

2023

# European/International Projects Report



The Project Office's staff wish to dedicate this report to our colleague, Donatella Calori, passed away in November 2023. We can lose her presence, her voice ... but what we learned from her, what she left us, we will never forget.



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## 1. INTRODUCTION TO THE CNR AND CNR-ISMAR

### 1.1 THE NATIONAL RESEARCH COUNCIL (CNR)

The National Research Council (CNR) is the largest public research institution in Italy performing multidisciplinary activities in all scientific domains. Founded in 1923, CNR mission is to perform research in its own Institutes, promote innovation and competitiveness of the national industrial system, foster the internationalization of the national research system, provide technologies and solutions to emerging public and private needs, to advice Government and other public bodies, and contribute to the qualification of human resources. Over 7.000 researchers and technologists operate in a distributed network throughout the national territory (namely 88 Institutes located in 220 research units and labs, and 3 permanent research stations at the Poles) coordinated by 7 thematic departments, contributing to science and research in areas such as climate, human well-being, study and treatment of rare diseases, food safety, nanotechnologies, monitoring of air, water and plants pollution <https://www.cnr.it/en>.

CNR has a great experience in dealing with EU projects confirmed by the 1893 projects funded.

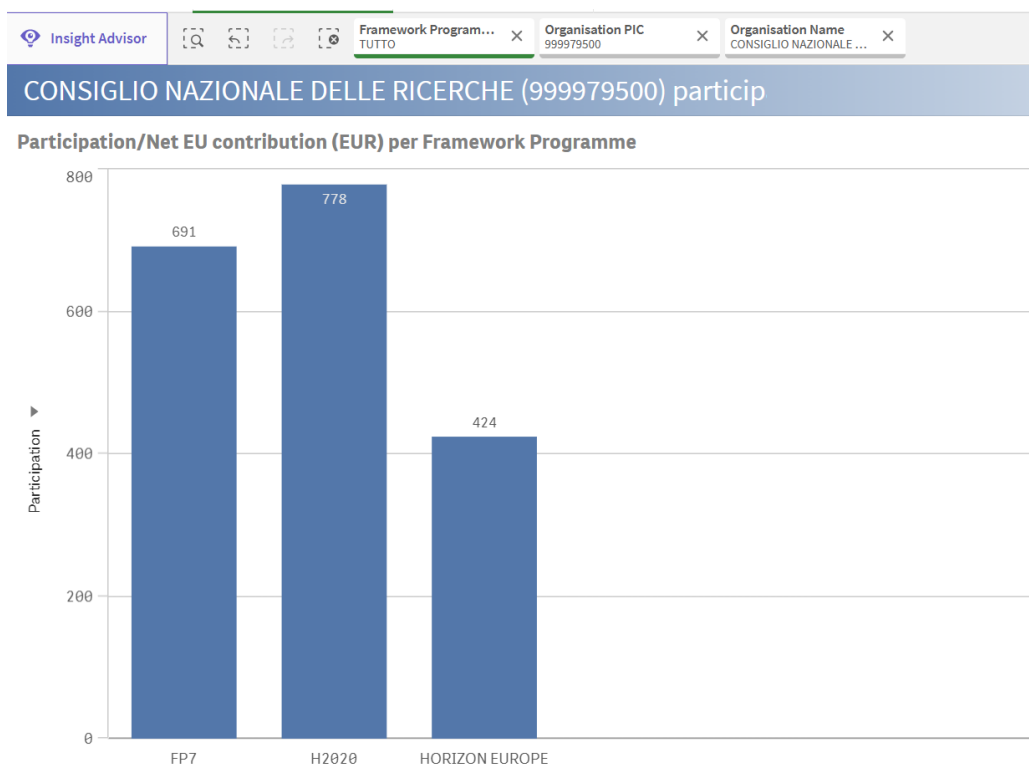


Fig.1: CNR participation to EU programmes

### 1.2 THE INSTITUTE OF MARINE SCIENCES (CNR-ISMAR)

The Institute of Marine Sciences (ISMAR) of the National Research Council (CNR) is the largest institution in Italy dedicated to marine science research. CNR-ISMAR conducts multidisciplinary

studies in all fields of marine sciences that include geological, biological and oceanographic research in the Mediterranean and the world's oceans. CNR-ISMAR boasts a permanent staff composed by 227 people (plus 43 Research Fellows and 29 associates) distributed over 6 main locations: Venice (headquarter), Trieste, Lerici, Bologna, Rome, Naples and the new branches of Milano and Firenze.

CNR-ISMAR is also a national leader in marine geological mapping, geological and environmental risk assessment, collection of long-term oceanographic time series, oceanographic modelling and maritime spatial planning. In the last decade CNR-ISMAR has been involved in over 400 EU-funded projects, 46 of them as coordinator thus demonstrating its capacity to be competitive at European level.

According to statute of the institute, the mission of CNR-ISMAR is divided into seven main lines of research:

- ✚ Marine geology and paleoceanography;
- ✚ Ocean processes, climate variability and ecosystem functioning and evolution;
- ✚ Observation and operational services for monitoring essential ocean and climate variables (EOV and ECV);
- ✚ Marine risks and anthropogenic impacts;
- ✚ Interoperable data management and maritime spatial planning;
- ✚ Dissemination of marine research products.

In addition, CNR-ISMAR manages a network of real-time observation systems (buoys, platforms, moorings, fishing observation sites, etc.), located along the Italian coasts, transmitting data processed by the institute's laboratories. The permanent observational systems in the Adriatic Sea and the Tyrrhenian Sea are noteworthy.

The Director of the Institute is Dr. Mario Sprovieri to whom goes the thanks of the Project Office's staff for having contributed actively to its work.

#### **CNR-ISMAR - HEADQUARTER**

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Web Site: [www.ismar.cnr.it](http://www.ismar.cnr.it)

*Director*

Mario Sprovieri



## 2. THE CNR-ISMAR PROJECT OFFICE

The Project Office (PO) was established in 2019 and is composed by 5 persons working in different branches of the institute. The staff works in close cooperation and at a cross cutting level since the ISMAR's branches are very often involved in the same project.

The persons involved are the following:



Emma Giovanna D'Acunzo  
Project Office: Rome-Naples



Laura Barbieri  
Project Office: Lerici



Teresa Loredana Alfarè  
Project Office: Venice



Elisabetta Borella di Torre  
Project Office: Bologna



Project Office: Bologna

Fig.2: Personnel of the Project Office

The PO main tasks consist in supporting the researchers and technologists to prepare project proposals, monitoring and reporting the projects.

Furthermore, the PO is involved in:

- Documents and projects archiving;
- Management of projects preliminary and negotiation activities;
- Verification of agreements /contracts before the signature of the Director;
- Preparation of internal agreements between CNR Institutes and management and distribution of relations and activities between the branches/institutes involved;
- drafting of the Projects economic plans;
- Collaboration with the auditors;
- Request for annual costs and tax charges/social security contributions for CNR personnel;
- Retrieval and verification of reporting documents (invoices, timesheets and general documentation of personnel and selection procedures for suppliers of goods and services, documentation relating to missions, mandates, other documents, etc.) in collaboration with the CNR-ISMAR Administrative Offices;
- Uploading of reporting data into Programme portals.



### 3. THE REPORT

This report consists in 6 sections devoted each to a different funding programme. Each section is composed by a general explanation of the program taken into consideration with a brief description of the running project funded. The programs are the HORIZON EUROPE; the HORIZON 2020; the INTERREG – Territorial Cooperation Programmes; the EU tenders and OTHER PROGRAMMES. Besides, a new section dedicated to the National Recovery and Resilience Plan (hereafter PNRR) has been created containing the project funded by this tool. An additional section contains the success rate of proposal submitted by the Institute for each programme.

For a correct classification of the funded projects, CNR has designed 4 thematic areas which have incorporated the old ones (A5-Technologies, A6-Impacts and A7-Data). Each project funded should refer to this classification but some long-standing projects are still maintaining the old subdivision .

The new classification codes is the following:

- AP1: Global Change
- AP2: Natural Resources and Ecosystems;
- AP3: Natural Hazards, Human Impacts and Technology for the Environment;
- AP4: Earth Observation

Fig. 3 shows the division of the CNR-ISMAR funded project according to this classification:

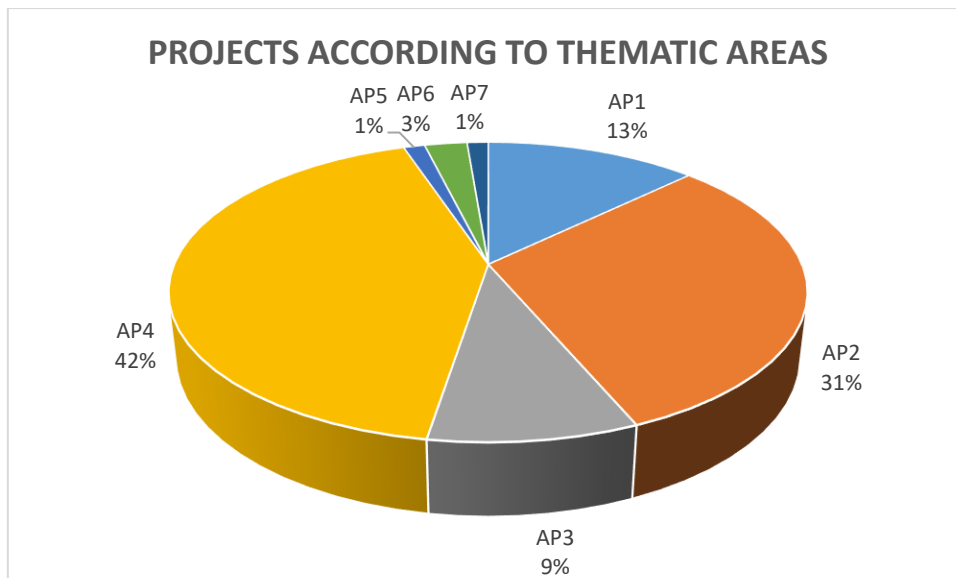


Fig.3: Projects funded under CNR Thematic Areas

It is worth to underline that the classification is quite different as shown in the following graphic related to the different programmes.

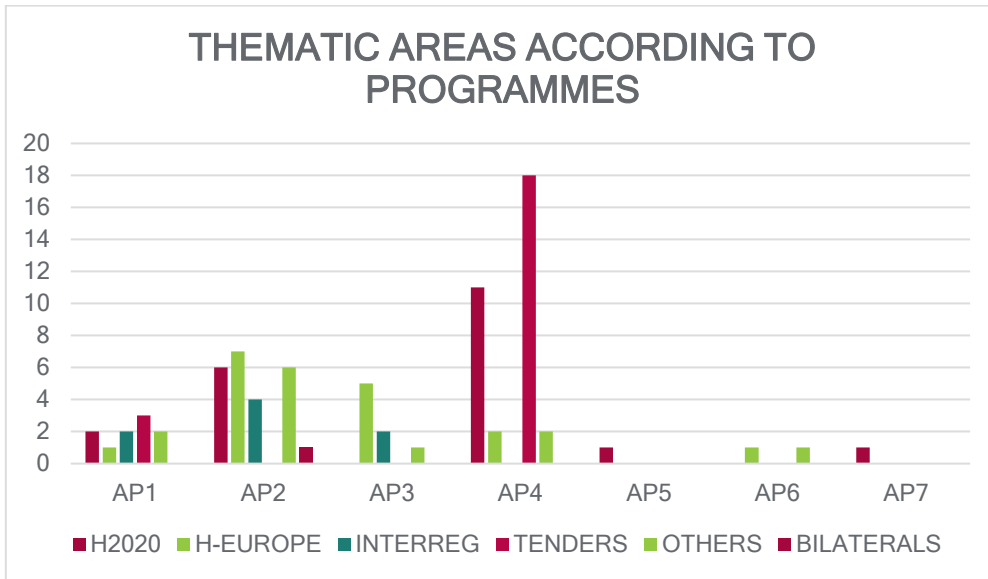


Fig.4: Project Thematic Areas in different EU programmes

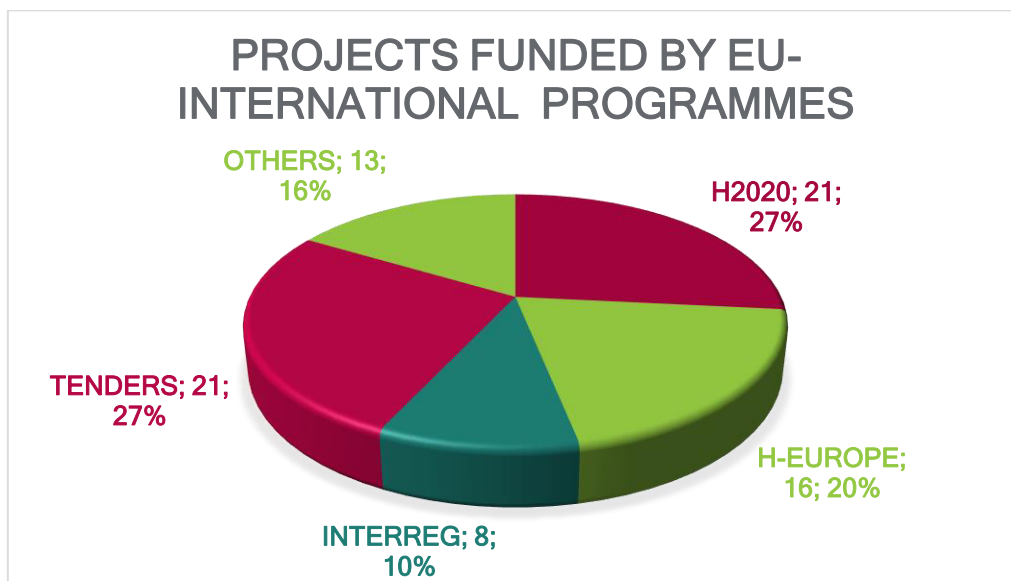


Fig.5: Projects funded by EU/International Programmes

In 2023 CNR-ISMAR has increased its participation to all EU programmes achieving good results with a general success rate of 70,37% and detailed in chapter 10.

## 4. HORIZON EUROPE

### 4.1 THE PROGRAMME

HORIZON EUROPE (hereafter HEU) is the EU's key funding programme for research and innovation, framework programme for the years 2021-2027. It tackles climate change, helps to achieve the UN's Sustainable Development Goals and boosts the EU's competitiveness and growth.

The programme facilitates collaboration and strengthens the impact of research and innovation in developing, supporting and implementing EU policies while tackling global challenges. It supports the creation and better diffusion of excellent knowledge and technologies.

It creates jobs, fully engages the EU's talent pool, boosts economic growth, promotes industrial competitiveness and optimizes the investment impact within a strengthened European Research Area.

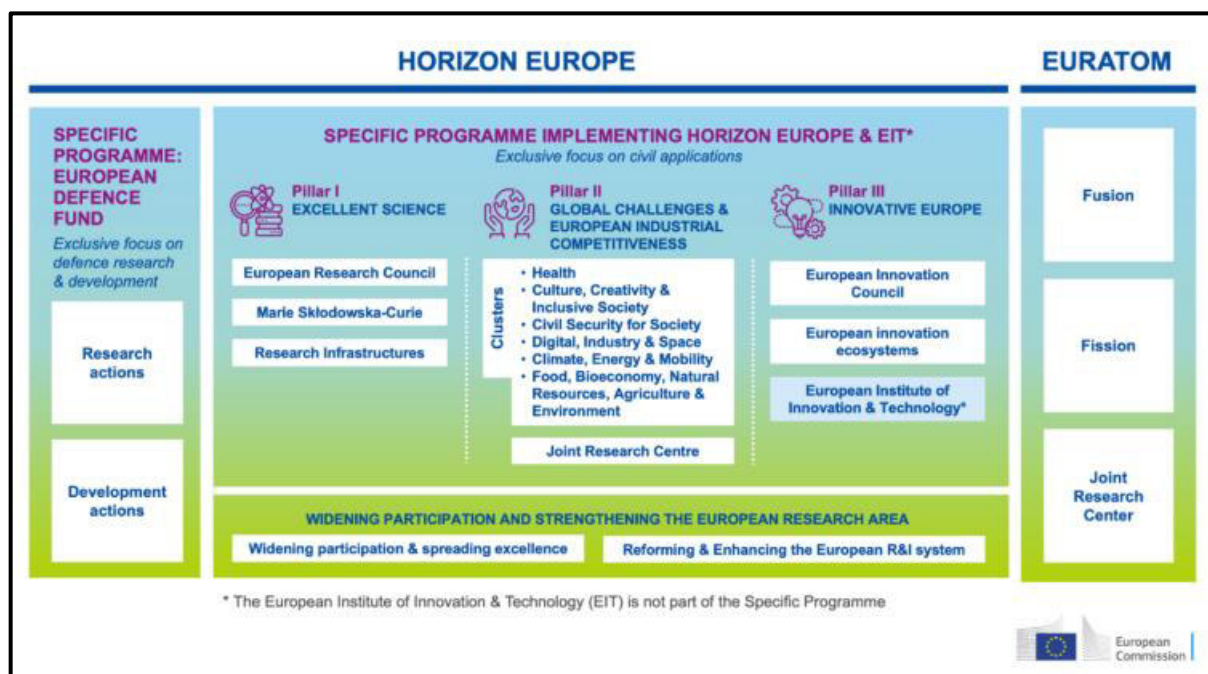


Fig.6: Pillars of Horizon Europe

HORIZON EUROPE is divided into three pillars and one part, corresponding to its main priorities:

- the Excellent Science pillar aims to increase the EU's global scientific competitiveness. It supports frontier research projects defined and driven by top researchers themselves through the European Research Council, funds fellowships for postdoctoral researchers, doctoral training networks and exchanges for researchers through Marie Skłodowska-Curie Actions and invests in world-class research infrastructures;
- the Global Challenges and European Industrial Competitiveness pillar supports research relating to societal challenges and reinforces technological and industrial capacities through clusters. It sets EU-missions with ambitious goals tackling some of our biggest problems. It also includes activities pursued by the Joint Research Centre which supports EU and national policymakers with independent scientific evidence and technical support;

- the Innovative Europe pillar aims to make Europe a frontrunner in market creating innovation via the European Innovation Council. It also helps to develop EU Grants: HE Programme Guide: V1.5 – 01.02.2022 8 the overall European innovation landscape through the European Institute of Innovation and Technology (EIT) which fosters the integration of the knowledge triangle of education, research and innovation.

The part Widening Participation and Strengthening the European Research Area (ERA) increase support to EU Member States in their efforts to make the most of their national research and innovation potential. Finally, Horizon Europe will be implemented also through the European Defence Fund and complemented by the Euratom Research and Training Programme.

HORIZON EUROPE have a budget of around €95.5 billion for 2021-2027. This includes EUR 5.4 billion from the Next Generation EU instrument, particularly to support the green and digital recovery from the COVID crisis. The budget is divided amongst the pillars and 15 components to support all the areas of research and innovation: excellent science, global challenges and industrial competitiveness, innovative Europe and widening participation and strengthening the European Research Area.

#### 4.2 CNR-ISMAR IN HORIZON EUROPE

The Institute is participating in 16 projects for a total budget of € 3.321.931,75. It is worth to underline that the number of project approved in 2023 under the HEU programme is quite remarkable (5 projects) considering that many researchers allocated most of their time in preparing the projects funded under the PNRR programme.

This success shows a good capacity of the Institute to deal with EU programmes and a consolidated wide network of partners established during the previous H2020 Programme period. Furthermore, in one HEU project (BlueNights) CNR-ISMAR covers the role of Lead Partner.

Anyway, CNR-ISMAR has taken part in 8 projects under the Research and Innovation Actions Funding Scheme, 2 projects under the Coordination and Support Action, 2 under Research Infrastructure, 3 under Innovative Actions and 1 under Marie Skłodowska-Curie Actions.

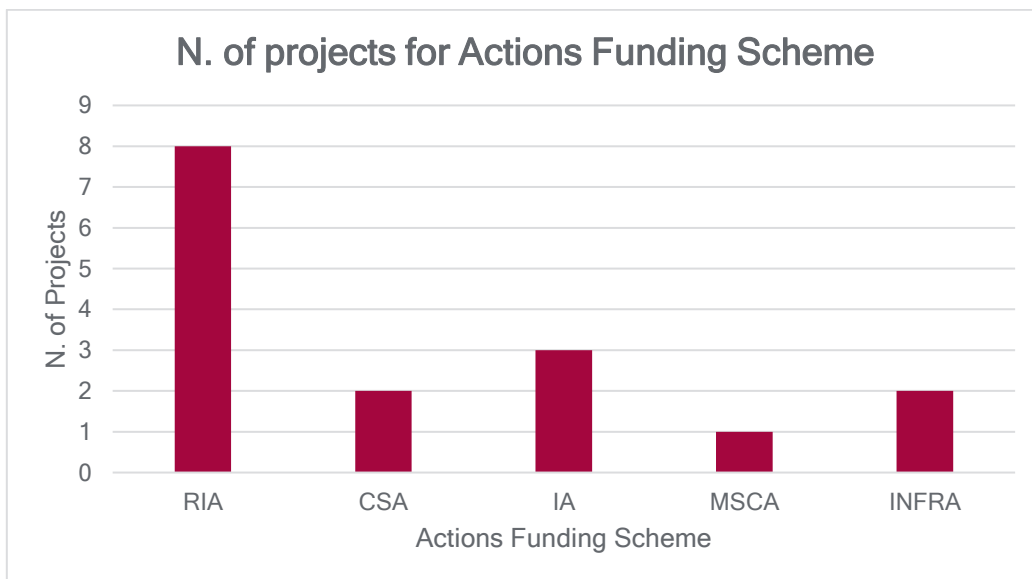



Fig.7: Projects funded for types of Actions Funding Scheme


## List of CNR-ISMAR projects funded under Horizon Europe



<b>Programme:</b>  HORIZON-CL4-2022-SPACE-01 - RIA	
<b>CNR Strategic Area:</b> AP4	
<b>Project title:</b> <b>New Copernicus capability for trophic ocean networks</b>	
<b>Acronym:</b> NECCTON	
<b>Role in the project:</b> Partner	
<b>Duration:</b> 1/1/2023 - 31/12/2026	
<b>Total budget:</b> € 9.999.373,00	
<b>ISMAR budget:</b> € 208.000,00	
<b>Web site:</b> <a href="https://www.neccton.eu/">https://www.neccton.eu/</a>	
<b>Key words:</b> Copernicus, ecosystem observation, ocean biodiversity	
<b>Summary:</b>  <p>The ocean's biodiversity supports the livelihoods of over three billion people, providing vital services, including food and nutrient cycling. However marine policy and resource management do not yet consider the latest scientific advances, even when the state-of-the-art operational models of the European Copernicus Marine Service (CMEMS) are used. Our objective is to enable CMEMS to deliver novel products that inform marine biodiversity conservation and food resources management, by fusing new data into innovative ecosystem models that integrate biological and abiotic components, habitats, and stressors of marine ecosystems. NECCTON will inter-link new models in the CMEMS systems, thus building novel capacities to simulate higher-trophic-levels, benthic habitats, pollutants, and deliver projections of climate change impacts. We will develop and exploit new data-processing chains, supporting CMEMS' use of novel ecosystem observations, including new hyperspectral data from satellites, as well as available acoustic, pollution and omics data. We will fuse these new data and models by using innovative machine-learning algorithms to improve models and data assimilation methods. These developments will be applied in thirteen case studies, co-designed with fisheries and conservation managers as part of our pathway-to-impact, resulting in the demonstration of Technological Readiness Level 6 of NECCTON products. The project objectives will be achieved by a team of twenty-three world-class organizations with track records for all the key project components. It includes the CMEMS Entrusted Entity and core developers, who will promote the final uptake of NECCTON by CMEMS. On project completion, NECCTON will provide CMEMS with the scientific and technical capabilities to sustain twenty-five new products in their operational portfolio, ultimately enabling users to make informed decisions on the exploitation of marine services, enhancing sustainability and conservation.</p>	
<b>Contact person in ISMAR:</b> <a href="mailto:federica.braga@ismar.cnr.it">federica.braga@ismar.cnr.it</a>	

**Partnership:**

1. Mercator Ocean (France)
2. Plymouth Marine Laboratory Limited (United Kingdom)
3. Bolding & Bruggeman Aps (Denmark)
4. Stiftelsen Nansen Senter for Miljoog Fjernmaling (Norway)
5. Universite de Liege (Belgium)
6. Institut Francais de Recherche pour l'Exploitation de la Mer (France)
7. Istituto Nazionale di Oceanografia e di Geofisica Sperimentale (Italy)
8. Met Office (United Kingdom)
9. Stichting Nederlandse Wetenschappelijk Onderzoek Instituten (The Netherlands)
10. Bundesamt fur Seeschifffahrt und Hydrographie (Germany)
11. Collecte Localisation Satellites (France)
12. Fondazione Centro Euro-Mediterraneosui Cambiamenti Climatici (Italy)
13. Helmholtz-Zentrum Hereon GmbH (Germany)
14. Danmarks Tekniske Universitet (Germany)
15. Hellenic Centre for Marine Research (Greece)
16. Lobelia Earth SI (Spain)
17. Ecopath International Initiative Asociacion (Spain)
18. Universiteit Utrecht (The Netherlands)
19. Minds Technologies Kai Epistimes Perivallontos I.K.E. (Greece)
20. Instituto Do Mar IMAR (Portugal)
21. Consiglio Nazionale Delle Ricerche, CNR (Italy)
22. Centre National de la Recherche Scientifique CNRS (France)
23. Sorbonne Universite (France)


<b>Programme:</b> HORIZON-CL6-2022-BIODIV-01 - RIA	
<b>CNR Strategic Area:</b> AP2	
<b>Project title:</b> <b>MARine COastal BiODiversity Long-term Observations</b>	
<b>Acronym:</b> MARCO-BOLO	
<b>Role in the project:</b> Partner	
<b>Duration:</b> 01/12/2022 – 30/11/2026	
<b>Total budget:</b> € 8.614.089,00	
<b>ISMAR budget:</b> € 181.188,00	
<b>Web site:</b> <a href="https://marcobolo-project.eu/">https://marcobolo-project.eu/</a>	
<b>Key words:</b> coastal and marine biodiversity, CoP	
<b>Summary:</b> <p>MARCO-BOLO aims to structure and strengthen European coastal and marine biodiversity observation capabilities, linking them to global efforts to understand and restore ocean health, hence ensuring that outputs respond to explicit stakeholder needs from policy, planning and industry. To this end it will establish and engage with a Community of Practice (CoP) to determine end user needs with the aim of optimizing marine data flows, knowledge uptake, and improving governance based on biodiversity observations. By exploiting synergies with concurrent projects MARCO-BOLO will develop and demonstrate new autonomous technology for biodiversity mapping and monitoring, and data streams from remote sensing, eDNA, robotics, optical and acoustic observations. Protocols for eDNA-based biodiversity observations are established and validated across applications, taxa and ecosystems. The sequence of the analytical and technical processes for the different use cases will be incorporated into operational Essential Ocean Variables (EOVs) and Essential Biodiversity Variables (EBVs) and included into online reusable workflows, contributing to the free and open access of EU and global biodiversity information facilities, and to support major EU biodiversity directives and global initiatives.</p> <p>The project partnership will leverage its international activities (MBON, GOOS, OBIS) and participation in UN Ocean Decade Programs (Marine Life 2030, OBON, ODIS, Ocean Practices for the Decade) to align the MARCO-BOLO work programme to global CoP, ensuring European participation and leadership in global biodiversity monitoring and global science. MARCO-BOLO results will be designed to build upon existing capability and infrastructures, and to be relevant to existing frameworks so that outputs can be easily integrated into national, regional (EU and adjacent sea basins), and global observation systems, with no delay ensuring the reusability of the investments Europe is already making in data generation.</p>	
<b>Contact person in ISMAR:</b> <a href="mailto:caterina.bergami@ismar.cnr.it">caterina.bergami@ismar.cnr.it</a>	
<b>Partnership:</b> <ol style="list-style-type: none"> <li>1. European Marine Biological Resource Centre European Research Infrastructure Consortium (France)</li> <li>2. Vlaams Instituut Voor De Zee (Belgium)</li> </ol>	



3. Helmholtz-Zentrum Hereon GMBH (Germany)
4. E-Science European Infrastructure for Biodiversity and Ecosystem Research (Spain)
5. Senckenberg Gesellschaft für Naturforschung (Germany)
6. Universitetet i Tromsø - Norges Arktiske Universitet (Norway)
7. Marine Scotland (United Kingdom)
8. United Nations Educational Scientific and Cultural Organization (France)
9. Goeteborgs Universitet (Sweden)
10. Marine Biological Association of the United Kingdom (United Kingdom)
11. Institutul National de Cercetare-Dezvoltare Pentru Geologie si Geoecologie Marina GEOECOMAR (Romania)
12. Autoridad Portuaria de Sevilla (Spain)
13. Universidad de Sevilla (Spain)
14. Universitatea din Bucuresti (Romania)
15. Consiglio Nazionale delle Ricerche CNR (Italy)
16. Stazione Zoologica Anton Dohrn (Italy)
17. Danmarks Tekniske Universitet (Denmark)
18. Ukrainian Scientific Centre Of Ecology Of The Sea Ukraina
19. Centre National De La Recherche Scientifique CNRS (France)
20. Alfred-Wegener-Institut Helmholtz-Zentrum für Polar- und Meeresforschung (Germany)
21. Seascope Belgium (Belgium)
22. Centro Interdisciplinar de Investigacao Marinha e Ambiental (Portugal)
23. Erinn Innovation Limited (Ireland)
24. National Oceanography Centre (United Kingdom)
25. Helmholtz-Zentrum für Umweltforschung GMBH - UFZ (Germany)
26. Universität Wien (Austria)
27. Norce Norwegian Research Centre AS (Norway)
28. Sorbonne Université (France)

<b>Programme:</b> HORIZON-MISS-2021-OCEAN-02 - IA	
<b>CNR Strategic Area:</b> AP2	
<b>Project title:</b> <b>Restoration of the Danube River Basin Waters for Ecosystems and People from Mountains to Coast</b>	
<b>Acronym:</b> DANUBE4all	
<b>Role in the project:</b> Partner	
<b>Duration:</b> 01/01/2023 – 31/12/2027	
<b>Total budget:</b> € 8.422.267,50	
<b>ISMAR budget:</b> € 200.000,00	
<b>Web site:</b> <a href="https://www.danube4allproject.eu/">https://www.danube4allproject.eu/</a>	
<b>Key words:</b> Danube River; Ecosystem restoration; nature base solution; protection to extreme events	
<b>Summary:</b>  <p>Over one million barriers on Europe’s rivers have resulted in extensive loss of river connectivity and 70-90 % of Europe’s floodplain areas are ecologically degraded due to human modifications. Despite having an ambitious EU policy framework in place, implementation of fresh and transitional water ecosystem restoration is lagging behind. Reasons for this lie among others in a lack of knowledge, awareness and participation of local people and business actors. The overall aim of DANUBE4all is the development of a comprehensive Restoration Action Plan for the Danube river basin lighthouse developed in an unprecedented co-creation process with stakeholders, integrating citizens’ interests to support the Mission “Restore our ocean and waters by 2030”. Based on solid scientific knowledge and new findings, the Action Plan will promote the improvement of ecological status, biodiversity and ecosystem connectivity. The development and implementation of innovative “Win-Win Nature Based Solutions” will simultaneously lead to an enhanced free-flowing status of rivers and floodplains, flood and drought risk reduction and enhancement of sediment and biota continuity. The aim is to adapt to climate change as well as to improve the endangered biodiversity of ecosystems. This will be reached by identifying, processing and upscaling effective and economically profitable restoration measures. DANUBE4all will implement innovative demonstration activities at three sites in the Upper, Middle Danube and the Danube Delta. DANUBE4all will link ecological and economic benefits providing tailored business cases for SMEs, and will deliver innovative tools to accelerate citizens’ and stakeholders’ engagement. DANUBE4all will provide GIS and Citizen Science tools for upscaling these restoration actions via ten Synergy Sites to the Danube Basin and will also transfer the outcomes to five Associated Regions by concrete steps towards the development of Replication Roadmaps for restoration action.</p>	
<b>Contact person in ISMAR:</b> <a href="mailto:c.ferrarin@ismar.cnr.it">c.ferrarin@ismar.cnr.it</a>	
<b>Partnership:</b>  <ol style="list-style-type: none"> <li>1. Universitaet fuer Bodenkultur Wien (Austria)</li> <li>2. Zentrum fur Soziale Innovation GmbH (Austria)</li> </ol>	

3. PULSAQUA (The Netherlands)
4. Institutul National de Cercetare-Dezvoltare Pentru Geologie Marina (Romania)
5. Odessa State Environmental University (Ukraine)
6. Ecologic Institut gemeinnuetzige GmbH (Germany)
7. Institute for Multidisciplinary Research - University of Belgrade (Serbia)
8. Global Water Partnership Central and Eastern Europe (Slovakia)
9. Forschungsverbund Berlin e.V. / Leibn. Instit. of Freshw. Ecol. Inl. Fish. (Germany)
10. Consiglio Nazionale delle Ricerche (Italy)
11. Ruder Boskovic Institute (Croatia)
12. University College Cork - National University of Ireland (Ireland)
13. Institute of Biodiversity and Ecosystem Research (Bulgaria)
14. Vyskumny Ustav Vodneho Hospodarstva (Slovakia)
15. Stichting Deltares (The Netherlands)
16. Institutul National de Cercetare-Dezvoltare Delta Dunarii (Romania)
17. The University of Stirling (United Kingdom)
18. Univerza v Ljubljani (Slovenia)
19. Danube River Network of Protected Areas (Austria)
20. International Commission for the Protection of the Danube River (Austria)
21. WWF for Nature Hungary Foundation (Hungary)
22. World Fish Migration Foundation (The Netherlands)
23. Via Donau Osterreichische Wasserstrassen Gesellschaft MBH (Austria)
24. Budapest University of Technology and Economics (Hungary)
25. Asociatia WWF Romania (Romania)
26. Plymouth Marine Laboratory Limited (United Kingdom)
27. Civitta Strategy & Consulting SA (Romania)


<b>Programme:</b> HORIZON-INFRA-2022-DEV-01 - INFRA	
<b>CNR Strategic Area:</b> AP4	
<b>Project title:</b> <b>Developing a Research Infrastructure Concept to Support European Hydrography</b>	
<b>Acronym:</b> EUROGO-SHIP	
<b>Role in the project:</b> Partner	
<b>Duration:</b> 01/12/2022 – 01/12/2025	
<b>Total budget:</b> € 2.998.546,00	
<b>ISMAR budget:</b> € 196.763,00	
<b>Web site:</b> <a href="https://eurogo-ship.eu/">https://eurogo-ship.eu/</a>	
<b>Key words:</b> Ship observations, hydrography data, end-users, best-practice, ocean demonstration, access, training, co-design RI, landscape	
<b>Summary:</b>  <p>Observations from ships, and in particular water column measurements, remain the backbone of much Oceanographic Science, including fisheries, regional oceanography, and global climate science. Every coastal country in Europe has a programme of such observations that feeds data into evaluations in support of the Marine Strategy Framework Directive with these programmes being organised into both regional clusters and serving as contributions to wider international networks. In 2019, as part of the OceanOBS conference, networks identified gaps in their requirements for support and here we propose a programme to address these requirements within the context of the European RI landscape. The proposed new services and access opportunities based on the network needs presented at OceanOBS are:</p> <ul style="list-style-type: none"> <li>• shared facilities such as training, best practices, access to capability and access to equipment through a European Marine Equipment Pool (EMEP)</li> <li>• data curation to ensure fit for purpose data systems and metadata for both real-time and delayed mode quality-controlled data</li> <li>• secondary quality control to increase consistency and add uncertainty estimates to observations.</li> </ul> <p>These will be refined by broad consultation with data originators, governments, funders and end-users. In addition, pilot activities will both provide immediate support to the networks and help to refine a statement of requirements. These requirements will be compared to the set of services already available within the European RI Landscape and on the basis of this a new structure for supporting European Hydrography proposed. Possible models range from complete service delivery within existing RIs and the establishment of no new structures through to the creation of an RI with a set of services unavailable elsewhere.</p>	
<b>Contact person in ISMAR:</b> <a href="mailto:katrin.schroeder@ismar.cnr.it">katrin.schroeder@ismar.cnr.it</a>	
<b>Partnership:</b>  1. Norce Norwegian Research Centre (Norce) – (Norway)	

2. Plymouth Marine Laboratory (Pml) – (United Kingdom)
3. Consiglio Nazionale delle Ricerche (Cnr) – (Italy)
4. Institut Francais de Recherche pour L'exploitation de la Mer (Ifremer) – (France)
5. Marine Institute (Mi) – (Ireland)
6. National Oceanography Centre (Noc) – (United Kingdom)
7. Met Office (Ukmo) – (United Kingdom)
8. Helmholtz-Zentrum fur Ozeanforschung Kiel (Geomar) – (Germany)
9. Seascope Belgium (Ssbe) – (Belgium)
10. World Meteorological Organization (Wmo) – (Switzerland)
11. Integrated Carbon Observation System European
12. Research Infrastructure Consortium (Icoe-Eric) – (Finland)
13. Universitetet I Bergen(Uib) – (Norway)
14. Agencia Estatal Consejo Superior de Investigaciones Cientificas (Csic) – (Spain)
15. Institutul National de Cercetare-Dezvoltare Pentru Geologie si Geoecologie Marina-Geocomar (Romania)

<b>Programme:</b> HORIZON-INFRA-2021-DEV-02-02 - INFRA	
<b>CNR Strategic Area:</b> AP3	
<b>Project title:</b> <b>Implemetantion Phase of DANUBIUS-RI</b>	
<b>Acronym:</b> DANUBIUS-IP	
<b>Role in the project:</b> Partner	
<b>Duration:</b> 01/10/2022 – 30/09/2025	
<b>Total budget:</b> € 1.302.655,00	
<b>ISMAR budget:</b> € 56.250,00	
<b>Web site:</b> n.a.	
<b>Key words:</b> anthropogenic pressures, climate change, economic impact	
<b>Summary:</b>  <p>DANUBIUS-IP is a 36-month Coordination and Support Action to support the ongoing development of DANUBIUS-RI – an environmental research infrastructure linking rivers and seas – as it proceeds towards its Operational Phase. The project proposes 7 work packages, in two parallel workstreams, that together will:</p> <ul style="list-style-type: none"> <li>• deliver a new governance structure for the RI as it transitions to DANUBIUS ERIC;</li> <li>• enhance the ICT potential of the RI to enable virtual delivery of key services;</li> <li>• implement the Science and Innovation Agenda supported by agile and quality assured scientific services;</li> <li>• demonstrate the value of the RI through examples of the unique services that the RI can offer to end-users across Europe and internationally; <ul style="list-style-type: none"> <li>• expand the DANUBIUS-RI community and enhance its standing in the wider European and International environmental RI landscape; and</li> </ul> </li> <li>• ensure that the potential of DANUBIUS-RI to have significant social and economic impact is widely communicated.</li> </ul> <p>DANUBIUS-IP is coordinated by GeoEcoMar (Romania) and brings together 25 experienced partners from 14 countries from across Europe in a consortium with complimentary areas of multi-disciplinary expertise across the freshwater and marine research fields. The project specifically seeks to address recommendations from the recent ESFRI and High-Level Expert Group reports (on DANUBIUS-RI) and make a significant contribution to the expected outcomes and wider impacts of the Horizon Europe Programme. As such the project considers the importance of sustainability of financial commitments, the need to test the funding model and to enhance the visibility of the RI. DANUBIUS-IP will further demonstrate the efficacy of an integrated and interdisciplinary approach embracing a 'river-sea continuum' perspective to fill current gaps in the Research and Innovation landscape to address key societal challenges in these environments impacted by anthropogenic pressures and climate change.</p>	
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**Partnership:**

1. Institutul National de Cercetare-Dezvoltare Pentru Geologie si Geoecologie Marina-Geoecomar (Geoecomar) - (Romania)
2. Institutul National de Cercetare Dezvoltare Pentru Stiinte Biologice ra - (INCDSB), (Romania)
3. Helmholtz-Zentrum Hereon Gmbh (Hereon) - (Germany)
4. Odessa State Environmental University (Osenu) – (Ukraine)
5. Ustav Vyzkumu Globalni Zmeny Av Cr Vvi (UVGZ) - (Czech Republic)
6. Stichting Deltares (Deltares) - (Netherlands)
7. University College Cork - National University of Ireland, Cork (UCC) - (Ireland)
8. Universitat Politecnica de Catalunya (UPC) - (Spain)
9. Universidad de Sevilla (USE) – (Spain)
10. Autoridad Portuaria de Sevilla (APS) - (Spain)
11. Jihočeská Univerzita v Českých Budejovicích (JU) - (Czech Republic)
12. Consiglio Nazionale Delle Ricerche (CNR) - (Italy)
13. CORILA - Consorzio Per Il Coordinamento delle Ricerche Inerenti al Sistema Lagunare di Venezia (Corila) - (Italy)
14. Bundesanstalt für Wasserbau (BAW) - (Germany)
15. Fciencias.Id - Associacao Para a Investigacao e Desenvolvimento de Ciencias (Fc.Id), (Portugal)
16. Hellenic Centre for Marine Research (HCMR) - (Greece)
17. Universitatea din Bucuresti (UB) –( Romania)
18. Bulgarian Academy of Sciences (BAS) – (Bulgaria)
19. Technische Universitaet Dresden (TUD) - (Germany)
20. X-Oficio Advokat Ab (X-Oficio) - (Sweden)

<b>Programme:</b> HORIZON-CL6-2021-BIODIV-01-12 - RIA	
<b>CNR Strategic Area:</b> AP2	
<b>Project title:</b> Improved Science-Based Maritime Spatial Planning to Safeguard and Restore Biodiversity in a coherent European MPA network	
<b>Acronym:</b> MSP4BIO	
<b>Role in the project:</b> Partner	
<b>Duration:</b> 1/08/2022 – 31/07/2025	
<b>Total budget:</b> € 3.490.501,00	
<b>ISMAR budget:</b> € 300.875,00	
<b>Web site:</b> <a href="https://msp4bio.eu/">https://msp4bio.eu/</a>	
<b>Key words:</b> biodiversity, MSP, management measures, policy process	
<b>Summary:</b>  <p>With an overall aim to support the coherent implementation of the EU (European Union) Biodiversity Strategy (EUBS) 2030, the Convention on Biological Diversity (CBD) post-2020 framework, as well as the EU Green Deal, MSP4BIO develops and demonstrates the ways in which knowledge-based MSP becomes a vehicle and a tool for the protection and recovery of ecosystems. Specifically, MSP4BIO will develop an integrated flexible socio-ecological management to cope with a rapidly changing environment for coastal, offshore, and deep-sea ecosystems and validate its concrete applicability in 6 test sites in 5 European Sea Basins. The management relies on improved systemic biodiversity prioritization criteria for MPAs and EBSAs, based on the best available scientific knowledge on biodiversity attributes, and linking spatial ecological features (including migratory ones) with socio-economic considerations. MSP4BIO uses a participatory approach to co-develop ecosystem services trade-off scenarios to prioritize the areas and assess the suitability of spatial and strategic management measures from the ecological and socio-economic perspectives. The approach integrates the criteria and objectives of relevant maritime and biodiversity policies as well as the EUBS 2030 to ensure coherent policy implementation. As such, the project will develop and improve approaches, methods, and tools to feed scientific knowledge, making it of direct use to planners and MPA managers, while producing site-specific results informing site-specific, and broader policy processes and decisions. The project builds on and integrate existing knowledge and results from multiple origins, and ensures effective collaboration with relevant projects and initiatives to fill present gaps on marine biodiversity, speeding up the scientific brake while paving pave the way for effective biodiversity management.</p>	
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<b>Partnership:</b>  1. S.Pro - Sustainable Projects GmbH (Germany)	




2. Centre D'Etudes et D'Expertise sur les Risques L'environnement La Mobilité et L'Aménagement (France) Center for Coastal and Marine Studies (Ccms) (Bulgaria)
3. Uniwersytet Morski w Gdyni (Poland)
4. Universidad de Cadiz (Spain)
5. Université de Nantes (France)
6. Tartu Ülikool (Estonia)
7. Fondazione WWF Mediterranean (Italy)
8. WWF European Policy Office (Belgium)
9. Public Institution Coastal Research and Planning Institute (Lithuania)
10. The Baltic Marine Environment Protection Commission (Finland)
11. Consiglio Nazionale delle Ricerche (Italy)
12. Vlaams Instituut voor de Zee (Belgium)
13. Suomen Ympäristökeskus (Finland)
14. Universidade dos Açores (Portugal)
15. Institutul National de Cercetare-Dezvoltare Marina Grigore Antipa (Romania)
16. Priority Actions Programme Regional Activity Centre (Croatia)
17. Seascope Consultants Ltd (United Kingdom)


<b>Programme:</b> HORIZON-MISS-2021-OCEAN-01 - CSA	
<b>CNR Strategic Area:</b> AP2	
<b>Project title:</b> <b>Preparing the Research &amp; Innovation Core for Mission Ocean, Seas &amp; Waters</b>	
<b>Acronym:</b> PREP4BLUE	
<b>Role in the project:</b> Part of the CNR team	
<b>Duration:</b> 01/06/2022 - 31/05/2025	
<b>Total budget:</b> € 4.997.690,00	
<b>ISMAR budget:</b> € 326.738,00	
<b>Web site:</b> <a href="https://prep4blue.eu/">https://prep4blue.eu/</a>	
<b>Key words:</b> Mission Oceans, Research and Infrastructure implementation, Light House Projects, public engagement, co-design and co-implementation	
<b>Summary:</b>  Mission Ocean, seas and water aims at restoring the health of our ocean and waters by 2030, as a major contributor to the European Green Deal and the Sustainable Development Goals. Research and innovation will be a key component of the Mission, which will link initiatives across disciplines, mobilise policymakers, stakeholders and citizens, and leverage public and private investments. PREP4BLUE overarching objective is to facilitate a successful first phase (2022-2025) of the Mission, by developing the co-creation and co-implementation R&I modalities required to achieve the Mission objectives and preparing the ground for inspiring and engaging citizens and stakeholders. The project is designed to deliver a series of tools, guidelines, methodologies and recommendations tested through pilots, which will interlink, leverage and optimise activities among the projects funded under the Mission. Our systemic approach will foster cohesion and connectivity between knowledge and technology, funding, regulation, education and skills, social structures and co-creation with R&I actors, citizens and stakeholders. PREP4BLUE multidisciplinary and multi-actor consortium is actively engaged in basin-based strategies and related R&I activities, with strong experience in co-developing business models and recommendations for policy-makers, expertise in social sciences related to participative democracy and citizen engagement and excellent track-record in methodologies for knowledge management and transfer, as well as in stakeholder engagement. PREP4BLUE will also carry out strategic actions to assure the alignment of our CSA with the evolution of the Mission components, including the Mission Core Network, other contributors to the Mission and other Missions. Our project will contribute to preparedness and engagement of all relevant stakeholders to empower them to play an active role in the Mission.	
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<b>Partnership:</b>  1. IFREMER (IFR) (France) 2. ERINN Innovation Ltd (ERINN) (Ireland)	

3. Joint Programming Initiative Healthy and Productive Seas and Oceans (JPIO) (Belgium)
4. German Marine Research Consortium (KDM) (Germany)
5. Flanders Marine Institute (VLIZ) (Belgium)
6. Blue Cluster (VLIZ-BC) (Belgium)
7. Fraunhofer Institute for Computer Graphics Research IGD (FHG) (Germany)
8. Conference of Peripheral Maritime Regions (CPMR) (France)
9. University of Southern Denmark (SDU) (Denmark)
10. Centro Tecnológico del Mar (CETMAR) (Spain)
11. Nordland Research Institute (NRI) (Norway)
12. Institut de Ciències del Mar (CSIC) (Spain)
13. University College Cork - National University of Ireland, Cork (UCC) (Ireland)
14. EuroMarine Association (EuroMarine) (France)
15. National Research Council (CNR) (Italy)
16. S.Pro - Sustainable Projects GmbH (S.Pro) (Germany)
17. 17. Galway Atlantic Aquaria (GAA) (Ireland)

<b>Programme:</b> HORIZON-CL4-2021-SPACE-01 - RIA	
<b>CNR Strategic Area:</b> AP 1	
<b>Project title:</b> Arctic Cross-Copernicus forecast products for sea Ice and iceBERGs	
<b>Acronym:</b> ACCIBERG	
<b>Role in the project:</b> Partner	
<b>Duration:</b> 01/01/2023 – 31/12/2026	
<b>Total budget:</b> € 2.999.315,00	
<b>ISMAR budget:</b> € 90.000,00	
<b>Web site:</b> <a href="https://acciberg.nersc.no/">https://acciberg.nersc.no/</a>	
<b>Key words:</b> Arctic, Copernicus Services, security risks	
<b>Summary:</b> <p>Sea ice and icebergs are a major security risk for navigation and fisheries in Arctic waters. Both will remain a significant threat even in a warmer Arctic, where traffic is expected to increase. Sea Ice Services are needed more and more to support less experienced captains with automated high quality forecasts and new information about icebergs that are not available today. To monitor and forecast sea ice types and icebergs ahead of time, adequate forecasts of sea ice, ocean, wind, and wave conditions for the whole Arctic are crucial. The Copernicus Marine and Climate Change Services provide such information products. However their uncertainties are not provided in a consistent and user-friendly manner. Reliable uncertainty estimates can however be based on forecast ensembles across the two Copernicus Services.</p> <p>ACCIBERG will improve the quality of sea ice, and ocean products and their uncertainty estimates in both Copernicus Services. It will also extend the coverage of the satellite detection of icebergs and develop a completely new iceberg forecast service. ACCIBERG will build upon state of the art sea ice and ocean models, remote sensing algorithms, data assimilation and cloud computing to offer probabilistic sea ice and iceberg forecasts based on Copernicus data consistently. National or commercial sea ice services are limited to smaller regions and will benefit from the increased accuracy and consistency across the Copernicus products. The new forecasts will be demonstrated in ACCIBERG by European Ice Services and ships of opportunity. The new iceberg forecasts will be automated and validated, and benefit a wide range of user groups navigating in the Arctic, from fisheries to cruise tourism, including Marine Surveillance under the Copernicus Security Service. We will provide prototype products ready to be implemented in the Copernicus services and accessible from a single entry point: its inherent cloud computing solution.</p>	
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<b>Partnership:</b> <ol style="list-style-type: none"> <li>1. Stiftelsen Nansen Senter For Miljoog Fjernmaling (NERSC), (Norway)</li> <li>2. Meteorologisk Institutt (METNO), (Norway)</li> <li>3. Mercator Ocean (MOI), (France)</li> </ol>	


4. European Centre For Medium-Range Weather Forecasts (ECMWF) (United Kingdom)
5. Consiglio Nazionale delle Ricerche (CNR), (Italy)
6. Itunova Teknoloji Anonim Sirketi (ITUNOVA), (Turkey)
7. Danmarks Meteorologiske Institut (DMI), (Denmark)

<b>Programme:</b> HORIZON-MSCA-2022-CITIZENS-01 - MSCA	
<b>CNR Strategic Area:</b> AP2	
<b>Project title:</b> <b>A touch of Blue in the EU Research Night for a more Sustainable Use of the Ocean</b>	
<b>Acronym:</b> BLUE-NIGHTS	
<b>Role in the project:</b> Lead Partner	
<b>Duration:</b> 01/03/2022 - 29/02/2024	
<b>Total budget:</b> € 622.835,00	
<b>ISMAR budget:</b> € 109.850,00	
<b>Web site:</b> <a href="https://bluenights.eu/">https://bluenights.eu/</a>	
<b>Key words:</b> Researchers Nights, ocean science	
<b>Summary:</b>  The main objective of the proposal is to bring the many facets and faces of people working in ocean science & research to the general public of Europe by organising a series of interconnected EU Blue Researchers Nights (BlueNIGHTs) to demonstrate that the ocean can be a source of inspiration, an object of interest/study, and a field of investigation for people with very different backgrounds, hobbies and passions, including science, history, technology, sociology, pedagogy, economics, art, design, etc. By doing so, this collective project will: <ul style="list-style-type: none"> <li>- Bring people to key objectives, principles and priorities of the European Green Deal that relate to the ocean: delivering a healthy and resilient ocean that can support sustainable Blue Growth and respond to Societal Priorities of Europe.</li> <li>- Contribute to make European citizens Ocean Literate in line with the objectives and priorities of EU4Ocean Coalition, an initiative supported by the European Commission's Directorate-General for Maritime Affairs and Fisheries (DG MARE).</li> </ul>	
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<b>Partnership:</b> <ol style="list-style-type: none"> <li>1. Consiglio Nazionale delle Ricerche (Italy)</li> <li>2. Acteon Sarl (France)</li> <li>3. Suomen Ymparistokeskus (Finland)</li> <li>4. Institutul National de Cercetare-Dezvoltare Delta Dunarii (Romania)</li> <li>5. Associacao Portuguesa Educacao Ambiental (Portugal)</li> <li>6. Universidade de Aveiro (Portugal)</li> <li>7. Universita ta Malta (Malta)</li> <li>8. HOLO3 (France)</li> <li>9. Société D'exploitation du Centre National de La Mer (France)</li> <li>10. Distretto veneziano della ricerca e dell'innovazione (Italy)</li> </ol>	

<b>Programme:</b> HORIZON-CL6-2021-GOVERNANCE-01 - RIA	
<b>CNR Strategic Area:</b> AP6	
<b>Project title:</b> <b>Coherent and cross-compliant ocean governance for delivering the EU Green Deal for European Seas</b>	
<b>Acronym:</b> CROSSGOV	
<b>Role in the project:</b> Partner	
<b>Duration:</b> 01/09/2022 - 31/08/2025	
<b>Total budget:</b> € 2.999.997,50	
<b>ISMAR budget:</b> € 236.783,75	
<b>Web site:</b> <a href="https://crossgov.eu/">https://crossgov.eu/</a>	
<b>Key words:</b> Coherence, cross-compliance, implementation, environmental policy integration, coordination, ocean governance, marine ecosystems	
<p><b>Summary:</b></p> <p>The three-year CrossGov R&amp;I project aims to enhance knowledge on how coherence and cross-compliance of marine related policies and legislation affect the ability to realise the EU Green Deals goals for the protection of marine ecosystems and biodiversity, and to co-create proposals and roadmaps together with the CrossGov Stakeholder Forum for more consistent and integrated approaches towards this end. The analyses and proposals will be conducted in the context of the multilevel governance system encompassing various sectors, composed by global and regional international frameworks, the EU and the European coastal states with their different national arrangements. The project addresses governance in three European marine regions: the North Sea, the Baltic Sea, and the Mediterranean Sea. The core strength of CrossGov is the close collaboration with the policymaking community and the production of co-created knowledge and solutions through innovative, web-based and fit-for purpose roadmaps and methodological guidelines. This will enable policymakers to effectively foster environmentally sustainable law and governance that is fit-for-purpose for delivering the societal transformation called for in the GD. Through the development of analytical and methodological guidelines for the studying of coherence and cross-compliance, CrossGov will develop a comprehensive and innovative research model. This model is expected project will enhance knowledge on, and reinforce, cross-compliance, coherence and innovation in EU marine governance to strengthen the resilience of European seas and facilitate the implementation of EUs Green Deal. The research brings forth innovative methodologies to systematically identify, analyse and remediate weaknesses, gaps, and inconsistencies in law, policies and decision- and policymaking processes to halt the degradation of European seas and facilitate cross-compliance within and across biodiversity, pollution and climate related laws and policies.</p>	
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<p><b>Partnership:</b></p> <ol style="list-style-type: none"> <li>1. Norsk Institut for Vannforskning (Norway)</li> <li>2. 2S.PRO - Sustainable Projects GMBH (Germany)</li> <li>3. ITA-Suomen Yliopisto (Finland)</li> </ol>	

4. Universiteit Utrecht (The Netherlands)
5. Acteon Sarl (France)
6. Institute for Advanced Sustainability Studies Ev (Germany)
7. Consiglio Nazionale delle Ricerche (Italy)




<b>Programme:</b> Horizon Europe – CL6-2023-BIODIV-01 - IA	
<b>CNR Strategic Area:</b> AP2	
<b>Project title:</b> <b>Restoration of deep-sea habitats to rebuilt European Seas</b>	
<b>Acronym:</b> REDRESS	
<b>Role in the project:</b> Partner	
<b>Duration:</b> 01/02/2024-31/01/2028	
<b>Total budget:</b> € 8.829.382,00	
<b>ISMAR budget:</b> € 462.500,00	
<b>Web site:</b> n.a.	
<b>Key words:</b> deep sea habitats, climate change, restoration, marine ecosystems	
<b>Summary:</b> <p>Especially in the deep sea. REDRESS will provide solutions to prioritize future restoration actions, extend deep-sea restoration to previously neglected habitat types, and demonstrate the feasibility, potential, and value for success of deep-sea ecosystem restoration. The project will focus on habitats that have great potential to contribute to carbon sequestration and climate mitigation but have been degraded by deep-sea fishing, especially trawling. Specifically, we will study vulnerable marine ecosystems, including sea pens and bamboo corals on soft sediments, coral gardens, cold-water coral reefs, sponge fields, and cold seeps. REDRESS will map degraded deep-sea habitats and identify habitat refugia to prioritize restoration efforts that will adapt to future scenarios of climate change. To adopt and adapt cutting-edge solutions for both restoration interventions and monitoring, REDRESS will make a significant technological investment and will benefit from a relevant ship time by in-kind contribution (136 days). REDRESS will offer nature based solutions to public authorities and operators to advance ecosystem restoration in the deep sea. Building on the MERCES experience, REDRESS will go beyond the state of art, either developing new methodologies, using sophisticated technologies, defining success indicators, and expanding the target habitats also to cold seeps. The results will enable a significant advancement in the EU's marine restoration strategy. The project will also provide socio-economic data, protocols, and tools to plan, and upscale restoration interventions in deep sea habitats. Finally, REDRESS will provide novel insights into the advantages and limits of active vs passive deep-sea restoration, and related cost-benefit analysis of restoration in different deep-sea habitats supporting policies and decision makers in the future application of the Nature Restoration Law.</p>	
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<b>Partnership:</b> <ol style="list-style-type: none"> <li>1. Università Politecnica delle Marche – UNIVPM (Italy)</li> <li>2. Agencia Estatal Consejo Superior de Investigaciones Cientificas – CSIC (Spain)</li> <li>3. Institut francais de recherche pour l'exploitation de la mer – Ifremer (France)</li> <li>4. Helmholtz Centre for Ocean Research Kiel – GEOMAR (Germany)</li> </ol>	


5. Stichting Nederlandse Wetenschappelijk Onderzoek Instituten – NWO-I (NIOZ) (Netherlands)
6. Hellenic Centre for Marine Research – HCMR (Greece)
7. National Oceanography Centre – NOC (UK)
8. National University of Ireland Galway – NUI Galway (Ireland)
9. Universidade de Aveiro – UAveiro (Portugal)
10. Goteborgs Universitet – UGOT (Sweden)
11. University of Haifa – UH (Israel)
12. REV Ocean AS- REV Ocean (Norway)
13. Marine and Freshwater Research Institute – MFRI (Iceland)
14. Consiglio Nazionale delle Ricerche – CNR (Italy)
15. University of Edinburgh – UEDIN (UK)
16. Sorbonne University – SU (France)
17. Stazione Zoologica di Napoli Anton Dohrn – SZN (Italy)
18. Engitec Systems International-Ltd – ESI (Cyprus)
19. Distributed Ecological and Environmental Subsea Sensing – DEESS (France)
20. ECOREACH SME-Ltd – ECOREACH (Italy)
21. Society for Ecological Restoration – SERE (Belgium)
22. Israel Oceanographic and Limnological Research – IOLR (Israel)
23. Wageningen University – WU (Netherlands)
24. University of Azores – UAc (Portugal)
25. Institute of Marine Research – IMAR (Portugal)
26. Plymouth Marine Laboratory – PML (UK)
27. Deep Sea Biology Society – DSBS (UK)

<b>Programme:</b> HORIZON-MISS-2021-OCEAN-03 – CSA	 
<b>CNR Strategic Area:</b> AP2	
<b>Project title:</b> <b>Lighthouse coordinating and supporting the innovation ecosystem for a Healthy, Pollution free Mediterranean Sea</b>	
<b>Acronym:</b> BlueMissionMed	
<b>Role in the project:</b> Part of the CNR team	
<b>Duration:</b> 01/01/2023 – 31/12/2025	
<b>Total budget:</b> € 3.000.097,00	
<b>ISMAR budget:</b> € 81.875,00	
<b>Web site:</b> <a href="https://bluemissionmed.eu/">https://bluemissionmed.eu/</a>	
<b>Key words:</b> innovation, ecosystem, restoration, mobilization of actors	
<b>Summary:</b>  <p>In line with the European Green Deal, the EU Mission "Restore our Ocean and Waters by 2030" aims to eliminate pollution and make the blue economy (the economic activities that depend on the sea) carbon-neutral and circular. In this context, the EU-funded BlueMissionMed project will inspire, inform, assess, mobilise, connect and empower all the actors that can take a role in preventing and eliminating pollution in the Mediterranean sea and waters. The project will build on, connect and structure existing initiatives and activities with the aim of designing and supporting a well-functioning basin scale innovation ecosystem as well as upscaling solutions in all forms (technological, social, business, governance). The aim is to ensure fast progress towards the achievement of the Mission objectives.</p> <p>BlueMissionMed will engage stakeholders from Policy, Business, Research &amp; Innovation and Civil Society, as well as the so-called Ecosystem Enablers to synergize the actions of the Mission Lighthouse in the Mediterranean basin.</p>	
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<b>Partnership:</b> <ol style="list-style-type: none"> <li>1. Consiglio Nazionale delle Ricerche (Italy)</li> <li>2. FVA SAS di Louis Ferrini &amp; C (Italy)</li> <li>3. Institut Francais de Recherche pour L'exploitation de la Mer (France)</li> <li>4. Hellenic Centre for Marine Research (Greece)</li> <li>5. Agencia Estatal Consejo Superior de Investigaciones Cientificas (Spain)</li> <li>6. Middle East Technical University (Turkey)</li> <li>7. SDG4MED - Sustainable Development Goal for the Mediterranean (Italy)</li> <li>8. MEDCITIES (Spain)</li> <li>9. Union Mediterranee des Confederations d'Entreprises (Tunisia)</li> <li>10. ECORYS Espana SL (Spain)</li> <li>11. Conference des Regions Peripheriques Maritimes d' Europe (France)</li> <li>12. Association la Saison Bleue (Tunisia)</li> </ol>	

13. Agencia de Residus de Catalunya (Spain)
14. MEDCRUISE Association (Spain)
15. Fondazione WWF Mediterranean (Italy)
16. Ministry for Education, Sport, Youth, Research and Innovation (Malta)


<b>Programme:</b> HORIZON-CL6-2023-GOVERNANCE-01 - RIA	
<b>CNR Strategic Area:</b> AP3	
<b>Project title:</b> Land-Sea interface: Let's observe together!	
<b>Acronym:</b> LandSeaLot	
<b>Role in the project:</b> Partner	
<b>Duration:</b> 01/02/2024-31/01/2028	
<b>Total budget:</b> € 8.437.021,25	
<b>ISMAR budget:</b> € 481.035,00	
<b>Web site:</b> n.a.	
<b>Key words:</b> land-sea interface, model observations, citizen science, EMODnet	
<b>Summary:</b> <p>LandSeaLot links in situ, model and earth observations (EO) together and connects related communities, citizens and initiatives such as Copernicus, ESA, EEA, GEOSS, EMODnet and the European Digital Twin of the Ocean. All engage in a gap analysis used to co-design a joint and common land-sea interface observation strategy and its implementation plan. LandSeaLot experts simultaneously work on improving: in situ and EO capabilities, models to reduce the model/observations gap and the integration of model, in situ and satellite data. Observation capacity is mainly increased through tested, improved and guided use of low-cost sensors by citizens, facilitated by the network of European marinas. The sensors identified are piloted in Integration Labs (ILs) together with improved and integrated in situ and EO observations techniques and model outputs. LandSeaLot ILs cover strategically selected areas in the Black, Aegean, Mediterranean, Atlantic, North and Baltic Seas, with a range of catchment, tidal and meteorological regimes.</p> <p>In LandSeaLot experts and citizen science initiative leaders will work in the ILs together with Jerico-RI, Danubius-RI and Icos-RI and with regional policy makers and managers to tailor integrated observations that will provide them information to manage societal challenges. Data generated in the ILs will be made FAIR available via EMODnet and interoperability and semantic solutions for existing, international data flows will be developed.</p>	
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<b>Partnership:</b> <ol style="list-style-type: none"> <li>1. DELTARES (The Netherlands)</li> <li>2. CNR (Italy)</li> <li>3. Hereon (Germany)</li> <li>4. Ifremer (France)</li> </ol>	

5. SMHI (Sweden)
6. University of Stirling (UK)
7. Covartec AS (Norway)
8. Mariene Informatie Service Maris BV (The Netherlands)
9. GeoEcoMar (Romania)
10. HCMR (Greece)
11. Norce (Norway)
12. ULiege (Belgium)
13. TransEurope Marinas (France)
14. +Atlantic Associacao para um Laboratorio Colab (Portugal)
15. Seascape Belgium (Belgium)
16. Marine Laboratory Limited- PML (UK)
17. ETT SPA (Italy)
18. Brockmann Consult GMBH (Germany)
19. Suomen Ymparistokeskus (Finland)
20. CNRS (France)


<b>Programme:</b> HORIZON-CL2-2023-HERITAGE-01-01 - RIA	
<b>CNR Strategic Area:</b> AP3	
<b>Project title:</b> <b>Systematic autonomous remote surveying of underwater cultural heritage monuments and artefacts using non-destructive, cost-effective and transportable digital solutions</b>	
<b>Acronym:</b> NERITES	
<b>Role in the project:</b> Partner	
<b>Duration:</b> 01/01/2024 – 31/12/2026	
<b>Total budget:</b> € 3.994.750,00	
<b>ISMAR budget:</b> € 116.250,00	
<b>Web site:</b> n.a.	
<b>Key words:</b> AUV, ROV, BUOY, heritage sites	
<b>Summary:</b> <p>The proposition in this project is to use autonomous platforms for remote monitoring and chemical mapping of underwater heritage sites, such as AUVs (Autonomous Underwater Vehicles), BUOYs (Unmanned Surface Vehicles) and ROVs (remote operated vehicles). A swarm of self-coordinated AUVs will be responsible to monitor, survey and scan the heritage sites for detecting/identifying and monitor degradation, state of the UW surrounding site, possible intervention actions for alarming conditions etc. The swarm of AUVs will embed high edge processing capacity to support operational autonomy, dynamic path planning, dynamic sample-strategy planning and coordinated-swarmling towards overall low energy consumption and long mission endurance, according to the project mission goals. The proposed swarming concept foresees building common underwater consensus of the cultural site, through periodic bilateral communication between AUVs to mutually achieve the overall common surveying goal; while the mother BUOY will be responsible to collect and deeply analyze raw AUV information to provide enhanced site situation awareness insights to the external human supervisor/user. Furthermore, the BUOY will be equipped with renewable solar collectors to ensure continuous power availability and reduced mission's footprint, enough to support the overall mission energy needs (AUV will be periodically powered through BUOY). The supervisor/user will be located in a remote monitoring station, onshore, to allow periodic mission lifecycle management and general overview of the whole system situation based on real-time visual analytic mechanisms.</p>	
<b>Contact person in ISMAR:</b> <a href="mailto:salvatore.passaro@cnr.it">salvatore.passaro@cnr.it</a>	
<b>Partnership:</b> <ol style="list-style-type: none"> <li>1. Information Technology Institute, ITI (Greece)</li> <li>2. LZH Laserzentrum Hannover EV (germany)</li> <li>3. Engitec Systems International Limited (Cyprus)</li> <li>4. Robust Systems Engineering SCC LTD (Cyprus)</li> </ol>	

5. Universitaet Ulm (Germany)
6. Atlantis Symvouleftiki Anonymietaireia Atlantis Consulting SA (Greece)
7. Ethniko Kentro Erevnas Kai Technologikis Anaptyxis (Greece)
8. Graal Tech SRL (Italy)
9. Consiglio Nazionale delle Ricerche (Italy)
10. Universita della Calabria (Italy)
11. Diethnes Panepistimio Ellados (Greece)
12. Korseai-Kathidryma Istorikon Kai Archaiologikon Erevnon (Greece)
13. Ministero della Cultura (Italy)
14. Alpes Lasers SA (Switzerland)



<b>Programme:</b> HORIZON-MISS-2022-OCEAN-01 - IA	 Innovative Solutions for Plastic Free European Rivers
<b>CNR Strategic Area:</b> AP3	
<b>Project title:</b> <b>Innovative Solutions for Plastic Free European Rivers</b>	
<b>Acronym:</b> INSPIRE	
<b>Role in the project:</b> Partner	
<b>Duration:</b> 30/05/2023 – 29/05/2027	
<b>Total budget:</b> € 9.983.780,50	
<b>ISMAR budget:</b> € 325.125,00	
<b>Web site:</b> <a href="https://inspire-europe.org/">https://inspire-europe.org/</a>	
<b>Key words:</b> litter, rivers, micro and macroplastics, test technologies	
<b>Summary:</b>  INSPIRE's main objective is to contribute to the drastic reduction of litter, macro and microplastics in European rivers in a holistic approach, by bringing together 20 technologies and actions for: DETECTION of the pollution present in the river and at the riverbank, COLLECTION of litter and macroplastics at the river bank and litter, macro and microplastics in the river, PREVENTION of litter, macro and microplastics to enter the river by collecting it from its waste stream before it can enter the river and by developing biodegradable alternatives for currently non-degradable polluting products, to avoid they will further be used and arrive in the river as litter. Six use case are defined in INSPIRE to install and test the technologies and actions, to model the processes related to the water purification activities, to obtain 7 well defined solutions at detection, collection or prevention level and combinations thereof. The technical feasibility is backboned by a techno-economical analysis with the development of business cases for the solutions, action plans towards upscaling and replication and together with mapping and modelling all elements are brought together to develop a Master Plan for tackling the challenges of the mission and contributing to the objectives of the mission. The INSPIRE project will be very visible due to its well developed dissemination and communication plan and strategy for community engagement. Apart from the general dissemination and communication tools and activities, specific activities will be setup on festivals, promoting 100% biodegradable products as a result of INSPIRE. INSPIRE's consortium is composed of 26 partners with complementary expertise and a good balance of academia, industry, communication specialists and soft skills organisations is obtained, who all together will work towards the target of having a number of successful solutions that can find their way to the market and put INSPIRE on the radar.	
<b>Contact person in ISMAR:</b> <a href="mailto:vanessa.moschino@cnr.it">vanessa.moschino@cnr.it</a>	
<b>Partnership:</b>  1. Vlaams Instituut voor de Zee (Belgium) 2. Vlaamse Instelling voor Technologisch Onderzoek N.V (Belgium) 3. Univerza v Mariboru (Slovenia)	

4. ENERG+ DOO (Slovenia)
5. MOLD SRL (Italy)
6. Fishflow Innovations BV (The Netherlands)
7. Centro Interdisciplinar de Investigacao Marinha e Ambiental (Portugal)
8. 123ZERO, Trgovina In Trajnostne Resitve, DOO (Slovenia)
9. Hochschulen Fresenius Gemeinnutzige Tragergesellschaft MBH (Germany)
10. Wageningen University (The Netherlands)
11. Bio-Mi Društvo S Ogranicenom Odgovornoscu za Proizvodnju, Istrazivanje Razvoj (Croatia)
12. Minds Technologies Kai Epistimes Perivallontos I.K.E. (Greece)
13. Kungliga Tekniska Hogskolan (Sweden)
14. Deligiannakis Georgios-Deligiannakis Dimitrios Oe (Greece)
15. Consiglio Nazionale delle Ricerche (Italy)
16. Foundation Exit (Serbia)
17. Universidad de Cadiz (Spain)
18. Alchemia-Nova Research & Innovation Gemeinnutzige GMBH (Austria)
19. ARCHA SRL (Italy)
20. Infordata Sistemi SRL (Italy)
21. Circe Biotechnologie GMBH (Austria)
22. River Cleanup (Belgium)
23. Waste & Water (France)
24. Asociatia Romana a Apei (Romania)
25. Asian Institute of Technology (Thailandia)
26. NORIA BV (The Netherlands)

<b>Programme:</b> HORIZON-CL4-2023-SPACE-01 - RIA	
<b>CNR Strategic Area:</b> AP3	
<b>Project title:</b> <b>Forecasting and observing the open-to-coastal ocean for Copernicus users</b>	
<b>Acronym:</b> FOCCUS	
<b>Role in the project:</b> Partner	
<b>Duration:</b> 01/01/2024 – 31/12/2026	
<b>Total budget:</b> € 4.999.655,62	
<b>ISMAR budget:</b> € 238.437,00	
<b>Web site:</b> <a href="#">n.a.</a>	
<b>Key words:</b> Copernicus, climate change, coastal prediction	
<b>Summary:</b> The main ambition of FOCCUS is to improve and advance the coastal dimension of the Copernicus Marine Environment Monitoring Service (CMEMS) by enhancing existing capability, developing innovative coastal products. Designing and demonstrating the integration of Copernicus and Member State coastal services will allow a seamless and fit-for-use monitoring and forecasting of the ocean from global to regional and coastal scales. Co-production of coastal services will reinforce the quality, efficiency and exploitation of Copernicus research and specific applications will demonstrate FOCCUS's progress beyond the state of the art for challenges such as the protection of the coastal zone, the development of a sustainable blue economy, and the building of coastal zone resilience to climate change, anthropogenic pressures and natural hazards. At the heart of the proposed methodology is the use of new space (such as Sentinels) and in-situ coastal observations, innovations in data fusion, data processing and visualisation together with seamless numerical coastal prediction (including interfaces for downscaling from CMEMS) from the regional to the near-shore, also connecting to the estuarine scale. Novel approaches will be used to ensure CMEMS evolves at the forefront of modern research and technology, in-line with the innovation and digitalisation required for the European digital ocean and water knowledge system. FOCCUS will ensure credible pathways for effective uptake and exploitation of key outcomes and research results by the CMEMS and the wider user community, thereby fostering the acceptance and efficient application of novel information products by society. This will include demonstrations of the technical readiness of the proposed evolutions and active dialogue with European and international initiatives to ensure the global community is aware of FOCCUS, and that results contribute to wider efforts.	
<b>Contact person in ISMAR:</b> <a href="mailto:federico.falcini@cnr.it">federico.falcini@cnr.it</a>	
<b>Partnership:</b> 1. Helmholtz-Zentrum Hereon GMBH (Germany)	

2. Mercator Ocean (France)
3. Fondazione Centro Euro-Mediterraneo sui Cambiamenti Climatici (Italy)
4. Service Hydrographique et Oceanographique de la Marine (France)
5. Collecte Localisation Satellites (France)
6. SOCIB - Consorcio para el Diseno, Construcccion, Equipamiento y Explotacion del Sistema de observacion Costero de las Illes Balears (Spain)
7. Consiglio Nazionale delle Ricerche (Italy)
8. Stichting DELTARES (Netherlands)
9. Stiftelsen Nansen Senter For Miljoog Fjernmaling (Norway)
10. Meteorologisk Institutt (Norway)
11. Sveriges Meteorologiska Och Hydrologiska Institut (Sweden)
12. +Atlantic Associacao para um Laboratorio Colaborativo do Atlantico (Portugal)
13. Institut Royal des Sciences Naturelles de Belgique (Belgium)
14. Directia Hidrografica Maritima (Romania)
15. EUROGOOS (Belgium)
16. Brockmann Consult GMBH (Germany)
17. Danmarks Meteorologiske Institut (Denmark)
18. Institut Francais de Recherche pour L'exploitation de la Mer (France)
19. Seascope Belgium (Belgium)

## 5. HORIZON 2020

### 5.1 THE PROGRAMME

Horizon 2020 (hereafter H2020), EU framework programme for the years 2014-2020, unified in a single financial tool three predecessors (2007-2013) aimed at supporting research, innovation and technological development: the Seventh Framework Programme (7FP), Competitiveness and Innovation Framework Programme (CIP) and the European Institute of Innovation and Technology (EIT).

Compared to the previous Framework Programme, H2020's funding schemes have been replaced by the so-called "actions".

The Programme H2020 (Fig.1) is structured in three pillars: **Excellent Science**, **Industrial Leadership and Societal Challenges** integrated with 5 horizontal initiatives, which are Euratom, Joint Research Center, Science with and for Society, Spreading Excellence and Widening Participation and the European Institute of Innovation and Technology (EIT).

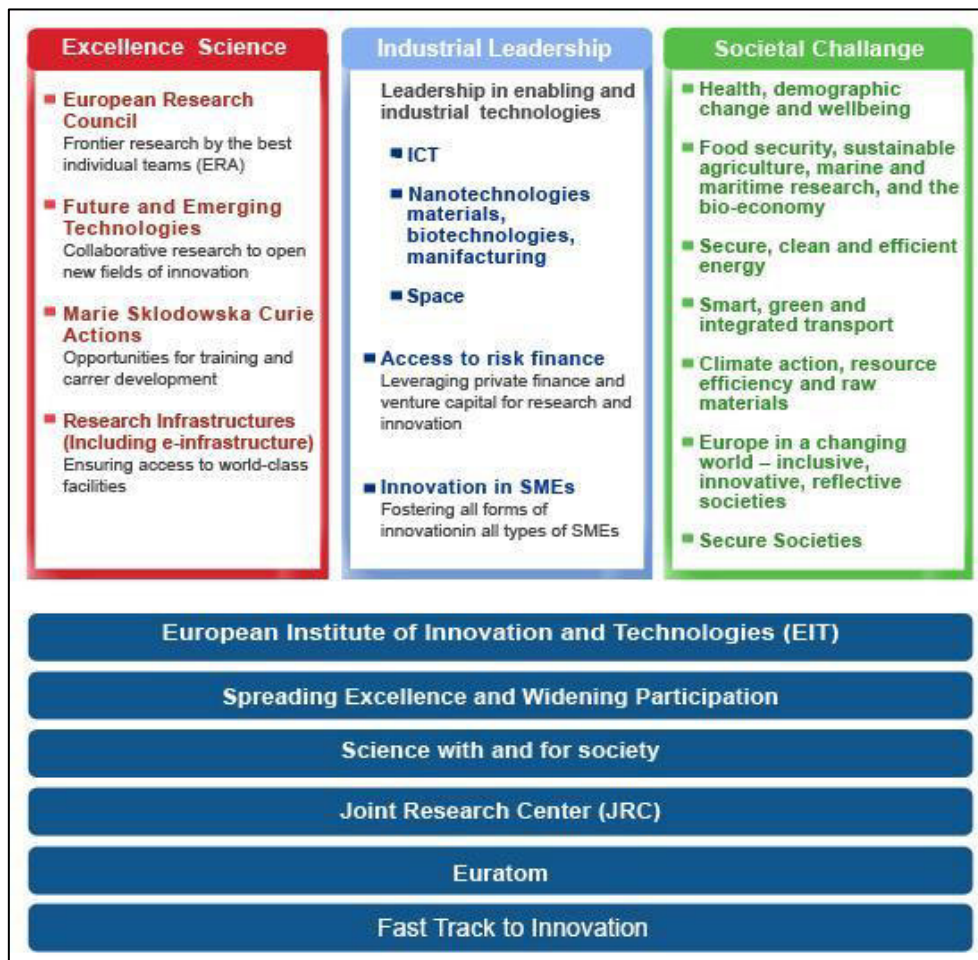


Fig. 8: Structure of Horizon 2020 Programme

The total budget was nearly € 80 billion and in constant prices of € 70.2 billion for 7 years.

According to H2020 Dashboard Portal<sup>1</sup>(Fig.9), a total of 283.017 eligible proposals were submitted by Member States and Associated Countries out of 964.314 applications with a net contribution of 67,79 billion. The overall success rate of eligible full proposals is 15.21%.

For Italy a total of 62.022 eligible proposals were submitted out of 109.413 applications receiving an EU net contribution of € 5.7 billion with a success rate of 13,02%. [R&I Country Profile - Key Figures - Italy | Foglio - Qlik Sense \(europa.eu\)](#) (8th January 2023)

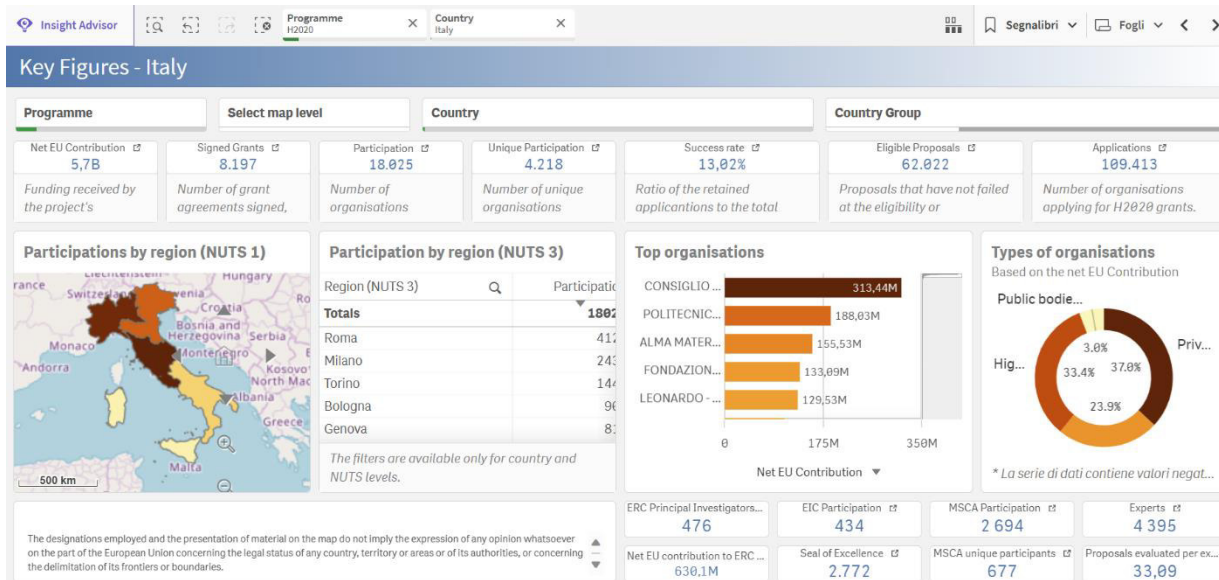


Fig.9: Key figures of Italy in Horizon 2020 Programme

CNR is the Italian institution with the highest amount of participation (778) and funds received with a net EU contribution of 313.44 million.

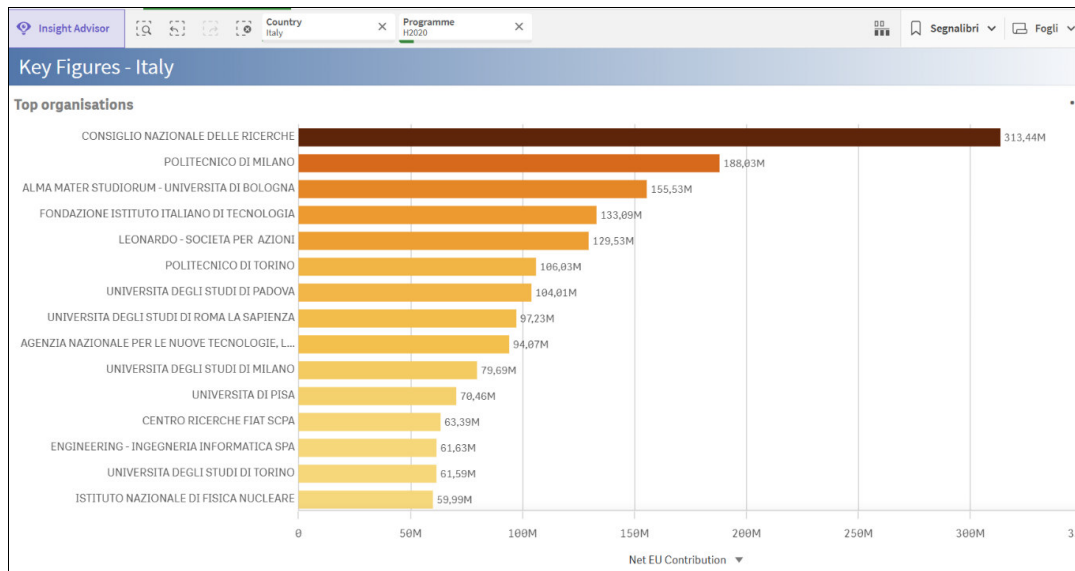


Fig. 10: Funds received by Italian Institutions

## 5.2 CNR-ISMAR IN HORIZON 2020

CNR-ISMAR has achieved remarkable results in Horizon 2020 along the programme period. In 2023 still 21 projects were ongoing for a total amount of € 147.516.014,50 (ISMAR budget: € 5.422.851,90).

The institute has taken part in 7 projects under the Research and Innovation Actions Funding Scheme, 1 project under the Coordination and Support Action, 5 projects under Innovative Actions, 1 project under MSCA and in 7 project under INFRA

In the MAELSTROM project the Institute plays the role of Lead Partner, receiving positive comments from the EU Commission for the good work done in managing the project and for the innovative techniques applied in the field of marine litter reduction and recycling.

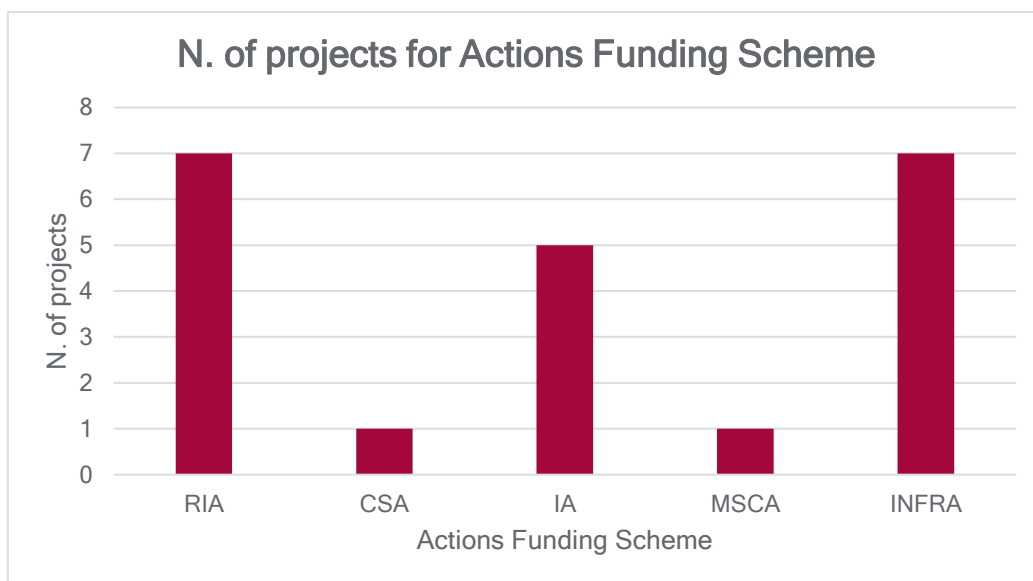


Fig. 11: N. of projects for types of Actions Funding Schemes in H2020 programme


# List of ISMAR projects funded under Horizon 2020



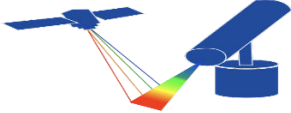



<b>Programme:</b> H2020--FNR-2020 Innovative Actions – IA	
<b>CNR Strategic Area:</b> AP 2	
<b>Project title:</b> <b>Smart technology for Marine Litter SusTainable RemOval and Management</b>	
<b>Acronym:</b> MAELSTROM	
<b>Role in the project:</b> Lead Partner	
<b>Duration:</b> 01/01/2021-31/12/2024	
<b>Total budget:</b> € 6.809.461,00	
<b>ISMAR budget:</b> € 1.003.750,00	
<b>Web site:</b> <a href="https://www.maelstrom-h2020.eu">https://www.maelstrom-h2020.eu</a>	
<b>Key words:</b> marine litter, recycling, clean-up campaigns, automated solutions	
<b>Summary:</b>  MAELSTROM will strive to provide answers and technological solutions to the complex question of whether floating river litter should be intercepted, and legacy ML removed, considering the balance between the positive effect of avoiding microplastics degradation into micro/nano plastics and the potential negative effects of the own removal process. Indeed, the type of ecosystem, the efficiency and selectivity of the removal technologies and the frequency of the removal are key variables to this decision making. Recycling the collected litter into higher performance certified “marine-litter-origin” materials and the assessment of the economic and societal impact of these cleaning activities will also be considered. The project will implement a wide array of complementary activities: from the designing and testing of innovative removal technologies for ML in different coastal ecosystems – the Venice lagoon/coast and the estuary of the Douro river in Porto - to the assessment of the effectiveness of removal and the environmental impact of such cleaning operations, to the adoption and adaptation of full-fledged circular economy solutions to effectively connect economic and environmental gains.	
<b>Contact person in ISMAR:</b> <a href="mailto:fantina.madricardo@ismar.cnr.it">fantina.madricardo@ismar.cnr.it</a>	
<b>Partnership:</b>  <ol style="list-style-type: none"> <li>1. Consiglio Nazionale delle Ricerche (Italy)</li> <li>2. Stitching Deltares (Netherlands)</li> <li>3. Universita Ta Malta (Malta)</li> <li>4. International Sustainable Development Initiatives (Malta)</li> <li>5. Gees Recycling Srl (Italy)</li> <li>6. Venice Lagoon Plastic Free (Italy)</li> <li>7. Centro Internazionale in Monitoraggio Ambientale - Fondazione CIMA (Italy)</li> <li>8. Fundacion Tecnalia Research and Innovation (Spain)</li> <li>9. Alpha Consultants ltd (United Kingdom)</li> <li>10. CIIMAR (Portugal)</li> </ol>	

11. Servizi Tecnici Srl (Italy)
12. The Great Bubble Barriers (Denmark)
13. Makeen Power (Netherland)
14. CNRS (France)

<b>Programme: H2020</b> RIA - H2020-MG-2018-2019-2020 - RIA	
<b>CNR Strategic Area:</b> AP 5	
<b>Project title:</b> <b>Development and demonstration of a long-endurance sea surveying autonomous unmanned vehicle with gliding capability powered by hydrogen fuel cell</b>	
<b>Acronym:</b> ENDURUNS	
<b>Role in the project:</b> Partner	
<b>Duration:</b> 01/11/2018 – 31/10/2023	
<b>Total Budget:</b> € 7.908.265,00	
<b>ISMAR budget:</b> € 550.875,00	
<b>Web site:</b> <a href="https://enduruns.eu">https://enduruns.eu</a>	
<b>Key words:</b> integrated hybrid AUV system, seabed mapping, deep see applications	
<b>Summary:</b>  <p>The main ambition of the ENDURUNS project is to develop an integrated hybrid AUV system capable of operating under deep ocean conditions and performing a wide-range of missions, targeting the increase of scientific knowledge as well as industrial capability and performance. Due to its versatile nature, the ENDURUNS system will be suited to perform scientific missions, such as seabed mapping, profiling, geological and geophysical surveys, commercial missions, such as inspection of infrastructure and assets, mineral and seabed mining exploration missions and public authority missions such as surveillance, search and find missions (e.g. aircraft wreckage), equally well. Therefore, the ENDURUNS system will enable for the first time long endurance missions demonstrated up to TRL 5 or above during the project for a wide variety of high impact deep sea applications. The AUV and USV combination are expected to significantly outperform all existing AUV vehicles, in terms of endurance, positioning, survey capability, resolution, sensitivity, etc.</p>	
<b>Contact person in ISMAR:</b> <a href="mailto:simone.marini@sp.ismar.cnr.it">simone.marini@sp.ismar.cnr.it</a>	
<b>Partnership:</b>  <ol style="list-style-type: none"> <li>1. Altus LSA Commercial and Manufacturing Sa (Greece)</li> <li>2. Graal Tech Srl (Italy)</li> <li>3. Compagnie Maritime d'Expertises Sa (France)</li> <li>4. Engitec Systems International Limited (Cyprus)</li> <li>5. Space Applications Services Nv (Belgium)</li> <li>6. On Air S.R.L. (Italy)</li> </ol>	

7. Uab Metis Baltic (Lithuania)
8. Klaipėdos Valstybinio Jūrų Uosto Direkcija (Lithuania)
9. Hysytech Srl (Italy)
10. Zarras Dimitrios (Greece)
11. Swiss Approval South East Mediterranean Sea (Sems) Ltd (Cyprus)
12. The University of Birmingham (United Kingdom)
13. Universidad De Castilla - La Mancha (Uclm) (Spain)
14. National Center for Scientific Research Demokritos (Greece)
15. Consiglio Nazionale delle Ricerche (CNR-ISMAR) (Italy)
16. Tuco Yacht Værft Aps (Denmark)


<b>Programme:</b> H2020-SC5-2016-2017/H2020-SC5-2017 - RIA	
<b>CNR Strategic Area:</b> AP4	
<b>Project title:</b> <b>A new hyperspectral radiometer integrated in automated networks of water and land bidirectional reflectance measurements for satellite validation</b>	
<b>Acronym:</b> HyperNets	
<b>Role in the project:</b> Partner and leader of the CNR Team	
<b>Duration:</b> 01/02/2018 – 01/04/2023	
<b>Total budget:</b> € 4.999.923,00	
<b>ISMAR budget:</b> € 346.735,00	
<b>Web site:</b> <a href="http://hypernets.eu/">http://hypernets.eu/</a>	
<b>Key words:</b> hyperspectral radiometer, pointing system, prototype network, surface reflectance	
<b>Summary:</b> The objective of the HYPERNETS project is to develop a new lower cost hyperspectral radiometer and associated pointing system and embedded calibration device for automated measurement of water and land bidirectional reflectance and, subsequently, for validation of all optical bands on all satellite missions. The instrument will be tested in a prototype network covering a wide range of water and land types and operating conditions. Quality controlled data with associated uncertainty estimates will be provided automatically for the validation of all optical satellite missions. Preparations will be made a) for the new instrument design (and associated calibration service) to be commercialized with an expected lifetime of at least 10 years and b) for the networks to be further expanded to fill the very important gap in the current Sentinel-3&2 Validation plans and the in situ component of the Copernicus programme and become the main source of surface reflectance validation data for all spectral bands of all optical missions for at least the next 10 years.	
<b>Contact person in ISMAR:</b> <a href="mailto:vittorioernesto.brand@cnr.it">vittorioernesto.brand@cnr.it</a>	
<b>Partnership:</b> <ol style="list-style-type: none"> <li>1. Institut Royal des Sciences Naturelles de Belgique (Belgium)</li> <li>2. Tartu Ulikool (Estonia)</li> <li>3. Sorbonne Université (France)</li> <li>4. Consiglio Nazionale delle Ricerche (Italy)</li> <li>5. NPL Management Limited (United Kingdom)</li> <li>6. Helmholtz Zentrum Potsdam Deutschesgeoforschungszentrum GFZ (Germany)</li> <li>7. Consejo Nacional de Investigaciones Cientificas y Tecnicas (CONICET) (Argentina)</li> </ol>	

<b>Programme:</b> H2020-INFRAIA-2018-2020 - INFRA	
<b>CNR Strategic Area:</b> AP4	
<b>Project title:</b> <b>Joint European Research Infrastructure of Coastal Observatories: Science, Service, Sustainability</b>	
<b>Acronym:</b> JERICO S3	
<b>Role in the project:</b> Partner	
<b>Duration:</b> 01/02/2020 – 31/01/2024	
<b>Total budget:</b> € 9.999.933,00	
<b>ISMAR budget:</b> € 471.115,00	
<b>Web site:</b> <a href="https://www.jerico-ri.eu">https://www.jerico-ri.eu</a>	
<b>Key words:</b> coastal ecosystem, e-infrastructure, monitoring strategies	
<b>Summary:</b> <p>JERICO-RI: Joint European Research Infrastructure of Coastal Observatories – a system of systems strengthening the European network of coastal observatories providing a powerful and structured European Research Infrastructure (RI) dedicated to observe and monitor the complex marine coastal seas and to: (i) provide services for the delivery of high quality environmental data, (ii) access to solutions and facilities as services for researchers and users, (iii) create product prototypes for EU marine core services and users, (iv) support excellence in marine coastal research to better answer societal and policy needs. JERICO-S3 will provide a state-of-the-art, fit-for-purpose and visionary observational RI, expertise and high quality data on European coastal and shelf seas, supporting world-class research, high-impact innovation and a window of European excellence worldwide. It will significantly enhance the current value and relevance of the JERICO-RI, through the implementation of the science and innovation strategy elaborated as part of the JERICO-NEXT project. JERICO-S3 is mainly targeting a more science integrative approach to better observe the coastal ecosystem, raising up the scientific excellence, with consideration of the regional and local ecosystems; the preliminary development of an e-infrastructure in support to scientists and users by offering access to dedicated services; progress on the design of the RI and its strategy for sustainability. Major user-driven improvements will be realised in terms of observing the complexity of coastal seas and continuous observation of the biology, access to facilities, data and services, best practices and performance indicators, innovative monitoring strategies, cooperation with other European RIs (EuroARGO, EMSO, AQUACOSM, DANUBIUS, ICOS, EMBRC, LIFEWATCH) and international scientific communities, industry and other stakeholders, and aligning strategy with COPERNICUS/CMEMS, EMODNET and GEO/GEOSS.</p>	
<b>Contact person in ISMAR:</b> <a href="mailto:carlo.mantovani@sp.ismar.cnr.it">carlo.mantovani@sp.ismar.cnr.it</a>	
<b>Partnership:</b>	


1. Institut Francais de Recherche pour L'exploitation de la Mer (France)
2. Acri-St Sas (France)
3. Alfred-Wegener-Institut Helmholtz-Zentrum fur Polar- und Meeresforschung (Germany)
4. Fundacion Azti - Azti Fundazioa (Spain)
5. Blue Lobster It Limited (United Kingdom)
6. The Secretary of State for Environment, Food and Rural Affairs (United Kingdom)
7. Consiglio Nazionale delle Ricerche (Italy)
8. Centre National de la Recherche Scientifique - CNRS (France)
9. Covartec As (Norway)
10. Stichting Deltares (Netherlands)
11. Danmarks Meteorologiske Institut (Denmark)
12. ETT SPA (Italy)
13. EUROGOOS (Belgium)
14. Havstovan (Faroe Islands)
15. Ilmatieteen Laitos (Finland)
16. Hellenic Centre for Marine Research (Greece)
17. Helmholtz-Zentrum Geesthacht Zentrum fur Material- und Küstenforschung GMBH (Germany)
18. IEEE France Section (France)
19. Instituto Hidrografico (Portugal)
20. Havforsknings Instituttet (Norway)
21. Leibniz-Institut fur Ostseeforschung Warnemunde Stiftung (Germany)
22. Ruder Boskovic Institute (Croatia)
23. Marine Institute (Ireland)
24. Mariene Informatie Service Maris BV (Netherlands)
25. Norsk Institutt for Vannforskning (Norway)
26. Norce Norwegian Research Centre AS (Norway)
27. Istituto Nazionale di Oceanografia e di Geofisica Sperimentale (Italy)
28. Puertos del Estado (Spain)
29. Consorcio Para el Diseno, Construccion, Equipamiento y Explotacion de la Plataforma Oceanica de Canarias (Spain)
30. Institut Royal des Sciences Naturelles de Belgique (Belgium)
31. Ministerie Van Infrastructuur en Waterstaat (Netherlands)
32. Sveriges Meteorologiska och Hydrologiska Institut (Sweden)
33. Socib - Consorcio Para el Diseno, Construccion, Equipamiento Y Explotacion Del Sistema De Observacion Costero de las Illes Balears (Spain)
34. Suomen Ymparistokeskus (Finland)
35. Tallinna Tehnikaulikool (EE)
36. United Nations Educational, Scientific and Cultural Organization -UNESCO (France)
37. Universitat Politecnica de Catalunya (Spain)
38. Vlaams Instituut Voor de Zee VZW (Spain)
39. 52°North Initiative for Geospatial Open Source Software GmbH (Germany)

<b>Programme:</b> H2020-INFRADEV-2018-2020 - INFRA	
<b>CNR Strategic Area:</b> AP4	
<b>Project title:</b> <b>Joint European Research Infrastructure of Coastal Observatories: Science, Service, Sustainability</b>	
<b>Acronym:</b> JERICO DS	
<b>Role in the project:</b> Partner	
<b>Duration:</b> 01/10/2020 - 30/09/2023	
<b>Total budget:</b> € 2.555.531,00	
<b>ISMAR budget:</b> € 145.500,00	
<b>Web site:</b> <a href="https://cordis.europa.eu/project/id/951799/it">https://cordis.europa.eu/project/id/951799/it</a>	
<b>Key words:</b> Pan-European Research Infrastructure, ESFRI roadmap	
<b>Summary:</b> <p>JERICO projects have consisted, since 2007, in continuously improving observations in European coastal marine areas with the objective to build a pan-European Research Infrastructure (RI). JERICO projects need to progress towards a structured operational European RI supported by the EU Member States (and associated members) and the EC, and endorsed as a high-value RI at EU level as part of the ESFRI roadmap. JERICO-DS will thus analyze the needs and propose a design for a sustainable observational European RI, conceptually designing the entire picture of the JERICO RI, covering both hardware and software components.</p>	
<b>Contact person in ISMAR:</b> <a href="mailto:marcello.magaldi@sp.ismar.cnr.it">marcello.magaldi@sp.ismar.cnr.it</a>	
<b>Partnership:</b> <ol style="list-style-type: none"> <li>1. Institut Francais de Recherche pour l'Exploitation de la Mer (France)</li> <li>2. Consiglio Nazionale delle Ricerche (Italy)</li> <li>3. Stichting Deltares (Netherlands)</li> <li>4. Eurogoos (Belgium)</li> <li>5. Hellenic Centre for Marine Research (Greece)</li> <li>6. Helmholtz-Zentrum Geesthacht Zentrum fur Material- und Küstenforschung GmbH (Germany)</li> <li>7. Instituto Hidrografico (Portugal)</li> <li>8. Havforskningsinstituttet (Norway)</li> <li>9. Ruder Boskovic Institute (Croatia)</li> <li>10. Marine Institute (Ireland)</li> <li>11. Institut Royal des Sciences Naturelles de Belgique (Belgium)</li> <li>12. Sveriges Meteorologiska och Hydrologiska Institut (Sweden)</li> <li>13. Socib - Consorcio para el Diseno, Construcción, Equipamiento y Explotacion del Sistema de Observacion Costero de las Illes Balears (Spain)</li> <li>14. Suomen Ymparistokeskus (Finland)</li> <li>15. Tallinna Tehnikaukool (Estonia)</li> </ol>	

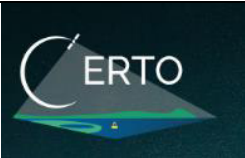


<b>Programme:</b> H2020-SC5-2018-2019-2020 - CSA	
<b>CNR Strategic Area:</b> AP 1	
<b>Project title:</b> EUROpean quality Controlled Harmonization Assuring Reproducible Monitoring and assessment of plastic pollution	
<b>Acronym:</b> EUROqCHARM	
<b>Role in the project:</b> Partner	
<b>Duration:</b> 01/11/2020 – 31/10/2023	
<b>Total budget:</b> € 2.045.000	
<b>ISMAR budget:</b> € 119.375	
<b>Web site:</b> <a href="https://www.euroqcharm.eu/">https://www.euroqcharm.eu/</a>	
<b>Key words:</b> plastic pollution, data harmonization, data comparability	
<b>Summary:</b> <p>This project aims to identify, test and optimise monitoring approaches through quality assured and rigorously validated methods based on current state-of-the-art techniques which cover all environmental matrices. In addition, the project will focus on harmonizing and possibly standardising methods and reporting formats to facilitate data comparability and meta-level analysis on regional, national and international scales. With multiple national and international organisations and working groups currently participating in the proposal of harmonisation and standardised for research and monitoring, a coordinated and strategic action to bring these key players together, merge working group ideas and facilitate a framework for harmonised procedures for monitoring and assessment.</p>	
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<b>Partnership:</b> <ol style="list-style-type: none"> <li>1. Norsk Institutt for Vannforskning (Norway)</li> <li>2. Consiglio Nazionale delle Ricerche (Italy)</li> <li>3. Stichting VU (Netherlands)</li> <li>4. Institut Francais de Recherche pour L'exploitation de la Mer (France)</li> <li>5. Institutul National de Cercetare-Dezvoltare Marina Grigore Antipa (Romania)</li> <li>6. Salt Lofoten AS (Norway)</li> <li>7. Agencia Estatal Consejo Superior de investigaciones Cientificas (Spain)</li> <li>8. Norsk Institutt for Luftforskning Stiftelse (Norway)</li> <li>9. Eigen Vermogen Van Het Instituut Voor Landbouw- En Visserijonderzoek (Belgium)</li> <li>10. Alfred-Wegener-Institut Helmholtz-Zentrum fur Polar- und Meeresforschung (Germany)</li> <li>11. Aarhus Universitet (Denmark)</li> <li>12. Chiron As (Norway)</li> </ol>	


13. Eidgenoessische Anstalt fuer Wasserversorgung Abwasserreinigung und Gewaesserschutz (Switzerland)
14. Istituto Nazionale di Oceanografia e di Geofisica Sperimentale (Italy)
15. Association Francaise de Normalisation (France)

<b>Programme:</b> H2020-INFRAEOSC-2018-2020/H2020-I - INFRA	
<b>CNR Strategic Area:</b> AP4	
<b>Project title:</b> <b>ENVironmental Research Infrastructures building Fair services Accessible for society, Innovation and Research</b>	
<b>Acronym:</b> ENVRI-FAIR	
<b>Role in the project:</b> Partner	
<b>Duration:</b> 01/01/2019 – 30/06/2023	
<b>Total budget:</b> € 18.997.878,00	
<b>ISMAR budget:</b> € 132.187,00	
<b>Web site:</b> <a href="https://envri.eu/home-envri-fair/">https://envri.eu/home-envri-fair/</a>	
<b>Key words:</b> thematic data services, ENVRI and ESFRI clusters, European Open Science Cloud (EOSC)	
<b>Summary:</b>  ENVRI-FAIR is the connection of the ESFRI Cluster of Environmental Research Infrastructures (ENVRI) to the European Open Science Cloud (EOSC). Participating research infrastructures (RI) of the environmental domain cover the subdomains Atmosphere, Marine, Solid Earth and Biodiversity / Ecosystems and thus the Earth system in its full complexity. The overarching goal is that at the end of the proposed project, all participating RIs have built a set of FAIR data services which enhances the efficiency and productivity of researchers, supports innovation, enables data- and knowledge-based decisions and connects the ENVRI Cluster to the EOSC. This goal is reached by: (1) well defined community policies and standards on all steps of the data life cycle, aligned with the wider European policies, as well as with international developments; (2) each participating RI will have sustainable, transparent and auditable data services, for each step of data life cycle, compliant to the FAIR principles. (3) the focus of the proposed work is put on the implementation of prototypes for testing pre-production services at each RI; the catalogue of prepared services is defined for each RI independently, depending on the maturity of the involved RIs; (4) the complete set of thematic data services and tools provided by the ENVRI cluster is exposed under the EOSC catalogue of services.	
<b>Contact person in ISMAR:</b> <a href="mailto:francesca.depascalis@ismar.cnr.it">francesca.depascalis@ismar.cnr.it</a>	
<b>Partnership:</b>  <ol style="list-style-type: none"> <li>1. Forschungszentrum Julich GMBH (FZJ) (Germany)</li> <li>2. Centre National de la Recherche Scientifique (CNRS) (France)</li> <li>3. Integrated Carbon Observation System (ICOS) (Finland)</li> <li>4. Lunds Universitet (ULUND) (Sweden)</li> <li>5. Fondazione Centro Euro-Mediterraneo Sui Cambiamenti Climatici (CMCC) (Italy)</li> <li>6. Universitetet i Bergen (UIB) (Norway)</li> </ol>	

7. Euro-Argo - European Research Infrastructure Consortium (EURO-ARGO ERIC) (France)
8. Institut Francais de Recherche pour l'exploitation de la Mer (IFREMER) (France)
9. European Multidisciplinary Seafloor and Water Column Observatory - European Research Infrastructure Consortium (EMSO ERIC) (Italy)
10. E-Science European Infrastructure for Biodiversity and Ecosystem Research (Spain)
11. Lifewatch - European Research Infrastructure Consortium (LIFEWATCH ERIC)
12. Norsk Institutt for Luftforskning Stiftelse (NILU) (Norway)
13. Consiglio Nazionale delle Ricerche (CNR) (Italy)
14. Ilmatieteen Laitos (FMI) (Finland)
15. Helsingin Yliopisto (UHEL) (FI)
16. Istituto Nazionale di Geofisica e Vulcanologia (INGV) (Italy)
17. United Kingdom Research and Innovation – UKRI (United Kingdom)
18. Bureau De Recherches Geologiques et Minieres (BRGM) (France)
19. Koninklijk Nederlands Meteorologisch Instituut (KNMI) (Netherlands)
20. Eiscat Scientific Association (EISCAT) (Sweden)
21. Institutul National de Cercetare-Dezvoltare Pentru Geologie si Geoecologie Marina (GEOECOMAR) (Romania)
22. Institutul National de Cercetare Dezvoltare Pentru Stiinte Biologice Ra (INSB) (Romania)
23. The University of Stirling (USTIR) (United Kingdom)
24. Consiglio per la Ricerca In Agricoltura e l'analisi dell'economia Agraria (CREA) (Italy)
25. Institut National de la Recherche Agronomique (Inra) (France)
26. Sios Svalbard AS (Norway)
27. Universiteit van Amsterdam (UVA) (Netherlands)
28. Technische Informationsbibliothek (TIB) (Germany)
29. Mariene Informatie Service Maris BV (MARIS) (Netherlands)
30. Institut Royal des Sciences Naturelles de Belgique (RBINS) (Belgium)
31. Istituto Nazionale di Oceanografia e di Geofisica Sperimentale (OGS) (Italy)
32. Agencia Estatal Consejo Superior De investigaciones Cientificas (CSIC) (Spain)
33. Umweltbundesamt Gesellschaft Mit Beschränkter Haftung (EAA) (Austria)
34. Biosense Institute - Research and Development Institute for Information Technologies in Biosystems (Biosense) (SERBIA)
35. Consortium of European Taxonomic Facilities (CETAF) (Belgium)
36. Stichting Naturalis Biodiversity Center (NATURALIS) (Netherlands)
37. Surfsara BV (SURFSARA) (Netherlands)

<b>Programme:</b> H2020-SPACE-2018-2020 - RIA	
<b>CNR Strategic Area:</b> AP4	
<b>Project title:</b> <b>Copernicus Evolution - Research for harmonised and Transitional water Observation</b>	
<b>Acronym:</b> CERTO	
<b>Role in the project:</b> Partner and leader of the CNR Team	
<b>Duration:</b> 01/01/2020 - 31/12/2023	
<b>Total budget:</b> € 2.843.000,00	
<b>ISMAR budget:</b> € 400.000,00	
<b>Web site:</b> <a href="https://certo-project.org/">https://certo-project.org/</a>	
<b>Key words:</b> water quality, coastal and transitional waters	
<b>Summary:</b> The aims to address this lack of harmonisation by undertaking research and development necessary to produce harmonised water quality data from each service and extend Copernicus to the large number of stakeholders operating in transitional waters. CERTO will focus on methods to classify waters, using satellite observations, together with the most comprehensive existing in situ data sets and additional data gathering within the project. Methods will be improved to remove the atmospheric signal, particularly problematic in near-coastal and transitional waters, as well as to flag waters where the bottom is visible. CERTO will also evaluate optical water quality Indicators, as specified by the broad group of end-users engaged in the project from industry, monitoring agencies and science communities. CERTO will investigate cross-cutting Indicators that may be used across coasts, transitional and inland waters including large rivers (monitored through the Water Framework and Marine Strategy Framework Directives). The project will contribute to DANUBIUS the European research infrastructure in River-Sea Systems, and international communities such as Group on Earth Observation (GEO) AquaWatch and Blue Planet, the Lagoons for Life initiative as well as supporting the United National Sustainable Development Goals.	
<b>Contact person in ISMAR:</b> <a href="mailto:rosalia.santoleri@ismar.cnr.it">rosalia.santoleri@ismar.cnr.it</a>	
<b>Partnership:</b> <ol style="list-style-type: none"> <li>1. Plymouth Marine Laboratory (United Kingdom)</li> <li>2. Brockmann Consult GmbH (Germany)</li> <li>3. Associação para a Investigação e Desenvolvimento de Ciências (Portugal)</li> <li>4. The University of Stirling (United Kingdom)</li> <li>5. Institutul National de Cercetare-Dezvoltare Pentru, Geologie si Geoecologie Marina GeoEcoMar (Romania)</li> <li>6. HYGEO (France)</li> <li>7. Odermatt and Brockmann GmbH (Switzerland)</li> <li>8. Consiglio Nazionale delle Ricerche (Italy)</li> </ol>	


9. PML Applications Ltd (United Kingdom)
10. Climate-KIC Holding BV (Netherlands)

<b>Programme:</b> H2020-INFRAEOSC-2018-2020 - INFRA	
<b>CNR Strategic Area:</b> AP7	
<b>Project title:</b> <b>Research Lifecycle Management technologies for Earth Science Communities and Copernicus users in EOSC</b>	
<b>Acronym:</b> RELIANCE	
<b>Role in the project:</b> Partner	
<b>Duration:</b> 01/01/2021 – 30/06/2023	
<b>Total budget:</b> € 1.999.972,00	
<b>ISMAR budget:</b> € 189.125,00	
<b>Web site:</b> <a href="https://www.reliance-project.eu">https://www.reliance-project.eu</a>	
<b>Key words:</b> EOSC-hub, data cubes access, data management	
<b>Summary:</b>  <p>The overall goal of RELIANCE project is to improve the FAIRness of research at a holistic level in ESOC, not just of the data, methods, code or publications individually, but of the whole research as a single information unit. In order to do that, Reliance proposes a set of complementary services supporting the research lifecycle using Research Objects (RO) as the overarching mechanism that connects the different research related artefacts, extended with data cubes for efficient and scalable structured data access and discovery, as well as rich machine-readable metadata, including metadata extracted from unstructured text, enabling a FAIR access to the underlying research. Accordingly, Reliance project will adapt and integrate into EOSC-hub the following interconnected services: i) RO management and evolution ii) data cubes access, discovery and exploration, and iii) text mining to enrich the RO with extracted metadata in order to make them more machine actionable and enable the creation of added value on top of them. As part of the integration in EOSC, Reliance services will leverage the existing offering in EOSC, and they will be made available via existing user interfaces and python libraries for use in Jupyter notebooks and other environments. In line with the guidelines to integrate new services into ESOC-hub, Reliance services will connect to core services like the EOSC AAI, but also to other common and thematic services.</p>	
<b>Contact person in ISMAR:</b> <a href="mailto:federica.foglini@bo.ismar.cnr.it">federica.foglini@bo.ismar.cnr.it</a>	
<b>Partnership:</b>  <ol style="list-style-type: none"> <li>1. Instytut Chemii Bioorganicznej Polskiej Akademii Nauk PSNC (Poland)</li> <li>2. Consiglio Nazionale delle Ricerche CNR (Italy)</li> <li>3. Expert System Iberia ESI (Spain)</li> <li>4. Meteorological Environmental Earth Observation MEEO (Italy)</li> <li>5. Istituto Nazionale di GeoFisica e Vulcanologia INGV (Italy)</li> <li>6. University of Oslo UiO (Norway)</li> <li>7. Universidad Politécnica de Madrid UPM (Spain)</li> <li>8. Terradue T2 (Italy)</li> <li>9. Alpha Consultants LTD ALPHA (United Kingdom)</li> </ol>	


<b>Programme:</b> H2020-BG-2018-2020 / H2020-BG-2019-2 - RIA	
<b>CNR Strategic Area:</b> AP4	
<b>Project title:</b> <b>Atlantic Ecosystems Assessment, Forecasting &amp; Sustainability</b>	
<b>Acronym:</b> ATLANTECO	
<b>Role in the project:</b> Partner	
<b>Duration:</b> 01/09/2020 – 31/08/2025	
<b>Total budget:</b> € 10.925.660,00	
<b>ISMAR budget:</b> € 253.000,00	
<b>Web site:</b> <a href="https://www.atlanteco.eu/the-project">https://www.atlanteco.eu/the-project</a>	
<b>Key words:</b> Atlantic ecosystems, ecosystem services, ecosystem stressors	
<b>Summary:</b> <p>The overall objective of AtlantECO is to assess and predict changes in the status and dynamics of Atlantic ecosystems at regional and basin scales to improve the sustainability of ecosystem services and enhance Blue Growth for Atlantic communities. CNR will be coordinating the Work Package 7, aimed to identify and quantify the variability and the dominant patterns of ecosystem stressors, as well as forcing of short- and long-term ecosystem changes. The analysis will combine novel high-resolution observation-based data products and model output. It distinguishes between drivers (e.g. wind forcing, currents, mixed layer dynamics, nutrients, biotic interactions) of planktonic ecosystem dynamics and stressors, here defined as environmental variables and anthropogenic processes for which projected changes are likely to have a negative impact on ecosystem dynamics (e.g. oxygen, pH, saturation state with respect to calcium carbonate, nutrient limitation). CNR will also be involved in WP 6, focused on the Multi-scale connectivity in Atlantic ecosystems.</p>	
<b>Contact person in ISMAR:</b> <a href="mailto:bruno.buongiornonardelli@cnr.it">bruno.buongiornonardelli@cnr.it</a>	
<b>Partnership:</b> <ol style="list-style-type: none"> <li>1. Stazione Zoologica Anton Dohrn (SZN) (Italy)</li> <li>2. Eidgenoessische Technische Hochschule Zuerich (ETH Zurich) (Switzerland)</li> <li>3. Universidade Federal de São Carlos (UFSCar) (Brazil)</li> <li>4. Commissariat à l’Energie Atomique et aux Energies Alterna&amp;ves (CEA) (France)</li> <li>5. Istituto Nazionale di Oceanografia e di Geofisica Sperimentale-OGS (Italy)</li> <li>6. European Molecular Biology Laboratory (EMBL) (United Kingdom)</li> <li>7. Universidade de Sao Paulo (USP) (Brazil)</li> <li>8. University of Pretoria (South Africa)</li> <li>9. Universiteit Utrecht (UU) (Netherlands)</li> <li>10. University of Cape Town (South Africa)</li> </ol>	



11. Fonda&on Tara Ocean (FTO) (France)
12. Universidade Federal de Santa Catarina (UFSC) (Brazil)
13. SINTEF AS (Norway)
14. Alfred-Wegener-Institut Helmholtz-Zentrum für Polar- und Meeresforschung (AWI) (Germany)
15. Fondazione Centro Euro-Mediterraneo sui Cambiamenti & Clima&ci (CMCC), (Italy)
16. Consiglio Nazionale delle Ricerche (CNR) (Italy)
17. Centre National de la Recherche Scientifique (CNRS) (France)
18. Council for Scientific and Industrial Research (CSIR) (South Africa)
19. Marine Biological Association of the United Kingdom (MBA) (United Kingdom)
20. Plymouth Marine Laboratory Limited (PML) (United Kingdom)
21. Sorbonne Université (SU) (France)
22. Universitaet Bern (UBERN) (Switzerland)
23. National Oceanography Centre (NOC) (United Kingdom)
24. The University of Liverpool (UNILIV) (United Kingdom)
25. Università degli Studi di Roma La Sapienza (UNIROMA) (Italy)
26. Universidad de Santiago de Compostela (USC) (Spain)
27. United Nations Educational, Scientific and Cultural Organization - UNESCO (France)
28. Seascope Belgium (SBE) (Belgium)
29. European Marine Biological Resource Centre European Research Infrastructure Consortium (EMBRC-ERIC) (France)
30. European Multidisciplinary Seafloor and water column Observatory- European Research Infrastructure Consortium (EMSO-ERIC) (Italy)
31. Sociedade Portuguesa de Inovação (SPI) (Portugal)
32. Okologiai Kutatoko&zpont (OK) (Hungary)
33. Stichting Nederlandse Wetenschappelijk Onderzoek Ins&tuten (NIOZ) (Netherlands)
34. Universidade Federal da Bahia (UFBA) (Brazil)
35. Universidade Federal do Rio Grande (FURG) (Brazil)
36. Agencia Estatal Consejo Superior de Investigaciones Cientificas M.P. (CSIC) (Spain)

<b>Programme:</b> H2020-BG-2018-2020 - IA	
<b>CNR Strategic Area:</b> AP4	
<b>Project title:</b> <b>Improving and integrating the European Ocean Observing and Forecasting System</b>	
<b>Acronym:</b> EUROSEA	
<b>Role in the project:</b> Partner	
<b>Duration:</b> 01/11/2019 – 31/12/2023	
<b>Total budget:</b> € 12.300.000,00	
<b>ISMAR budget:</b> € 30.000,00	
<b>Web site:</b> <a href="https://eurosea.eu/">https://eurosea.eu/</a>	
<b>Key words:</b> ocean observation improvement, knowledge gaps, sustainable use of oceans	
<b>Summary:</b> <p>The oceans provide us with food and oxygen. They are trade routes and climate buffers. They serve as places for recreation, but often also as waste dumps. Storms, rising sea levels, tidal waves and pollution threaten people and ecosystems along the coasts. This is particularly true of Europe with its vast populated coastlines, marginal seas, gulfs and bays. Yet, despite the immense importance of the oceans, there are still major gaps in our knowledge of the ocean interior, due to missing or insufficiently linked ocean observations. Such knowledge gaps make it difficult to assess the present ocean status, as well as predict how best to plan for future developments for a sustainable use of the oceans. Through the EuroSea project, an international consortium of 55 partners has now joined forces with the aim to significantly improve ocean observation in Europe and beyond.</p>	
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<b>Partnership:</b> <ol style="list-style-type: none"> <li>1. Helmholtz-Zentrum für Ozeanforschung Kiel -GEOMAR (Germany)</li> <li>2. EuroGOOS</li> <li>3. United Nations Educational, Scientific and Cultural Organisation - IOC/UNESCO (France)</li> <li>4. Mercator Ocean International – MOI (France)</li> <li>5. Alma Mater Studiorum – Università di Bologna - UNIBO (Italy)</li> <li>6. Marine Institute – MI (Ireland)</li> <li>7. Agencia Estatal Consejo Superior de Investigaciones Cientificas - CSIC (Spain)</li> <li>8. Ecole Normale Supérieure – ENS (France)</li> <li>9. Collecte Localisation Satellites Sa – CLS (France)</li> <li>10. Istituto Nazionale di Oceanografia e di Geofisica Sperimentale – OGS (Italy)</li> <li>11. Fondazione Centro Euro-Mediterraneo sui Cambiamenti Climatici – CMCC (Italy)</li> <li>12. Universitetet i Bergern - UiB (Norway)</li> <li>13. United Kingdom Research and Innovation – UKRI (United Kingdom)</li> <li>14. Sorbonne University – SU (France)</li> </ol>	


15. Consorcio para el Diseño, Construcción, Equipamiento y Explotación del Sistema de Observación Costero de las Illes Balears – SOCIB (Spain)
16. European Centre for Medium-Range Weather Forecasts - ECMWF
17. Instytut Oceanologii Polskiej Akademii Nauk IO PAN (Poland)
18. Institut für Weltwirtschaft – IfW (Germany)
19. Euro-Argo – ERIC (France)
20. Centre National de la Recherche Scientifique – CNRS (France)
21. Institut Français de Recherche Pour L'Exploitation de la Mer IFREMER (France)
22. Institut royal des Sciences naturelles de Belgique – RBINS (Belgium)
23. Institut de Science et Ethique – SCIENCETHICS (France)
24. Istituto Superiore per la Protezione e la Ricerca Ambientale – ISPRA (Italy)
25. France Section – IEEE (France)
26. European Marine Board IVZW - EMB
27. Institut Mines-Télécom – IMT (France)
28. OceanNext
29. AZTI Fundazioa – AZTI (Spain)
30. Puertos del Estado – EPPE (Spain)
31. ACRI-ST SAS (France)
32. OVE Arup & Partners International Limited - ARUP
33. Hellenic Centre for Marine Research – HCMR (Greece)
34. Norsk Institut for Vannforskning- NIVA (Norway)
35. Met Office (United Kingdom)
36. European Multidisciplinary Seafloor and water column Observatory - European Research Infrastructure Consortium - EMSO ERIC
37. Consorcio para el Diseño, Construcción, Equipamiento y Explotación de la Plataforma Oceanica de Canarias – PLOCAN (Spain)
38. Universitaet Bremen – UBREMEN (Germany)
39. Universidade do Porto – UPORTO (Portugal)
40. Stazione Zoologica Anton Dorhn – SZN (Italy)
41. Alfred-Wegener-Institut, Helmholtz-Zentrum für Polar- und Meeresforschung – AWI (Germany)
42. ETT SPA (Italy)
43. Nologin Consulting, S.L. – Nologin (Spain)
44. Universitat Politècnica de Catalunya – UPC (Spain)
45. Danmarks Meteorologiske Institut – DMI (Denmark)
46. Tallinna Tehnikaukool -TalTech (Estonia)
47. Consiglio Nazionale delle Ricerche – CNR (Italy)
48. Institut de Recherche pour le Développement – IRD (France)
49. The Chancellor Masters and Scholars of The University of Cambridge – UCAM (United Kingdom)
50. Xylem Aanderaa Data Instruments AS – XYLEM (Norway)
51. Organisation Meteorologique Mondiale - WMO
52. Universidade do Estado do Rio de Janeiro – UERJ (Brazil)
53. Universidade Federal de Pernambuco – UFPE (Brazil)
54. Memorial University of Newfoundland – MUN (Canada)
55. Dalhousie University - DAL (Canada)

<b>Programme:</b> H2020-MG-2020-SingleStage-INEA - RIA	
<b>CNR Strategic Area:</b> AP2	
<b>Project title:</b> <b>Solutions At Underwater Radiated Noise</b>	
<b>Acronym:</b> SATURN	
<b>Role in the project:</b> Partner	
<b>Duration:</b> 01/02/2021 – 31/01/2025	
<b>Total budget:</b> € 8.965.964,00	
<b>ISMAR budget:</b> € 250.000,00	
<b>Web site:</b> <a href="https://www.saturnh2020.eu/">https://www.saturnh2020.eu/</a>	
<b>Key words:</b> bioacoustics, underwater noise, stakeholder engagement, maritime policy	
<b>Summary:</b> <p>The SATURN consortium brings together leading experts in bioacoustics; population biology; marine mammal, fish and invertebrate biology; maritime architecture and engineering; shipping; maritime policy; stakeholder engagement and science communication. We will combine expertise from these disciplines to work with unity of purpose and clarity of intent to identify:</p> <ol style="list-style-type: none"> <li>a. The sounds that are most detrimental to aquatic species and how they are produced and propagated;</li> <li>b. The short-term and cumulative long-term negative impacts of noise from shipping and boats on three representative groups of aquatic species in rivers and the sea (invertebrates, fish and marine mammals);</li> <li>c. The most promising options for measuring and reducing the negative impacts of ship noise that can be applied to current and future vessels.</li> </ol>	
<b>Contact person in ISMAR:</b> <a href="mailto:fantina.madricardo@ve.ismar.cnr.it">fantina.madricardo@ve.ismar.cnr.it</a>	
<b>Partnership:</b> <ol style="list-style-type: none"> <li>1. University College Cork (UCC) (Ireland)</li> <li>2. Aarhus Universitet (AU) (Denmark)</li> <li>3. Bureau Veritas Marine and Offshore SAS BV (France)</li> <li>4. CETENA S.p.A (CETENA) (Italy)</li> <li>5. Secretary of State for Environment, Food and Rural Affairs (CEFAS) (United Kingdom)</li> <li>6. DNV GL AS (DNVGL) (Norway)</li> <li>7. JASCO Applied Sciences GmbH (JASCO) (Germany)</li> <li>8. Stichting Maritiem Research Instituut Nederland (MARIN) (Netherlands)</li> <li>9. Naval Group (NG) (France)</li> <li>10. Nederlandse Organisatie voor Toegepast Natuurwetenschappelijk Onderzoek (TNO) (Netherlands)</li> </ol>	

11. Consorcio para el Diseño, Construcción, Equipamiento y Explotación de la Plataforma Oceánica de Canarias (PLOCAN) (Spain)
12. Quiet Oceans (QO) (France)
13. Institute for Terrestrial and Aquatic Wildlife Research, University of Veterinary Medicine Hannover (TIHO) (Germany)
14. Técnicas y Servicios de Ingeniería, S.L (TSI) (Spain)
15. Wärsilä Netherlands B.V. (WART) (Netherlands)
16. Universiteit Leiden (LEID) (Netherlands)
17. Universitat Politècnica de Catalunya, Barcelona Tech (UPC) (Spain)
18. Consiglio Nazionale delle Ricerche (CNR) (Italy)
19. Universidad de la Laguna (ULL) (Spain)


<b>Programme:</b> H2020-INFRAIA-2018-2020 - INFRA	
<b>CNR Strategic Area:</b> AP2	
<b>Project title:</b> <b>An alliance of European marine research infrastructure to meet the evolving needs of the research and industrial communities</b>	
<b>Acronym:</b> EUROFLEETS+	
<b>Role in the project:</b> Partner	
<b>Duration:</b> 01/02/2019 – 31/10/2023	
<b>Total budget:</b> € 9.999.360,00	
<b>ISMAR budget:</b> € 37.317,00	
<b>Web site:</b> <a href="https://www.eurofleets.eu/">https://www.eurofleets.eu/</a>	
<b>Key words:</b> vessel fleets, ocean observation infrastructures, portable telepresence system	
<b>Summary:</b> <p>The EUROFLEETS+ project will facilitate open free of charge access to an integrated and advanced research vessel fleet, designed to meet the evolving and challenging needs of the user community. European and international researchers from academia and industry will be able to apply for several access programmes, through a single-entry system. EUROFLEETS+ will prioritise support for research on sustainable, clean and healthy oceans, linking with existing ocean observation infrastructures, and it will support innovation through working closely with industry. The project will enable access to a unique fleet of 27 state-of-the-art research vessels from European and international partners. Through competitive Calls, researchers will be able to access the entire North Atlantic, Mediterranean, Black Sea, North Sea, Baltic Sea, Pacific Southern Ocean and Ross Sea. In addition to ship time, researchers will also have access to new AUVs and ROVs. A unique portable telepresence system will enable remote access by researchers and diverse end users including the public; a first for Europe.</p>	
<b>Contact person in ISMAR:</b> <a href="mailto:anna.vetrano@sp.ismar.cnr.it">anna.vetrano@sp.ismar.cnr.it</a>	
<b>Partnership:</b> <ol style="list-style-type: none"> <li>1. Marine Institute (Ireland)</li> <li>2. Faroe Marine Research Institute (Faroe Islands)</li> <li>3. Finnish Environment Institute – Marine Research Center (Finland)</li> <li>4. Flanders Marine Institute (Belgium)</li> <li>5. Mariene Informatie Service 'MARIS' BV(Netherlands)</li> <li>6. European Centre for Information on Marine Science and Technology (Portugal)</li> <li>7. University of Gothenburg (Sweden)</li> <li>8. Hellenic Centre for Marine Research (Greece)</li> <li>9. Royal Belgian Institute of Natural Sciences (Belgium)</li> <li>10. Institute of Oceanology, Polish Academy of Sciences (Poland)</li> </ol>	

11. National Research Council (Italy)
12. Portuguese Institute for the Ocean and Atmosphere (Portugal)
13. Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research (Germany)
14. National Institute of Oceanography and Applied Geophysics (Italy)
15. Tubitak Marmara Research Center (Turkey)
16. University Bremen (Germany)
17. Institutul National de Cercetare-Dezvoltare Pentru Geologie si Geoecologie Marina- GeoEcoMar (Romania)
18. Spanish Institute of Oceanography (Spain)
19. University of Girona (Spain)
20. Greenland Institute of Natural Resources (Greenland)
21. Marine and Freshwater Research Institute (Iceland)
22. Technical University of Denmark (Denmark)
23. Institut Français de Recherche pour l'Exploitation de la MER (France)
24. European Multidisciplinary Seafloor and Water Column Observatory – European Research Infrastructure Consortium (Italy)
25. Institute of Marine Research (Norway)
26. Agencia Estatal Consejo Superior de Investigaciones Cientificas – Unidad De Tecnologia Marina (Spain)
27. Tallinna Tehnikaülikool (Estonia)
28. Royal Netherlands Institute for Sea Research (Netherlands)
29. Centre for Maritime Research and Experimentation (Belgium)
30. Coronis Computing S.L. (Spain)
31. Blue Lobster IT Limited (United Kingdom)
32. GEOMAR Helmholtz Centre of Ocean Research (Germany)
33. NIWA Vessels Ltd (New Zealand)
34. Balearic Islands Observing and Forecasting System (Spain)
35. VoyagerIP International Services Limited (Ireland)
36. Seaonics AS (Norway)
37. Hampidjan Hf (Iceland)
38. IQUA Robotics SL (Spain)
39. MacArtney A/S (Denmark)
40. The Global Foundation for Ocean Exploration, Inc. (USA)
41. Université du Québec à Rimouski-Institut des Sciences de la mer de Rimouski (Canada)
42. Bermuda Institute of Ocean Sciences (BIOS), Inc. (Bermuda)


<b>Programme:</b> H2020-INFRAIA-2018-2020 - INFRA	
<b>CNR Strategic Area:</b> AP1	
<b>Project title:</b> eLTER Advanced Community Project	
<b>Acronym:</b> eLTER+	
<b>Role in the project:</b> Partner	
<b>Duration:</b> 01/02/2020 – 31/01/2025	
<b>Total budget:</b> € 10.065.009,00	
<b>ISMAR budget:</b> € 41.354,00	
<b>Web site:</b> <a href="https://www.lter-europe.net/projects">https://www.lter-europe.net/projects</a>	
<b>Key words:</b> ecosystem integrity study, ecosystem services, cc impacts	
<b>Summary:</b>  The Advanced Community Project for the eLTER Research Infrastructure (eLTER PLUS) belongs to INFRAIA-01-2018-2019 programme of HORIZON 2020 and is built on three main pillars - networking, joint research activities and transnational, remote and virtual access. eLTER PLUS will conduct a performance test of the emerging eLTER RI while challenging, assessing and strengthening its operations. Selected sites and platforms in terrestrial, freshwater and coastal ecosystems will be used to study ecosystem integrity, impacts of climate change and endangered ecosystem services at a pan-European scale. Alongside these exemplary case studies eLTER PLUS will identify and assess innovative observational and analytical methods, elaborate detailed specifications of eLTER RI according to community needs (standard observations, site design), support community building and training, and pilot priority services (IT and other support).	
<b>Contact person in ISMAR:</b> <a href="mailto:caterina.bergami@bo.ismar.cnr.it">caterina.bergami@bo.ismar.cnr.it</a>	
<b>Partnership:</b>  <ol style="list-style-type: none"> <li>1. University of Helsinki (Finland)</li> <li>2. Umweltbundesamt Gesellschaft Mit Beschränkter Haftung (Uba Gmbh) (Austria)</li> <li>3. Suomen Ympäristökeskus (Finland)</li> <li>4. Centre National de la Recherche Scientifique CNRS (France)</li> <li>5. Forschungszentrum Jülich GmbH (Germany)</li> <li>6. Helmholtz-Zentrum für Umweltforschung GmbH – Ufz (Germany)</li> <li>7. Polytechnio Kritis (Greece)</li> <li>8. Consiglio Nazionale delle Ricerche (Italy)</li> <li>9. Europejskie Regionalne Centrum Ekohydrologii Polskiej Akademii Nauk (Poland)</li> <li>10. Sveriges Lantbruksuniversitet (Sweden)</li> <li>11. Institut Po Bioraznoobrazie I Ekosistemni Izsledvaniya Balgarska Akademiya Na Naukite (Bulgaria)</li> <li>12. Senckenberg Gesellschaft für Naturforschung (Germany)</li> <li>13. Okologiai Kutatóközpont (Hungary)</li> </ol>	




14. Ben-Gurion University of the Negev (Israel)
15. Israel Institute of Technology (Israel)
16. Latvijas Universitates (Latvia)
17. Universitatea din Bucuresti (Romania)
18. Institute of Landscape Ecology of the Slovak Academy of Sciences (Slovakia)
19. Znanstvenoraziskovalni Center Slovenske Akademije Znanosti In Umetnosti (Slovenia)
20. Agencia Estatal Consejo Superior Deinvestigaciones Cientificas (Spain)
21. Biosense Institute - Research and Development Institute for Information Technologies in Biosystems (Serbia)
22. Fciencias.Id - Associacao Para a Investigacao e Desenvolvimento de Ciencias (Portugal)
23. Centre for Ecology & Hydrology (United Kingdom)
24. Universitaet fuer Bodenkultur Wien (Austria)
25. Eigen Vermogen Van Het Instituut Voor Natuur- En Bosonderzoek (Belgium)
26. Ustav Vyzkumu Globalni Zmeny Av Cr Vvi (Czechia)
27. Kobenhavns Universitet (Denmark)
28. Csc-Tieteen Tietotekniikan Keskus Oy (Finland)
29. Universita degli Studi Di Milan (Italy)
30. Eidgenossichen Forschungsanstalt fur Wald Schnee und Landschaft (Switzerland)
31. Iceta Instituto de Ciencias, Tecnologias E Agroambiente da Universidade do Porto (Portugal)
32. Pensoft Publishers (Bulgaria)


<b>Programme:</b> H2020-BG-2018-2020 - IA	
<b>CNR Strategic Area:</b> AP4	
<b>Project title:</b> <b>New Approach to Underwater Technologies for Innovative, Low-cost Ocean observation</b>	
<b>Acronym:</b> NAUTILOS	
<b>Role in the project:</b> Part of the CNR team	
<b>Duration:</b> 01/10/2020 - 30/09/2024	
<b>Total budget:</b> € 9.048.349,00	
<b>ISMAR budget:</b> € 134.134,00	
<b>Web site:</b> <a href="https://nautilus-h2020.eu/">https://nautilus-h2020.eu/</a>	
<b>Key words:</b> observation tools and services, new cutting-edge technologies, open data	
<b>Summary:</b> <p>NAUTILOS will fill in existing marine observation and modelling gaps through the development of a new generation of cost-effective sensors and samplers for physical (salinity, temperature), chemical (inorganic carbon, nutrients, oxygen), and biological (phytoplankton, zooplankton, marine mammals) essential ocean variables, in addition to micro-/nano-plastics, to improve our understanding of environmental change and anthropogenic impacts related to aquaculture, fisheries, and marine litter. Newly developed marine technologies will be integrated with different observing platforms and deployed through the use of novel approaches in a broad range of key environmental settings.</p> <p>The fundamental aim of the project will be to complement and expand current European observation tools and services, to obtain a collection of data at a much higher spatial resolution and temporal regularity and length than currently available at the European scale, and to further enable and democratise the monitoring of the marine environment to both traditional and non-traditional data users. The principles that underlie the NAUTILOS project will be those of the development, integration, validation and demonstration of new cutting-edge technologies with regards to sensors, interoperability and embedding skills. NAUTILOS will also provide full and open data feed towards well- established portals and data integrators (EMODnet, CMEMS, JERICO).</p>	
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<b>Partnership:</b> <ol style="list-style-type: none"> <li>1. Consiglio Nazionale delle Ricerche (Italy)</li> <li>2. Hellenic Centre for Marine Research (Greece)</li> <li>3. Norsk Institutt for Vannforskning (Norway)</li> <li>4. Suomen Ymparistokeskus (Finland)</li> <li>5. Institut Francais de Recherche pour L'Exploitation de la Mer (France)</li> <li>6. Centre National de la Recherche Scientifique CNRS (France)</li> </ol>	


7. Ett Spa (Italy)
8. Edgelab Srl It
9. Universidade do Algarve (Portugal)
10. Nke Instrumentation Sarl (France)
11. Aquatec Group Limited (United Kingdom)
12. Subctech Gmbh (Germany)
13. Ceiiia - Centro de Engenharia e Desenvolvimento (Associacao) (Portugal)
14. Haute Ecole Specialisee de Suisse Occidentale (Switzerland)
15. CSEM Centre Suisse d'Electronique et de Microtechnique Sa - Recherche et Developpement (Switzerland)
16. Univerza V Ljubljani (Slovenia)
17. Fundacao Eurocean (Portugal)
18. Deutsches Forschungszentrum fur Kunstliche Intelligenz Gmbh (Germany)
19. Università della Calabria (Italy)
20. IMAR - Instituto do Mar (Portugal)
21. Evroproject Ood (Bulgaria)

<b>Programme:</b> H2020-SPACE-2018-2020 - IA	
<b>CNR Strategic Area:</b> AP4	
<b>Project title:</b> <b>Satellite Seafloor Survey Suite</b>	
<b>Acronym:</b> 4S	
<b>Role in the project:</b> Partner	
<b>Duration:</b> 01/10/2020 – 31/10/2023	
<b>Total budget:</b> € 2.672.650,00	
<b>ISMAR budget:</b> € 272.175,00	
<b>Web site:</b> <a href="https://www.eomap.com/">https://www.eomap.com/</a>	
<b>Key words:</b> data and solution gaps, digital information, cloud based software	
<b>Summary:</b>  4S will address a current data and solution gaps from coastal and offshore stakeholders, which are the ability to generate and access spatial and recent information on seabed, such as benthic habitat, morphology, depth and change and trends. Digital information on these are crucial to respond to EC maritime directive, environmental impact studies and engineering offshore activities. We will address this gap by developing an online, cloud based software, named 4S – Satellite Seafloor Survey Suite – which empowers the users to benefit from satellite capabilities and specific aquatic EO algorithms. 4S will harness Copernicus data together with US satellite lidar data and – optionally – integrate client airborne (drone) imagery and on-site data. Other stakeholders, many of which have signed supporting letters, will participate in 7 use cases which cover four countries, the Caribbean and several selected sites globally. The development of a sustainable business based on 4S will be driven by the industry partners, which contribute with 52% of the workload.	
<b>Contact person in ISMAR:</b> <a href="mailto:marzia.rovere@bo.ismar.cnr.it">marzia.rovere@bo.ismar.cnr.it</a>	
<b>Partnership:</b>  <ol style="list-style-type: none"> <li>1. EOMAP GmbH &amp; Co.KG (Germany)</li> <li>2. Hellenic Centre for Marine Research (Greece)</li> <li>3. Quality Positioning Services (QPS) (Netherlands)</li> <li>4. Länsstyrelsen Västerbottens län LV (Sweden)</li> <li>5. Consiglio Nazionale delle Ricerche (Italy)</li> <li>6. Instituto Hidrografico (Portugal)</li> <li>7. FugroGermany Marine GmbH (Germany)</li> <li>8. Smith Warner International Limited (Jamaica)</li> </ol>	

<b>Programme:</b> H2020-INFRAIA-2018-2020 / H2020-INFRAIA-2020-1	
<b>CNR Strategic Area:</b> AP4	
<b>Project title:</b> <b>Metrology for Integrated Marine Management and Knowledge-Transfer Network</b>	
<b>Acronym:</b> MINKE	
<b>Role in the project:</b> Partner	
<b>Duration:</b> 01/04/2021 – 31/03/2025	
<b>Total budget:</b> € 4.994.955,00	
<b>ISMAR budget:</b> € 77.336,00	
<b>Web site:</b> <a href="https://minke.eu/">https://minke.eu/</a>	
<b>Key words:</b> marine metrology research infrastructures, Ocean & Coastal Observation	
<b>Summary:</b> <p>MINKE will integrate key European marine metrology research infrastructures, to coordinate their use and development and propose an innovative framework of “quality of oceanographic data” for the different European actors in charge of monitoring and managing the marine ecosystems. MINKE proposes a new vision in the design of marine monitoring networks considering two dimensions of data quality, accuracy and completeness, as the driving components of the quality in data acquisition. The present proposal, through the different Integration Activities (Networking, Transnational-Virtual Access and Joint Research), aims to lay the groundwork for creating the necessary synergies among the different involved actors in the quintuple helix model of innovation, creating a new community with complementary capabilities for Ocean &amp; Coastal Observation, that will facilitate the transition towards a blue growth socio-economic system.</p>	
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<b>Partnership:</b> <ol style="list-style-type: none"> <li>1. Agencia Estatal Consejo Superior Deinvestigaciones Cientificas (Spain)</li> <li>2. Institut Francais de Recherche pour l'Exploitation de la Mer (France)</li> <li>3. Hellenic Centre for Marine Research (Greece)</li> <li>4. Consorcio Para el Diseno, Construccion, Equipamiento y Explotacion de la Plataforma Oceanica de Canarias (Spain)</li> <li>5. Universitat Politecnica de Catalunya (Spain)</li> <li>6. Istituto Nazionale di Oceanografia e di Geofisica Sperimentale (Italy)</li> <li>7. Consiglio Nazionale delle Ricerche (Italy)</li> <li>8. Istituto Nazionale di Ricerca Metrologica (Italy)</li> <li>9. Service Hydrographique et Oceanographique de la Marine (France)</li> <li>10. Norsk Institutt for Vannforskning (Norway)</li> <li>11. National Oceanography Centre (United Kingdom)</li> <li>12. Agenzia Nazionale per le Nuove Tecnologie, l'Energia e lo Sviluppo Economico Sostenibile (Italy)</li> </ol>	

13. Physikalisch-Technische Bundesanstalt (Germany)
14. Universite d'Aix Marseille (France)
15. Universidad Catolica del Norte (Chile)
16. Anel.Lides SI (Spain)
17. Laboratoire National de Metrologie et d'Essais (France)
18. 52°North Initiative for Geospatial Open Source Software Gmbh (Germany)
19. Institut d'Arquitectura Avancada de Catalunya (Spain)
20. Suomen Ymparistokeskus (Finland)
21. Joint Programming Initiative on Healthy and Productive Seas and Oceans (Belgium)
22. European Multidisciplinary Seafloorand Water Column Observatory - European Research Infrastructure Consortium (EMSO ERIC) (Italy)




<b>Programme:</b> H2020, Marie Skłodowska Curie Actions, Global Fellowships - MSCA	
<b>CNR Strategic Area:</b> AP4	
<b>Project title:</b> <b>Marine Environmental Dynamics and seX-based analysis for climate change adaptation in marine spatial planning</b>	
<b>Acronym:</b> MEDIX	
<b>Role in the project:</b> Lead Partner	
<b>Duration:</b> 28/12/2020 – 27/12/2023	
<b>Total budget:</b> € 269.000,00	
<b>ISMAR budget:</b> € 244.903,00	
<b>Web site:</b> <a href="http://www.medix-project.eu/">http://www.medix-project.eu/</a>	
<b>Key words:</b> climate change, MSP, Ecosystem-based management	
<b>Summary:</b> <p>To effectively adapt to climate change (CC), a novel more dynamic approach in governing the oceans is needed. Marine Spatial Planning (MSP) – a public process aimed to allocate human uses at sea while maintaining multiple ecosystem services (ES) – as currently implemented is too static to adequately incorporate climate refugia and CC responses of marine life. The goal of my project is to provide a stronger, more complete model for the sustainable planning of marine ES in the California Current. MEDIX will significantly improve the traditional MSP process in a context of a fast-changing climate by creating a novel approach to MSP that incorporates a dynamic ES assessment under CC scenarios with a sex-based analysis of CC effects on species and ecosystems, to elaborate a guideline for adaptation actions in MSP. The California Current will provide an ideal case study to test the new approach for adaptation strategies to maintain the ES. Through the MSCA Global Fellowship, Dr. Elena Gissi, Marie S. Curie Fellow, will reinforce her expertise in ecosystem-based management in MSP with new interdisciplinary expertise and skills in ES modeling under CC and sex analysis, which she will transfer back to Europe, where the development of adaptive strategies for MSP is relevant and timely. The GF envisages: i) an outgoing period at Stanford University, USA, where Dr. Gissi will be involved in a major initiative to revise and adapt the marine protected areas network of the California Current within the national MSP initiative, in collaboration with governments, and ii) a return period in Italy at CNR, Italy, where she intends to build on and transfer the skills acquired to elaborate the adaptive MSP guidelines that she will make accessible to relevant European stakeholders through a process of science-to-policy and science-for-society engagement in the Mediterranean.</p>	
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<b>Partnership:</b> <ol style="list-style-type: none"> <li>1. National Research Council, Institute of Marine Sciences (Italy)</li> <li>2. Stanford University, Hopkins Marine Station (USA)</li> </ol>	


<b>Programme:</b> H2020-BG-2018-2020 / H2020-BG-2020-2 - RIA	
<b>CNR Strategic Area:</b> AP2	
<b>Project title:</b> <b>Developing Optimal and Open Research Support for the Black Sea</b>	
<b>Acronym:</b> DOORS	
<b>Role in the project:</b> Partner	
<b>Duration:</b> 01/06/2021 – 31/05/2025	
<b>Total budget:</b> € 9.795.350,00	
<b>ISMAR budget:</b> € 350.000,00	
<b>Web site:</b> <a href="https://www.doorsblacksea.eu/">https://www.doorsblacksea.eu/</a>	
<b>Key words:</b> Blue Growth Accelerator, Black Sea	
<b>Summary:</b>  DOORS will bring the four pillars of the SRIA into reality, turning the challenges into opportunities for a highly valued Black Sea. It will harmonise research and provide the infrastructure to better understand the Black Sea, particular ecosystem characteristics, develop the framework to support Blue Growth and early development of startups, and provide evidence to inform policy and behavioural change. To reach its ambitious objectives, the project team will work closely with stakeholders from the start to develop an open research system and establish a framework to support continuous stakeholder dialogue. DOORS will implement three Work Programmes: a System of Systems to harmonise approaches and provide an accessible data repository, a Blue Growth Accelerator to support enterprise, and Knowledge Transfer and Training to share best practice and build capacity. These will: <ul style="list-style-type: none"> <li>• Engage stakeholders through communication, dissemination and training activities to raise awareness, build capacity and foster a stronger Black Sea identity</li> <li>• Harmonise data collation, analysis and access to optimise data use in decision and policy making</li> <li>• Strengthen the Black Sea scientific network through new collaborations, and bridge the gap between science and policy</li> <li>• Provide a range of products to support Black Sea innovation and enterprise DOORS will have long-lasting impact by giving stakeholders in the region the skillsets and understanding to: <ul style="list-style-type: none"> <li>• Implement key policies and legislation</li> <li>• Improve environmental quality and reduce pollution risk</li> <li>• Design measures to mitigate pollution and remediate historically contaminated areas</li> <li>• Become resilient communities</li> <li>• Realise and sustainably develop potential economic growth for future well-being</li> <li>• Build capacity in existing industries, develop new start-ups and become actively involved in delivering Blue Growth</li> <li>• Create ocean informed citizens to better understand Black Sea's potential</li> </ul> </li> </ul>	
<b>Contact person in ISMAR:</b> <a href="mailto:debora.bellafiore@ismar.cnr.it">debora.bellafiore@ismar.cnr.it</a>	



## Partnership:

1. Institutul National de Cercetare-Dezvoltare Pentru Geologie Si Geoecologie Marina-Geocomar (GEOCOMAR)
2. Institutul National de Cercetare-Dezvoltare Marina Grigore Antipa (NIMRD), Romania,
3. Organizatia Neguvernamentala Ecologista Mare Nostrum (MNOSTRUM), Romania
4. Institute of Oceanology Bas (IO-BAS), Bulgaria
5. Geo Marine (GEOMARINE), Bulgaria
6. Burgaski Svoboden Universitet (BFU), Bulgaria
7. Middle East Technical University (METU), Turkey
8. Dokuz Eylul Universitesi (DEU), Turkey
9. Karadeniz Teknik Universitesi (KTU), Turkey
10. Gis and Rs Consulting Center Geographic (GEORG), Georgia
11. P.P. Shirshov Institute of Oceanology of Russian Academy of Sciences (SIORAS), Russia
12. Russian Presidential Academy of National Economy and Public Administration, North-West Institute of Management (NWIM RANEPa), Russia
13. Odessa State Environmental University (OSENU) Ukraine
14. Universitatea De Stat Din Tiraspol (UST) Moldova
15. Consiglio Nazionale delle Ricerche (CNR), Italy
16. Institut Francais de Recherche pour l'Exploitation de la Mer (IFREMER), France
17. Helmholtz-Zentrum Hereon GmbH (HEREON), Germany
18. Brockmann Consult GmbH (BC), Germany
19. Stichting Deltares (DELTARES), Netherlands
20. Universitat Politecnica de Catalunya (UPC), Spain
21. Socib - Consorcio Para el Diseno, Construccin, Equipamiento y Explotacion del Sistema de Observacion Costero de las Illes Balears (SOCIB), Spain
22. University College Cork - National University of Ireland, Cork (UCC), Ireland
23. Hellenic Centre for Marine Research (HCMR), Greece
24. Kantor Symvouloi Epicheiriseon Anonimi Etairia (KANTOR), Greece
25. The University of Stirling (USTIR), United Kingdom
26. Plymouth Marine Laboratory Limited (PML), United Kingdom
27. National Oceanography Centre (NOC), United Kingdom
28. Eurogoos (EUROGOOS), Belgium
29. Euro-Argo Eric (Euro-Argo Eric), France
30. European Multidisciplinary Seafloor and Water Column Observatory - European Research Infrastructure Consortium (EMSO ERIC) Italy
31. European Marine Biological Resource Centre European Research Infrastructure Consortium (EMBRC), France
32. E-Science European Infrastructure for Biodiversity and Ecosystem Research (LIFEWATCH), Spain
33. Derzhavna Naukova Ustanova Tsentr Problem Morskoyi Heologii Heoekolohiyi ta Osadovoho Rudoutvorennya Nanukrainy Dnu Morheoekotsentr Nan Ukrainy (MGEC) Ukraine
34. Istituto Nazionale di Geofisica e Vulcanologia (INGV), Italy
35. Athina-Erevnitiko Kentro Kainotomias Stis Technologies Tis Pliroforias, Ton Epikoinonion Kai Tis Gnosis (ATHENA), Greece
36. Toulon var Technologies (POLMED), France
37. Rea Michael (MRM), United Kingdom

<b>Programme:</b> H2020 - EIT RAW MATERIALS - IA	  
<b>CNR Strategic Area:</b> AP2	
<b>Project title:</b> <b>RIS-Internship programme:broadening University-Business Cooperation</b>	
<b>Acronym:</b> RIS-Internship	
<b>Role in the project:</b> Partner	
<b>Duration:</b> 01/03/2023 – 01/03/2024	
<b>Total budget:</b> € 978.697,00	
<b>ISMAR budget:</b> € 64.458,00	
<b>Web site:</b> <a href="https://www.ris-internship.eu/">https://www.ris-internship.eu/</a>	
<b>Key words:</b> hosting organisations, business skills	
<b>Summary:</b>  Overall objective of the project is to implement a Sustainable and structured RIS Internship Programme for East European (RIS) and EIT-RM- labelled MSc students, thus increasing students' entrepreneurial and business skills, broadening the University-Business Cooperation activities in the RIS region, boosting the employment of the RM graduates within the hosting organizations and leveraging the regional brain drain.	
<b>Contact person in ISMAR:</b> <a href="mailto:silvia.giuliani@bo.ismar.cnr.it">silvia.giuliani@bo.ismar.cnr.it</a>	
<b>Partnership:</b>  <ol style="list-style-type: none"> <li>1. University of Zagreb - Faculty of Mining, Geology and Petroleum Engineering (Croatia)</li> <li>2. National Technical University of Athens (Greece)</li> <li>3. Technical University of Kosice (Slovakia)</li> <li>4. Spanish National Research Council (Spain)</li> <li>5. National Research Council (Italy)</li> <li>6. Technische Universität Bergakademie Freiberg (Germany)</li> <li>7. University of Liège (Belgium)</li> <li>8. University of Miskolc (Hungary)</li> <li>9. Wroclaw University of Science and Technology</li> <li>10. Slovenian National Building and Civil Engineering Institute (Slovenia)</li> </ol>	

<b>Programme:</b> H2020-BG-2018-2020 - RIA	
<b>CNR Strategic Area:</b> AP2	
<b>Project title:</b> <b>Advancing Black Sea research and innovation to co-develop blue growth within resilient ecosystems</b>	
<b>Acronym:</b> BRIDGE-BS	
<b>Role in the project:</b> Partner	
<b>Duration:</b> 01/06/2021 – 30/11/2025	
<b>Total budget:</b> € 8.999.877,00	
<b>ISMAR budget:</b> € 443.750,00	
<b>Web site:</b> <a href="http://bridgeblacksea.org/">http://bridgeblacksea.org/</a>	
<b>Key words:</b> Ecosystem resilience, ecosystem services, multi-stressors, biogeochemistry, start-ups, capacity building	
<b>Summary:</b> <p>The Black Sea's unique ecosystem services are degrading and need to be better managed for the benefit of citizens dependent upon their sustainability. As a critical contribution to the science-based policy needed to preserve the Black Sea ecosystems, BRIDGE-BS proposes a multidisciplinary, multisectoral program building on regional and international initiatives. The project will develop predictive tools and capabilities necessary to understand and predict the impacts of climate-driven and anthropogenic multi-stressors on the services stemming from Black Sea ecosystems. These services and their responses to stressors will be mapped, monitored and modeled in order to identify a safe operating space within which a sustainable blue economy can flourish. To this end, BRIDGE-BS is structured around "three" interconnected nodes: Service Dynamics, Blue Growth Incubators and Empowered Citizens.</p>	
<b>Contact person in ISMAR:</b> <a href="mailto:andrea.barbanti@ismar.cnr.it">andrea.barbanti@ismar.cnr.it</a>	
<b>Partnership:</b> <ol style="list-style-type: none"> <li>1. Middle East Technical University (TR)</li> <li>2. Institute of Oceanology - Bulgarian Academy of Sciences (BG)</li> <li>3. Institutul National de Cercetare-Dezvoltare Marina Grigore Antipa (RO)</li> <li>4. Institut Po Bioraznoobrazie I Ekosistemni Izsledvaniya Balgarska Akademiya Na Naukite (BG)</li> <li>5. Ukrainian Scientific Centre of Ecology of the Sea (UA)</li> <li>6. Ivane Javakhishvili Tbilisi State University (GE)</li> <li>7. Institutul National de Cercetare-Dezvoltare Pentru Geologie si Geoecologie Marina-Geocomar (RO)</li> <li>8. P.P. Shirshov Institute of Oceanology of Russian Academy of Sciences (RU)</li> <li>9. International Center for Black Sea Studies (EL)</li> </ol>	

10. Hellenic Centre for Marine Research (EL)
11. Consiglio Nazionale delle Ricerche (IT)
12. Universite de Liege (BE)
13. Athens University of Economics and Business - Research Center (EL)
14. Stockholms Universitet (SE)
15. Centro Tecnológico del Mar - Fundacion Cetmares (ES)
16. Indigo Med Smpc (EL)
17. Institute of Electronic Engineering and Nanotechnologies (MD)
18. Danmarks Tekniske Universitet (DK)
19. Organization of the Black Sea Economic Cooperation (TR)
20. Strategies Mer et Littoral (FR)
21. Conference des Regions Peripheriques Maritimes d' Europe - Association

## 6. INTERREG – TERRITORIAL COOPERATION PROGRAMMES

European Territorial Cooperation (ETC), better known as INTERREG, is a key European Union (EU) instrument that strengthens cooperation between regions and countries within the EU. As part of the EU's Cohesion Policy, INTERREG plays a vital role in promoting regional development, cohesion, and reducing economic disparities. For the 2021-2027 period, Interreg is focused on addressing current challenges like climate change, digital transformation, and social inclusion.

Starting in 1990 as a Community Initiative with a € 1 billion budget, INTERREG focused on cross-border cooperation. Over time, it expanded to include transnational and interregional cooperation.

The current period's € 10 billion budget highlights Interreg's evolution, featuring reinforced cooperation with partner countries via INTERREG IPA and INTERREG NEXT, and a dedicated strand for EU outermost regions and neighboring countries. 2021-2027 is the sixth period of INTERREG and therefore it is called INTERREG VI.

INTERREG is built around three strands of cooperation: cross-border (INTERREG A), transnational (INTERREG B) and interregional (INTERREG C). Strand D encompasses cooperation within a specific, often expanded, geographical area.

### 6.1 2021-2027 PERIOD – INTERREG VI

In accordance with the new design of the European Cohesion Policy INTERREG has significantly been reshaped to achieve greater impact and an even more effective use of the investments. Key elements of the present programme period are:

Almost € 10 billion are shared between almost 100 INTERREG programmes across the borders, in and outside the EU, contributing to the implementation of EU's cohesion policy main priorities:

- A more competitive and smarter Europe (PO1);
- A greener, low-carbon transitioning towards a net zero carbon economy and resilient Europe (PO2);
- A more connected Europe (PO3);
- A more social and inclusive Europe (PO4);
- A Europe closer to citizens (PO5)

In 2021-2027 INTERREG has 2 new specific objectives:

- **INTERREG Specific Objective (ISO) 1 : A better Cooperation governance ;**
  - To enhance the institutional capacity of public administrations,
  - To resolve legal and administrative obstacles in border regions,
  - To promote sustainable democracy,
  - To strengthen mutual trust among citizens.
- **INTERREG Specific Objective (ISO) 2: A safer and more secure Europe**
  - For actions in the fields of border crossing management, mobility and migration management, including the protection and economic and social integration of third-country nationals.
  - To support employment and labour market measures such as improving access to employment, encouraging life-long learning, promoting gender balance and fostering equal opportunities.



Fig. 12 Interreg policy objectives

## 6.2 CNR-ISMAR IN INTERREG PROGRAMMES

In 2023 the INTERREG V programmes were at the end and for this reason only one project “TRECAP” was financed as “capitalization project” by the cross-border Italy-Slovenia. Other 7 projects ended within the year. Several proposal have been submitted in 2023 as described in chapter 10 and CNR-ISMAR has gained a good number of them.

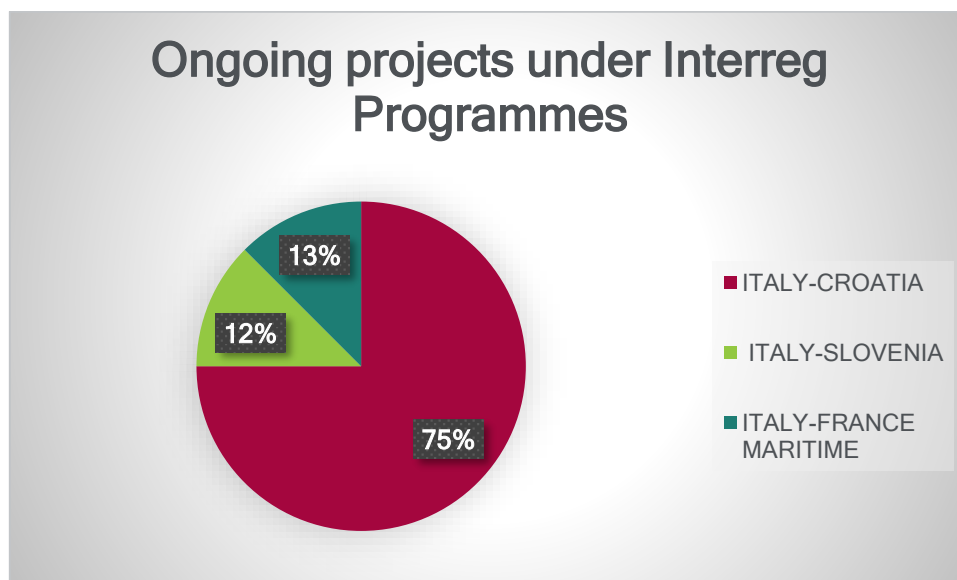




Fig. 13: Projects running in 2023 under INTERREG programmes



# List of ISMAR projects funded under INTERREG PROGRAMMES








<b>Programme:</b> INTERREG ITALY-CROATIA (Strategic Projects) <b>Priority Axis 2: Safety and Resilience</b>	 
<b>CNR Strategic Area:</b> AP1	
<b>Project title:</b> <b>Climate change information, monitoring and management tools for adaptation</b>	
<b>Acronym:</b> AdriaClim	
<b>Role in the project:</b> Partner	
<b>Duration:</b> 01/01/2020 – 30/06/2023	
<b>Total budget:</b> € 8.823.415,00	
<b>ISMAR budget:</b> € 390.000,00	
<b>Web site:</b> <a href="https://www.italy-croatia.eu/web/adriaclim">https://www.italy-croatia.eu/web/adriaclim</a>	
<b>Key words:</b> climate risks, cc adaptation plans, blue economy, cc monitoring	
<b>Summary:</b>  <p>The Mediterranean Sea and specifically the Adriatic coastal and marine areas are particularly vulnerable to climate-related risks. The sea surface temperature of the Adriatic Sea will increase of about +1.5/1.6°C in 2050 and sea level will increase of +7 cm with consequent negative impacts on coastal areas and marine ecosystem services.</p> <p>In Italy and Croatia climate monitoring, modelling and adaptation are necessary to face this crucial climate challenge and to turn potential threats into economic opportunities. AdriaClim will develop accurate information able to support the development of regional and local climate change adaptation plans. In particular coastal adaptation planning, for a sustainable blue economy, will be developed based on reliable and accurate information on local sea level rise, sea temperature and salinity, coastal erosion, etc. AdriaClim will consolidate the climate change monitoring (observing and modelling) and planning of measures for strengthening the adaptation capacity in Italy and in Croatia also building upon cross-border cooperation. AdriaClim will develop consolidate and enhance climate monitoring systems and innovative data handling for fostering knowledge and cooperation for adaptation strategies planning in coastal and marine environment.</p>	
<b>Contact person in ISMAR:</b> <a href="mailto:c.ferrarin@ismar.cnr.it">c.ferrarin@ismar.cnr.it</a>	
<b>Partnership:</b> <ol style="list-style-type: none"> <li>1. Regional Agency for Prevention, Environment and Energy in Emilia Romagna (Italy)</li> <li>2. National Research Council (CNR) (Italy)</li> <li>3. Regional Agency for Environmental Protection and Prevention of Veneto (Italy)</li> <li>4. Zadar County Development Agency Zadra Nova (Croatia)</li> <li>5. Dubrovnik Neretva County (Croatia)</li> <li>6. Ruder Boskovic Institute (Croatia)</li> <li>7. Public Institution Rera Sd for Coordination and Development of Split-Dalmatia County (Croatia)</li> <li>8. Institute of Oceanography and Fisheries (Croatia)</li> </ol>	



9. Apulia Region (Italy)
10. Euro-Mediterranean Center on Climate Change Foundation (Italy)
11. Alma Mater Studiorum - University of Bologna (Italy)
12. Environmental Protection Agency of Friuli Venezia Giulia (Italy)
13. Italian National Institute for Environmental Protection and Research (ISPRA)(Italy)
14. Marche Region – Productive Activities, Education and Labour (Italy)
15. Local Health Authority Nr 3 (Italy)
16. Molise Region (Italy)
17. Emilia-Romagna Region (Italy)
18. City of Venice (Italy)
19. Region of Istria (Croatia)

<b>Programme:</b> INTERREG ITALY-CROATIA (2021 Cluster) <b>Priority Axis 2: Safety and Resilience</b>	 
<b>CNR Strategic Area:</b> AP1	
<b>Project title:</b> <b>Climate REsponses for the AdriaTic rEgion</b>	
<b>Acronym:</b> CREATE	
<b>Role in the project:</b> Partner	
<b>Duration:</b> 01/06/2022 - 30/06/2023	
<b>Total budget:</b> € 599.692,00	
<b>ISMAR budget:</b> € 92.000,00	
<b>Web site:</b> <a href="https://www.italy-croatia.eu/web/create">https://www.italy-croatia.eu/web/create</a>	
<b>Key words:</b> climate risks, cc adaptation plans, blue economy, cc monitoring	
<b>Summary:</b> <p>During the implementation of the projects financed under Axis 2 of the programme, important results have been developed for supporting actors in shaping responses to climate change impacts in the programme area, yet this knowledge is dispersed across different websites and platforms. The CREATE cluster will jointly analyse and synthesize results achieved in all relevant projects and provide systematic access to this knowledge. It will enhance transferability of project results using an on-line tool, a good practice handbook, as well as conferences, workshops and webinars with partners and stakeholders and initiatives for showcasing good implementation examples.</p> <p>Create will use the knowledge communication and dissemination for increasing awareness among local and regional actors in the programme area on options and benefits from climate action across the programme area to prepare the ground for more effective and more efficient partnerships between knowledge providers and local actors</p> <p>.</p>	
<b>Contact person in ISMAR:</b> <a href="mailto:davide.bonaldo@ve.ismar.cnr.it">davide.bonaldo@ve.ismar.cnr.it</a>	
<b>Partnership:</b> <ol style="list-style-type: none"> <li>1. Euro-Mediterranean Center on Climate Change Foundation (Italy)</li> <li>2. Uav University of Venice (Italy)</li> <li>3. National Research Council – Institute of Marine Sciences (Italy)</li> <li>4. Abruzzo Region (Italy)</li> <li>5. Pap/Rac Priority Action Programme Regional Activity Centre (Croatia)</li> <li>6. Institute of Oceanography and Fisheries (Croatia)</li> <li>7. County of Split-Dalmatia (Croatia)</li> <li>8. Energy Institute Hrvoje Požar (Croatia)</li> </ol>	



<b>Programme:</b> INTERREG ITALY-CROATIA (2021 Cluster) <b>Priority Axis 3:</b> Environmental and Cultural Heritage	 
<b>CNR Strategic Area:</b> AP2	
<b>Project title:</b> <b>Hadriaticum DATA HUB. Data management, protocols harmonization, preparations of guidelines: cross-border tools for maritime spatial planning decision-makers</b>	
<b>Acronym:</b> HATCH	
<b>Role in the project:</b> Affiliated partner of CORILA	
<b>Duration:</b> 01/06/2022 - 30/06/2023	
<b>Total budget:</b> € 566.621,00	
<b>ISMAR budget:</b> € 25.000,00	
<b>Web site:</b> <a href="https://www.italy-croatia.eu/web/hatch">https://www.italy-croatia.eu/web/hatch</a>	
<b>Key words:</b> decision making, monitoring, cross-border platform	
<b>Summary:</b>  <p>The project aims at creating a single platform in the Adriatic collecting all the information and data produced by different projects, and in particular Interreg IT-HR, providing a tool useful to promote decision-making based for both political and technical. The existing data relevant for characterizing the Adriatic chemical-physical features and its habitats, for monitoring the wildlife and flora, and for describing the anthropogenic pressures/pollution will be analyzed, compared and organized in a single uniform format. The final outcome will allow to obtain a shared cross-border platform, where data will be made available, fed with the new ones obtained from robust and validated protocols, and that will contain as well information on how to process and manage the input data in order to obtain harmonized outputs.</p>	
<b>Contact person in ISMAR:</b> <a href="mailto:stefano.menegon@ismar.cnr.it">stefano.menegon@ismar.cnr.it</a>	
<b>Partnership:</b> <ol style="list-style-type: none"> <li>1. University of Udine - Department of agricultural, food and animal science (Italy)</li> <li>2. CORILA - Consortium for coordination of research activities concerning the Venice lagoon system (CNR-ISMAR, IUAV and OGS) (Italy)</li> <li>3. Marche Region (Italy)</li> <li>4. Istrian University of Applied Sciences (Italy)</li> <li>5. Blue World Institute of Marine Research and Conservation (Croatia)</li> <li>6. University of Split (Croatia)</li> </ol>	

<b>Programme:</b>  INTERREG ITALY-CROATIA (Strategic Projects) <b>Priority Axis 1: Blue Innovation</b>	  
<b>CNR Strategic Area:</b> AP2	
<b>Project title:</b> <b>Developing innovative technologies for sustainability of Adriatic Sea</b>	
<b>Acronym:</b> INNOVAMARE	
<b>Role in the project:</b> Partner	
<b>Duration:</b> 01/07/2020 – 30/06/2023	
<b>Total budget:</b> € 5.555.755,00	
<b>ISMAR budget:</b> € 791.451,00	
<b>Web site:</b> <a href="https://www.italy-croatia.eu/web/innovamare">https://www.italy-croatia.eu/web/innovamare</a>	
<b>Key words:</b> innovative technologies, policy instruments, underwater robotics and sensors	
<b>Summary:</b>  Main challenges in Programme area according to EUSAIR are low competitiveness on international markets of SMEs, the effectiveness of the innovation activities, human skills capacities, lack of support schemes and weak involvement of stakeholders and interrelation of business, research and the public sector in sectors of blue economy. To tackle these challenges, INNOVAMARE project aim is to enhance framework conditions on cross-border level by jointly develop and implement strategical and operational level capacity that consist of mix of policy instruments and innovation players as a frame for development of innovative technologies for sustainability of Adriatic Sea. Project is set up on mission-oriented approach that rather than focusing on sectors – as in traditional industrial policy – mission-oriented policy focuses on problem-specific societal challenges, which many different sectors interact to solve. In this case the project focusing on using mix of policy instruments together with innovation players to increase effectiveness of innovation activities of underwater robotics and sensors in direction of sustainability of Adriatic Sea as a crucial strategical societal challenge on cross-border level. INNOVAMARE project has 9 main outputs: 1. development of a cross-border network for scientific-research sector and the private sector based on demand and offers 2. Developed methodology and business plan for DIH for innovative underwater robotics and sensors and living lab in Adriatic Sea,3. Designed and implemented questionnaire for stakeholders, 4. Developed tools and workshop materials for raising human capital, 5. Pilot action I. - creating a prototype that is innovative robotic solution as a platform for development of solutions for monitoring and prediction of the sea pollution, 6. Pilot action II. – analysis of the obtained results on pilot action I and guidelines for the improvement of underwater conditions, 7. Established DIH (Digital innovation Hub) for innovative underwater robotics and sensors and living lab in Adriatic Sea, 8. Developed strategy and action plan for the enhancement of framework conditions for raising collaboration and networking in the field of robotics and sensors for further steps in public policies based on quadruple helix approach, 9. Policy recommendations.	



**Contact person in ISMAR:** [francesca.depascalis@ve.ismar.cnr.it](mailto:francesca.depascalis@ve.ismar.cnr.it)

**Partnership:**

1. Croatian Chamber of Economy (Croatia)
2. Regional Union of the Chambers of Commerce of Veneto Region (Italy)
3. University of Trieste (Italy)
4. Regional Agency for Technology and Innovation (Italy)
5. National Research Council (Italy)
6. Maritime Technology Cluster FVG (Italy)
7. Communication Technology Srl (Italy)
8. National Institute of Oceanography and Experimental Geophysics (Italy)
9. Ruder Bošković Institute (Croatia)
10. Faculty of Electrical Engineering and Computing (Croatia)
11. University of Dubrovnik (Croatia)
12. University of Rijeka (Croatia)
13. Geomar Ltd (Croatia)
14. Šibenik Knin County (Croatia)


<b>Programme:</b>  INTERREG ITALY-CROATIA (Strategic Projects) <b>Priority Axis 2: Safety and Resilience</b>	 
<b>CNR Strategic Area:</b> AP3	
<b>Project title:</b> <b>Strategic development of flood management</b>	
<b>Acronym:</b> STREAM	
<b>Role in the project:</b> Partner	
<b>Duration:</b> 01/04/2020 – 30/06/2023	
<b>Total budget:</b> € 9.411.657,00	
<b>ISMAR budget:</b> € 403.529,00	
<b>Web site:</b> <a href="https://www.italy-croatia.eu/web/stream">https://www.italy-croatia.eu/web/stream</a>	
<b>Key words:</b> coastal flooding, flood risk maps, raising citizens'awareness	
<b>Summary:</b>  <p>In the last decades, flooding events linked to climate change have been on the increase, rising costs and leaving consequences for communities. Cities in the program area are experiencing urban flooding problems caused by extreme weather. The risk of coastal flooding in the region is expected to increase over the next 50-100 years, with urban areas continuing to expand and sea levels expected to rise.</p> <p>Local authorities and emergency services are not sufficiently prepared to promptly react to crisis situations due to the lack of innovative technologies and adequate equipment. Project STREAM will enhance all stakeholders' competencies to promptly respond to the flood. STREAM objective is to improve monitoring and risks and to improve the management for prompt reaction in events of flood disasters by creating and developing flood risk maps, flood hazard maps and FRMP, as well as by developing EWS along with raising awareness of citizens. This action will result in increasing safety of the project area from natural and man-made disasters, which will reduce the adverse consequences on human health, environment, cultural heritage, and economic aspects of the area associated with floods. Such improvement of the early warning system will reduce the risk of flood disasters and minimize loss.</p>	
<b>Contact person in ISMAR:</b> <a href="mailto:c.ferrarin@ismar.cnr.it">c.ferrarin@ismar.cnr.it</a>	
<b>Partnership:</b> <ol style="list-style-type: none"> <li>1. Zadar County Development Agency Zadra Nova (Croatia)</li> <li>2. Dubrovnik Neretva County (Croatia)</li> <li>3. Public Institution Rera Sd for Coordination and Development of Split Dalmatia County (Croatia)</li> <li>4. University of Zadar (Croatia)</li> <li>5. Regional Agency for Prevention, Environment and Energy in Emilia Romagna (Italy)</li> <li>6. Regional Strategic Agency for the Eco- Sustainable Development of the Territory – Apulia Region (Italy)</li> </ol>	

7. National Research Council (CNR) (Italy)
8. Euro-Mediterranean Center on Climate Change Foundation (Italy)
9. Politechnic University of Marche (Italy)
10. Marche Region (Italy)
11. Public Body for the Right to Study (Italy)
12. Public Institution Development Agency of Lika- Senj County (Croatia)
13. Karlovac County (Croatia)
14. Town of Poreč – Parenzo (Croatia)
15. City of Venice (Italy)
16. IUAV University of Venice (Italy)
17. Croatian Waters (Croatia)
18. Emilia-Romagna Region (Italy)
19. Regional Agency for Territorial Safety and Civil Protection- Emilia-Romagna Region (Italy)
20. Puglia Region (Italy)



<b>Programme:</b> INTERREG ITALY-CROATIA <b>Priority Axis 3:</b> Environmental and Cultural Heritage	 
<b>CNR Strategic Area:</b> AP2	
<b>Project title:</b> <b>CoAStal and marine waters integrated monitoring systems for ecosystems proteCtion AnD management</b>	
<b>Acronym:</b> CASCADE	
<b>Role in the project:</b> Sub contractor of ARPAE	
<b>Duration:</b> 01/09/2020 - 30/06/2023	
<b>Total budget:</b> € 5.817.547,00	
<b>ISMAR budget:</b> € 60.000,00	
<b>Web site:</b> <a href="https://www.italy-croatia.eu/web/cascade">https://www.italy-croatia.eu/web/cascade</a>	
<b>Key words:</b> Maritime Spatial Planning - MSP, Integrated Coastal Zone Management - ICZM, Land-Sea Interaction – LSI	
<b>Summary:</b>  CASCADE will develop a set of concerted and coordinated actions including monitoring (observing and modelling) and management (Maritime Spatial Planning - MSP, Integrated Coastal Zone Management - ICZM, Land-Sea Interaction - LSI) to enhance the knowledge and to evaluate the quality and assess the vulnerability of inland, coastal and marine ecosystems in Italy and Croatia with the final objective to restore endangered species and to support integrated management. The integrated modelling and observing systems will be developed to design and implement MSP/LSI/ICZM, management and restoration actions in 11 pilot areas. Pilot actions will assess and protect coastal and marine biodiversity in degraded areas, set up restoration actions, assess the impacts of extreme events on ecosystems and understand how to avoid conflicts and boost synergies in the areas. The project will consolidate long-lasting research capabilities in the field through a concrete dialogue with stakeholders and the participation of Agencies, research centres and universities in order to enhance inland, coastal and marine knowledge. Such shared information and monitoring protocols are essential for supporting concrete actions dealing with environmental vulnerability, fragmentation and safeguarding of ecosystem services at cross-border level.	
<b>Contact person in ISMAR:</b> <a href="mailto:georg.umgiesser@ismar.cnr.it">georg.umgiesser@ismar.cnr.it</a>	
<b>Partnership:</b> <ol style="list-style-type: none"> <li>1. Apulia Region (Italy)</li> <li>2. Fondazione Centro EuroMediterraneo sui cambiamenti climatici (Italy)</li> <li>3. Institut Ruder Boskovic (Croatia)</li> <li>4. Dubrovackp-Neretvanska Zupanija – Dubrovnicj – Neretva (Croatia)</li> <li>5. Agenzia Regionale per la Protezione dell’Ambiente del Friuli (Italy)</li> <li>6. Università IUAV di Venezia (Italy)</li> <li>7. Alma Mater Studiorum Università di Bologna (Italy)</li> </ol>	



8. Agenzia Regionale per la Protezione dell'Ambiente Emilia Romagna (Italy)
9. Delta 2000 Società Consortile ARL (Italy)
10. Università del Salento (Italy)
11. Institut Za Oceanografiju I Ribarstvo - Institute of Oceanography and Fisheries
12. Jadranski Edukativno-Istrazivacki Centar Za Reagiranja Na Iznenadna Oneciséenja Mora-Atrac (Croatia)
13. City of Nin (Croatia)
14. Università degli Studi del Molise (Italy)
15. Regione Marche (Italy)
16. Public Institution for the Management of Protected Areas in the Area of Split-Dalmatia County Sea and Karst (Croatia)
17. Consorzio Di Gestione Di Torre Guaceto (Italy) Associated partner
18. Region of Istria (Croatia) Associated partner
19. Molise Region (Italy) Associated partner
20. Marine Protected Area Torre del Cerrano (Italy) Associated partner

<p><b>Programme:</b></p> <p>INTERREG Italy-France Maritime 2014-2020  <b>Priority Axis 2:</b> Protection and valorization of natural and cultural resources and risk management</p>	
<p><b>CNR Strategic Area:</b> AP3</p>	
<p><b>Project title:</b> Assistance to Navigation for a Safe Access to Ports</p>	
<p><b>Acronym:</b> SINAPSI</p>	
<p><b>Role in the project:</b> Partner</p>	
<p><b>Duration:</b> 01/04/2019 – 31/12/2023</p>	
<p><b>Total budget:</b> € 2.188.294,00</p>	
<p><b>ISMAR budget:</b> € 653.504</p>	
<p><b>Web site:</b> <a href="http://interreg-maritime.eu/web/sinapsi">http://interreg-maritime.eu/web/sinapsi</a></p>	
<p><b>Key words:</b> maritime transport, safety of navigation, weather real time data</p>	
<p><b>Summary:</b></p> <p>Maritime transport is a crucial aspect of Blue Economy since international economic exchanges are based on an efficient and safe transport and logistics system of which ports are a vital element. Operational safety is essential in port areas due to an ever-increasing number of ships whose sizes keep getting bigger. Loading and unloading goods in ports must be as efficient as possible to keep up with growing competition from other ports in the Mediterranean and Northern European areas. However, these operations must guarantee the safety of ships, cargo and operators. Therefore, ensuring the safety of navigation remains an open challenge. Weather and sea conditions can affect, to a large extent, the safe handling of ships inside ports, where space is limited. Knowledge of weather and sea conditions plays a primary role in guaranteeing safety. Despite the application of new technologies, naval accidents due to bad weather and sea conditions are common; for example, the incident of the Sigma cargo ship stranded on the Tuscan coast due to strong winds and rough seas in 2017. SINAPSI's goal is to meet the need of port operators to have real-time data on weather and sea conditions and be able to navigate and handle ships in ports with complete safety. It will achieve this objective by monitoring and simulating weather and sea conditions near and inside ports. The information thus produced will be made available to the stakeholders (Pilots, Commanders, Port and Maritime Authorities) through a dedicated ICT application. SINAPSI will also integrate the current Maritime monitoring network for the measurement of weather-marine parameters.</p>	
<p><b>Contact person in ISMAR:</b> <a href="mailto:marcello.magaldi@sp.ismar.cnr.it">marcello.magaldi@sp.ismar.cnr.it</a></p>	
<p><b>Partnership:</b></p> <ol style="list-style-type: none"> <li>1. Università degli Studi di Genova (Italy)</li> <li>2. Consiglio Nazionale delle Ricerche CNR-ISMAR (Italy)</li> </ol>	

3. Université de Toulon (France)
4. Autorità di Sistema portuale del Mar Tirreno Settentrionale (Italy)
5. Consorzio Laboratorio di Monitoraggio e Modellistica Ambientale (Italy)
6. European Research Institute Onlus (Italy)
7. Chambre de Commerce et d'Industrie du Var (France)

<b>Programme:</b> INTERREG INTERREG Italy-Slovenia SO 2.4	  Cofinanziato dall'Unione europea Sofinancirna Evropska unija
<b>CNR Strategic Area:</b> AP2	
<b>Project title:</b> <b>TREzze, tegnue e ambienti marini dell'alto Adriatico: Capitalizzazione</b>	
<b>Acronym:</b> TRECAP	
<b>Role in the project:</b> Partner	
<b>Duration:</b> 01/04/2019 – 31/01/2023	
<b>Total budget:</b> € 594.011,00	
<b>ISMAR budget:</b> € 100.132,00	
<b>Web site:</b> <a href="https://www.ita-slo.eu/it/trecap">https://www.ita-slo.eu/it/trecap</a>	
<b>Key words:</b> Tegnùe, North Adriatic, Pinna nobilis, best practices, education	
<b>Summary:</b>  The primary objective of the project is the capitalization of the technical-scientific advances developed by the former TRETAMARA project concluded in 2022 and their transposition into best practices for the management, conservation and use of the Italian and Slovenian submerged benthic habitats of high ecological value present in the northern Adriatic. The partnership includes OGS (Lead Partner), Shoreline Soc. Coop., NIB, CNR, Aquarium of Piran, Municipality of Caorle. TRECcap will benefit from the participation of a multidisciplinary group, with expertise in coastal oceanography, ecology and marine geology to contribute to the development of management actions aimed at protecting marine biodiversity and defining a suitable context for the development of sustainable blue economy through information and educational actions. The CNR-ISMAR will work on the characterization and monitoring of benthic habitats with innovative techniques, as a management practices for the protected areas in the coastal waters of Veneto, Friuli Venezia Giulia and Slovenia. Specific conservation actions will be implemented for the priority species <i>Pinna nobilis</i> (larval recruitment, juvenile replanting, genetic mapping).	
<b>Contact person in ISMAR:</b> <a href="mailto:alessandro.bergamasco@cnr.it">alessandro.bergamasco@cnr.it</a>	
<b>Partnership:</b> <ol style="list-style-type: none"> <li>1. OGS Istituto Nazionale di Oceanografia e di Geofisica Sperimentale (Italy)</li> <li>2. Shoreline Società Cooperativa (Italy)</li> <li>3. Nacionalni inštitut za biologijo (Slovenia)</li> <li>4. Consiglio Nazionale delle Ricerche, Istituto di Scienze Marine (Italy)</li> <li>5. Univerza na Primorskem - Università del Litorale (Slovenia)</li> <li>6. Comune di Caorle (Italy)</li> </ol>	

## 7. EUROPEAN TENDERS

Among the several EU Tenders CNR-ISMAR, with its branch in Rome in particular, has participated in those launched by ESA and Copernicus programmes due to the affinity with their topic fields.

The European Space Agency (ESA) is an intergovernmental organisation of 22 member states dedicated to the exploration of space. Its mission is to shape the development of Europe's space capability and ensure that investment in space continues to deliver benefits to the citizens of Europe and the world.

Copernicus, previously known as GMES (Global Monitoring for Environment and Security), is the European Programme for the establishment of a European capacity for Earth Observation. It offers information services that draw from satellite Earth Observation and in-situ (non-space) data. The European Commission manages the Programme. It is implemented in partnership with the Member States, the European Space Agency (ESA), the European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT), the European Centre for Medium-Range Weather Forecasts (ECMWF), EU Agencies and Mercator Océan.

### 7.1 CNR-ISMAR IN TENDER PROGRAMMES

CNR-ISMAR manages 21 projects under this programme: 8 funded by ESA and 13 by COPERNICUS, for a total budget of € 6.824.495,95. In 12 projects the institute plays the role of Prime Contractor. Successful results were gained thanks to the long-time network established with the partners, allowing the institute to manage an high number of projects.

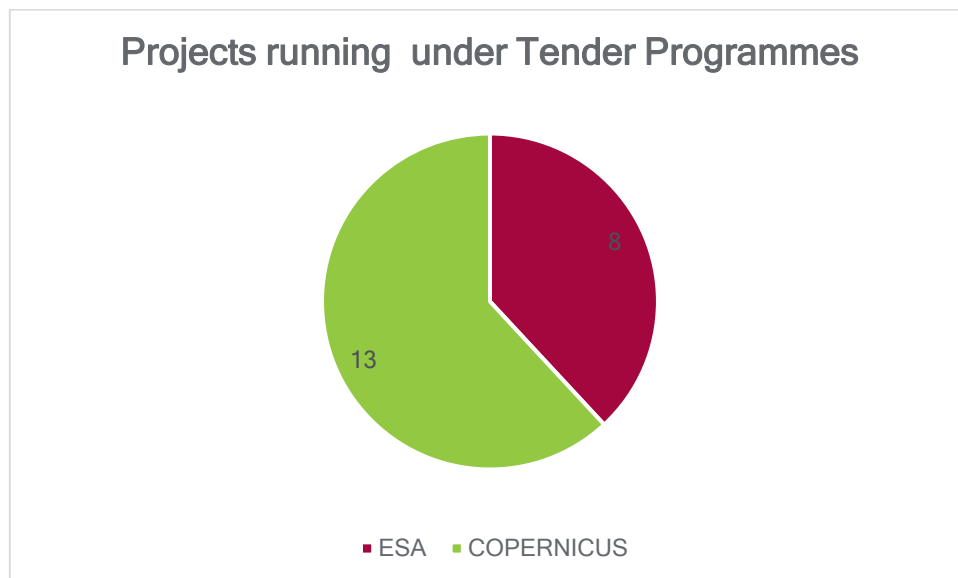




Fig. 18 Projects running under Tender Programmes


## List of ISMAR projects funded under EU Tenders





<b>Programme:</b>  ESA	
<b>CNR Strategic Area:</b> AP4	
<b>Project title:</b> <b>Dimensional data-driven reconstruction of the Mediterranean ecosystem for the study of biophysical interactions and their impact assessment</b>	
<b>Acronym:</b> 4DMED-SEA	
<b>Role in the project:</b> Prime Contractor	
<b>Duration:</b> 22/06/2023 – 21/06/2025	
<b>Total budget:</b> € 700.000,00	
<b>ISMAR budget:</b> € 140.000,00	
<b>Web site:</b> n.a.	
<b>Key words:</b> situ observation, ocean's health, climate system	
<b>Summary:</b>  <p>The Mediterranean Sea ecosystem provides fundamental resources and services that support large and complex human socio-economic systems, that can be severely impacted by both natural and anthropogenic stressors. The management, restoration and preservation of the Mediterranean Sea Health requires improved monitoring tools to advance our understanding of the marine ecosystem functioning. These novel tools and products will foster innovative approaches to provide science-based solutions for sustainable development, such as those enabled through future Digital Twins of the Ocean. Investigating the complex interactions between the physical/biological/biogeochemical processes that shape the Mediterranean ecosystem represents the key interdisciplinary research objective that will be addressed by 4DMED project. 4DMED consortium will also provide recommendations for a Science Agenda and 5-year science roadmap and actively interact with the major international initiatives focused Mediterranean Sea Health. CNR will be coordinating the entire consortium that includes CLS, CNRS, Univ. of Aix-Marseille, AWI, Mercator Ocean International and INNUERE consulting.</p>	
<b>Contact person in ISMAR:</b> <a href="mailto:bruno.buonjornonardelli@cnr.it">bruno.buonjornonardelli@cnr.it</a>	
<b>Partnership:</b>  <ol style="list-style-type: none"> <li>1. CNR (Italy)</li> <li>2. AMU (France)</li> <li>3. AWI (Germany)</li> <li>4. CLS (France)</li> <li>5. CNRS (France)</li> <li>6. CSIC (Spain)</li> <li>7. INNUERE CONSULTING (Italy)</li> <li>8. MERCATOR OCEAN (France)</li> </ol>	


<b>Programme:</b> ESA	
<b>CNR Strategic Area:</b> AP4	
<b>Project title:</b> <b>Sea Level Budget Closure</b>	
<b>Acronym:</b> SLBC CCI+	
<b>Role in the project:</b> Subcontractor	
<b>Duration:</b> 07/04/2023 – 31/03/2026	
<b>Total budget:</b> € 77.000,00	
<b>ISMAR budget:</b> € 77.000,00	
<b>Web site:</b> n.a.	
<b>Key words:</b> sea level budget closure, altimetry, gravimetry, steric sea level, barystatic sea level	
<b>Summary:</b>  <p>The SLBC_cci+ aims at continuing and going beyond the work carried out on the sea level budget closure by the SLBC_cci project. The general objectives of the project are: i) to improve the closure of the global mean SLB and extend the global SLB time series, ii) to assess the closure of the SLB at regional scales and iii) to explain the time and space variability in SLB both at global and regional spatial scales. More specifically, the global SLB will be updated up to 2022 and if possible will be extended to 2023 depending on the availability of the individual components. We also intend to go further by extending the SLB exercise at regional scale for the 2002-2022 period (called GRACE/Argo period). Extending the SLB to regional spatial scales will allow us to identify regions where the SLB does not close, leading to a regional breakdown of the assessment of the CCI products that represent a large part of the individual components used in the SLB. However, our approach in the SLBC_cci+ project is not only to provide an extension of the SLBC_cci project but it really aspires to go a step further and to understand the causes of possible inconsistencies.</p>	
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<b>Programme:</b> ESA	
<b>CNR Strategic Area:</b> AP4	
<b>Project title:</b> Ocean CIRculation from ocean COLOUR observations	
<b>Acronym:</b> ESA-CIRCOL	
<b>Role in the project:</b> Prime Contractor	
<b>Duration:</b> 01/11/2019 – 15/02/2023	
<b>Total budget:</b> € 297.092,00	
<b>ISMAR budget:</b> € 247.072,00	
<b>Web site:</b> <a href="https://eo4society.esa.int/projects/circol/">https://eo4society.esa.int/projects/circol/</a>	
<b>Key words:</b> oceanic currents, high frequency and high resolution observations	
<b>Summary:</b> <p>The monitoring of the oceanic surface currents is a major scientific and socio-economic challenge. Ocean currents represent one of the fundamental elements that modulate natural and anthropogenic processes at several different space and time scales, from global climate change to local dispersal of tracers and pollutants, with relevant impacts on marine ecosystem services and maritime activities (e.g. optimization of the ship routes, maritime safety, coastal protection). An appropriate monitoring of the oceanic currents must rely on high frequency and high resolution observations of the global ocean, which are achieved using satellite measurements. At present, no satellite sensor is able to provide a direct measurement of the ocean currents – The indirect and synoptic retrieval of the large-scale geostrophic component of the sea-surface motion is given by satellite altimetry at a spatial (~100km) and temporal (~one week) resolution which is not sufficient for many applications, even more in semi-enclosed basins as the Mediterranean Sea where the most energetic variable signals are found at relatively small scales. In this context, the objective of the CIRCOL (Ocean Circulation from Ocean Colour Observations) project is to improve the retrieval of altimeter-derived currents in the Mediterranean Basin combining the largescale, altimeter-derived geostrophic currents with the high-resolution dynamical information contained in sequences of satellite-derived surface Chlorophyll (Chl) observations. The project will be implemented in two phases.</p>	
<b>Contact person in ISMAR:</b> <a href="mailto:daniele.ciani@cnr.it">daniele.ciani@cnr.it</a>	
<b>Partnership:</b> <ol style="list-style-type: none"> <li>1. CNR Consiglio Nazionale delle Ricerche (Italy)</li> <li>2. CLS Collecte Localisation Satellites (France)</li> </ol>	



<b>Programme:</b>  ESA	
<b>CNR Strategic Area:</b> AP4 EARTH OBSERVATION	
<b>Project title:</b> Copernicus Contributing Missions access Support Functions and platform	
<b>Acronym:</b> ESA-PRISM	
<b>Role in the project:</b> Subcontractor	
<b>Duration:</b> 01/12/2020 - 31/12/2025	
<b>Total budget:</b> n.a.	
<b>ISMAR budget:</b> € 219.662,78	
<b>Web site:</b> <a href="https://earth.esa.int/eogateway/instruments/prism">https://earth.esa.int/eogateway/instruments/prism</a>	
<b>Key words:</b> data quality control, quality control service, quality of data set	
<b>Summary:</b>  <p>The Copernicus Space Component Data Access (CSCDA) Copernicus Contributing Missions access Support Functions and platform (PRISM) includes the operations, maintenance and evolution of the ensemble of existing supporting functions, processes, tools and infrastructures that coordinate the overall data access and information flow between the Copernicus Missions (i.e. including both the Contributing Mission Entities (CCMEs) and the Sentinels) and the Copernicus Services as well as eligible European Union Institutions, Public Authorities, Union Research Projects. Within this frame, the PRISM CSCDA Data Quality Control (CQC) CSCDA Quality Control Service is in charge of monitoring the quality of datasets and all delivered data products, and supports the investigation of any data anomaly.</p> <p>The CNR will support Serco Italia in the scientific analysis of the Copernicus Contributing Missions (CCMs) data.</p>	
<b>Contact person in ISMAR:</b> <a href="mailto:davide.dionisi@cnr.it">davide.dionisi@cnr.it</a> - <a href="mailto:gianluigi.liberti@cnr.it">gianluigi.liberti@cnr.it</a>	



<b>Programme:</b>  ESA	
<b>CNR Strategic Area:</b> AP4	
<b>Project title:</b> <b>Satellite-based observations of Carbon in the Ocean: Pools, fluxes and Exchanges</b>	
<b>Acronym:</b> ESA-SCOPE	
<b>Role in the project:</b> Partner	
<b>Duration:</b> 01/12/2023 – 10/12/2025	
<b>Total budget:</b> € 950.000,00	
<b>ISMAR budget:</b> € 50.000,00	
<b>Web site:</b> <a href="#">n.a.</a>	
<b>Key words:</b> Ocean Carbon Cycle, Ocean Carbon Budget, Satellite, Model, BGC-Argo; Atlantic Ocean	
<b>Summary:</b>  SCOPE will develop coherent, consistent and integrated budget of pools and fluxes of carbon in the ocean, and further understanding its variability in space and time. This budget will be primarily based on satellite data but also rely on in-situ measurements and models to reduce uncertainties and fill the gaps. First, SCOPE will consolidate the technical specifications of targeted EO products (air-sea exchange and surface DIC; Internal DIC and carbon chemistry; land-sea exchange and coastal carbon; phytoplankton carbon; primary production and export production) and will develop 3-Dimensional products. Then, these new products will be used to estimate the ocean carbon budget and the strength of the different pumps (physical, solubility, biological), to analyse its spatial and temporal variability and its different components as well as the role of biology using BioGeoChemical-Argo floats (BGC-Argo). SCOPE will contribute to the ESA Ocean Science Cluster activities.	
<b>Contact person in ISMAR:</b> <a href="mailto:emanuele.organelli@cnr.it">emanuele.organelli@cnr.it</a>	
<b>Partnership:</b>  <ol style="list-style-type: none"> <li>1. Plymouth Marine Laboratory – Prime contractor (UK)</li> <li>2. University of Exeter (UK)</li> <li>3. University of Bergen (Norway)</li> <li>4. Nansen Environmental and Remote Sensing Center (Norway)</li> <li>5. University of Tartu (Estonia)</li> <li>6. Finnish Meteorological Institute (Finland)</li> <li>7. University of Reading (UK)</li> <li>8. The Chancellor Masters and Scholars of the University of Oxford (UK)</li> <li>9. Brockmann Consult (Germany)</li> <li>10. Consiglio Nazionale delle Ricerche (Italy)</li> <li>11. Barcelona Supercomputing Center (Spain)</li> </ol>	

<b>Programme:</b> ESA – OCEAN HEALTH (ITT AO/1-10757/21/I-DT)	
<b>CNR Strategic Area:</b> AP4	
<b>Project title:</b> <b>Detection and threats of marine heat waves</b>	
<b>Acronym:</b> CAREHeat	
<b>Role in the project:</b> Partner	
<b>Duration:</b> 01/02/2022 – 30/09/2024	
<b>Total budget:</b> € 495.804,00	
<b>ISMAR budget:</b> € 149.880,00	
<b>Web site:</b> <a href="#">n.a.</a>	
<b>Key words:</b> marine heat waves, marine ecosystems	
<b>Summary:</b>  <p>As global ocean temperatures continue to rise, Marine Heat Waves (MHW) have become more widespread, threatening marine ecosystems and their services for food-provision, livelihoods and recreation. Predicting the occurrence, intensity and duration of MHW, and understanding their impacts on marine ecosystems is essential for management planning of ecosystems services, a key step towards developing science-based solutions for sustainable development. CAREHeat will develop novel strategies to identify MHW, assess the status and trends of MHW, and determine their effect on marine ecosystems. This will be achieved following a multidisciplinary approach capitalizing on the large potential offered by satellite Earth observations, complemented with automated (Argo and Biogeochemical-Argo) field measurements, biogeochemical modelling and emerging machine learning technologies. CAREHeat will: 1) develop, validate and cross-compare novel EO MHW products; 2) Produce an improved multidimensional global MHW Atlas, and provide a 4D MHW reconstruction Experimental Dataset; 3) Advance the understanding and prediction of MHW development, and assess the single and combined effect of MHWs and other anthropogenic stressors (acidification, eutrophication, deoxygenation) on marine dynamics, function, and biodiversity; 4) Assess the usefulness of the novel MHW indices relevant for marine ecosystems stakeholders (fishery, aquaculture, marine protected areas), contributing towards science-based solutions in support of decision-makers and marine ecosystem management strategies; 5) Provide recommendations for a Science Agenda and 5-year science roadmap.</p>	
<b>Contact person in ISMAR:</b> <a href="mailto:rosalia.santoleri@cnr.it">rosalia.santoleri@cnr.it</a> - <a href="mailto:emanuele.organelli@cnr.it">emanuele.organelli@cnr.it</a>	
<b>Partnership:</b> <ol style="list-style-type: none"> <li>1. CNR-ISMAR (Italy)</li> <li>2. CLS (France)</li> <li>3. + Atlantic (Portugal)</li> <li>4. ENEA (Italy)</li> <li>5. IFREMER (France)</li> <li>6. Mercator Ocean (France)</li> </ol>	



<b>Programme:</b> ESA	
<b>CNR Strategic Area:</b> AP4	
<b>Project title:</b> <b>Harmony Mission Performance and Requirement Consolidation Activity for Ocean Applications</b>	
<b>Acronym:</b> HARMONY-EXPRO	
<b>Role in the project:</b> Subcontractor	
<b>Duration:</b> 08/02/2022 – 09/12/2023	
<b>Total budget:</b> € 499.744,00	
<b>ISMAR budget:</b> € 58.000,00	
<b>Web site:</b> n.a.	
<b>Key words:</b> Earth Observation, simulation	
<b>Summary:</b> <p>Harmony - a mission dedicated to the observation and quantification of small-scale motion and deformation fields – has been recommended to proceed to phase A as a candidate for ESA's 10th Earth Explorer. Aim of this activity is to justify, refine, trace and consolidate Harmony mission performances and mission requirements to SRL-5 or above through the following objectives:</p> <p>OBJ-1: Trace and justify Harmony requirements to scientific and user needs. Based on documented scientific user needs and applications, establish traceability for all mission requirements set out in the Harmony MRD.</p> <p>OBJ-2: Confirm Harmony L2 and L3 performance and product requirements. Based on the latest information from literature, international studies and documentation relevant to the Harmony mission, justify scientifically mission requirements.</p> <p>OBJ-3: Confirm Harmony L1 performance and product requirements through sensitivity analysis.</p> <p>OBJ-4: Evaluate and confirm Harmony SRL evolution using consistent Scientific Readiness Assessments of scientific activity in parallel with Harmony Phase A/B1 implementation.</p> <p>OBJ-5: Provide Phase A/B1 System Scientific Support to HEEPS and System Study Activities. Respond to ad-hoc request to support the progress in the Phase A/B1 system studies and HEEPS activities.</p> <p>OBJ-6: Promote the Harmony mission at the international level.</p> <p>OBJ-7: Consolidate Harmony requirements to a final set of recommendations to mature the mission requirements that address the Harmony mission aim and objectives at SRL 5 or above.</p>	
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<b>Programme:</b> ESA	
<b>CNR Strategic Area:</b> AP4	
<b>Project title:</b> <b>Cdom-Proxy Retrieval From Aeolus Observations</b>	
<b>Acronym:</b> ESA-COLOR	
<b>Role in the project:</b> Prime Contractor	
<b>Duration:</b> 15/11/2021 – 13/04/2023	
<b>Total budget:</b> € 146.881,00	
<b>ISMAR budget:</b> € 48.580,00	
<b>Web site:</b> <a href="http://ricerca.ismar.cnr.it/color/">http://ricerca.ismar.cnr.it/color/</a>	
<b>Key words:</b> ESA, AEOLUS data set	
<p><b>Summary:</b></p> <p>The objective of the COLOR (CDOM-proxy retrieval from aeOLus ObseRvations) project is to assess the feasibility of deriving an in-water AEOLUS product from the analysis of the ocean sub-surface backscattered component of the 355 nm signal acquired by the ALADIN (Atmospheric LAsEr Doppler INstrument). The project will focus on the potential retrieval of the ocean particle optical properties at 355 nm: diffuse attenuation coefficient for downwelling irradiance, <math>K_d</math> [<math>m^{-1}</math>], and sub-surface hemispheric particulate backscatter coefficient, <math>bbp</math> [<math>m^{-1}</math>].</p> <p>COLOR activities are organized in three different but interacting phases:</p> <ol style="list-style-type: none"> <li>1) Consolidation of the scientific requirements;</li> <li>2) Implementation and assessment of AEOLUS COLOR prototype product;</li> <li>3) Scientific roadmap.</li> </ol> <p>Furthermore, data collection activity will feed phase 1 and 2, encompassing both AEOLUS dataset and the ancillary reference/validation datasets.</p> <p>The overall proposed approach is based on the transfer of the lidar consolidated know-how from atmospheric to oceanic applications through AEOLUS observation data analysis and ocean radiative transfer numerical modelling.</p>	
<b>Contact person in ISMAR:</b> <a href="mailto:davide.dionisi@cnr.it">davide.dionisi@cnr.it</a>	
<p><b>Partnership:</b></p> <ol style="list-style-type: none"> <li>1. CNR Consiglio Nazionale delle Ricerche (Italy)</li> <li>2. Aequora (Portugal)</li> <li>3. SERCO ITALIA SPA (Italy)</li> <li>4. Università della Basilicata (Italy)</li> </ol>	



<b>Programme:</b> Copernicus Marine Service	 
<b>CNR Strategic Area: AP4</b>	
<b>Project title: Validation and Intercomparison of Global Ocean Reanalyses for Mesoscale</b>	
<b>Acronym: COP-GLORAN-LOT5</b>	
<b>Role in the project: Prime Contractor</b>	
<b>Duration: 01/01/2022 - 31/12/2024</b>	
<b>Total budget: € 90.000,00</b>	
<b>ISMAR budget: € 90.000,00</b>	
<b>Web site: n/a</b>	
<b>Key words: GLORAN, CMEMS</b>	
<b>Summary:</b> <p>The Global Ocean Reanalysis (GLORAN) component of CMEMS is designed to provide, among a large portfolio of products, long-term physical reanalyses of the global ocean, covering at least the era of satellite altimetry, along with their scientific assessment. CNR-ISMAR is leading the activities of validation and intercomparison of CMEMS ensemble global reanalyses (GREP) focusing on mesoscale eddies. We will use a three dimensional eddy tracking scheme to understand the statistics of eddy population, duration in GREP and compare with higher resolution of ocean reanalysis (CMEMS GLORYS12). The eddy tracking will provide us the base to investigate eddy induced kinetic energy, mixed layer depth, vertical velocity, Ekman pumping and heat/salt transport, etc. The objective is to understand the uncertainty of the climate signals present in reanalyses dataset at mesoscale and to ensure the quality of reanalyses data used in ocean and climate studies related to mesoscale eddies.</p>	
<b>Contact person in ISMAR: <a href="mailto:chunxue.yang@cnr.it">chunxue.yang@cnr.it</a></b>	

<b>Programme:</b> Copernicus Marine Service	 
<b>CNR Strategic Area:</b> AP4	
<b>Project title:</b> <b>Validation and inter-comparison of global ocean reanalyses for long term changes in the ocean state</b>	
<b>Acronym:</b> 21003-COP-GLORAN-Lot8	
<b>Role in the project:</b> Prime Contractor	
<b>Duration:</b> 01/01/2022 - 31/12/2023	
<b>Total budget:</b> € 90.000,00	
<b>ISMAR budget:</b> € 90.000,00	
<b>Web site:</b> n/a	
<b>Key words:</b> GLORAN, CMEMS	
<b>Summary:</b>  <p>The Global Ocean Reanalysis (GLORAN) component of CMEMS is designed to provide, among a large portfolio of products, long-term physical reanalyses of the global ocean, covering at least the era of satellite altimetry, along with their scientific assessment. CNR-ISMAR proposes the independent validation and inter-comparison of the GREP global ocean reanalyses, looking in detail at the low-frequency changes, trends, and climatologically relevant diagnostics, deduced from the GREP ocean reanalyses along with other reanalysis products belonging to the CMEMS catalogue and outside it. Observation-only products will also be used for reference. The scientific team involved in the project has a long-standing experience in ocean reanalysis development, production and validation, and assessment of key parameters such as ocean heat and salt content, sea level and its steric component, and slowly varying processes. We will focus our studies not only on such relevant variables, assessed at both global and regional levels, but also on sea level budget studies, ocean heat content optimization through a multi-platform approach, and analysis of the thermohaline circulation, volume, heat, and salt transports across the main oceanic sections, and extreme events such as marine heat waves.</p>	
<b>Contact person in ISMAR:</b> <a href="mailto:andrea.storto@cnr.it">andrea.storto@cnr.it</a>	





<b>Programme:</b>  Copernicus Marine Service	 
<b>CNR Strategic Area:</b> AP4	
<b>Project title:</b> Copernicus Marine Service - Multi Observations Thematic Assembly Centre - CNR Production Unit	
<b>Acronym:</b> CMS-MOB-TAC	
<b>Role in the project:</b> Partner	
<b>Duration:</b> 01/12/2021 - 31/12/ 2024	
<b>Total budget:</b> € 1.900.000,00	
<b>ISMAR budget:</b> € 180.000,00	
<b>Web site:</b> <a href="http://marine.copernicus.eu">http://marine.copernicus.eu</a>	
<b>Key words:</b> Copernicus Marine Service Multi Observations Thematic Assembly Center	
<b>Summary:</b>  In the framework of the Copernicus Marine Service Multi Observations Thematic Assembly Center (CMS-MOB-TAC), CNR will be in charge of two production lines for global Sea Surface Salinity (SSS)/Sea Surface Density (SSD), and global vertical velocities (OMEGA3D). Specifically, CNR Production Unit (PU) will implement three evolutions of the present processing chains, including: the ingestion of SMAP data in the SSS/SSD chain, the upgrade of the SSS/SSD product to 1/8° daily processing, the upgrade of the OMEGA3D processing chain to the algorithm developed within ESA-WOC project	
<b>Contact person in ISMAR:</b> <a href="mailto:bruno.buonjornonardelli@cnr.it">bruno.buonjornonardelli@cnr.it</a>	
<b>Partnership:</b>  1. CLS (Collecte Localisation Satellites) (France) Coordinator 2. CNR (Consiglio Nazionale delle Ricerche) (Italy) 3. LSCE (Laboratoire des Sciences du Climat et de l'Environnement) (France) 4. LOV (Laboratoire d'Océanographie de Villefrance) (France) 5. IFREMER (Institut Français de Recherche pour l'Exploitation de la Mer) and CATDS (Centre Aval de Traitement des Données du Satellite SMOS) (France)	



<b>Programme:</b> Copernicus Marine Training Service	 
<b>CNR Strategic Area:</b> AP4	
<b>Project title:</b> <b>EUMETSAT ITT</b>	
<b>Acronym:</b> EUMETSAT ITT	
<b>Role in the project:</b> Subcontractor	
<b>Duration:</b> 15/01/2021 – 31/12/2023	
<b>Total budget:</b> € 251.040,00	
<b>ISMAR budget:</b> € 51.040,00	
<b>Web site:</b> n.a.	
<b>Key words:</b> Copernicus, Sentinel, marine, training ocean colour	
<b>Summary:</b> <p>Following the successes of the first phase of the European Commission Copernicus programme, EUMETSAT is continuing and expanding its offer of data access services, marine data products, as well as marine training activities and user support services, under phase two.</p> <p>EUMETSAT operates the Sentinel-3, Sentinel-6 and Jason-3 satellites, and provides level-1 and level-2 marine data products for ocean colour, sea surface temperature, and altimetry science and applications.</p> <p>User support services include data access, customisation, and visualisation platforms, web-based technical information about products, as well as a helpdesk available to answer a full range of user queries on the products and their use.</p> <p>Interactive training activities are designed to accommodate a diverse range of audiences, both research and operational, putting trainee needs and interests at the centre of learning objectives. A focus on co-development of resources and participant-led learning interventions allows participants to tailor their own experiences towards development of the skills and knowledge that will help them in their own applications and work tasks. Building on four years of successful general courses, this project will develop from EUMETSAT further specialised training and advanced courses for the marine community.</p>	
<b>Contact person in ISMAR:</b> <a href="mailto:vittorio.brand@cnr.it">vittorio.brand@cnr.it</a>	

<b>Programme:</b>  Copernicus Marine Service	 
<b>CNR Strategic Area:</b> AP4	
<b>Project title:</b> <b>Copernicus Marine: Provision of ocean observation product</b>	
<b>Acronym:</b> CMEMS LOT7_INSTAC	
<b>Role in the project:</b> Partner	
<b>Duration:</b> 15/12/2021 – 31/12/2024	
<b>Total budget:</b> € 5.450.000,00	
<b>ISMAR budget:</b> € 100.000,00	
<b>Web site:</b> n.a.	
<b>Key words:</b> HF radar, ocean currents, ocean observation, copernicus marine	
<b>Summary:</b>  The mission of the In Situ Thematic Centre (INS TAC) is to provide integrated in situ products built from in situ observations acquired from outside Copernicus Marine Service data providers to fit the needs of Copernicus Marine Service internal and external users. It is a distributed centre composed of 6 regional centres working closely with the EuroGOOS ROOS (Regional Operational Observing System) and a Global centre well connected to the JCOMM networks (Joint WMO-IOC Commission for Oceanography and Marine Meteorology). INS TAC also works closely with the SeaDataNet infrastructure that coordinates a network of European National Data Centres which archive observation data acquired within scientific campaign and EMODNet, which is a network of organisations supported by the EU's integrated maritime policy. The in situ products are either assimilated in forecasting models by MFCs , used as ground truth for models from the Monitoring and Forecasting Centers (MFC) or Satellite Thematic Centre (TAC) product validation or provided to Copernicus Marine Service users for Research and downstream activities.	
<b>Contact person in ISMAR:</b> <a href="mailto:carlo.mantovani@cnr.it">carlo.mantovani@cnr.it</a>	
<b>Partnership:</b>  <ol style="list-style-type: none"> <li>1. IFREMER (France)</li> <li>2. AZTI (Spain)</li> <li>3. BSH (Germany)</li> <li>4. CLS (France)</li> <li>5. CNR (Italy)</li> <li>6. HCMR (Greece)</li> <li>7. IMR (Norway)</li> <li>8. IO-BAS (Bulgaria)</li> <li>9. NOLOGIN (Spain)</li> <li>10. OceanScope (France)</li> <li>11. Puertos del Estado (Spain)</li> <li>12. POKAPOK (France)</li> <li>13. SMHI (Sweden)</li> </ol>	

14. SOCIB (Spain)
15. SYKE (Finland)
16. UiB (Norway)

<b>Programme:</b> Copernicus Climate Change Service	
<b>CNR Strategic Area:</b> AP4	
<b>Project title:</b> <b>Advancing ocean data assimilation methodology for climate applications</b>	
<b>Acronym:</b> ERGO2	
<b>Role in the project:</b> Partner	
<b>Duration:</b> 01/07/2022 - 30/06/2025	
<b>Total budget:</b> € 1.200.000,00	
<b>ISMAR budget:</b> € 215.000,00	
<b>Web site:</b> n.a.	
<b>Key words:</b> data assimilation, atmosphere, land, ocean, sea-ice and ocean waves	
<b>Summary:</b> <p>This proposal builds on the development already carried out under a previous C3S contract (C3S_321b), which implemented the components needed to enable an ensemble of data assimilations (EDA) for ocean reanalyses. The main goal of this contract is to further integrate these individual components and to develop additional data assimilation (DA) tools so the next generation of C3S climate reanalysis can benefit from better exploitation of the available observations. The activity within this contract will contribute to the following production streams:</p> <ul style="list-style-type: none"> <li>• OCEAN6: multi-decadal uncoupled ocean reanalyses for climate studies and initialization of seasonal/decadal coupled forecasts. This will use NEMO4 forced by ERA5 surface forcing, and the latest version of NEMOVAR. The service sought will help to finalize the final configuration of OCEAN6 and assist with monitoring during production. OCEAN6 will also serve as reference and anchor for ERA6, described next. The production of OCEAN6 is intended to start before Q1-2023.</li> <li>• ERA6: the next generation of C3S' s Reanalysis System which will be conducted using a coupled data assimilation methodology (at an outer-loop level) to provide a monitoring capability for the Earth System, including atmosphere, land, ocean, sea-ice and ocean waves, and to be ready for production in early 2024. The service sought shall advance the ocean and data assimilation methodology to ensure improved exploitation of surface observations.</li> <li>• ERA6-Ocean-offline: a multidecadal uncoupled ocean reanalysis forced by ERA6 surface forcing, produced in a sequential manner. The service sought aims at improving the reliability of the low- frequency climate signals.</li> </ul>	
<b>Contact person in ISMAR:</b> <a href="mailto:andrea.storto@cnr.it">andrea.storto@cnr.it</a>	
<b>Partnership:</b> <ol style="list-style-type: none"> <li>1. INRIA (France),</li> <li>2. CERFACS (France)</li> <li>3. CNR-ISMAR</li> </ol>	



<b>Programme:</b> Copernicus Marine Service	
<b>CNR Strategic Area:</b> AP4	
<b>Project title:</b> <b>evaluation of the WAtER Mass Balance in Ocean Reanalyses with space geodetic measurements</b>	
<b>Acronym:</b> WAMBOR	
<b>Role in the project:</b> Partner	
<b>Duration:</b> 01/07/2022-30/06/2024	
<b>Total budget:</b> € 150.000,00	
<b>ISMAR budget:</b> € 52.000,00	
<b>Web site:</b> n.a.	
<b>Key words:</b> satellite gravity measurements, ocean mass changes	
<b>Summary:</b> <p>The objective of the WAMBOR (WAtER Mass Balance in Ocean Reanalyses) project is to improve the observational constraints on the water mass balance in ocean reanalyses with satellite geodetic measurements. Large uncertainties affect the water mass balance in ocean model forcing. The exchanges of freshwater fluxes between the continents and the ocean rely on climatological estimates of the river discharge, that are by construction unable to capture the full variability of the global water cycle. The GRACE and GRACE-FO satellite gravity missions are able to quantify the redistribution of water masses at the Earth's surface over nearly two decades (2002 - present day). The WAMBOR project will set up a production chain to estimate ocean mass changes from GRACE and GRACE-FO satellite gravity measurements, that will be extended over the satellite altimetry era (1993 - 2020) with the fusion of several independent data sources. The freshwater fluxes between the continents and the oceans will then be deduced from the water mass balance equation solved at global scale over the ocean and at regional scale over land. Finally, several ocean model experiments will be carried out to test the sensitivity of the ocean circulation to improved freshwater forcing. In summary, the WAMBOR project will prepare the addition of new satellite data (GRACE and GRACE-FO) in the Copernicus Marine Environment Monitoring Service (CMEMS) and investigate how these new data can improve ocean models and reanalyses.</p>	
<b>Contact person in ISMAR:</b> <a href="mailto:andrea.storto@cnr.it">andrea.storto@cnr.it</a>	
<b>Partnership:</b> <ol style="list-style-type: none"> <li>1. Magellium (France)</li> <li>2. CNR-ISMAR (Italy)</li> </ol>	



<b>Programme:</b>  Copernicus Marine Service	 
<b>CNR Strategic Area:</b> AP4	
<b>Project title:</b> <b>Copernicus Marine - Digital Continuity of the Dissemination Unit Operations</b>	
<b>Acronym:</b> CMEMS-DU	
<b>Role in the project:</b> Prime Contractor	
<b>Duration:</b> 01/01/2022 – 31/03/2024	
<b>Total budget:</b> € 1.550.000,00	
<b>ISMAR budget:</b> € 538.690,00	
<b>Web site:</b> <a href="https://marine.copernicus.eu/">https://marine.copernicus.eu/</a>	
<b>Key words:</b> Copernicus programme, end-users, forecast, oceanography, ocean & climate, data analysis and processing, operational mode, service providers.	
<b>Summary:</b>  <p>The Copernicus Marine Service (or Copernicus Marine Environment Monitoring Service) is the marine component of the Copernicus Programme of the European Union. It provides free, regular and systematic authoritative information on the state of the Blue (physical), White (sea ice) and Green (biogeochemical) ocean, on a global and regional scale. It is funded by the European Commission (EC) and implemented by Mercator Ocean International. It is designed to serve EU policies and International legal Commitments related to Ocean Governance, to cater for the needs of society for global ocean knowledge and to boost the Blue Economy across all maritime sectors by providing free-of-charge state-of-the-art ocean data and information.</p> <p>It provides key inputs that support major EU and international policies and initiatives and can contribute to: combating pollution, marine protection, maritime safety and routing, sustainable use of ocean resources, developing renewable marine energy resources, supporting blue growth, climate monitoring, forecasting, and more. It also aims to increase awareness amongst the general public by providing European and global citizens with information about ocean-related issues.</p> <p>Product Management function is ensured by a central IT element of the system – the Marine Data Store (MDS), composed by Central DU and DRAS systems – where all product data will be stored, registered and organized for their exploitation and a Marine Information System (MIS) manages all IT data flows. The Central Dissemination Unit (DU): it is the main operational Back-End component of the system which allows collection of data, its storage and backing up, and delivering all standard delivery interfaces on which all Front-End services such as the Central Portal (and 3rd party websites) rely on.</p>	
<b>Contact person in ISMAR:</b> <a href="mailto:vega.fornieris@cnr.it">vega.fornieris@cnr.it</a>	


**Partnership:**


1. CNR-ISMAR (Italy)
2. ACRI-ST (France))
3. ADWAISEO (Luxembourg)
4. ETT (Italy)
5. IFREMER (France)
6. INNUERE (Italy)
7. LASERROMAE (Italy)
8. SERCO-Italia (Italy)
9. T-SYSTEMS (France)




<b>Programme:</b>  Copernicus Marine Service	 
<b>CNR Strategic Area:</b> AP4	
<b>Project title:</b> <b>Copernicus Marine - Production Provision of Ocean Observation Products Thematic Assembly Centre OC TAC_LOT2</b>	
<b>Acronym:</b> Copernicus Marine Ocean Colour Thematic Assembly Center LOT 2	
<b>Role in the project:</b> Prime Contractor	
<b>Duration:</b> 01/01/2022- 31/12/2024	
<b>Total budget:</b> € 3.645.461,00	
<b>ISMAR budget:</b> € 1.110.000,00	
<b>Web site:</b> <a href="https://marine.copernicus.eu/about/producers/oc-tac">https://marine.copernicus.eu/about/producers/oc-tac</a>	
<b>Key words:</b> Ocean Colour, operational oceanography, satellite	
<b>Summary:</b>  The Ocean Colour Thematic Assembly Centre (OC TAC) operates the European Ocean Colour component within the Copernicus Marine Service, bridging the gap between space agencies and end-user with high-quality core ocean colour products for the Global Ocean and the European regional seas based on multiple satellite missions.  OCTAC provides in a timely and sustained manner a set of the Essential Ocean Variables (EOVs) that can be retrieved from Ocean Colour radiometry, i.e., CHL, IOPs and PFTs/PSCs (Phytoplankton Functional Groups and community structure). Global and regional products are higher level observational combined products providing an added value to standard products delivered by the space agencies. Regional products provide higher accuracy than standard global products as the regionalisation of processing chains takes into account the bio-optical characteristics of each regional sea. Blended datasets are generated by applying the appropriate algorithms across the open ocean and coastal waters.	
<b>Contact person in ISMAR:</b> <a href="mailto:vittorio.brand@cnr.it">vittorio.brand@cnr.it</a>	
<b>Partnership:</b>  <ol style="list-style-type: none"> <li>1. CNR-ISMAR (Italy)</li> <li>2. AEQUORA LDA (Portugal)</li> <li>3. ACRI-ST S.A.S., (France)</li> <li>4. Brockmann Consult GmbH (Germany)</li> <li>5. INNUERE CONSULTING (Italy)</li> <li>6. Plymouth Marine Laboratory (United Kingdom) (01/01/2022 - 31/03/2023)</li> <li>7. Royal Belgian Institute of Natural Sciences (Belgium)</li> <li>8. Suomen ympäristökeskus SYKE (Finland)</li> </ol>	

<b>Programme:</b> Copernicus Marine Service	 
<b>CNR Strategic Area:</b> AP4	
<b>Project title:</b> <b>Copernicus Marine - Production Provision of Ocean Observation Products Thematic Assembly Centre (TAC)- SST TAC LOT3</b>	
<b>Acronym:</b> SST TAC	
<b>Role in the project:</b> Prime Contractor	
<b>Duration:</b> 01/01/2022 - 31/12/2024	
<b>Total budget:</b> € 2.096.718,00	
<b>ISMAR budget:</b> € 524.421,00	
<b>Web site:</b> n.a.	
<b>Key words:</b> Sea Surface Temperature (SST), Operational Oceanography, Satellite sensors, Climate, Ocean Monitoring Indicators	
<b>Summary:</b> <p>CNR-ISMAR leads the Copernicus Marine Service Sea Surface Temperature (SST) Thematic Assembly Centre (TAC). The SST TAC, a consortium composed by different production units (PUs), is the service in charge of the operational production of state-of-the-art SST products covering the Global Ocean (GLO) and the European Seas, namely the North West Shelf/Iberia-Biscay-Irish Seas (ATL), Baltic Sea (BAL), Black Sea (BS) and Mediterranean Sea (MED).</p> <p>All these products are primarily based on satellite observations and provided as merged multi-sensors (level-3) and gap-free (level-4) near real time (NRT) and multi-year (or reprocessed, REP) datasets, designed respectively for operational and climate applications.</p> <p>This TAC works to continuously improve the service, addressing specific requirements from the users, improving the quality and accuracy of the products delivered, maintaining up-to-date the processing chains through e.g. integration of new generation satellite sensors (as e.g. SLSTR from the Sentinel-3A/-3B/-3C satellites), and releasing new products.</p> <p>SST TAC maintains and updates on a regular basis the provision of the so-called SST Ocean Monitoring Indicators (OMIs) and contributes to the Ocean State Report to provide consistent descriptions of the ocean state over the past decades.</p>	
<b>Contact person in ISMAR:</b> <a href="mailto:andrea.pisano@cnr.it">andrea.pisano@cnr.it</a>	
<b>Partnership:</b> <ol style="list-style-type: none"> <li>1. CNR-ISMAR (Italy)</li> <li>2. DMI (Danish Meteorological Institute) (Denmark)</li> <li>3. Ifremer (French Research Institute for Exploitation of the Sea) (France)</li> <li>4. Met.No (Norwegian Meteorological Institute) (Norway)</li> <li>5. Innuere Consulting (Italy)</li> </ol>	

<b>Programme:</b> Copernicus Climate Change Service	
<b>CNR Strategic Area:</b> AP4	
<b>Project title:</b> <b>Technical Solutions for C3S2_520: Quality Assurance for Datasets in the Climate Data Store</b>	
<b>Acronym:</b> C3S2_520	
<b>Role in the project:</b> Prime Contractor	
<b>Duration:</b> 01/02/2022 - 31/12/2026	
<b>Total budget:</b> € 5.550.000,00	
<b>ISMAR budget:</b> € 1.416.000,00	
<b>Web site:</b> n.a.	
<b>Key words:</b> climate dataset, EQC	
<b>Summary:</b> <p>The project enhance the quality and efficiency of the C3S Evaluation and Quality Control (EQC) function through the delivery of an efficient and timely quality assurance of C3S climate datasets. The final goal is to facilitate users in the dataset selection and the self-assessment fitness-for-purpose of the selected datasets. The objective of C3S2_520 is to continue the EQC effort addressed in previous EQC contracts (C3S_511 and C3S_512), evolve the existing EQC concepts and infrastructure already put in place, and further consolidate, harmonise and streamline the entire framework, including its methodologies, procedures and outputs.</p>	
<b>Contact person in ISMAR:</b> <a href="mailto:chunxue.yang@cnr.it">chunxue.yang@cnr.it</a>	
<b>Partnership:</b> <ol style="list-style-type: none"> <li>1. Consiglio Nazionale delle Ricerche (Italy)</li> <li>2. Fondazione Centro Euro-Mediterraneo sui Cambiamenti Climatici (CMCC) (Italy)</li> <li>3. Centre National de la Recherche Scientifique (CNRS) (France)</li> <li>4. Agencia Estatal Consejo Superior de Investigaciones Científicas (CSIC) (Spain)</li> <li>5. Agenzia Nazionale Per Le Nuove Tecnologie, L'energia E Lo Sviluppo Economico Sostenibile (ENEA) (Italy)</li> <li>6. Norwegian Meteorological Institute (Met Norway), Nansen Environmental and Remote Sensing Center (NERSC) (Norway)</li> <li>7. Vrije Universiteit Brussel (VUB) (Belgium)</li> <li>8. The Climate Data Factory (TCDF)</li> <li>9. CoLAB +Atlantic (+Atlantic) (Portugal)</li> </ol>	

<b>Programme:</b> Copernicus Marine Service	
<b>CNR Strategic Area:</b> AP4	
<b>Project title:</b> Provision of Sea Surface Temperature (SST) Observation Products – Thematic Assembly Centre (TAC)	
<b>Acronym:</b> CMEMS SST-TAC	
<b>Role in the project:</b> Prime Contractor	
<b>Duration:</b> 01/01/2022-31/12/2024	
<b>Total budget:</b> € 1.750.000,00	
<b>ISMAR budget:</b> € 458.421,00	
<b>Web site:</b> <a href="https://marine.copernicus.eu/it">https://marine.copernicus.eu/it</a>	
<b>Key words:</b> Copernicus, new satellite sensors, TAC	
<b>Summary:</b> <p>CNR-ISMAR leads the Copernicus Marine Service Sea Surface Temperature (SST) Thematic Assembly Centre (TAC). The SST TAC, a consortium composed by different production units (PUs), is the service in charge of the operational production of state-of-the-art SST products covering the Global Ocean (GLO) and the European Seas, namely the North West Shelf/Iberia-Biscay-Irish Seas (ATL), Baltic Sea (BAL), Black Sea (BS) and Mediterranean Sea (MED). All these products are primarily based on satellite observations and provided as Level-3 (L3) and Level-4 (L4) near real time (NRT) and reprocessed (REP) datasets, the latter designed for climate applications. Presently, the SST TAC catalogue includes 19 products, of which 13 are NRT products and 6 REP products. The SST TAC works to continuously improve the service, specifically addressing new requirements by users, as well as implementing operational improvements by e.g. introducing product quality improvements, integration of new satellite sensors (as e.g. SLSTR from the Sentinel-3A/-3B/-3C satellites), and releasing new products. This TAC also maintains and updates on a regular basis the provision of the so-called SST Ocean Monitoring Indicators (OMIs) and contributes to the Ocean State Report to provide consistent descriptions of the ocean state over the past decades.</p>	
<b>Contact person in ISMAR:</b> <a href="mailto:andrea.pisano@cnr.it">andrea.pisano@cnr.it</a>	
<b>Partnership:</b> <ol style="list-style-type: none"> <li>1. CNR-ISMAR (Italy)</li> <li>2. Danish Meteorological Institute (DMI) (Denmark)</li> <li>3. Ifremer (French Research Institute for Exploitation of the Sea) (France)</li> <li>4. Met Office (United Kingdom),</li> <li>5. Met.No (Norwegian Meteorological Institute) (Norway)</li> <li>6. Innuere Consulting (Italy)</li> </ol>	

<b>Programme:</b> Copernicus Marine Service	
<b>CNR Strategic Area:</b> AP4	
<b>Project title:</b> <b>Ocean Colour Thematic Assembly Centre</b>	
<b>Acronym:</b> CMEMS / OCTAC	
<b>Role in the project:</b> Prime Contractor	
<b>Duration:</b> 01/01/2022 – 31/12/2024	
<b>Total budget:</b> € 3.550.000,00	
<b>ISMAR budget:</b> € 1.340.000,00	
<b>Web site:</b> <a href="https://marine.copernicus.eu/it">https://marine.copernicus.eu/it</a>	
<b>Key words:</b> OCTAC, CMEMS, radiometry	
<b>Summary:</b> <p>The project OCTAC operates the European Ocean Colour component within the CMEMS, bridging the gap between space agencies, providing high-quality core ocean colour products for the Global Ocean and the European regional seas based on multiple Ocean Colour missions. OCTAC provides in a timely and sustained manner a set of the Essential Ocean Variables (EOVs) that can be retrieved from Ocean Colour radiometry, i.e. CHL, IOPs and PFTs/PSCs (Phytoplankton Functional Groups and community structure).</p> <p>Global and regional products are higher level observational combined products proving an added value to standard products delivered by the space agencies.</p> <p>Regional products provide higher accuracy than standard global products as the regionalization of processing chains takes into account the bio-optical characteristics of each regional sea.</p>	
<b>Contact person in ISMAR:</b> <a href="mailto:vittorio.brand@cnr.it">vittorio.brand@cnr.it</a>	
<b>Partnership:</b> <ol style="list-style-type: none"> <li>1. National Research Council – CNR/ISMAR (Italy)</li> <li>2. ACRI-ST (France)</li> <li>3. Plymouth Marine Laboratory – PML (UK)</li> <li>4. Brockmann Consult GmbH – BC (Germany)</li> <li>5. Royal Belgian Institute of Natural Sciences – RBINS (Belgium)</li> <li>6. AEQUORA Lda (Portugal)</li> <li>7. Finnish Environmental Institute – SYKE (Finland)</li> <li>8. Innuere Consulting – IC (Italy)</li> </ol>	

## 8. CNR-ISMAR IN OTHER PROGRAMMES

CNR-ISMAR is managing 13 projects from different EU and international programmes for a total budget of € 2.753.128,95. It is worth noticing about other projects where CNR-ISMAR plays a crucial role, meaning the LIFE-DREAM project, funded under the LIFE Programme, which is coordinate by the Institute, and other 2 projects funded by the ONR programme, showing the capacity of dealing project with external EU partners.

Besides, 3 project were funded under the EMFAF programme: REGINA-MSP, MSP-GREEN and REMAP, confirming the good know-how achieved by the institye in this topic.

Lastly, other projects were funded in different programmes achieving remarkable results and confirming the capacity by the personnal of dealing with many different kind of tools.

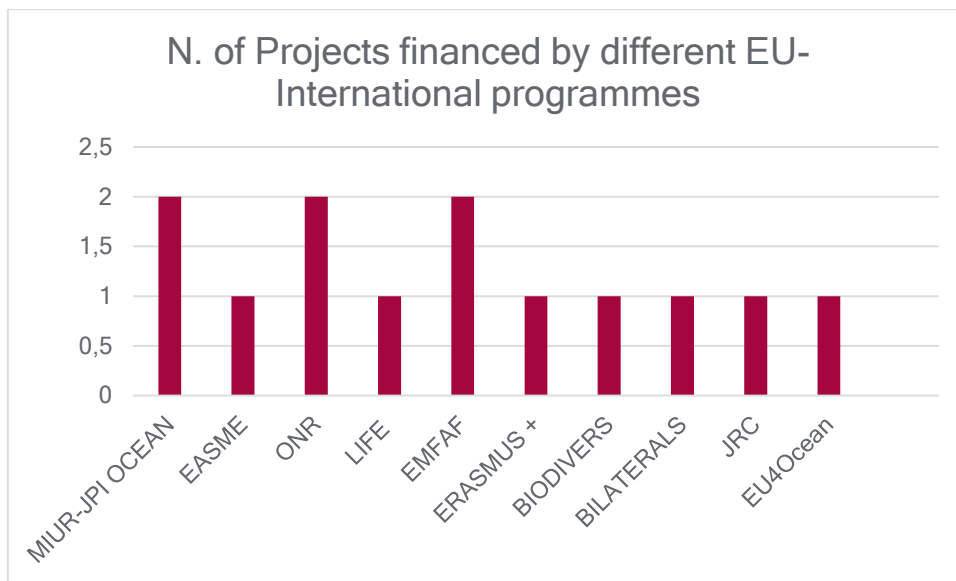



Fig. 19: N. of Projects funded under different EU/International Programmes


## List of CNR-ISMAR projects funded under Other Programmes




<b>Programme:</b> EU4Oceans	<b>EU4Ocean Coalition</b> Connect to the ocean and drive change together
<b>CNR Strategic Area:</b> AP2	
<b>Project title:</b> <b>Fostering Ocean Literacy in Education for Sustainable Development</b>	
<b>Acronym:</b> BlueMindTeachers	
<b>Role in the project:</b> Partner	
<b>Duration:</b> 30/11/2023 – 30/11/2024	
<b>Total budget:</b> € 40.000,00	
<b>ISMAR budget:</b> € 12.800,00	
<b>Web site:</b> n.a.	
<b>Key words:</b> Teachers training; Ocean Literacy; dissemination and edutainment; sustainability; gender issues	
<b>Summary:</b> <p>This project aims at strengthening the skills of Primary and Secondary Education EU (and non-EU) teachers (including pre-service teachers, university students, other educators such as of aquaria and museums) in OL issues by collaboration of marine and freshwater scientists -in order to empower connection between freshwater and marine ecosystems- as well as experts from educational sciences and social sciences, teachers experienced in implementation of blue projects (e.g., EU Blue Schools Network) and young ocean ambassadors (e.g., Youth4Ocean Forum, university students, youth partners from collaborative projects). Teachers of primary education who have an adequate pedagogical content knowledge (PCK), and therefore are fairly aware of methodological issues, teaching and learning strategies, will benefit from sufficient content knowledge (CK) on ocean science issues. On the other hand, secondary school teachers, especially those coming from science, who can have sufficient CK on relevant issues, will benefit from PCK. In this way, teachers of both levels will be able to promote ocean literacy to their pupils, i.e. children and youth, the future citizens and consumers, that will inevitably affect the environment.</p>	
<b>Contact person in ISMAR:</b> <a href="mailto:francesca.alvisi@cnr.it">francesca.alvisi@cnr.it</a>	
<b>Partnership:</b> <ol style="list-style-type: none"> <li>1. HCMR/DUTH/ Hydrobiological Station of Pella/Youth (Greece)</li> <li>2. UNIZD</li> <li>3. CNR (Italy)</li> </ol>	





<b>Programme:</b> Office of Naval Research – ONR	
<b>CNR Strategic Area:</b> AP4	
<b>Project title:</b> <b>Multiplatform observations (Lagrangian , microstructure and microplastic) for the study of vertical velocities and subduction</b>	
<b>Acronym:</b> 3D-pathways II	
<b>Role in the project:</b> Lead Partner	
<b>Duration:</b> 01/12/2021 – 29/02/2025	
<b>Total budget:</b> € 145.347,00	
<b>ISMAR budget:</b> € 145.347,00	
<b>Web site:</b> <a href="https://www.nre.navy.mil/">https://www.nre.navy.mil/</a>	
<b>Key words:</b> drifter data, thermocline and microstructure properties, vertical transport	
<b>Summary:</b> <p>The goal of this proposal is to contribute to the identification and characterization of high vertical velocity regions and 3Dpathways in frontal areas ,through the joint analysis of Lagrangian data at the surface, Argofloat samplings and microstructure observations. Vertical dynamics will be further explored by using microplastics and microfibers as a subduction tracer with samples collected in the water column and surface layers.</p>	
<b>Contact person in ISMAR:</b> <a href="mailto:maristella.bera@ismar.cnr.it">maristella.bera@ismar.cnr.it</a>	

<b>Programme:</b> OFFICE NAVAL RESEARCH (ONR)	
<b>CNR Strategic Area:</b> AP6	
<b>Project title:</b> <b>Vital Rates Cuvier's beaked wales: A multi regional comparative assessment</b>	
<b>Acronym:</b> ZIFIO	
<b>Role in the project:</b> Sub-contractor	
<b>Duration:</b> 01/07/2021 – 29/09/2023	
<b>Total budget:</b> € 300.000,00	
<b>ISMAR budget:</b> € 20.000,00	
<b>Web site:</b> n.a.	
<b>Key words:</b> Population dynamics, demographic parameters, Cuvier's beaked whale, multi-region, disturbance	
<b>Summary:</b> <p>The goal of this project is to estimate and compare vital rates for Cuvier's beaked whales at five study areas around the world. These regions have widely ranging histories of military sonar use: from virtually none, to decades of frequent use that continues today. Population level effects are a pressing concern in areas where whales are chronically exposed and Population Consequences of Disturbance models have been developed to help understand what these effects might be. The results of this proposal would both inform key parameters and validate resulting projections of those models, which rely heavily on vital rate data that are currently deficient or non-existent for most Cuvier's beaked whale populations.</p>	
<b>Contact person in ISMAR:</b> <a href="mailto:simone.tenan@ismar.cnr.it">simone.tenan@ismar.cnr.it</a>	

<b>Programme:</b>  LIFE-2021-SAP-NAT	
<b>CNR Strategic Area:</b> AP2	
<b>Project title:</b> <b>Deep REef restoration And litter removal in the Mediterranean sea</b>	
<b>Acronym:</b> LIFE-DREAM	
<b>Role in the project:</b> Lead Partner	
<b>Duration:</b> 01/09/2022 - 31/08/2027	
<b>Total budget:</b> € 5.308.472,00	
<b>ISMAR budget:</b> € 1.140.739,00	
<b>Web site:</b> <a href="https://www.life-dream.eu/">https://www.life-dream.eu/</a>	
<b>Key words:</b> biodiversity, Natura 2000, ML recovery and recycling	
<b>Summary:</b>  <p>The EU's biodiversity strategy for 2030 promotes the recovery of the biodiversity of European natural ecosystems through extending conservation networks, preventing and reducing anthropic impacts, and restoring the degraded natural heritage. Marine Deep Reefs (DR) are ecologically relevant benthic habitats acting as CO<sub>2</sub> sinks and attracting a highly diverse associated fauna. The multiple pressures DR are currently facing (e.g., climate change, fishery and littering) make the need to protect and restore these habitats more urgent. Marine Litter (ML) can affect the health status of DR, leading to the loss of associated ecological functions. Through an innovative, sustainable approach, the LIFE DREAM Project aims at mitigating the anthropic pressure on deep sensitive habitats (DR) and promoting their protection, recovery and preservation. LIFE DREAM will comprise active intervention to aid the regeneration of DR and will provide supporting information to extend the Natura 2000 network to the deep-sea by integrating biological data on DR and ecosystems services they supply with spatial data on human activities. Active restoration (deployment of artificial structure as substrate for DR the forming-species growth) will be integrated with passive restoration activities (ML removal in correspondence of DR). The involvement of fishers and stakeholders within LIFE DREAM activities intends to enhance the impact of the project and boost a social behavior change. Following the principles of the circular economy, among the ambitions of the Project is pairing the recovery with recycling of materials at the end of their lifecycle, converting the recovered ML in 2nd generation fuel that will reduce the CO<sub>2</sub> emissions. The results of LIFE DREAM would represent the baseline to extend the Natura 2000 network to the deep Mediterranean Sea and to restore deep sensitive habitats by providing best practices for DR restoration and the related costs and benefits.</p>	
<b>Contact person in ISMAR:</b> <a href="mailto:federica.foglini@bo.ismar.cnr.it">federica.foglini@bo.ismar.cnr.it</a>	
<b>Partnership:</b>  1. Consiglio Nazionale delle Ricerche (Italy)	

2. Università degli Studi di Bari Aldo Moro (Italy)
3. Hellenic Centre for Marine Research (Greece)
4. Net European Consulting Srls (Italy)
5. Enaleia Astiki Mi Kerdoskopiki Etaireia (Italy)
6. Università Politecnica delle Marche (Italy)
7. Agencia Estatal Consejo Superior de Investigaciones Cientificas (Spain)
8. Università degli Studi di Napoli Federico II (Italy)
9. Regione Puglia (Italy)
10. Region of Thessaly (Italy)
11. Stazione Zoologica Anton Dohrn (Italy)
12. Federpesca - Federazione Nazionale delle Imprese di Pesca (Italy)
13. Organizacion de Productores Pesqueros de Almeria(Spain)
14. Università degli Studi di Roma Tor Vergata (Italy)


<b>Programme:</b> ERASMUS +	
<b>CNR Strategic Area:</b> AP2	
<b>Project title:</b> <b>Supporting the development of socially-inclusive Blue Challenges in schools in the Mediterranean Sea-basin</b>	
<b>Acronym:</b> BlueS_Med	
<b>Role in the project:</b> Partner	
<b>Duration:</b> 01/09/2020 – 31/08/2023	
<b>Total budget:</b> € 448.169,00	
<b>ISMAR budget:</b> € 49.807,00	
<b>Web site:</b> n.a.	
<b>Key words:</b> educational activities on marine issues, innovative approaches	
<b>Summary:</b> <p>The Erasmus+ project entitled "Supporting the development of socially-inclusive Blue Challenges in schools in the Mediterranean Sea-basin" (BlueS_Med) aims at developing, testing and evaluating innovative approaches to integrate ocean/marine issues and challenges in the curriculum and educational activities of schools in different Mediterranean countries. The project will build on the following principles: (a) co-building - ensuring children/pupils contribute to the co-design of "their" Blue challenge - putting co-responsibility and action at the center of their Blue Challenge; (b) interactive and proactive - making use of all e-tools and social medias to support implementation and peer-to-peer exchanges, while giving the priority to "practical activities" that give a feeling about the ocean and the human-ocean relationships; (c) inclusive - giving special attention to mobilise children from different social groups, to generate gender unbiased questions and to learning about the principle of democracy (discussing, listening, accepting while being still mobilised) when designing and implementing their Blue challenge; (d) sustainable - ensuring the footprint of the project and of the actions proposed under the Blue Challenge of each school is minimised - and that potential environmental and social ancillary benefits are delivered whenever possible and relevant.</p>	
<b>Contact person in ISMAR:</b> <a href="mailto:francesca.alvisi@bo.ismar.cnr.it">francesca.alvisi@bo.ismar.cnr.it</a>	
<b>Partnership:</b> <ol style="list-style-type: none"> <li>1. Acteon Sarlfrance (France)</li> <li>2. Consiglio Nazionale delle Ricerche (Italy)</li> <li>3. Associazione Nazionale Insegnanti di Scienze Naturali (Italy)</li> <li>4. European Research Institute Associazione (Italy)</li> <li>5. Hellenic Centre for Marine Research (Greece)</li> <li>6. Dimokritio Panepistimio T)</li> <li>7. Agence Française Pour La Biodiversité (France)</li> <li>8. Institut De La Mer De Villefranche (France)</li> <li>9. Parc National Des Calanques (France)</li> </ol>	

<b>Programme:</b> MIUR JPI OCEANS <b>CNR Strategic Area:</b> AP1	 Ministero dell'Istruzione, dell'Università e della Ricerca Ricerca Internazionale
<b>Project title:</b> <b>Fluxes and Fate of (Small) Microplastics in Northern European Waters</b>	
<b>Acronym:</b> FACTS - MIUR JPI OCEANS	
<b>Role in the project:</b> Partner	
<b>Duration:</b> 01/01/2020 – 31/08/2023	
<b>Total budget:</b> € 3.747.000,00	
<b>ISMAR budget:</b> € 144.905,00	
<b>Web site:</b> n.a.	
<b>Key words:</b> microplastics contamination, distribution and transport of MP	
<b>Summary:</b> <p>FACTS will create new knowledge and improve our mechanistic understanding on the sources, transport, occurrence, and fate of small microplastics in the northern marine waters. FACTS will combine state-of-the-art analytical, monitoring and modelling approaches in feedback cycles to describe transport and geographical sources of microplastics contamination as well as sinks from the temperate waters of the southern North Sea to the Arctic waters of the Barents Sea. It analyses the distribution of MP in the water column and quantifies Skagerrak as a major sink zone. Investigated transport processes range from drift scenarios to air transport to aggregation and sinking processes. FACTS also zooms in on the geographic scale to study microplastic transport and fate in a semi enclosed fjord system. The goal is to address the question of how MP move vertically in the water column with time under comparatively well-defined hydrodynamic conditions. FACTS is structured around a set of sampling campaigns reaching from the German Bight to Svalbard, where samples are collected from large research vessels, smaller research vessels, fishery vessels and land based boats. Plastic particle concentrations, obtained from the proposed sampling campaigns are implemented into oceanographic models. The modelling approach is used to integrate release and transport scenarios, and the likelihood and timescale for particle pathways is estimated based on sinking, defragmentation, and beach ingrates, obtained from observations.</p>	
<b>Contact person in ISMAR:</b> <a href="mailto:stefano.alianni@sp.ismar.cnr.it">stefano.alianni@sp.ismar.cnr.it</a>	
<b>Partnership:</b> <ol style="list-style-type: none"> <li>1. Aalborg Universitet (Denmark)</li> <li>2. Alfred-Wegener-Institut Helmholtz-Zentrum für Polar und Meeresforschung (Germany)</li> <li>3. Norwegian Institute for Air Research (Norway)</li> <li>4. Carl von Ossietzky Universität Oldenburg (Germany)</li> <li>5. Consiglio Nazionale delle Ricerche- Istituto di Scienze Marine (Italy)</li> <li>6. Havforskningsinstituttet (Norway)</li> <li>7. Norwegian Research Centre AS (Norway)</li> </ol>	


8. GEOMAR Helmholtz Zentrum für Ozeanforschung Kiel (Germany)
9. Göteborgs Universitet (Sweden)
10. Technische Universität Berlin (Germany)
11. 5750 Imhoff Drive (USA)
12. Universitetet i Bergen (Norway)
13. Continental Reifen Deutschland GmbH (Germany)
14. Ocean Scientific International LTD (United Kingdom)
15. Heriot-Watt University (United Kingdom)


<b>Programme:</b>	 Ministero dell'Istruzione, dell'Università e della Ricerca Ricerca Internazionale
MUR JPI OCEANS - Underwater noise call <b>CNR Strategic Area: AP3 RISKS</b>	
<b>Project title: ecOsystem Responses to Constant offsHorE Sound spectRA</b>	
<b>Acronym: ORCHESTRA</b>	
<b>Role in the project: Partner</b>	
<b>Duration: 01/02/2023 – 31/01/2026</b>	
<b>Total budget: € 2.000.000,00</b>	
<b>ISMAR budget: € 345.048,00</b>	
<b>Web site: <a href="https://www.jpi-oceans.eu/">https://www.jpi-oceans.eu/</a></b>	
<b>Key words: copepods, physical-biological interactions, underwater noise</b>	
<b>Summary:</b> <p>The dynamic of marine communities between and within ecosystems depend on responses to a multivariate set of changes such as climate warming and environmental pollution. The increase of anthropogenic underwater noise (AUN) through oil exploitation, ship traffic and the construction and operation of wind turbines alters the marine acoustic environment significantly and is now considered a global challenge. AUN can harm a variety of taxa by impairing an individual's physiological, ethological, and fitness relevant behaviors. These behaviors include orientation, searching mates, anti-predator behavior and foraging. Benthic and planktonic invertebrates are playing a key role as a dynamic link between lower and higher trophic levels in the world's oceans. However, data on the effects of AUN on these organisms are scarce but crucial for the implementation of mitigation strategies for GES. ORCHESTRA combines interdisciplinary expertise on plankton, benthos, fish and underwater acoustics from five Institutions of four countries. Together, we will fill the presented knowledge gaps by sampling and through laboratory and field experiments with a focus on behavioral and physiological/molecular changes on key species and on community effects. The experiments will be conducted in a multiple stressor, AUN and warming scenarios, approach. The AUN exposure in the laboratory (playbacks and simulations) and in the field (the real deal) is decided upon the current development in ship traffic and offshore wind farming. The resulting data will be combined with information on local soundscapes in order to produce maps of risks. In the end, our results should be implemented in strategies for the mitigation of AUN impacts on marine ecosystem key species and further contribute to the development of measures and criteria/indices to reach GES.</p>	
<b>Contact person in ISMAR: <a href="mailto:alessandro.bergamasco@ismar.cnr.it">alessandro.bergamasco@ismar.cnr.it</a></b>	
<b>Partnership:</b> <ol style="list-style-type: none"> <li>1. Institute of Marine Research (Germany)</li> <li>2. Universitet Gent (Belgium)</li> <li>3. Christian-Albrechts Universität zu Kiel (Germany)</li> <li>4. Università degli Studi di Padova (Italy)</li> <li>5. Consiglio Nazionale delle Ricerche (Italy)</li> <li>6. Alfred Wegener Institut Helmholtz Zentrum für Polar- und Meeresforschung (Germany)</li> </ol>	




<b>Programme:</b> EMFAF-2021-PIA-MSP	
<b>CNR Strategic Area:</b> AP 2	
<b>Project title:</b> <b>Reviewing and Evaluating the Monitoring and Assessment of Maritime Spatial Planning</b>	
<b>Acronym:</b> REMAP	
<b>Role in the project:</b> Affiliated partner of CORILA	
<b>Duration:</b> 01/11/2022 – 31/10/2025	
<b>Total budget:</b> € 1.917.103,00	
<b>ISMAR budget:</b> € 221.828,00	
<b>Web site:</b> <a href="http://www.geoportal.ulpgc.es/remap/">http://www.geoportal.ulpgc.es/remap/</a>	
<b>Key words:</b> MSP, data tools, models, data infrastructures	
<b>Summary:</b> <p>This project is focused in setting-up strategies and approaches to review maritime spatial plans (MSP), and in particular grounded on the interest for the development of data tools, models and reuse of operational data infrastructures, allowing interoperability and enabling Member States (MS) to share MSP data and assessment information.</p> <p>The main objective is to provide EU MS with ReMAP innovative technical framework for the support of the European MSP process. The ReMAP technical framework is mainly aimed at the review, assessment performance and improvement of the adopted plans.</p> <p>ReMAP consortium and proposed framework build on the efforts of the Technical Expert Group (TEG) on MSP data and EMODnet to harmonize EU MSP layer and propose innovative approach of modular analytics.</p> <p>These modular analytics include (10+1) simplified analytical modules and related (web) tools considering environmental, economic, social, governance and safety aspects. This approach decreases the complexity of the assessments and, at the same time, increases the probability to be reused by wide MSP community.</p>	
<b>Contact person in ISMAR:</b> <a href="mailto:stefano.menegon@ismar.cnr.it">stefano.menegon@ismar.cnr.it</a>	
<b>Partnership:</b> <ol style="list-style-type: none"> <li>1. Universidad de Las Palmas de Gran Canaria (Spain)</li> <li>2. The Baltic Marine Environment Protection Commission (Finland)</li> <li>3. Centro Tecnológico del Mar - Fundacion Cetmar (Spain)</li> <li>4. Service Hydrographique et Oceanographique de La Marine (France)</li> </ol>	


5. Corila - Consorzio per Il Coordinamento delle Ricerche Inerenti al Sistema Lagunare di Venezia (Italy)
6. Consiglio Nazionale delle Ricerche (Italy)
7. Università Iuav di Venezia (Italy)
8. Centro de Estudios y Experimentacion de Obras Publicas – Cedex (Spain)

<b>Programme:</b> EMFAF-2021-PIA-MSP	
<b>CNR Strategic Area:</b> AP 2	
<b>Project title:</b> <b>Regions to boost National Maritime Spatial Planning</b>	
<b>Acronym:</b> REGINA-MSP	
<b>Role in the project:</b> Affiliated to CORILA	
<b>Duration:</b> 01/11/2022 – 30/10/2024	
<b>Total budget:</b> € 1.957.909,00	
<b>ISMAR budget:</b> € 140.272,00	
<b>Web site:</b> <a href="https://www.regina-msp.eu/">https://www.regina-msp.eu/</a>	
<b>Key words:</b> MSP, governance, policy and planning	
<b>Summary:</b>  REGINA MSP aims at improving the participation of regional and local authorities and stakeholders in maritime spatial planning. This governance level provides an adequate scale for detailed planning of marine areas and for integrating European and national policy requirements with local specificities and needs. The project combines a general analysis at the European level aiming at creating a compendium of regional experiences on MSP and identifying persisting gaps with an in-depth MSP-focused analysis at the level of sub-national case studies in five Atlantic and Mediterranean EU countries (Ireland, France, Spain, Italy and Greece). REGINA MSP methodology includes analysis of existing policy and planning documents, literature review, collection and assessment of spatial data, interviews with actors and engagement of regional and local stakeholders. CNR-ISMAR is involved in all project activities, working in particular on the definition of a common methodological approach to case studies and on the implementation of the Italian case in Sardinia region. Besides reports, the project will deliver policy-oriented papers and briefs targeting different users (the EU, countries and regions).	
<b>Contact person in ISMAR:</b> <a href="mailto:e.ramieri@ismar.cnr.it">e.ramieri@ismar.cnr.it</a>	
<b>Partnership:</b> <ol style="list-style-type: none"> <li>1. CEREMA - Centre for Studies and Expertise on Risks, the Environment, Mobility and Urban Planning (France)</li> <li>2. SHOM - Naval Hydrographic and Oceanographic Service (France)</li> <li>3. CSIC IEO - Spanish National Research Council - Institute of Oceanography (Spain)</li> <li>4. UCC - University College Cork (Ireland)</li> <li>5. CORILA - Consortium for coordination of research activities concerning the lagoon of Venice (Italy)</li> <li>6. CNR-ISMAR – National Research Council - Institute of Marine Sciences (Italy)</li> <li>7. University IUAV of Venice (Italy)</li> <li>8. PUSPS - Panteion University of Social and Political Sciences (Greece)</li> <li>9. AUTh - Aristotle University of Thessaloniki (Greece)</li> <li>10. CPMR - Conference of Peripheral Maritime Regions of Europe</li> <li>11. DHLGH – Department of Housing, Local Government and Heritage (Ireland)</li> <li>12. CETMAR – Centro Tecnológico del Mar (Spain)</li> </ol>	

<b>Programme:</b> EMFAF-2021-PIA-MSP	
<b>CNR Strategic Area:</b> AP 2 RESOURCES	
<b>Project title:</b> Maritime Spatial Planning as enabler of the European Green Deal	
<b>Acronym:</b> MSP-GREEN	
<b>Role in the project:</b> Affiliated partner of CORILA	
<b>Duration:</b> 01/11/2022 – 30/10/2024	
<b>Total budget:</b> € 1.933.548,00	
<b>ISMAR budget:</b> € 195.382,00	
<b>Web site:</b> <a href="https://mspgreen.eu/">https://mspgreen.eu/</a>	
<b>Key words:</b> MSP, governance, policy and planning	
<b>Summary:</b> <p>The European Green Deal (EGD) is an ambitious package of policy initiatives to set the EU on the path to a green transition, improving the well-being and health of citizens and future generations. MSP-GREEN recognises that EGD components within MSP plans are still limited and must be reinforced and operationalised. The project aims at developing a framework to analyse and strengthen the role of MSP plans as “marine enablers” of the EGD, focusing on the topics of particular relevance for the marine environment and the sustainable transition of the blue economy: climate change mitigation and adaptation, circular blue economy, protection of marine biodiversity, marine renewable energies, healthy and sustainable food from the sea. MSP-GREEN approach builds on three major components: analysis, innovation (via valuable practises and new actions), and transferability. Recommendations on how to strengthen the EGD ambition of EU MSP plans and boost EGD implementation with actions addressed by MSP will be prepared based on the project results and by consulting experts and practitioners at EU level. CNR-ISMAR contributes to several project activities and will lead WP4 “Towards a Greener MSP for Europe: scaling-up and innovating” aiming at defining the recommendations to make MSP an enabler of the EGD.</p>	
<b>Contact person in ISMAR:</b> <a href="mailto:e.ramieri@ismar.cnr.it">e.ramieri@ismar.cnr.it</a>	
<b>Partnership:</b> <ol style="list-style-type: none"> <li>1. CORILA - Consortium for coordination of research activities concerning the lagoon of Venice (Italy)</li> <li>2. University IUAV of Venice (Italy)</li> <li>3. CNR-ISMAR – National Research Council - Institute of Marine Sciences (Italy)</li> <li>4. CSIC IEO - Spanish National Research Council - Institute of Oceanography (Spain)</li> <li>5. CEREMA - Centre for Studies and Expertise on Risks, the Environment, Mobility and Urban Planning (France)</li> <li>6. Regional Council of Southwest Finland (Finland)</li> <li>7. CCMS - Centre for Coastal and Marine Studies (Bulgaria)</li> <li>8. Ministry of Environmental Protection and Regional Development (Latvia)</li> <li>9. State Regional Development Agency (Latvia) – associated partner</li> </ol>	

10. University of Western Brittany (France)
11. IFREMER – French Research Institute for Exploration of the Sea (France)
12. Federal Hydrographic and Maritime Agency (Germany) - associated partner

<b>Programme:</b> JRC 2022	
<b>CNR Strategic Area:</b>	
<b>Project title: AAOT (Acqua Alta Oceanographic Tower) services JRC/IPR/2022/NP/0855</b>	
<b>Acronym:</b> AAOT	
<b>Role in the project:</b> Lead Partner	
<b>Duration:</b> 12/07/2022 – 11/07/2027	
<b>Total budget:</b> € 120.000,00	
<b>ISMAR budget:</b> € 120.000,00	
<b>Web site:</b> n.a.	
<b>Key words:</b> radiometer, AAOT, JRC	
<b>Summary:</b> Host the JRC AERONET-OC autonomous above-water radiometer and related services as specified at point 1.4.3 of the Tender Specifications for 4 years (2022-2026).	
<b>Contact person in ISMAR:</b> <a href="mailto:angela.pomaro@ismar.cnr.it">angela.pomaro@ismar.cnr.it</a>	

<b>Programme:</b> Biodiversa+ 2021 Call for Proposals	
<b>CNR Strategic Area:</b> AP4	
<b>Project title:</b> <b>Plankton biodivErsity Through Remote sensing and omics in the MEDiterranean sea</b>	
<b>Acronym:</b> PETRI-MED	
<b>Role in the project:</b> Partner	
<b>Duration:</b> 01/04/2023 – 30/04/2026	
<b>Total budget:</b> € 1.400.000,00	
<b>ISMAR budget:</b> € 249.000,00	
<b>Web site:</b> <a href="https://www.biodiversa.eu/2023/04/19/petri-med/">https://www.biodiversa.eu/2023/04/19/petri-med/</a>	
<b>Key words:</b> microbial plankton, biodiversity, ecosystem	
<b>Summary:</b> <p>The objective of PETRI-MED is to develop novel strategies to determine and monitor the status and trends of microbial plankton biodiversity in the entire Mediterranean Sea, supporting the assessment of the impact of ecological connectivity on local biodiversity and ecosystem functioning. This will be achieved following a highly multidisciplinary approach, capitalizing on the large potential offered by the past and ongoing satellite missions, complemented with field measurements (optical, physical, chemical, and genomic), biogeochemical/ecosystem/marine currents modelling, and artificial intelligence technologies. PETRI-MED will allow to:- identify spatio-temporal patterns in the microbial plankton community distribution and biodiversity;- assess key controls of biodiversity patterns, including ecological connectivity, natural (e.g., river runoffs and marine currents) and human-related forcing (e.g., use of land and coastal ecosystems).</p>	
<b>Contact person in ISMAR:</b> <a href="mailto:emanuele.organelli@cnr.it">emanuele.organelli@cnr.it</a>	
<b>Partnership:</b> <ol style="list-style-type: none"> <li>1. Consejo Superior de Investigaciones Científicas (Spain)</li> <li>2. Consiglio Nazionale delle Ricerche (Italy)</li> <li>3. National Institute of Biology (Slovenia)</li> <li>4. Sorbonne University (France)</li> <li>5. Institute of Agriculture and Food Research and Technology (Spain)</li> </ol>	

<b>Programme:</b>	
Italy-Azerbaijan Bilateral	
<b>CNR Strategic Area:</b> AP2	
<b>Project title:</b> <b>Mud volcanism In the Caspian Sea Region: Deciphering the interplay between tectonics and Mud/Fluid Flow through onshore-offshore correlations</b>	
<b>Acronym:</b> CASPIAN-AZERBAIJAN	
<b>Role in the project:</b> Partner	
<b>Duration:</b> 01/01/2021 – 15/06/2023	
<b>Total budget:</b> € 12.000,00	
<b>ISMAR budget:</b> € 12.000,00	
<b>Web site:</b> n.a.	
<b>Key words:</b> Mud volcanos, tectonics, seismic activity, active faults, fluids, gas	
<b>Summary:</b>	
<p>The work design addresses mainly two different objectives:</p> <ol style="list-style-type: none"> <li>1) High-resolution imaging of the sea floor and very shallow subsurface (10 m), to map the submarine part of the fault ruptures and other recent scarps and/or mud flows and MVs.</li> <li>2) Multichannel survey aiming at the upper 100-200 m of the subsurface, to resolve Quaternary structures and the internal geometry of MVs.</li> </ol> <p>The more detailed scientific objectives can be summarized as follows:</p> <ul style="list-style-type: none"> <li>• Collect information for a correct three-dimensional representation of MV systems onshore and offshore, providing realistic predictions of fluid migration;</li> <li>• Identify major active fault (s) and their relationship with MVs;</li> <li>• Investigate how seismogenic faults couple with recent structures in the sediments (is the fault continuous only at and near the surface, or over the entire seismogenic layer?);</li> <li>• Evaluate how transpression is partitioned between strike-slip and reverse faults (e.g., are thrust faults decoupling on specific layers? Are the MVs correlated with intersections between the right-lateral faults and reverse faults?)</li> </ul>	
<b>Contact person in ISMAR:</b> <a href="mailto:alina.polonia@cnr.it">alina.polonia@cnr.it</a>	
<b>Partnership:</b>	
<ol style="list-style-type: none"> <li>1. Consiglio Nazionale delle Ricerche (Italy)</li> <li>2. Oil and Gas Institute of Azerbaijan National Academy of Sciences (Azerbaijan)</li> </ol>	





## 9. NATIONAL RECOVERY AND RESILIENCE PLAN - PNRR

The National Recovery and Resilience Plan, better known in Italy as PNRR and as “Italia Domani”, is a plan aiming to contribute the achievement of the European Union climatic, environmental, and energetic objectives and raise the European growth, investments, and reforms.

The European Commission elaborated guidelines for the elaboration of national plans, by identifying the components where aggregate investment and reforms projects. All these components reflect the priorities of specific areas aiming to produce adequate measures. The Italian plan is composed by 16 components grouped in six missions reflecting the pillars forming the Recovery and Resilience Facility (RRF): green transition; digital transformation; smart, sustainable, and inclusive growth; social and territorial cohesion; economic, social, and institutional health and resilience; and policies for new generation, childhood, and youth.

The six missions are the following:

- Mission 1: digitalization, innovation, competitiveness, culture, and tourism
- Mission 2: green revolution and ecological transition
- Mission 3: Infrastructure for a sustainable mobility
- Mission 4: Education and research
- Mission 5: Cohesion and inclusion
- Mission 6: Health

### 9.1 MISSION 4: EDUCATION AND RESEARCH

The 4<sup>th</sup> mission is provided with 30,88 € billion and is related to education and research. It aims to fill the structural, quantitative, and qualitative lacks in educational services and favor access to universities by strengthening the orientation and recruitment tools. In addition, this mission foresees a significative reinforcement to the basic and applied research and new tools for stepping up the technological transfer and boosting potential growth.

The 4<sup>th</sup> mission is composed of two components: M4C1 – Enhancement of the offer related to education: from nursery school to university, with resources amounting to 19,44 € billion; and M4C2 – From research to enterprise, with resources of 11,44 € billion.

The 1<sup>st</sup> component (M4C1) aims to realize investment to fill or reduce the structural lacks characterizing all the educational levels. Indeed, this pursues the enhancement of the educational offers, by strengthening and improving the teachers' competencies. Furthermore, this component intends to reinforce the infrastructures and technological tools in support of education, also reinforcing the doctoral programs.

The 2<sup>nd</sup> component (M4C2) aims to raise the potential growth of the economic system, favoring the transition towards a development model based on knowledge. With this component is expected an increase of volume in research & development sectors, fostering a more efficient collaboration level between the private and public sectors.

Each component is composed in turn of investments and reforms listed in the following table. Everyone is focusing on specific aspects to boost the achievement the objectives foreseen by the main component.


<b>M4C1 – Enhancement of the offer related to education: from nursery school to university</b>
<b>1. Qualitative improvement and quantitative extension of educational services and training</b>
<ul style="list-style-type: none"> <li>- Investment 1.1: Plan for nursery and childhood school and educational services and early childhood care</li> <li>- Investment 1.2: Plan for the extension of full time and canteen</li> <li>- Investment 1.3: Enhancement of sport infrastructure at school</li> <li>- Investment 1.4: Intervention for reducing the territorial discrepancies in 1<sup>st</sup> and 2<sup>nd</sup> cycles of secondary school of second grade</li> <li>- Reform 1.1: Reform of technical and professional institutes</li> <li>- Reform 1.2: Reform of ITS system</li> <li>- Investment 1.5: Development of tertiary professional training system (ITS)</li> <li>- Reform 1.3: Reform for the organization of the educational system</li> <li>- Reform 1.4: Reform of the orienteering system</li> <li>- Investment 1.6: Active orienteering in school-university transition</li> <li>- Reform 1.5: Reform of degree classes</li> <li>- Reform 1.6: Reform of qualifying degree for some profession</li> <li>- Reform 1.7: Accommodation for students and reform of legislation on students' accommodation</li> <li>- Investment 1.7: Scholarship for accessing university</li> </ul>
<b>2. Improvement of recruitment process and training of teachers</b>
<ul style="list-style-type: none"> <li>- Reform 2.1: Reform for the recruitment system of teachers</li> <li>- Reform 2.2: High Training School and mandatory training for education directors, teachers, and technical-administrative personnel</li> <li>- Investment 2.1: Integrated digital teaching and training on digital transition for educational personnel</li> </ul>
<b>3. Extension of competences and enhancement of infrastructures</b>
<ul style="list-style-type: none"> <li>- Investment 3.1: New competences and new languages</li> <li>- Investment 3.2: School 4.0 – innovative school, new teaching class and laboratories</li> <li>- Investment 3.3: Security plan and requalification of educational buildings</li> <li>- Investment 3.4: Advanced university education and competences</li> </ul>
<b>4. Reform and enhancement of doctoral programs</b>
<ul style="list-style-type: none"> <li>- Reform 4.1: Doctoral programs reform</li> <li>- Investment 4.1: Extension of doctoral research numbers and innovative doctoral for the Public Administration and cultural heritage</li> </ul>
<b>M4C2 – From research to Enterprise</b>
<b>1. Strengthening of research and spread out of innovative models for basic and applied research conducted in synergy between universities and enterprises</b>
<ul style="list-style-type: none"> <li>- Investment 1.1: Fund for the Research National Program (PNR) and project of National Relevant Interest Research (PRIN)</li> <li>- Investment 1.2: Financing of project proposed by young researchers</li> <li>- Investment 1.3: Partnerships extended to universities, research centers, enterprises and financing to basic research projects</li> <li>- Investment 1.4: Enhancement of research structures and creation of “national champion” of research and development on Key Enabling Technologies</li> <li>- Investment 1.5: Creation and strengthening of “innovative ecosystem for sustainability”, building of “territorial leader of research and development”</li> </ul>


<p><b>2. Support to innovative processes and technological transfers</b></p> <ul style="list-style-type: none"> <li>- Investment 2.1: IPCEI</li> <li>- Investment 2.2: Partnership – Horizon Europe</li> <li>- Investment 2.3: Enhancement and thematic and territorial extension of technological transfer center for industry</li> </ul>
<p><b>3. Enhancement of condition for supporting research and innovation</b></p> <ul style="list-style-type: none"> <li>- Investment 3.1: Fund for the realization of an integrated research and innovative infrastructures system</li> <li>- Investment 3.2: Financing of start-up</li> <li>- Investment 3.3: Introduction of innovative doctoral programs answering to the need of innovation from enterprise and promoting the hiring of researchers by enterprise</li> </ul>

## 9.2 CNR-ISMAR IN PNRR


The CNR-ISMAR is part of 6 projects in 3 different investments axis, all under the component n°2 (M4C2):

- **Italian Integrated Environmental Research Infrastructure System – ITINERIS** under the Investment 3.1 - Fund for the realization of an integrated research and innovative infrastructures system.
- **National Centre for HPC, Big Data and Quantum Computing – HPC**
- **National Biodiversity Future Center – NBFC** under Investment 1.4 - Enhancement of research structures and creation of “national champion” of research and development on Key Enabling Technologies;
- **Ecosystem for sustainable transition in Emilia-Romagna - Ecosister**
- **Robotics and AI for Socio-economic Empowerment – RAISE** under Investment 1.5 - Creation and strengthening of “innovative ecosystem for sustainability”, building of “territorial leader of research and development”;
- **Unlocking the Potential for Health and Food from the seas - EMBRC-UP**

<p><b>Programme:</b> Piano Nazionale di Ripresa e Resilienza (PNRR)  <b>Mission:</b> Missione 4  <b>Component:</b> Componente 2  <b>Investment:</b> Investimento 3.1 “Fondo per la realizzazione di un sistema integrato di infrastrutture di ricerca e innovazione”</p>	
<p><b>Project title:</b> <b>Italian Integrated Environmental Research Infrastructures System</b></p>	
<p><b>Acronym:</b> ITINERIS</p>	
<p><b>Role in the project:</b> Lead Partner</p>	
<p><b>Duration:</b> 01/11/2022 – 30/04/2025</p>	
<p><b>Total budget:</b> € 155.208.808,81</p>	
<p><b>ISMAR budget:</b> € 25.567.889,84</p>	
<p><b>Web site:</b> <a href="https://itineris.cnr.it/">https://itineris.cnr.it/</a></p>	
<p><b>Key words:</b> research infrastructure, environmental data, hub</p>	
<p><b>Summary:</b></p> <p>ITINERIS will build the Italian Hub of Research Infrastructures in the environmental scientific domain for the observation and study of environmental processes in the atmosphere, marine domain, terrestrial biosphere, and geosphere, providing access to data and services and supporting the Country to address current and expected environmental challenges. ITINERIS coordinates a network of national nodes from 22 RIs (18 from the environmental domain, 2 from agri-food with strong link with the environment and 2 from the PSE domain, supporting services for the marine domain).</p> <p>The main goal is to develop cross-disciplinary research in environmental sciences through the use and re-use of existing (or preoperational) data and services and new observations, to address scientifically and societally relevant issues such as sustainable use of natural resources, implementation of Nature-Based Solutions, Green and Blue Economy, pollution reduction, critical zone and ecosystem management and restoration, carbon cycle, mitigation of the downstream effects of climate and environmental change.</p>	
<p><b>Contact person in ISMAR:</b> <a href="mailto:rosalia.santoleri@cnr.it">rosalia.santoleri@cnr.it</a> , <a href="mailto:laura.barbieri@cnr.it">laura.barbieri@cnr.it</a></p>	
<p><b>Partnership:</b></p> <ol style="list-style-type: none"> <li>1. Consiglio Nazionale delle Ricerche</li> <li>2. Istituto Nazionale di Fisica Nucleare</li> <li>3. Istituto Nazionale di Geofisica e Vulcanologia</li> <li>4. Istituto Superiore per la Protezione e la Ricerca Ambientale</li> <li>5. Istituto Nazionale di Oceanografia e Geofisica Sperimentale</li> <li>6. Università degli Studi di Firenze</li> <li>7. Università Ca' Foscari</li> </ol>	

<p><b>Programme:</b> Piano Nazionale di Ripresa e Resilienza (PNRR)  <b>Mission:</b> Missione 4  <b>Component:</b> Componente 2  <b>Investment:</b> Investimento 1.4 "Potenziamento strutture di ricerca e creazione di "campioni nazionali di R&amp;S" su alcune <i>Key Enabling Technologies</i>"</p>	
<p><b>Project title:</b> <b>National Centre for HPC, Big Data and Quantum Computing</b></p>	
<p><b>Acronym:</b> HPC</p>	
<p><b>Role in the project:</b> Partner</p>	
<p><b>Duration:</b> 01/09/2022 – 31/08/2025</p>	
<p><b>Total budget:</b> € 325.938.979,26</p>	
<p><b>ISMAR budget:</b> € 600.000,00</p>	
<p><b>Web site:</b> <a href="https://www.supercomputing-icsc.it/">https://www.supercomputing-icsc.it/</a></p>	
<p><b>Key words:</b> PNRR-CN-HPC earth system models, high-resolution climate projections seamless climate predictions, digital infrastructure</p>	
<p><b>Summary:</b></p> <p>In the next few years, an unprecedented amount of data will be produced by scientific, industrial, and institutional actors, so we will have to face the challenge of extracting social and economic value from this data explosion. In this context, supercomputing, numerical simulation, Artificial Intelligence, high performance data analytics and Big Data management will be essential and strategic for understanding and responding to grand societal challenges and in stimulating a people-centered process of sustainable growth and human development, allowing academia, industry and institutions to develop services and discoveries. The CN aims to create the national digital infrastructure for research and innovation, starting from the existing HPC, HTC and Big Data infrastructures evolving towards a cloud datalake model accessible by the scientific and industrial communities through flexible and uniform cloud web interfaces, relying on a high-level support team, form a globally attractive ecosystem based on strategic public-private partnerships to fully exploit top level digital infrastructure for scientific and technical computing and promote the development of new computing technologies.</p>	
<p><b>Contact person in ISMAR:</b> <a href="mailto:elisabetta.borella@ve.ismar.cnr.it">elisabetta.borella@ve.ismar.cnr.it</a></p>	
<p><b>Partnership:</b></p> <ol style="list-style-type: none"> <li>1. CINECA</li> <li>2. Consiglio Nazionale delle Ricerche</li> <li>3. Fondazione Centro Euro-Mediterraneo sui Cambiamenti Climatici</li> <li>4. Centro di Ricerca, Sviluppo e Studi Superiori in Sardegna - CRS4 Srl</li> <li>5. ENEA - Agenzia nazionale per le nuove tecnologie, l'energia e lo sviluppo economico sostenibile</li> <li>6. Fondazione Bruno Kessler</li> <li>7. Consortium GARR</li> </ol>	


4. Istituto Italiano di Tecnologia
5. Istituto Nazionale di Astrofisica
6. Istituto Nazionale di Fisica Nucleare
7. Istituto Nazionale di Geofisica e Vulcanologia
8. Istituto Nazionale di Ocenografia e di Geofisica Sperimentale
9. Politecnico di Bari
10. Politecnico di Milano
11. Politecnico di Torino
12. Scuola Internazionale Superiore di Studi Avanzati
13. Scuola Normale Superiore di Pisa
14. Sapienza Università di Roma
15. Università degli Studi dell'Aquila
16. Università degli Studi di Bari Aldo Moro
17. Alma Mater Studiorum - Università di Bologna
18. Università degli Studi della Calabria
19. Università degli Studi di Catania
20. Università degli Studi di Napoli Federico II
21. Università degli Studi di Ferrara
22. Università degli Studi di Firenze
23. Università degli studi di Milano-Bicocca
24. Università degli Studi di Modena e Reggio Emilia
25. Università degli Studi di Padova
26. Università degli Studi di Parma
27. Università degli Studi di Pavia
28. Università degli Studi di Pisa
29. Università degli Studi di Roma Tor Vergata
30. Università del Salento
31. Università degli Studi di Trento
32. Università degli Studi di Torino
33. Università degli Studi di Trieste
34. Engineering Ingegneria Informatica S.p.A.
35. Eni
36. Ferrovie dello Stato Italiane Group
37. Fincantieri S.p.A.
38. Fondazione Innovazione Urbana
39. Autostrade per l'Italia S.p.A.
40. IRCCS Istituto Clinico Humanitas
41. IFAB
42. Intesa Sanpaolo S.p.A.
43. Leonardo S.p.A.
44. Sogei – Società Generale d'Informatica S.p.A.
45. Thales Alenia Space Italia S.p.A.
46. Terna
47. UnipolSai Assicurazioni
48. Enel

<p><b>Programme:</b> Piano Nazionale di Ripresa e Resilienza (PNRR)  <b>Mission:</b> Missione 4  <b>Component:</b> Componente 2  <b>Investment:</b> Investimento 1.4 "Potenziamento strutture di ricerca e creazione di "campioni nazionali di R&amp;S" su alcune <i>Key Enabling Technologies</i>"</p>	
<p><b>Project title:</b> <b>National Biodiversity Future Center</b></p>	
<p><b>Acronym:</b> NBFC</p>	
<p><b>Role in the project:</b> Lead Partner</p>	
<p><b>Duration:</b> 01/09/2022 – 31/08/2025</p>	
<p><b>Total budget:</b> € 328.217.375,39</p>	
<p><b>ISMAR budget:</b>  Spoke 1: € 1.000.000  Spoke 2: € 1.000.000  Spoke 7: € 100.000</p>	
<p><b>Web site:</b> <a href="https://www.nbfc.it/">https://www.nbfc.it/</a></p>	
<p><b>Key words:</b> ecological indicators, Biodiversity Observatory system, biotelemetry</p>	
<p><b>Summary:</b></p> <p>Biodiversity, the diversity of life on Earth, delivers essential contributions to human life: crop pollination, climate regulation, water and air filtration, soil formation and disaster risk mitigation. However, biodiversity is declining increasingly rapidly, mainly due to human-induced pressure. According to the latest global assessment of the state of nature, human activity, responsible for significant alteration of 75% of the land and 66% of the marine environment, is expected to drive more than one million plant and animal species to extinction, many within decades, unless broad policy action is taken to stem the drivers of this deterioration.</p> <p>The Vision of NBFC is to promote the sustainable management of Italian biodiversity in order to improve the planet's health and return beneficial effects, essential for all people. This complies with the EU Biodiversity 2050 vision 'Living in harmony with nature'. The general Mission of the Consortium is to create an extended national network of universities, research centers, associations, and other private and societal stakeholders to take effective and immediate action to halt the loss of biodiversity and the impairment of its delivered ecosystem services while enhancing a sustainable use of biodiversity-derived resources and new job opportunities.</p>	
<p><b>Contact person in ISMAR:</b> <a href="mailto:emmagiovanna.dacunzo@cnr.it">emmagiovanna.dacunzo@cnr.it</a></p>	
<p><b>Partnership:</b></p> <ol style="list-style-type: none"> <li>1. Consiglio Nazionale delle Ricerche</li> <li>2. Istituto Nazionale di Oceanografia e di Geofisica Sperimentale</li> <li>3. Stazione Zoologica Anton Dohrn</li> <li>4. Politecnico di Milano</li> <li>5. Università degli Studi del Molise</li> <li>6. Università degli Studi della Tuscia</li> <li>7. Università degli Studi di Firenze</li> <li>8. Università degli Studi di Milano-Bicocca</li> <li>9. Università degli Studi di Modena e Reggio Emilia</li> </ol>	




10. Università degli Studi di Napoli Federico II
11. Università degli Studi di Palermo
12. Università degli Studi di Pavia
13. Università degli Studi di Roma La Sapienza
14. Università degli Studi di Sassari
15. Università degli Studi di Salerno
16. Università degli Studi di Siena
17. Università degli Studi di Udine
18. Università degli Studi di Verona
19. Università degli Studi Roma Tre
20. Università del Salento
21. Università di Bologna
22. Università di Genova
23. Università di Padova
24. Università Politecnica delle Marche
25. Università di Torino
26. Istituto Nazionale di Fisica Nucleare
27. Aboca SPA Società Agricola
28. CINECA
29. ENI
30. Fondazione Ri.MED
31. Novamont S.p.a.

<p><b>Programme:</b> Piano Nazionale di Ripresa e Resilienza (PNRR)  <b>Mission:</b> Missione 4  <b>Component:</b> Componente 2  <b>Investment:</b> Investimento 1.5 “Creazione e rafforzamento di “Ecosistemi dell’innovazione””</p>	
<p><b>Project title:</b> <b>Ecosystem for Sustainable Transition in Emilia-Romagna</b></p>	
<p><b>Acronym:</b> ECOSISTER</p>	
<p><b>Role in the project:</b> Partner</p>	
<p><b>Duration:</b> 01/10/2022 – 30/09/2025</p>	
<p><b>Total budget:</b> € 9.067.434,00</p>	
<p><b>ISMAR budget:</b> € 230.420,00</p>	
<p><b>Web site:</b> <a href="https://ecosister.it/">https://ecosister.it/</a></p>	
<p><b>Key words:</b> ecosystem, resilience, green and digital transition, smart city model, circular economy, carbon neutrality</p>	
<p><b>Summary:</b></p> <p>The Ecosystem for Sustainable Transition in Emilia-Romagna gathers key actors at regional level that want to cooperate to reach a common vision: enhance Emilia-Romagna's global leadership in applied research and guarantee an effective ability to support sustainable, resilient and people-centered industrial development of the regional manufacturing and services system, through the implementation of green and digital transitions, in coherence with regional, national, and European strategies.</p> <p>This challenge requires interventions relating to infrastructures and plants for the production, transmission and distribution of energy, building renovation and energy requalification of existing buildings, transformation of the production system for a sustainable economy, development of sustainable materials, the extension of the “smart city” model to the entire regional territory, and the transformation of economic activities towards Circular Economy with emphasis on to blue growth, tourism, and agriculture sectors.</p>	
<p><b>Contact person in ISMAR:</b> <a href="mailto:mariarita.cogliandro@cnr.it">mariarita.cogliandro@cnr.it</a></p>	
<p><b>Partnership:</b></p> <ol style="list-style-type: none"> <li>1. Alma Mater Studiorum Università di Bologna</li> <li>2. Università degli Studi di Ferrara</li> <li>3. Università degli Studi di Modena e Reggio Emilia</li> <li>4. Università degli Studi di Parma</li> <li>5. Consiglio Nazionale delle Ricerche</li> <li>6. Politecnico di Milano</li> <li>7. Università Cattolica del Sacro Cuore</li> <li>8. Istituto Nazionale di Fisica Nucleare</li> <li>9. ENEA Agenzia nazionale per le nuove tecnologie, l'energia e lo sviluppo economico sostenibile</li> <li>10. ART-ER Attrattività Ricerca Territorio S. cons. P.A</li> </ol>	

<p><b>Programme:</b> Piano Nazionale di Ripresa e Resilienza (PNRR)  <b>Mission:</b> Missione 4  <b>Component:</b> Componente 2  <b>Investment:</b> Investimento 1.5 “Creazione e rafforzamento di “Ecosistemi dell’innovazione””</p>	 <p>Robotics and AI for socio-economic empowerment  Ecosistema dell'innovazione della Liguria  PNRR – M4C2 – I.1.5</p>
<p><b>PROJECT TITLE:</b> <b>Robotics and Ai for Socio-Economic Empowerment</b></p>	
<p><b>Acronym:</b> RAISE</p>	
<p><b>Role in the project:</b> Partner</p>	
<p><b>Duration:</b> 01/10/2022 – 30/09/2025</p>	
<p><b>Total budget:</b> € 117.646.645,14</p>	
<p><b>ISMAR budget:</b>  Spoke 3: € 538.522,63  Spoke 4: € 331.532,65</p>	
<p><b>Web site:</b> <a href="https://www.raiseliguria.it/en/home-copy/">https://www.raiseliguria.it/en/home-copy/</a></p>	
<p><b>Key words:</b> Sustainable environmental caring, protection technologies, ports, sustainability environmental protection</p>	
<p><b>Summary:</b></p> <p>The Robotics and AI For Socio-Economic Empowerment (RAISE) project aims to sustain the development of an innovation ecosystem based on the scientific and technological domains of AI and Robotics, focusing on the needs of a specific regional context, i.e. the Liguria Region. It eventually aspires to evolving into an ecosystem highly attractive for firms, investors and researchers, both at national and international level.</p> <p>The proposed project is rooted in a regional territory characterized by scientific, technological, and economic specificities. In this perspective, it aims to build on strengths and help reduce weaknesses, by leveraging on existing resources and capabilities as well as by generating new opportunities through effective and efficient knowledge transfer. The idea underlying this ecosystem is to coordinate and value these projects in a logic of integrating technology transfer system, using the local market as an extraordinary and immediate testing lab. In this perspective, the ecosystem represents a sort of “engine” to rewrite the basis of Italian industrialization not only addressing the “Digital Transformation” but also going towards a further evolution in which the looming "lack of hands" will be solved through a "Robotic Transformation" that requires strategic and technological support to be reached.</p>	
<p><b>Contact person in ISMAR:</b> <a href="mailto:laura.barbieri@cnr.it">laura.barbieri@cnr.it</a></p>	
<p><b>Partnership:</b></p> <ol style="list-style-type: none"> <li>1. Università degli Studi di Genova</li> <li>2. Consiglio Nazionale delle Ricerche</li> <li>3. Istituto Italiano di Tecnologia</li> <li>4. Regione Liguria</li> </ol>	

5. FI.L.S.E. S.p.A.
6. Liguria Digitale S.p.A.
7. ANCI Liguria
8. Centro Internazionale in Monitoraggio Ambientale – Fondazione CIMA
9. Job Centre S.r.l.

<p><b>Programme:</b> Piano Nazionale di Ripresa e Resilienza (PNRR)  <b>Mission:</b> Missione 4  <b>Component:</b> Componente 2  <b>Investment:</b> Investimento 3.1 “Fondo per la realizzazione di un sistema integrato di infrastrutture di ricerca e innovazione”</p>	
<p><b>Project title:</b> <b>EMBRC: Unlocking the Potential for Health and Food from the seas</b></p>	
<p><b>Acronym:</b> EMBRC-UP</p>	
<p><b>Role in the project:</b> Partner</p>	
<p><b>Duration:</b> 01/09/2022 – 28/02/2025</p>	
<p><b>Total budget:</b> € 20.495.193,74 €</p>	
<p><b>ISMAR budget:</b> € 152.000</p>	
<p><b>Web site:</b> n.a.</p>	
<p><b>Key words:</b> environmental health, tools, continuous cycle data, environmental database, biodiversity, genetic diversity</p>	
<p><b>Summary:</b></p> <p>Seas and oceans are the largest resource of the planet and are of fundamental importance for developing sustainably a strategic asset for a country with 8700 km of coasts and possessing ca 15% of the surface of the Mediterranean Sea. However, their potential is still largely unexploited. In order to expand the Blue economy of the Country we need a tight cooperation between research and industry capable of identifying smart solutions. In fact, from one side, we need to develop tools for the sustainable use of marine resources and, from the other side, we can create new occupational opportunities. The marine life offers a plethora of novel opportunities, either in terms of seafood, nutraceutical, and bioactive molecules, which are of extraordinary importance in the field of pharmacology, biomaterials and bioremediation. The development of new technologies and biotechnologies can unlock this underexploited potential with positive impacts in several industrial sectors and with positive impact on national economy. The project EMBRC-UP represents a national strategic implementation of the ERIC EMBRC (European Marine Biological Resource Centre) and is planned to enhance the research potential in the area “Health and Food” in the Sectors of marine resources. The infrastructures proposed follow the model of a distributed infrastructure and are unique in the Italian framework. The equipment, sensors, instrumentation, digitalization and data acquired through this project will allow to boost the Italian research in the exploration and sustainable exploitation of the marine resources, while at the same time, will reinforce the cooperation and exchanges within the Italian JRU, thus increasing the Italian competitiveness in these sectors of strategic importance also in the light of the European Partnership Sustainable Blue Economy that Italy is going to coordinate.</p>	
<p><b>Contact person in ISMAR:</b> <a href="mailto:emmagiovanna.dacunzo@cnr.it">emmagiovanna.dacunzo@cnr.it</a></p>	
<p><b>Partnership:</b></p> <ol style="list-style-type: none"> <li>1. Stazione Zoologica Anton Dohrn di Napoli</li> </ol>	

2. Università Politecnica delle Marche
3. Università degli Studi di Cagliari
4. Agenzia nazionale per le nuove tecnologie, l'energia e lo sviluppo economico sostenibile
5. Istituto Nazionale di Oceanografia e di Geofisica Sperimentale
6. Università degli Studi di Ferrara
7. Università degli Studi di Messina
8. Università di Torino
9. Università degli Studi della Tuscia
10. Consiglio Nazionale delle Ricerche
11. Università degli Studi di Milano-Bicocca
12. Università degli Studi di Napoli Federico II
13. Istituto Superiore per la Protezione e la Ricerca Ambientale

## 10. CNR-ISMAR PROPOSALS AND SUCCESS RATE

In 2023 the Institute has submitted 39 project proposals. The majority were submitted under the Programme Horizon Europe followed by the Tenders, INTERREG and Other Programmes. During the previous year the Institute submitted 48 proposal but it is worth noticing that the submission of many important proposal, characterized by important budget and a precise scheduling of activities, under the PNRR programme has taken time and effort from personnel.

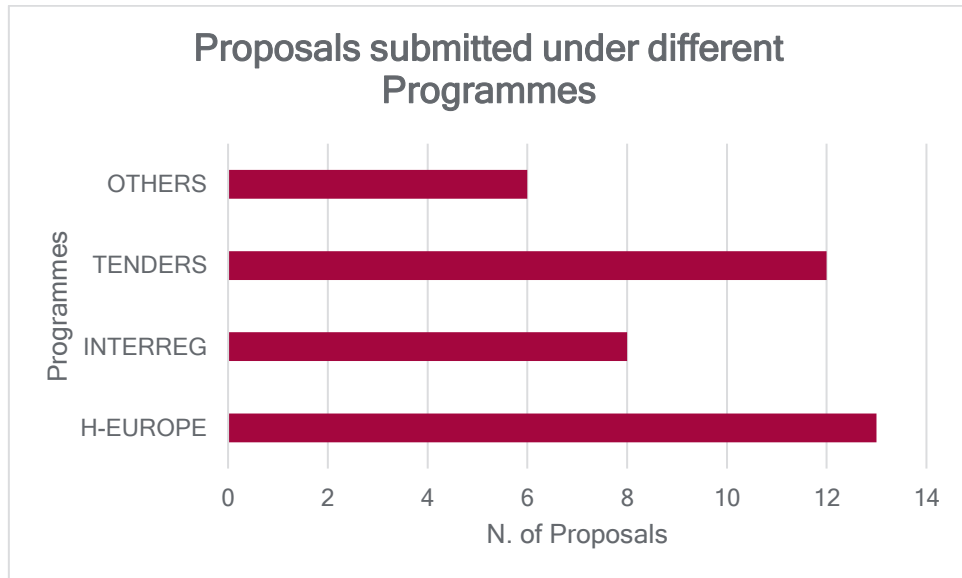


Fig. 20: N. of Proposals submitted in EU/International Programmes

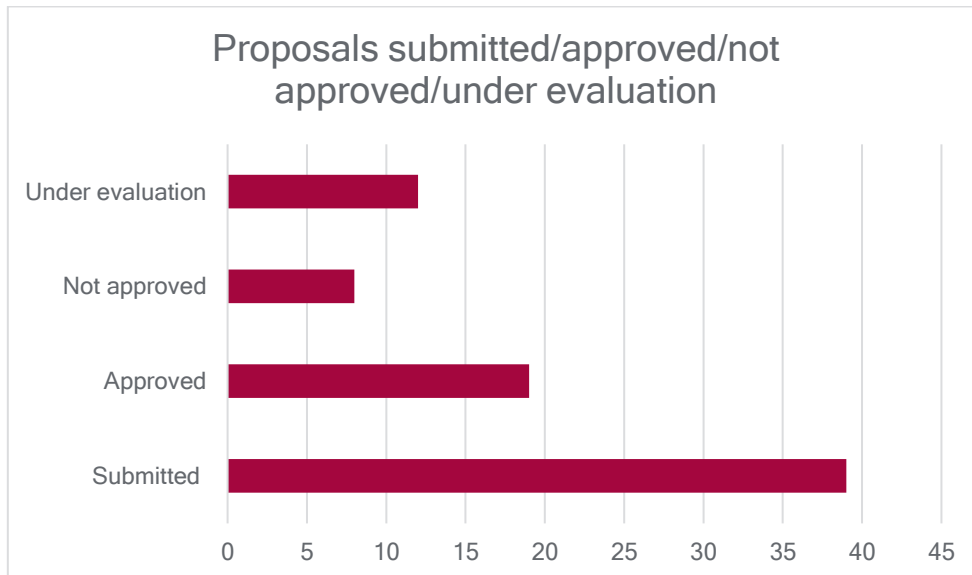


Fig.21: Proposals submitted/ approved/not approved/under evaluation

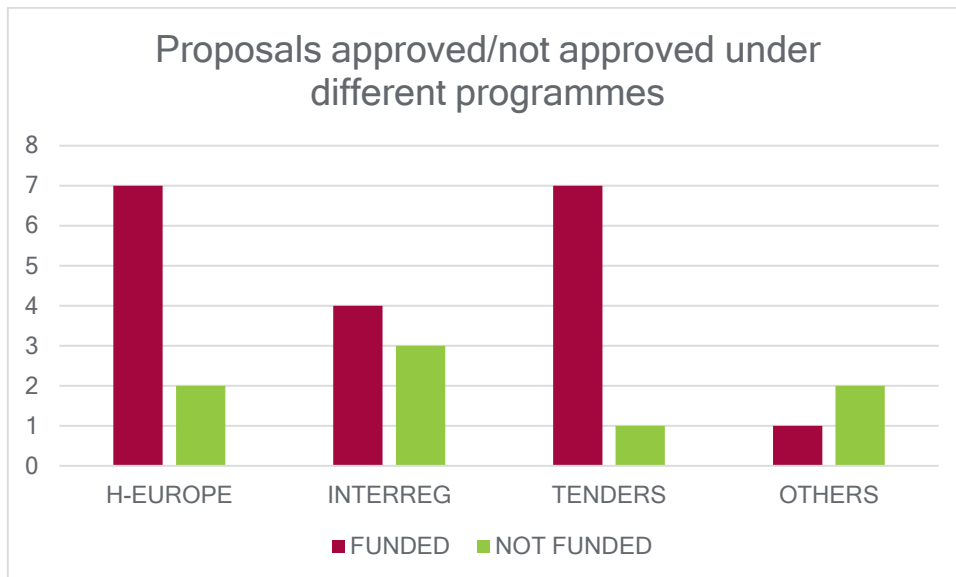


Fig. 22: Proposals approved/not approved under different programmes

The general success rate is 70,37%. The majority of the proposal were under the AP2 of the CNR Project Thematic Areas, followed by AP3 and AP1, and AP4.

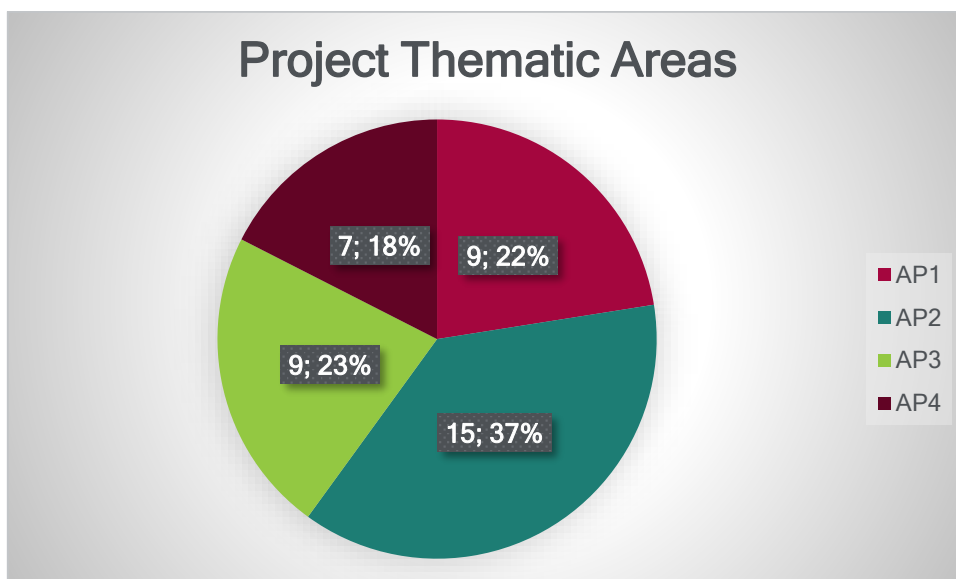


Fig. 22: Project Thematic Areas for the Proposals



## 11. CONCLUSIONS

This report illustrates the progress made by CNR-ISMAR researchers and technologist in the acquisition and management of EU and international projects.

Thanks to the setup of the CNR-ISMAR Project Office, that has worked on a transversal basis supporting researchers and technologists in the proposal, reporting and audit phases, the involvement in the EU and international projects can be considered very satisfactory.

In 2023, 79 projects were implemented, 9 project less respect to the previous year but it must be considered the conclusion of a programme period (INTERREG) and the missing evaluation of some projects already submitted. Furthermore, as stated above, the PNRR programme has involved many personnel with their time and effort. However, it must be stated that a good success rate has been achieved with 39 proposal submitted and funded, meaning the 70,37% of success.

These numbers confirm the effective ability of ISMAR's personnel of being competitive at European and extra-European levels.

It is worth to mention the following positive aspects:

- the participation to Horizon Europe with 16 projects and with 22 in Horizon 2020 that has enlarged the visibility and reliability of the institute;
- the variety of topics which characterize the 8 branches has increased the opportunity to participate to different calls;
- the good network skills that allow CNR-ISMAR to cooperate not only with some of the major Universities and research institutions among the world, but also with players from the industrial sector. Moreover, the Institute of Marine Science has developed a great connection with other Institutes part of the National Research Council, some of them dedicated to marine related research thematic and others active on complementary fields.
- even the participation in Interreg territorial programmes, therefore not really scientific, has meant that the CNR-ISMAR could offer to local authorities data and support to develop decision support systems and provide inputs for governance and the acquisition of 1 project (at the end of the programme period) under the capitalization call proves the good work done;
- the high number of projects funded show that researchers are motivated and have developed a good technical-scientific ability and many of them have improved the management capacity, also thanks to the tools and staff at their disposal;
- the considerable amount of funds from the PNRR programme is a challenge both from a scientific and managerial point of view and the researchers and administrative personnel are doing their best to handle a considerable amount of work.

Concerning the criticalities:

- there is a different rate of engagement among the eight branches in the EU projects although they cooperate in different projects, this is due the dimension of the branch and the type of work carried out. In fact, there are branches more focused on national projects or services (Naples, Trieste and partially Bologna);
- it is necessary to improve the number of administrative staff in order to provide appropriate support to the researcher in submitting proposals as Lead Partner;

- although the number of projects in Horizon Europe is quite good it would be advisable to focus the participation in projects with a relevant budget and a strategic involvement for the Institute due to the heavy work to be carried out for the management;
- while the Institute's participation in European projects is good at the European level, it is not so good at the international level and given that CNR-ISMAR deals with the oceans, it would be appropriate to increase the exchange of experience outside Europe;
- given the high number of projects acquired, it would be desirable to provide management courses for researchers for improving the financial and communication aspects of the projects.
- the huge amount of funds from the PNRR programme permitted the researchers to give the opportunity to purchase instrumentation and work on interesting topics, even if a huge amount of effort is requested both from the scientific and administrative and bureaucratic points of view.

It is important to notice that the Institute's involvement in such a high number of projects has caused increasing audits carried out from the funding authorities. The overall of these checks, related to both the scientific and the reporting issues, have led to a positive result and no major budget cuts so far. The Project Office has played an essential role in order to collect and provide the requested documents and argue all the presented remarks, supporting the scientific personnel. Some recommendations have been received and are being implemented.

# ANNEX 1

## RUNNING PROJECTS



N.	Programme	Acronym	Project Title	Total Budget	ISMAR Budget	Role	Responsible	Project start year	Project end year	Branch	Tematic Area
1	HORIZON EUROPE	NECCTON	New Copernicus capability for trophic ocean networks	9.999.373,00 €	208.000,00 €	PP	Braga	01/01/2023	31/12/2026	Venezia	AP4
2	HORIZON EUROPE	MARCO BOLO	MARine COastal BiODiversity Long-term Observations	8.614.089,00 €	181.188,00 €	PP	Bergami	01/12/2022	30/11/2026	Bologna	AP2
3	HORIZON EUROPE	DANUBE4all	Restoration of the Danube River Basin Waters for Ecosystems and People from Mountains to Coast	8.422.267,50 €	200.000,00 €	PP	Ferrarin	01/01/2023	31/12/2027	Venezia	AP2
4	HORIZON EUROPE	EUROGOSHIP	Developing a Research Infrastructure Concept to Support European Hydrography	2.998.546,00 €	196.763,00 €	PP	Schroeder	01/12/2022	01/12/2025	Venezia	AP4
5	HORIZON EUROPE	DANUBIUS-IP	Implemetantion Phase of DANUBIUS-RI	1.302.655,00 €	56.250,00 €	PP	De Pascalis	01/10/2022	30/09/2025	Venezia	AP3
6	HORIZON EUROPE	MSP4BIO	Improved Science-Based Maritime Spatial Planning to Safeguard and Restore Biodiversity in a coherent European MPA network	3.490.501,00 €	300.875,00 €	PP	Bongiorni	01/08/2022	31/07/2025	Venezia	AP2
7	HORIZON EUROPE	PREP4BLUE	Preparing the Research & Innovation Core for Mission Ocean, Seas & Waters	4.997.690,00 €	37.000,00 €	PP	Falcieri	01/06/2022	31/05/2025	Venezia	AP2
8	HORIZON EUROPE	ACCIBERG	Arctic Cross-Copernicus forecast products for sea Ice and iceBERGs	2.999.315,00 €	90.000,00 €	PP	Storto	01/01/2023	31/12/2026	Roma	AP1

9	HORIZON EUROPE	CROSSGOV	Coherent and cross-compliant ocean governance for delivering the EU Green Deal for European Seas	2.999.997,50 €	236.783,75 €	PP	Barbanti	01/09/2022	31/08/2025	Venezia	AP6
10	HORIZON EUROPE	LandSealot	Land-Sea interface: Let's observe together!	8.437.021,25 €	481.035,00 €	PP	Bellafiore	01/02/2024	31/01/2028	Venezia	AP3
11	HORIZON EUROPE	REDRESS	Restoration of Deep-sea habitats to Rebuild European Seas	8.829.382,00 €	462.500,00 €	PP	Foglini	01/02/2024	31/01/2028	Bologna	AP2
12	HORIZON EUROPE	NERITES	Systematic autonomous remote surveying of underwater cultural heritage monuments and artefacts using non-destructive, cost-effective and transportable digital solutions	3.994.750,00 €	116.250,00 €	PP	Passaro	01/01/2024	31/12/2026	Napoli	AP3
13	HORIZON EUROPE	BlueMissionMed	Lighthouse coordinating and supporting the innovation ecosystem for a Healthy, Pollution free Mediterranean Sea	3.000.097,50 €	81.875,00 €	DTA	Madricardo	01/01/2023	31/12/2025	Venezia	AP2
14	HORIZON EUROPE	INSPIRE	Innovative Solutions for Plastic Free European Rivers	9.983.780,50 €	325.125,00 €	PP	Moschino	30/05/2023	29/05/2027	Venezia	AP3
15	HORIZON EUROPE	FOCCUS	Forecasting and observing the open-to-coastal ocean for Copernicus users	4.999.655,62 €	238.437,00 €	PP	Falcini	01/01/2024	31/12/2026	Roma	AP3

16	HORIZON EUROPE	Blue Nights	A touch of Blue in the EU Research Night for a more Sustainable Use of the Ocean	622.835,00 €	109.850,00 €	LP	Alvisi	01/03/2022	29/02/2024	Bologna	AP2
<b>Sub-total</b>				<b>82.691.858,37 €</b>	<b>3.321.931,75 €</b>						
1	H2020	EUROFLEETS+	An alliance of European marine research infrastructure to meet the evolving needs of the research and industrial communities	9.999.360,00 €	37.317,00 €	PP	Vetrano	01/02/2019	31/10/2023	Lerici	AP2
2	H2020	HYPERNETS	A new hyperspectral radiometer integrated in automated networks of water and land bidirectional reflectance measurements for satellite validation	4.999.923,00 €	346.735,00 €	PP	Brando	01/02/2018	0/04/2023	Roma	AP4
3	H2020	MAELSTROM	Smart technology for Marine Litter SusTainable RemOval and Management	6.809.461,00 €	868.750,00 €	LP	Madricardo	01/01/2021	31/12/2024	Venezia	AP2
4	H2020	RELIANCE	Research Lifecycle Management technologies for Earth Science Communities and Copernicus users in EOSC	1.999.972,00 €	189.125,00 €	PP	Fogliani	01/01/2021	30/06/2023	Bologna	AP7
5	H2020	ENDURUNS	Development and demonstration of a long-endurance sea surveying autonomous unmanned vehicle with	7.908.265,00 €	550.875,00 €	PP	Marini	01/11/2018	31/10/2023	Lerici	AP5

			gliding capability powered by hydrogen fuel cell								
6	H2020	EUROqCHARM	EUROpean quality Controlled Harmonization Assuring Reproducible Monitoring and assessment of plastic pollution	2.045.000,00 €	119.375,00 €	PP	Aliani	01/11/2020	31/10/2023	Lerici	AP1
7	H2020	JERICO-S3	Joint European Research Infrastructure of Coastal Observatories: Science, Service, Sustainability	9.999.933,00 €	471.115,00 €	PP	Mantovani	01/02/2020	31/01/2024	Lerici	AP4
8	H2020	JERICO-DS	Joint European Research Infrastructure of Coastal Observatories - Design Study	2.555.531,00 €	145.500,00 €	PP	Magaldi	01/10/2020	30/09/2023	Lerici	AP4
9	H2020	ENVRI-FAIR	ENV ironmental Research Infrastructures building Fair services Accessible for society, Innovation and Research	18.997.878,00 €	132.187,00 €	PP	De Pascalis	01/01/2019	30/06/2023	Venezia	AP4
10	H2020	CERTO	Copernicus Evolution - Research for Transitional-water Observation	2.843.000,00 €	400.000,00 €	PP	Santoleri	01/01/2020	31/12/2023	Roma	AP4

11	H2020	ATLANTECO	Atlantic Ecosystems Assessment, Forecasting & Sustainability	10.925.660,00 €	253.762,00 €	PP	Bongiorno Nardelli	01/09/2020	30/08/2024	Napoli	AP4
12	H2020	eLTER+	eLTER Advanced Community Project Plus	10.065.009,00 €	41.354,90 €	PP	Bergami	01/02/2020	31/01/2025	Bologna	AP1
13	H2020	MEDIX	Marine Environmental Dynamics and seX-based analysis for climate change adaptation in marine spatial planning	269.003,00 €	244.903,00 €	LP	Gissi	23/12/2020	31/12/2023	Venezia	AP4
14	H2020	EUROSEA	Improving and integrating the European Ocean Observing and Forecasting System	12.642.177,00 €	30.000,00 €	PP	Mantovani	01/11/2019	31/12/2023	Lerici	AP4
15	H2020	SATURN	Solutions At Underwater Radiated Noise	8.965.964,00 €	250.000,00 €	PP	Barbanti	01/02/2021	31/01/2025	Venezia	AP2
16	H2020	NAUTILOS	New Approach to Underwater Technologies for Innovative, Low-cost Ocean obServation	9.048.349,00 €	134.134,00 €	PP	Sparnocchia	01/10/2020	30/09/2024	Trieste	AP4



17	H2020	4S	Satellite Seafloor Survey Suite	2.672.650,00 €	272.175,00 €	PP	Rovere	01/10/2020	31/10/2023	Bologna	AP4
18	H2020	MINKE	Metrology for Integrated Marine Management and Knowledge-Transfer Network	4.994.955,00 €	77.336,00 €	PP	Schroeder	01/04/2021	31/03/2025	Venezia	AP4
19	H2020	BRIDGE-BS	Advancing Black Sea Research and Innovation to Co-Develop Blue Growth within Resilient Ecosystems	8.999.877,50 €	443.750,00 €	PP	Barbanti	01/06/2021	30/11/2025	Venezia	AP2
20	H2020	DOORS	Developing Optimal and Open Research Support for the Black Sea	9.795.350,00 €	350.000,00 €	PP	Bellafiore	01/06/2021	31/05/2025	Venezia	AP2
21	H2020	RIS-INTERNSHIP - EIT Raw Materials	RIS Internship programme: broadening University-Business Cooperation	978.697,00 €	64.458,00 €	PP	Giuliani	01/03/2023	01/03/2024	Bologna	AP2
<b>Sub. Tot.</b>				<b>147.516.014,50 €</b>	<b>5.422.851,90 €</b>						
1	INTERREG IT-HR	ADRIACLIM	Climate change information, monitoring and management tools for adaptation	8.823.415,00 €	390.000,00 €	PP	Ferrarin	01/01/2020	30/06/2023	Venezia	AP1
2	INTERREG IT-HR	STREAM	Strategic development of flood management	9.411.657,00 €	403.529,00 €	PP	Ferrarin	01/04/2020	30/06/2023	Venezia	AP3

3	INTERREG IT-HR	INNOVAMARE	Developing innovative technologies for sustainability of Adriatic Sea	5.555.755,00 €	553.288,00 €	PP	De Pascalis	01/07/2020	30/06/2023	Venezia	AP2
4	INTERREG IT-HR	CREATE	Climate REsponses for the AdriaTic rEgion	599.692,00 €	92.000,00 €	PP	Bonaldo	01/06/2022	30/06/2023	Venezia	AP1
5	INTERREG IT-HR	HATCH	Hadriaticum DATA HUB. Data management, protocols harmonization, preparations of guidelines: cross-border tools for maritime spatial planning decision-makers	566.621,00 €	25.000,00 €	AP	Menegon	01/06/2022	30/06/2023	Venezia	AP2
6	INTERREG-IT-HR	CASCADE	CoAStal and marine waters integrated monitoring systems for ecosystems protection AnD managemEnt	5.817.547,00 €	60.000,00 €	SC	Umgiesser	01/09/2020	31/06/2023	Venezia	AP2
<b>Sub. Tot.</b>				<b>30.774.687,00 €</b>	<b>1.523.817,00 €</b>						
1	INTERREG ITA-SLO	TRECap	Trezze, Tegnue e Ambienti marini dell'alto adriatico: proposte di gestione	590.000,00 €	100.132,00 €	PP	Bergamasco	01/09/2023	30/08/2025	Venezia	AP2
<b>Sub. Tot.</b>				<b>590.000,00 €</b>	<b>100.132,00 €</b>						
1	INTERREG IT-FR	SINAPSI	asSistenza alla Navigazione per l'Accesso ai Porti in Sicurezza	2.188.294,00 €	653.504,00 €	PP	Magaldi	01/04/2019	31/12/2023	Lerici	AP3
<b>Sub. Tot.</b>				<b>2.188.294,00 €</b>	<b>575.025,00 €</b>						
1	TENDER	ESA – CIRCOL	ocean CIRculation from ocean COLOUR observations)	297.092,00 €	247.072,00 €	PC	Ciani	01/11/2019	15/02/2023	Roma	AP4

2	TENDER	ESA-PRISM	Copernicus Contributing Missions access Support Functions and platform (PRISM): - Subcontract SERCO- ISMAR		219.662,78 €	SC	Liberti, Dionisi	01/12/2020	30/04/2023	Roma	AP4
3	TENDER	CMEMS-LOT7_INSTAC	Copernicus Marine: Provision of ocean observation product INSTAC	5.450.000,00 €	100.000,00 €	PP	Mantovani	15/12/2021	31/12/2024	Lerici	AP4
4	TENDER	COP-DU	Copernicus Marine - Digital operations of dissemination service LOT1	4.500.000,00 €	490.000,00 €	PC	Forneris	01/01/2022	30/09/2023	Roma	AP4
5	TENDER	Cop-GLO_RAN_Lot_8	Validation and intercomparison of global reanalysis for ong term changes in the ocean state	90.000,00 €	90.000,00 €	PC	Storto	01/01/2022	31/12/2023	Roma	AP1
6	TENDER	Cop-GLO_RAN_Lot_5	Validate and Intercomparison of mesoscale eddies in Global Reanalyses	90.000,00 €	90.000,00 €	PC	Chunxue Yang	01/01/2022	31/12/2023	Roma	AP1
7	TENDER	EUMETSAT ITT	Marine Training Service in Copernicus Phase	251.040,00 €	51.000,00 €	SC	Brando	15/01/2022	31/12/2023	Roma	AP4
8	TENDER	CMEMS-MOB-TAC	Copernicus 2 - Multi Observations Thematic Assembly Centre -	1.900.000,00 €	180.000,00 €	PP	Bongiorno Nardelli	01/12/2021	31/12/2024	Napoli	AP4
9	TENDER	CMEMS-OC-TAC	Copernicus 2 - Ocean Colour Thematic Assembly Centre	2.210.000,00 €	1.340.000,00 €	PC	Brando	01/01/2022	31/12/2024	Roma	AP4
10	TENDER	CAREHeat	DeteCtion and threAts of maRinE Heat waves	495.804,00€	149.880,00	PC	Santoleri/Organe lli/Landolfi	01/02/2021	30/09/2024	Roma	AP4
11	TENDER	ESA_COLOR	CDOM-proxy retrievals from aeOLus ObseRvations	146.881,00 €	48.580,00	PC	Dionisi	15/11/2021	13/04/2023	Roma	AP4

12	TENDER	ESA-HARMONY-EXPRO	Harmony Mission Performance and Requirement Consolidation Activity for Ocean Applications	499.744,00 €	58.000,00	SC	Liberti	15/11/2021	30/06/2023	Roma	AP4
13	TENDER	CMEMS-DU	COPERNICUS MARINE – Digital Continuity of the Dissemination Unit Operations	1.550.000,00€	538.690,00 €	PC	Forneris	01/01/2022	31/03/2024	Roma	AP4
14	TENDER	COPERNICUS MARINE OCEAN COLOUR THEMATIC ASSEMBLY CENTER LOT 2	COPERNICUS MARINE - PRODUCTION PROVISION OF OCEAN OBSERVATION PRODUCTS THEMATIC ASSEMBLY CENTRE OC TAC_LOT2	3.645.461,00 €	1.110.000,00 €	PC	Brando	01/01/2022	31/12/2024	Roma	AP4
15	TENDER	COPERNICUS MARINE OCEAN COLOUR THEMATIC ASSEMBLY CENTER LOT 3	COPERNICUS MARINE - PRODUCTION PROVISION OF OCEAN OBSERVATION PRODUCTS THEMATIC ASSEMBLY CENTRE (TAC)- SST TAC LOT3	2.096.718,00€	524.421,00 €	PC	Pisano	01/01/2022	31/12/2024	Roma	AP4
16	TENDER	C3S2_520	Copernicus Climate Change Service: Technical Solutions for C3S2_520: Quality Assurance for Datasets in the Climate Data Store	5.500.000,00 €	1.416.000,00 €	PC	Yang/Santoleri	01/02/2022	31/12/2026	Roma	AP1
17	TENDER	ERGO2	Advancing ocean data assimilation methodology for climate applications	1.200.000,00 €	215.000,00 €	PP	Storto	01/07/2022	30/06/2025	Roma	AP4
18	TENDER	ESA-SCOPE	Satellite-based observations of Carbon in the Ocean: Pools, fluxes and Exchanges	950.000,00 €	50.000,00 €	PP	Organelli	11/12/2023	10/12/2025	Roma	AP4

19	TENDER	ESA – 4DMED-SEA	4-Dimensional data-driven reconstruction of the Mediterranean ecosystem for the study of biophysical interactions and their impact assessment	700.000,00 €	140.000,00 €	PC	Bongiorno Nardelli	22/06/2023	21/06/2025	Napoli	AP4
20	Tender	SLBC CCI+	SEA LEVEL BUDGET CLOSURE	77.000,00 €	77.000,00 €	SC	Storto	07/04/2023	31/03/2026	Roma	AP4
21	TENDER	WAMBOR	evaluation of the Water Mass Balance in Ocean Reanalyses with space geodetic measurements	150.000,00 €	52.000,00 €	PP	Storto	01/07/2022	30/06/2024	Roma	AP4
<b>Sub. Tot.</b>				<b>28.259.740,00 €</b>	<b>6.967.306,53 €</b>						
1	MIUR-JPIOCEAN	FACTS - MIUR JPI OCEANS	Fluxes and Fate of (Small) Microplastics in Northern European Waters	3.747.000,00 €	100.905,00 €	PP	Aliani	01/09/2020	31/08/2023	Lerici	AP1
2	MIUR JPI OCEANS	ORCHESTRA	ecOsysteM Responses to Constant offshorE Sound specTRA	2.000.000,00 €	345.048,00 €	PP	Bergamasco	01/04/2023		Venezia	AP3
3	ONR	ZIFIO (ONR)	Vital Rates Cuvier, beaked whales: A multi-regional comparative assessment	300.000,00 €	20.000,00 €	PP	Tenan	01/07/2021	29/09/2023	Venezia	AP6
4	ERASMUS+	BlueS_Med	Supporting the development of socially-inclusive Blue Challenges in schools in the Mediterranean sea-basin	448.169,00 €	49.807,00 €	PP	Alvisi	01/09/2020	31/08/2023	Bologna	AP2
5	LIFE	LIFE-DREAM	Deep REef restoration And litter removal in the Mediterranean sea	5.308.472,00 €	1.140.739,00 €	LP	Foglini	01/09/2022	31/08/2027	Bologna	AP2

6	EMFAF	REMAP	Reviewing and Evaluating the Monitoring and Assessment of Maritime Spatial Planning	1.917.103,00 €	221.828,00 €	AP	Menegon	01/11/2022	31/10/2025	Venezia	AP2
7	EMFAF	MSP-GREEN	Maritime Spatial Planning as enabler of the European Green Deal	1.933.548,00 €	195.382,00 €	AP	Ramieri	01/11/2022	30/10/2024	Venezia	AP2
8	EMFAF	REGINA-MSP	Regions to boost National Maritime Spatial Planning	1.957.909,00 €	140.272,00 €	AP	Ramieri	01/11/2022	30/10/2024	Venezia	AP2
9	JRC	AAOT	AAOT (Acqua Alta Oceanographic Tower) services JRC/IPR/2022/NP/0855	120.000,00 €	120.000,00 €	LP	Pomaro	12/07/2022	11/07/2027	Venezia	AP4
10	Biodiversa	PETRI-MED	Plankton biodiversiTy Through Remote sensing and omcs in the MEDiterranean sea	1.400.000,00 €	249.000,00 €	PP	Organelli	01/04/2023	30/04/2026	Roma	AP4
11	EU4Ocean	BlueMinds4Teachers	Fostering Ocean Literacy in Education for Sustainable Development	40.000,00 €	12.800,00 €	PP	Alvisi	30/11/2023	30/11/2024	Bologna	AP2
12	Bilateral	CASPIAN-AZERBAIJAN	Mud Volcanism in the Caspian Sea Region: Deciphering the interplay between tectonics and mud/fluid flow through onshore correlations	12.000,00 €	12.000,00 €	-	Polonia	01/01/2021	15/06/2023	Bologna	AP2

13	ONR	3D Pathways II	Multiplatform observations (Lagrangian, microstructure and microplastic) for the study of vertical velocities and subduction	145.347,00 €	145.347,00 €	LP	Berta	01/12/2021	29/02/2025	Lerici	AP1
<b>Sub. Tot.</b>				<b>19.329.548,00€</b>	<b>2.753.128,00 €</b>						
<b>Tot. projects</b>				<b>311.350.141,87 €</b>	<b>20.664.192,18 €</b>						
1	PNRR	ITINERIS	Italian Integrated Environmental Research Infrastructures System	155.208.808,81 €	25.567.889,84 €	LP	Santoleri/Barbieri	01/11/2022	30/04/2025	Venezia	
2	PNRR	HPC	National Centre for HPC, Big Data and Quantum Computing	325.938.979,26 €	600.000,00 €	PP	Borella di Torre	01/09/2022	31/08/2025	Venezia	
3	PNRR	NBFC	National Biodiversity Future Center	328.217.375,39 €	2.200.000,00 €	PP	D'Acunzo	01/09/2022	31/08/2025	Venezia	
4	PNRR	ECOSISTER	Ecosystem for Sustainable Transition in Emilia-Romagna	9.067.434,00 €	230.420,00 €	PP	Cogliandro	01/10/2022	30/09/2025	Bologna	
5	PNRR	RAISE	Robotics and Ai for Socio-Economic Empowerment	117.646.645,14 €	870.055,28 €	PP	Barbieri	01/10/2022	30/09/2025	Lerici	
6	PNRR	EMBRC-UP	EMBRC: Unlocking the Potential for Health and Food from the seas	20.495.193,74 €	152.000,00 €	PP	D'Acunzo	01/09/2022	28/02/2025	Venezia	
<b>Sub. Tot.</b>				<b>956.574.436,34 €</b>	<b>29.620.365,12 €</b>						
<b>GENERAL TOTAL</b>				<b>1.267.924.578,21 €</b>	<b>50.284.557,30 €</b>						