improving the information for sustainable fisheries management in the Atlantic coasts of the Iberian Peninsula to the East Central Atlantic area off the coast of Africa. CETMAR's role in the project consists mainly in facilitating and boosting the participation of all stakeholders in the discussion processes and in the co-design of bycatch solutions, with the ultimate goal of multiplying the opportunities for the impact of the knowledge and research results generated, and their effective transfer to end users.

PERIOD: 2023/2027

BUDGET: 8.927.513,75 euros

FINANCING: European Union. Horizon Europa.



FISHERIES SOCIOECONOMICS

EMODNET

The main objective of EMODnet Human Activities is to make available the necessary information about the geographic location, spatial extent and the characteristics of a wide range of marine and maritime human activities across Europe. Particular attention is paid to providing, where possible, historical time series to indicate the temporal variation of activities such as fishing, shipping density, and port traffic. The web allows users to view, query and download data and metadata from public and private sources across Europe, through a single entry point.

PERIOD: 2020/2025

BUDGET: 1.000.000 euros

FINANCING: Comisión Europea. DG MARE.



REMAP-MSP

Facilitating the application of the Marine Spatial Planning Directive (MSP) in the European Union by developing innovative responses to face specific challenges in each of the Member States (MS) is the objective of this action, which focuses on the follow-up, evaluation and review of the plans presented by each of the MSs. Given the shared nature of the challenges of the MSP, the proposals that come out of this call must be able to be applied at a European maritime demarcation level. CETMAR's main actions focus on developing a module for monitoring socioeconomic and governance aspects and co-development activities with stakeholders, as well as communication and dissemination of project results.

PERIOD: 2021/2025

BUDGET: 1.917.105 euros

FINANCING: European Climate, Infrastructure and Environment Executive Agency (CINEA).



EUMOFA

Participation in the network of market experts from the European Fisheries and Aquaculture Observatory. EUMOFA is a market intelligence tool aimed at increasing its transparency and efficiency, analyzing the dynamics of community markets, supporting business decisions and the creation of policies. EUMOFA allows direct monitoring of volumes, values and prices of seafood products, from the first sale to the retail stage, including imports and exports. The data come from countries of the European Union, Norway, Iceland and European institutions and are updated every day.

PERIOD: 2019/2022

BUDGET: 12.000 euros

FINANCING: Comisión Europea. DG MARE.

FISHERIES SOCIOECONOMICS

ENCOMENDA GALPS 23-26

For the new DLP into the FEMPA program, the Ministry needs the collaboration of CETMAR to continue the analysis of this axis with the following tasks: Technical support in the development of FEMPA priority 3; monitoring of projects, indicators and activities developed in the EDLP by the GALP; identification and quantification of the effects of DLP in the Galician fishing sector; development of a framework for the activities of the GALP in the strategic axes of digital and ecological transformation and sustainability; periodic analysis of the socio-economic impact of GALP, analysis of cooperation initiatives and dynamism in the framework of DLP, and preparation of technical reports for the Ministry.

PERIOD: 2023/2026

BUDGET: 529.134,85 euros

FINANCING: Xunta de Galicia. Consellería do Mar.



ENCOMENDA OPPs 2024

Assistance service to the Regional Department of the Sea to assess the annual reports of the Galician producers' organisations that apply for funding to FEMPA. CETMAR provides this service since 2022. Following the criteria by FEMPA, the Regional Department for the Sea considers that there is a need for an external evaluation by an entity of prestige, independent of the processing body, in order to report on its content. In addition, it must be analysed the innovative nature of the proposals to assess their funding intensity. CETMAR is in charge of the analysis offering expert reports to help the Regional Ministry to take decisions.

PERIOD: 2024/2025

BUDGET: 50.294,29 euros

FINANCING: European Maritime, Fisheries and Aquaculture Fund (EMFAF).

ENCOMENDA PARQUES DE CARRIL

Commissioned by the Xunta de Galicia (Galician government), through the Regional Department for the Sea, to review the situation of the Carril farming parks that are vacant after the review and reordering procedure developed from 1995 to 2019. Of the 1,165 parks granted with an enabling license, about 35 parks remain vacant without enabling license and ignoring the details of their legal status. CETMAR is assigned to make a legal analysis of the possibilities to definitively grant these parks, and to develop the bases, the call and its criteria to publish and grant these concessions, where appropriate.

PERIOD: 2024/2025

BUDGET: 15.025,96 euros

FINANCING: European Maritime, Fisheries and Aquaculture Fund (EMFAF).

FISHERIES SOCIOECONOMICS

BLUE OBSERVATORY

Service requested by CINEA in the inter-institutional framework contract to support activities related to regulatory improvement, in this case, Lot 2-Sustainable blue economy and ocean affairs. The Observatory will cover all economic sectors of the EU blue economy, operating with a long-term vision and will be jointly coordinated by DG MARE and DG JRC. It aims to collect, harmonize, analyze and disseminate data and knowledge and to conduct market analysis, reports and studies on the EU blue economy to be published. It will report to policy makers on the sustainable blue economy, create an open access website with socio-economic data on the blue economy to support decision making by public actors and companies.

PERIOD: 2022/2025

BUDGET: 1.797.250 euros

FINANCING: European Climate, Infrastructure and Environment Executive Agency (CINEA).

BLUE SKILLS

The main objective of this study is to conduct a comprehensive assessment of the current and foreseen development of skills in the different sectors of the blue economy in the EU. Specifically, it will: Define blue skills and related skills requirements; Analyse current and future skills needs in the blue economy in all Member States; Map the current provision of blue economy education and training in the EU; Review EU-funded initiatives on blue skills to date; Provide recommendations to address identified skills gaps and support the development of a framework for blue skills.

PERIOD: 2024/2026

BUDGET: 215.050 euros

FINANCING: European Climate, Infrastructure and Environment Executive Agency (CINEA).

ENCOMENDA FEMPA OPs

CETMAR will support the Administration to develop the regulatory bases and the corresponding calls for the different financing lines that support economically, under the FEMPA, to the professional organisations of fisheries and aquaculture, recognised in the scope of Galicia, as well as to those entities willing to achieve this recognition.

PERIOD: 2023/2025

BUDGET: 73.960,32 euros

FINANCING: Xunta de Galicia. Consellería do Mar.

FISHERIES SOCIOECONOMICS

AQUAVITAE

Development of innovative solutions for aquaculture production and processes in the Atlantic basin. Thirty five partners from four continents study organisms at the base of the food chain through five value chains: macroalgae; integrated multitrophic aquaculture (IMTA); echinoderms; mollusks and fish. New products and species, optimised production processes and circular economy principles will be implemented in eleven case studies. CETMAR Foundation leads work on communication, training and stakeholder interaction.

PERIOD: 2017/2024



BUDGET: 8.000.000 euros

FINANCING: Unión Europea. Horizonte 2020.

MAT4FISH

The main goal is the development and implementation of a robust, transparent and efficient virtual information infrastructure to meet the needs for mathematical modeling used for the scientific assessment of fisheries. CETMAR will work in the organization and facilitation of the working meetings with the sector. Four workshops with the sector are expected to be developed with a limited number of participants to enable the dialogue.

PERIOD: 2021/2024



BUDGET: 15.000 euros

FINANCING: Instituto Español de Oceanografía-IEO.

CONXEMAR INFORME SOFÍA

Comparative analysis of the last two FAO SOFIA reports on the State of World Fisheries and Aquaculture. It highlights the evolution, the relevant aspects of each study and anything that may be of interest to CONXEMAR and its partners. The report is well-timed as this year's Conxemar Congress was dedicated to the 25th anniversary of the SOFIA Report. For this purpose, previous SOFIA reports were analysed to draw conclusions on the evolution of their content. Particular attention was paid to the blue transformation sections focused on the added value of aquatic products.

PERIOD: 2024

BUDGET: 3.500 euros

FINANCING: Conxemar.

TRANSFORMAR

Transformar will provide solutions to boost adaptation to climate change. It will promote cooperative innovation to trigger social transformation in six regions, through nature-based measures, innovative technologies, financing, insurance and governance models, awareness raising and behavioral change. In Galicia the project will develop a case study aimed at sectors regarding mussel farming and shellfish gathering.

PERIOD: 2020/2026

BUDGET: 11.872.256,88 euros

FINANCING: Unión Europea. Horizonte 2020.



AIXOLA 2024

Course program at the "A Aixola" Training Center to train groups that quit the fishing industry to continue working in other activities in the maritime sector. The purely technical training is complemented with activities of social inclusion and promotion of gender equality, offering support in the search for new employment opportunities, and promoting the entrepreneurial and cooperative spirit. The common feature of all training actions is the practical approach to achieve the skills required by the labor market, through workshop learning and projects arising from real needs. The Consellería do Mar is assigning CETMAR the management of this center since 2004.

PERIOD: 2024

BUDGET: 183.247,59 euros

FINANCING: Xunta de Galicia. Consellería do Mar. European Maritime, Fisheries and Aquaculture Fund (EMFAF).



EDUCATION & TRAINING

CAPACITAMEX

The objective is to improve the skills of mussel producers in Galicia by transferring the results of the APROMEX project. To this end, bilateral meetings will be coordinated with all the mussel producers' associations in Galicia, to present the results. Training sessions will be planned for mussel producers, with the participation of staff involved in APROMEX research, and other project collaborators; and other sessions for aquaculture trainers, educated in courses for aquaculture trainers by the Regional Ministry for the Sea. Guides and support materials will be developed to implement the main results of the APROMEX project.

PERIOD: 2024/2026

BUDGET: 241.466,26 euros

FINANCING: Xunta de Galicia. Consellería do Mar and European Maritime, Fisheries and Aquaculture Fund (EMFAF).



EDUCATION & TRAINING

SHOREWINNER

The project aims to establish a community of practice in five Centres of Excellence in Vocational Education and Training (CoVEs) in Portugal, Spain, Italy, Greece and Cyprus, with a focus on the marine renewable energy sector. These CoVEs will collaborate to improve the training of the workforce, sharing resources and strategies to adapt the training to the needs of the industry. CETMAR participates in the Spanish CoVE, led by the University of A Coruña, developing training materials on the occupations with the highest demand, and participating in awareness campaigns and dissemination events with the consortium. It also promotes the creation of working groups on training in marine renewable energies linked to the Skills Pact.

PERIOD: 2023/2028

BUDGET: 4.975.531 euros

FINANCING: European Union. Erasmus Plus.



GREEN DIVING

Green Diving will promote green skills in the maritime industry, understood as capacities to reduce environmental impact, and will aim its activity to Vocational Training centres, involving students, future maritime professionals and teachers. CETMAR leads the development of a repository of materials aimed at promoting green skills in maritime training, which will be tested and evaluated by the VT centres that participate in the consortium. Innova+ will organize a teacher training action to promote green skills in the classroom. In addition, a roadmap will be drawn up to integrate these capacities in VT centres, and will promote maritime careers in VT.

PERIOD: 2021/2024

BUDGET: 284.810 euros

FINANCING: European Union. Erasmus Plus.



FLORES

Forward Looking at the Offshore RenewableS will reinforce the activity of the large-scale consortium promoting the Offshore Renewable Energy (ORE) Capability Pact. FLORES will support the most committed organizations in the promotion of ORE by stimulating the training offer. The consortium will promote training for the new jobs expected in this sector, estimated at between 20,000 and 54,000 over the next five years, and will contribute to improving training opportunities for the current ORE.

PERIOD: 2022/2026

BUDGET: 877.668 euros

FINANCING: European Union. Erasmus Plus.



GREEN

GREEN, the European Network for Greener VET, aims to identify, develop, test and evaluate innovative approaches to "greener" education to reduce the environmental impact. It will identify the most relevant green skills for the labor market in six industrial sectors: automotive, energy, batteries, defense, maritime and additive manufacturing. There will be supporting tools to introduce these skills into VET programs and to test them through a training of trainers. CETMAR will coordinate the analysis of needs, reporting the skills needs for the reduction of environmental impact in maritime technologies identified by the MATES project.

PERIOD: 2022/2026

BUDGET: 657.096 euros

FINANCING: European Union. Erasmus Plus.



AFD 23-24

Teaching in the Aixola Training Center (Marin) the following training actions for unemployed people, within the framework of the Order of May 13, 2022: Communication in Spanish N2 (138 hours); Communication in Galician N2 (38 hours); Mathematical competence N2 (138 hours); Auxiliary maintenance operations of structural elements and surface coating of sports and recreational boats (298 hours), and qualification for teaching in grades A, B and C of the VET (330 hours).

PERIOD: 2023/2024

BUDGET: 107.128,50 euros

FINANCING: Xunta de Galicia. Consellería de Emprego, Comercio e Emigración.

EDUCATION & TRAINING

AFD 24-25

Teaching in the Aixola Training Center (Marin) the following training actions for unemployed people, within the framework of the Order of 1st July 2024: Auxiliary maintenance operations of structural elements and surface coating of sports and recreational boats (298 hours); Qualification for teaching in VET grades A, B and C (330 hours); Auxiliary maintenance operations of systems and equipment of sports and recreational boats (408 hours).

PERIOD: 2024/2025

BUDGET: 121.082,70 euros

FINANCING: Xunta de Galicia. Consellería de Emprego, Comercio e Emigración.

EDUCATION & TRAINING

CTP

"Catching The Potential: Setting the standard for Sustainable fishing training". CTP will develop an international rule for skills capacity of fishermen regarding sustainable fishing, carrying out an International Cooperation framework between the extractive sector and fisheries teachers. Information will be exchanged throughout a series of seminars regarding best practices and experiences to qualify fishermen in sustainable issues.

PERIOD: 2019/2024

BUDGET: 746.417 euros

FINANCING: European Maritime, Fisheries and Aquaculture Fund (EMFAF).

**Catching
THE Potential**

INTERNATIONAL COOPERATION

2023-SANPERÚ

Contribute to the improvement of the food and nutritional security rate of the Sechuran population through the addition of hydro-biological products in the family's diets. The expected results are: households in Sechura Bay will improve their use of hydro-biological products and schools in Sechura Bay will improve their training and awareness of the consumption of hydro-biological products.

PERIOD: 2022/2023

BUDGET: 117.047,85 euros

FINANCING: Xunta de Galicia. Cooperación Galega.

2022 INNOVA ABANICO

CETMAR will render professional services to the consortium made up by AeA and ANFACO, with a technical-economic feasibility study for the generation of dehydrated mantle, conceived as a continuous process throughout the project execution. For that purpose, an analysis of the cost structure of the new production line of mantle will be performed to establish the selling price required for the product to be economically viable. A market study will also be carried out to determine the marketing possibilities of the product obtained from the dehydration of fan shell mantle (healthy snack).

PERIOD: 2022/2024

BUDGET: 571.360 euros

FINANCING : Agencia Española de Cooperación Internacional para el Desarrollo (AECID).

2024-VerTyCe

Project about adaptation to climate change by strengthening marketing mechanisms and sustainable tourism proposals as a diversification strategy for small-scale fishing in Sechura, Peru.

The overall objective is the adaptation to climate change by ensuring the economic reactivation of different groups of producers and women's groups through the strengthening of marketing processes and sustainable tourism. It also aims to increase the processes, mechanisms and actions that help to improve the socio-economic situation of producers and traders by improving the marketing system and generating fisheries diversification strategies.

PLAZO: 2024-2028

PRESUPUESTO: 75.000 euros

FINANCING : Xunta de Galicia. Cooperación Galega.

INTERNATIONAL COOPERATION

AQUAVALORA PERÚ

An assessment of the improvement mechanisms and instruments generated in the ACUIPESCA project is necessary regarding to the pilot projects developed in the field of aquaculture in the Bay of Sechura, Peru, and specifically in the cultivation of Peruvian calico scallop. The project aims to increase the resilience of the Sechuran population through initiatives linked to the seafood production that enable the economic development of the region. It will focus on the promotion of traceability and commercialisation of the value chain of hydrobiological products from the Bay of Sechura to promote sustainable livelihoods, supporting the gender approach and governance.

PERIOD: 2024-2030

BUDGET: 185.000 euros.

FINANCING : Xunta de Galicia. Cooperación Galega

RED INVIPESCA 2022-2024

To support the growth of the INVIPESCA Network so it becomes a benchmark regarding international cooperation in marine research lined up with the following strategies: Decade of Ocean Sciences for Sustainable Development, Agenda 2030, Mission of the European Union: Restore our oceans & waters. Support will also continue for the organization of the next edition of the Ibero-American Symposium on Reproductive Ecology, Recruitment and Fisheries-SIBECORP (VI Sibecorp) to be held in 2024.

PERIOD: 2022/2024

BUDGET: 134.885,30 euros.

FINANCING : Xunta de Galicia. Consellería do Mar.



INTERCONECTA INVIPESCA

Latin America faces major challenges to achieve SDG 14 ("Undersea Life") of the 2030 Agenda. The management of fishery resources, based on scientific knowledge, is essential for the food and nutritional security of these countries and their economic development. The INVIPESCA Network promotes collaboration between reference institutions in fisheries scientific advice in the region. It aims to establish scientific-fisheries priorities, design a roadmap to implement public policies for the management and conservation of fishery resources, develop a training plan in fisheries advice and link science, administration and industry to ensure a sustainable and fair exploitation of fishery resources.

PERIOD: 2022/2023

BUDGET: 25.000 euros

FINANCING : Agencia Española de Cooperación Internacional para el Desarrollo (AECID).

INTERNATIONAL COOPERATION

2023_ADELANTE2-Costa Rica

The objective of the project is to train the Costa Rican fishing sector in the use of selective and ecosystem-friendly fishing gear for the benefit of fisheries sustainability and design a training module for Costa Rican fishermen and assess the fishing gear used in the area. This training will take place in the three countries making part of this triangular cooperation: Costa Rica as beneficiary country; Peru as provider country 1 and Spain as provider country 2. Specifically in Spain, the training will be aimed at the fisheries administration and the sector focusing on marine fisheries linked to fishing gear and equipment, traceability of artisanal fishing products and the relationship between the fisheries sector and tourism

PERIOD: 2023/2024

BUDGET: 100.000 euros.

FINANCING : Fondo de cooperación triangular Unión Europea-América latina y el Caribe.

2023-CR-Identificación SARGAZO

Collaboration of CETMAR with AECID-Spanish Agency for International Development Cooperation, within the framework of a technical assistance service on the Sargasso problem. Although under normal climatic conditions Sargasso forms a valuable ecosystem, supporting oceanic food webs and providing refuge for endemic species, the uncontrolled increase of this marine algae has become a threat to the environment, the economy and public health. The problem of the massive arrival of Sargasso, affecting many coastal countries, has its own characteristics and the approach to the problem presents differences. CETMAR's work will focus on that.

PERIOD: 2023/2024

BUDGET: 5.900 euros.

FINANCING : Agencia Española de Cooperación Internacional para el Desarrollo (AECID).

2022-FONSECA 3

Collaboration with Engineers Without Borders, within the framework of technical assistance to generate knowledge based on scientific rigor allowing the analysis of the data generated to understand the causes of the mollusk mortality in the Gulf of Fonseca (Honduras) and thus propose recommendations for the recovery of the resource. This technical assistance will be in charge of: development of science-based studies on the sector to promote knowledge among institutions managing the shellfish sector and tests for sustainable recovery of bivalve mollusks in natural areas.

PERIOD: 2022/2028

BUDGET: 250.000 euros

FINANCING : Xunta de Galicia. Cooperación Galega.

INTERNATIONAL COOPERATION

2024 FONSECA IV

Technical assistance to establish knowledge generation and management processes for the recovery and sustainability of shellfish in the Gulf of Fonseca, Honduras; and training of agents in the shellfish sector. It includes improving the sustainability of shellfishing for women's groups in the Honduran municipalities of Amapala, Alianza, Nacaome, San Lorenzo and Marcovia; and improving the governance of shellfishing in the south of the country.

PERIOD: 2024/2026

BUDGET: 25.000 euros.

FINANCING: Xunta de Galicia. Cooperación Galega..

2024-Identificación Etiopía

Expert advisor in aquaculture for the Ethiopia office of the Spanish Agency for International Development Cooperation (AECID). Expert services in aquaculture will be provided to support the management of the project 'Support to agricultural policies and improvement of production systems in Ethiopia, including fish farming - Ministry of Agriculture', in the assessment of the initial stages of fish farming. In addition, the Spanish Cooperation office in Ethiopia will be supported in supervising and monitoring of aquaculture activities.

PERIOD: 2024/2025

BUDGET: 14.800 euros.

FINANCING: Agencia Española de Cooperación Internacional para el Desarrollo (AECID).

2024-Xalissima 2-MZ

The project aims to improve the sustainability and integrated management of the fisheries and aquaculture value chain by promoting socio-economic development, gender equality, food security and environmental conservation of inland water ecosystems in the province of Maputo (Mozambique). The promotion of the sustainable growth of artisanal fisheries through improved management, governance mechanisms and harvesting techniques are goals of this project.

This action intends to improve household income, and provide technical skills to community beneficiaries and institutions involved, affecting all participants in the value chain of artisanal fisheries and creating synergies with other regional actions.

PERIOD: 2024/2025

BUDGET: 185.000 euros

FINANCING: Xunta de Galicia. Cooperación Galega and Fundación Ayuda en Acción.



INTERNATIONAL COOPERATION

NATMIRC IV

The project aims to improve NatMIRC's capacity on fishery resources and their fisheries, and favor their sustainable management by a scientific alternative for the historical data of the ICSEAF era. Searching for alternative information and making a reconstruction of the historical series of catches. Exploring a size assessment model with the review of existing assessment models, implementation of the chosen model and analysis of the results obtained. Providing advice on the MSC certification process.

PERIOD: 2023/2025

BUDGET: 99.123,56 euros

FINANCING: Xunta de Galicia. Consellería do Mar.

2024 FAO STP

The general objective of the FAO STP project is to promote the recognition of labour skills and establish the necessary professional qualification programmes for a satisfactory socio-occupational integration and to enhance the basic skills of professionals in artisanal fisheries.

PERIOD: 2024-2026

BUDGET: 179.688,81 euros.

FINANCING: FAO.

FISHERIES PRODUCTS TECHNOLOGY

ENCOMENDA SECTOR DEPURACIÓN

The objective of the Good Practices Guide is to serve as a reference for food operators, collecting the most widespread purification systems and handling procedures in Galicia. After its review and approval, the competent authorities will take it into account during their activities. The guidelines offered in the guide will be adapted to the particular nature of the Galician depuration/trading sector. The guide will serve as a reference for mollusk purification centers and marine invertebrate dispatch centers in Galicia

PERIOD: 2023-2024

BUDGET: 65.015,08 euros

FINANCING: Xunta de Galicia. Consellería do Mar.

MARINE SCIENCES PROGRAM OF GALICIA

The Marine Sciences Program of Galicia is a unique opportunity for the coordination of Galician marine research and for the reinforcement of its capabilities and results at the service of society. This initiative is inclusive and participatory, conceived from the perspective of involving all stakeholders in these works (quintuple-helix) and under the paradigm of what is known as RRI or Responsible Research and Innovation.

This program has a budget of 10,000,000 euros, with the participation and boost of 250 researchers from multiple disciplines from the three universities of the Galician University System, the four centres of the Higher Council for Scientific Research (IEO, IIM and INCIPIT) and the six technological or research centres of the Xunta de Galicia (CETMAR, INTECMAR, CIMA, IGaFA, CESGA and METEOGALICIA), as well as the Department of the Sea.

The protection and sustainable management of the marine ecosystems services is the main cha

llenge of the Marine Sciences Program of Galicia via three main action lines: observation and monitoring of marine and coastal environment; sustainable, intelligent and precise aquaculture and innovation and opportunities of blue economy.

These three great action lines are developed throughout 11 work packages with 38 actions that require 132 activities and 293 tasks that will result in 172 deliverables and 233 milestones, all with the participation of 89 research groups.

L. A.1. Observation and monitoring the marine and coastal environment

The aim of this first action line of the Marine Sciences Program is to create a strategy to monitor the marine ecosystem in Galicia in all its dimensions, with the ultimate goal of achieving the necessary information to guarantee a better and more sustainable use of its resources and services.

The intention is to have a multidisciplinary and interdisciplinary set of highly innovative and efficient tools and technologies to substantia-

lly improve monitoring and observation of the sea.

Thus, the construction of an integrated data platform in the Galician Supercomputing Centre is planned, as well as the use of heterogeneous information integration tools based on complex modelling, data science and artificial intelligence.

L.A.2. To enhance precise and sustainable aquaculture production

Within the framework of this second line of action, advanced research in genomics will be developed to improve crops and tools for the sustainable supply of seed in bivalve mollusk aquaculture.

At the same time, the aim is to improve strategies for the diagnosis, prevention and control of pathologies and the study of new sustainable farming systems based on integrated multitrophic aquaculture.

L.A.3. Blue Economy. Innovation and opportunities

The aim of this third action line of the

Marine Sciences Program of Galicia is to enhance social and economic changes, the transfer, knowledge training and capitalization towards a truly sustainable blue economy, with greater response and transformation capacity to adapt to challenges of the ecological and digital transition in a global change context.

To this end, research will be promoted from the field of social sciences integrated with disciplines from the fields of physics, chemistry, mathematics, biology or geology, among others, to achieve sustainable and resilient development of the Galician coastline.

Measures for adaptation and relief of the pressures and vectors of change that are taking place will also be investigated and concrete proposals will be made to help all stakeholders make decisions.

Finally, the development of an integrated management model for the flow of scientific knowledge in

marine sciences is also planned, specifically adapted to the environmental, sociocultural, economic and institutional context of Galicia.

Context

The Marine Sciences Program of Galicia is part of the Joint Program in Marine Sciences -in which the autonomous communities of Galicia, Andalusia, Cantabria, the Region of Murcia and the Valencian Community collaborate- to deploy a joint research and innovation strategy in marine sciences to sustainably address the new challenges in monitoring and observing the marine environment, climate change, aquaculture and other sectors of the blue economy

The Marine Sciences program is one of the eight programs described in the Complementary Plans between the Ministry of Science and Innovation and the autonomous communities, with the aim of creating synergies, aligning the implementation of funds

and setting common priorities. The Supplementary Plans are Investment 1 of Component 17 of the Recovery and Resilience Mechanism of the Next Generation EU funds.



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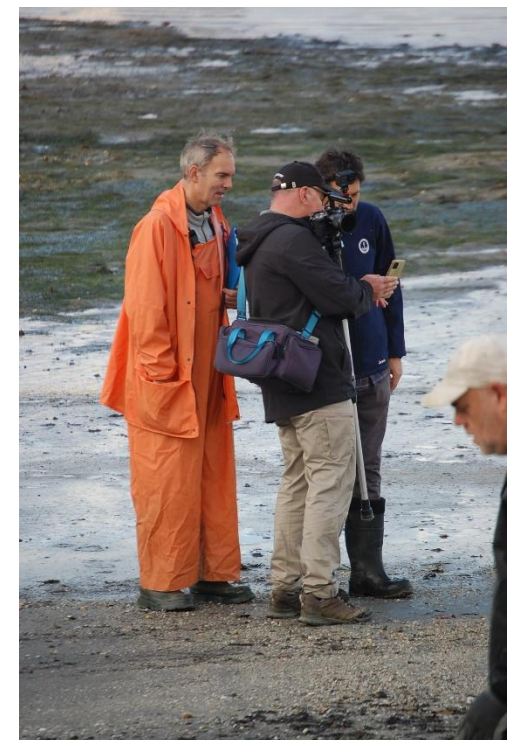
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Plan de
Recuperación,
Transformación
y Resiliencia



**XUNTA
DE GALICIA**



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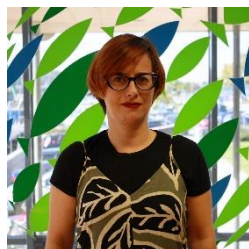


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