BLUEMED
PRELIMINARY IMPLEMENTATION PLAN
Horizon 2020 – BG-13-2016
Grant Agreement 727453

ANNEX 1
BLUEMED FICHES FOR THE 13 PRIORITIES
June 2020
BLUEMED

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June 2020

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Turkey: Baris Salihoglu and Mustafa Yucel
ANNEX 1: BLUEMED FICHES FOR THE 13 PRIORITIES

FICHE 1
UNDERSTANDING POLLUTION IMPACTS, MITIGATION AND REMEDIATION IN THE MEDITERRANEAN SEA
CO-CHAMPION COUNTRIES: ITALY & TUNISIA

Background

Detect and understand pollution impact is the basic for the set-up of a strong research plan to support the proper management and improvement of the marine environment and connected activities. However, development and implementation of strategies for prevention, mitigation and remediation of environmental pollutants is becoming a major challenge for the Mediterranean countries. In this context, innovative technologies for sustainable remediation is a potentially important priority.

Either from land or marine activities, the priority actually addresses an acute issue in the Med, where coastal population is constantly growing: unless adequately studied and innovatively tackled, the ecological and social impacts of marine pollution will affect economic development adversely across the Basin.

Understanding the effect of pollution and the way to combat the various forms it takes (including plastics, emerging chemical pollutants and noise) remains a challenge.

Deploying available knowledge to fill gaps in understanding how the Mediterranean Sea peculiar ecosystems function to better know the fate of pollutants can rapidly enable to take tailored measurements to protect it, develop new technologies and enhance the economy of the region.

This calls for focused research initiatives as highlighted by actions A2.1, A2.5 and A2.6 of the SRIA while linking with monitoring/mitigation technology actions. This should also bring concrete impact in terms of economic development, jobs, well-being of citizens, being clearly related to maritime activities (tourism, seafood quality...).

While responding to the growing attention devoted to macro and microplastics, and supporting the BLUEMED Pilot on plastic-free, healthy Mediterranean Sea, the priority can add value in relation to policy frameworks developed at the EU level (e.g. the MSFD, the EU Plastic Strategy) and international level (UNEP/MAP, the UN-Decade for Ocean Science and the G7&G20 Groups).

Mapping and discussing implementation options and potentials of this priority

Recent and ongoing relevant projects

<table>
<thead>
<tr>
<th>PROJECT</th>
<th>DESCRIPTION</th>
<th>OBJETIVES</th>
</tr>
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<tbody>
<tr>
<td><strong>AQUA-LIT</strong></td>
<td>Preventive Measures for Averting the Discarding of Litter in the Marine Environment from the Aquaculture Industry</td>
<td>• Prevent marine littering from aquaculture activities. • Have better monitoring schemes in place. • Remove and recycle litter from the aquaculture facilities both before litter enters the sea and for litter already existing at sea.</td>
</tr>
<tr>
<td><em>SRIA Action: D2.4</em></td>
<td>Call: EASME/EMFF/2017/1.2.1.12 - Sustainable Blue Economy</td>
<td>EU Contribution: 469,800.00€</td>
</tr>
<tr>
<td></td>
<td>Duration: 01/01/2019 - 31/12/2020</td>
<td>Website: <a href="https://aqua-lit.eu/">https://aqua-lit.eu/</a></td>
</tr>
<tr>
<td><strong>PLASTIC BUSTERS MPAS</strong></td>
<td>preserving biodiversity from plastics in Mediterranean Marine Protected Areas”</td>
<td>• Contribute to maintaining biodiversity and preserving natural ecosystems in pelagic and coastal MPAs, by defining and implementing a harmonized approach against ML.</td>
</tr>
<tr>
<td></td>
<td>Call: Interreg MED Programme 2014–2020</td>
<td>EU Contribution: 5 Mil</td>
</tr>
<tr>
<td></td>
<td>Duration: 01/02/2018–31/01/2022</td>
<td>Website: <a href="https://plasticbustersmpas.interreg-med.eu/">https://plasticbustersmpas.interreg-med.eu/</a></td>
</tr>
</tbody>
</table>
| **CLAIM** | **Call:** HORIZON 2020 – Blue green innovation for clean coasts and seas  
**EU Contribution:** 5.654.786 €  
**Website:** http://www.claim-h2020project.eu/ | **EPHEMARE** | **Call:** 2014 JPI Oceans Pilot  
**EU Contribution:** 3.154.000 €  
**Website:** http://www.jpi-oceans.eu/ephemare | **SMS** | **Call:** FP7-OCEAN–2013  
**EU Contribution:** 4.144.263 €  
**Website:** http://www.project-sms.eu/ |
|---|---|---|---|---|
| **Cleaning litter by developing & applying innovative methods in European seas** | **• Develop innovative technologies able to reduce the amount and impact of plastic pollution on the ecosystem-based services of the Mediterranean and Baltic Seas.**  
**• Set the basis for operational forecasting of the impacts of marine plastic litter pollution on ecosystem services.**  
**• Develop new business model to enhance the economic feasibility for upscaling the innovative cleaning technologies.**  
**• Change policy and public perceptions and provide advice for management decision-making.** | **Ecotoxicological effects of microplastics in marine ecosystems** | **• Investigate the uptake, tissue distribution and final fate of microplastics in organisms’ representative of pelagic and benthic ecosystems.**  
**• Investigate the toxic effects of microplastics on marine organisms and the potential role of microplastics as vectors of marine pollutants and their trophic transfer in marine food webs.**  
**• Investigate detrimental effects at molecular, cellular, physiological and organism levels.**  
**• Assist public and private stakeholders with the scientific basis for the development and compliance with general environmental regulations concerning chemicals used in plastic production (WFD, MSFD, environmental quality standards, REACH, Directive 2002/72/ECEU and subsequent amendments, Regulation No 10/2011).** | **Sensing toxicants in Marine waters makes Sense using biosensors** | **Deliver a novel automated networked system that will enable real-time in situ monitoring of marine water chemical and ecological status in coastal areas by the detection of a series of contaminants regulated by the MSFD.** |
<table>
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<tr>
<th>Project</th>
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<th>Duration</th>
<th>EU Contribution</th>
<th>Website</th>
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<tbody>
<tr>
<td><strong>SEA CHANGE</strong>&lt;br&gt;Our ocean/Our health</td>
<td>Call: H2020-BG-2014-1&lt;br&gt;<strong>Duration:</strong> 01/03/2015 – 28/02/2018</td>
<td><strong>EU Contribution:</strong> 3,494,876 €</td>
<td>Website: <a href="https://www.seachangeproject.eu/">https://www.seachangeproject.eu/</a></td>
<td>• Compile an in-depth review of the links between Seas and Ocean and Human health based on latest research knowledge outputs. &lt;br&gt;• Help to design and implement successful mobilization activities focused on education, community, governance actors and directly targeted at citizens. &lt;br&gt;• Ensure Knowledge exchange with transatlantic partners to bring about a global approach to protecting the planet’s shared seas and ocean.</td>
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<tr>
<td><strong>VECTORS</strong>&lt;br&gt;VECTORS of Change in European Marine Ecosystems and their Environmental and Socio-Economic Impacts</td>
<td>Call: FP7-OCEAN-2010&lt;br&gt;<strong>Duration:</strong> 01/02/2011-31/01/2015</td>
<td><strong>EU Contribution:</strong> 12,484,835 €</td>
<td>Website: <a href="https://www.marine-vectors.eu/">https://www.marine-vectors.eu/</a></td>
<td>• Elucidate the drivers, pressures and vectors that cause change in marine life and their impacts on ecosystem structures and functioning, and on the economics of associated marine sectors and society. &lt;br&gt;• Provide solutions and tools for relevant stakeholders and policymakers.</td>
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<tr>
<td><strong>TOPIOS</strong>&lt;br&gt;Tracking Of Plastic In Our Seas</td>
<td>Call: ERC-2016-STG&lt;br&gt;<strong>Duration:</strong> 01/04/2017-31/03/2022</td>
<td><strong>EU Contribution:</strong> 1,484,760 €</td>
<td>Website: <a href="http://topios.org/">http://topios.org/</a></td>
<td>• Creating a novel comprehensive modeling framework that tracks plastic movement through the ocean, simulating fragmentation, sinking, beaching, wave-mixing and ingestion by biota. &lt;br&gt;• Inform policymakers, the public and engineers on where and how to best invest resources in mitigating the problem of plastic in our ocean.</td>
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<tr>
<td><strong>EMBLAS-PLUS</strong>&lt;br&gt;“improving environmental monitoring in the black sea: selected measures”</td>
<td>Call: European Union&lt;br&gt;<strong>Duration:</strong> 2019–2020</td>
<td><strong>EU Contribution:</strong> 1,55 mil €</td>
<td>Website: <a href="http://emblasproject.org">http://emblasproject.org</a></td>
<td>• Improve protection of the Black Sea environment. &lt;br&gt;• Improve availability and sharing of marine environmental data from the national and joint regional monitoring programmes aligned with the MSFD and WFD principles and the Black Sea Integrated monitoring and Assessment Programme (BSiMAP). &lt;br&gt;• Support joint actions to reduce river and marine litter.</td>
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<tr>
<td>COMMON SENSE</td>
<td>Call: FP7- OCEAN-2013</td>
<td>EU Contribution: 4,664,072 €</td>
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<td><strong>Call:</strong> FP7-OCEAN-2013</td>
<td><strong>EU Contribution:</strong> 4,664,072 €</td>
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<td><strong>Duration:</strong> 01/11/2013 – 28/02/2017</td>
<td><strong>Website:</strong> wwwcommonsenseproject.eu/media/sensor-profiles</td>
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<tr>
<td><strong>• Developing innovative sensors in order to increasing the availability of standardised data on:</strong> eutrophication; concentrations of heavy metals; micro plastic fraction within marine litter; underwater noise; and other parameters such as temperature, pH, pCO2 and pressure.</td>
<td><strong>• Provide key tool for EU Member States in meeting their MSFD requirements and achieving Good Environmental Status (GES) of their marine territories.</strong></td>
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<thead>
<tr>
<th>IMPRESSIVE</th>
<th>Call: H2020- SPACE-2018</th>
<th>EU Contribution: 1,913,701,25 €</th>
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<tbody>
<tr>
<td><strong>Call:</strong> H2020- SPACE-2018</td>
<td><strong>EU Contribution:</strong> 1,913,701,25 €</td>
<td></td>
</tr>
<tr>
<td><strong>Duration:</strong> 01/12/2018 – 31/05/2021</td>
<td><strong>Website:</strong> <a href="http://impressive-project.eu/about-impressive/">http://impressive-project.eu/about-impressive/</a></td>
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<tr>
<td><strong>Developing of remotely operated sophisticated tools integrated with very high resolution models and EO products (satellite, ASV, UAV) for pollution control in harbors and coastal areas; a graduated system of alert that will help to cope with and as quickly as possible.</strong></td>
<td><strong>Restoration of different degraded marine habitats, with the aim of:</strong> 1) Assessing the potential of different technologies and approaches. 2) Quantifying the returns in terms of ecosystems services and their socio-economic impacts. 3) Defining the legal-policy and governance frameworks needed to optimize the effectiveness of the different restoration approaches.</td>
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<td><strong>Call:</strong> H2020- SC5-2015-two-stage</td>
<td><strong>EU Contribution:</strong> 6,651,118,20 €</td>
<td></td>
</tr>
<tr>
<td><strong>Duration:</strong> 01/06/2016 – 31/05/2020</td>
<td><strong>Website:</strong> <a href="http://www.merces-project.eu/">http://www.merces-project.eu/</a></td>
<td></td>
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<tr>
<td><strong>Restoration of different degraded marine habitats, with the aim of:</strong> 1) Assessing the potential of different technologies and approaches. 2) Quantifying the returns in terms of ecosystems services and their socio-economic impacts. 3) Defining the legal-policy and governance frameworks needed to optimize the effectiveness of the different restoration approaches.</td>
<td><strong>Assessing the impacts of environmental crime as well as effective and feasible policy options for combating it from an interdisciplinary perspective, with a focus on the EU.</strong></td>
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<tr>
<th>EFFACE</th>
<th>Call: FP7- SSH-2012-2</th>
<th>EU Contribution: 2,318,624,70 €</th>
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<tbody>
<tr>
<td><strong>Call:</strong> FP7- SSH-2012-2</td>
<td><strong>EU Contribution:</strong> 2,318,624,70 €</td>
<td></td>
</tr>
<tr>
<td><strong>Duration:</strong> 01/12/2012 – 31/03/2016</td>
<td><strong>Website:</strong> <a href="https://efface.eu/">https://efface.eu/</a></td>
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<td><strong>Assessing the impacts of environmental crime as well as effective and feasible policy options for combating it from an interdisciplinary perspective, with a focus on the EU.</strong></td>
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<td><strong>Call:</strong> H2020-NMBP-BIO-CN-2018</td>
<td><strong>EU Contribution:</strong> 4,964,168,25€</td>
<td></td>
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<tr>
<td><strong>Duration:</strong> March 2019 – Feb 2023</td>
<td><strong>Website:</strong> <a href="https://cordis.europa.eu/project/rcn/221215/factsheet/en">https://cordis.europa.eu/project/rcn/221215/factsheet/en</a></td>
<td></td>
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<tr>
<td><strong>GREENER proposes the development of innovative, efficient and low-cost hybrid solutions that integrate bioremediation technologies with bio–electrochemical systems (BES). The project will investigate the synergetic effect of different bioremediation strategies and demonstrate effective pollutants removal in water and soil/sediments, while generating side products of interest, such as bioelectricity.</strong></td>
<td><strong>GREENER proposes the development of innovative, efficient and low-cost hybrid solutions that integrate bioremediation technologies with bio–electrochemical systems (BES). The project will investigate the synergetic effect of different bioremediation strategies and demonstrate effective pollutants removal in water and soil/sediments, while generating side products of interest, such as bioelectricity.</strong></td>
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### ECLAIRE
**Effects of Climate Change on Air Pollution Impacts and Response Strategies for European Ecosystems**

**Call:** FP7-ENV-2011  
**Duration:** 01/10/2011 – 30/09/2015  
**EU Contribution:** 6,997,001 €  
**Website:** [http://www.eclaire-fp7.eu/](http://www.eclaire-fp7.eu/)

- Investigates the ways in which climate change alters the threat of air pollution on European land ecosystems including soils.
- Establish new flux, concentration and dose-response relationships, as a basis to inform future European policies.

### Programmes and initiatives of relevance, including research and data infrastructures

#### INTERNATIONAL STRATEGIES AND PROGRAMMES

- JERICO Research Infrastructure: [http://www.jerico-ri.eu/](http://www.jerico-ri.eu/)
- EMODnet for National, Regional or Local Government Agencies.
- UfM Working Group on Blue Economy: [https://ufmsecretariat.org/ufm-working-group-blue-economy/](https://ufmsecretariat.org/ufm-working-group-blue-economy/)
- Any other relevant UfM Ministerial (transport, energy, sustainable urban development, etc.), related strategies, programmes and projects: [https://ufmsecretariat.org/what-we-do/water-environment/](https://ufmsecretariat.org/what-we-do/water-environment/)
## INTERNATIONAL PROTOCOLS AND INITIATIVES

Seven Protocols addressing specific aspects of Mediterranean environmental conservation complete the MAP legal framework:


- **Sustainable Development Goals Agenda (UN, 2015)**: and in particular SDG14 (“Life below water”) (https://sustainabledevelopment.un.org/sdg14


## EUROPEAN STRATEGIES AND PROGRAMMES


RELEVANT INDIRECT MEASURES

- **Closing the loop – An EU action plan for the Circular Economy**: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52015DC0614

**Target sectors and groups**

A number of specific sectors represent natural assets of collaboration at pan-Mediterranean scale in the field of this key topic. In particular:

- Aquaculture and potential impact on pollution and the health of the marine ecosystem.
- Coastal tourism and effects on pollution at small to large-scale.
- Shipping and pollution impacts on all the environmental matrices.
- Ports and effects on pollution at small to large-scale.
- Seabed mining (sand borrowing sites on continental shelves, and deep see mining for nodules and ore deposits) and impact on seawater and sediments in terms of widespread impact of pollutants and transfer to the food web.
- Health of the ecosystem.
- Stakeholder’s engagement for assessment of contamination impact and searching/applying mitigation/remediation solutions.
- Re-suspension of polluted sediments (in response to major meteorological or geological events) and their transport to areas originally not impacted by pollution.
- Coastal landfills that may become exposed and leak pollutants into the coastal seas.
- Water column pollution events and their possible impact on mussel cultivations and other aquaculture sites.
- Oil spills from offshore platforms, pipelines and tankers.
- Plastic with particular reference to single use plastic ending up in the ocean.
• Need to improve our collective ability to measure substances that are in some cases very difficult (and expensive) to detect; develop a network of labs (in an inter-calibrated and comparable way).

• Analysis of chemicals leaked from munitions deployed at sea and coordinated approaches to mitigation and remediation.

• Investigation of effects of shipwrecks abandoned at the sea bottom (and, specifically, effects of chemical leakage and/or release) and analysis of their effects on the surrounding marine ecosystem.

• Emerging contaminants (pharmaceuticals, hormones, etc.) and effects on the ecosystem and fishery compartment. Analytical intercalibration of laboratory hubs and approaches to chemical dynamics of metabolite.

• Effects of mixtures of contaminants and role played by antagonistic and synergistic effects on the ecosystem and trophic web.

• Noise.

• Light pollution (from traffic and also from coastal urban areas).

• Coastal Urban development:
  o Wastewater treatment;
  o Efficiency of waste management;
  o Circular economy in cities.

• Impact of rivers on pollution at sea; development of good practices from prevention and control of land based activities; good practices examples are the Rivers Contract (Italy, Ministry of Environment) and the Contrat de rivière (France).

Technology platforms (European, national):

Maritime Clusters
• European Network of Maritime Clusters (ENMC) (https://enmc.eu/about-us/).
• Pole Mer Mediterranee (https://www.polemermediterranee.com/).

Intergovernmental bodies:
• Union for Mediterranean (UfM) (https://ufmsecretariat.org/).
• EC-DG Mare (https://ec.europa.eu/maritimeaffairs/home_en).
• UNEP/MAP (http://web.unep.org/unepmap/) and its Regional Centers.
• IOC-UNESCO (http://msp.ioc-unesco.org/).
• Union for Mediterranean (UfM) (https://ufmsecretariat.org/).
• Organisation for Economic Co-operation and Development (OECD) (http://www.oecd.org/science/).
Research bodies, businesses and local authorities

- European Environmental Agency (https://www.eea.europa.eu/).

Thematic platform:


Associations:

WWF, GREENPEACES, OCEANA, FEMISE, etc.

Funding options and agencies

European funding:

- Interreg Mediterranean Programme (https://interreg-med.eu/).
- JERICO (http://www.jerico-ri.eu/).
- JPI-O action: Science4GES “Science for Good Environmental Status”.
- European Regional Development Fund (ERDF).
- Cohesion Fund (CF).
### International funding:
- Global Environment Fund (GEF) (www.globalenvironmentfund.com).

### Activities to promote the SRIA Implementation

<table>
<thead>
<tr>
<th>Examples of activities</th>
<th>Content and objective</th>
<th>How and timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Networking and engagement of economic sectors and national Blue Growth communities</td>
<td>Participation in the Maritime Clusters. Participation in the Research organizations (e.g. JERICO).</td>
<td>How: Thematic workshops for stakeholders. When: At least one per year.</td>
</tr>
<tr>
<td>Alignment and coordination</td>
<td>CSO BLUEMED Working Group. Alignment and coordination with coherent EUSAIR initiatives. Alignment and coordination with coherent UNESCO/IOC Initiatives. Alignment and coordination with UNEP/MAP initiative dedicated to ecotoxicology and marine pollution.</td>
<td>How: Meetings. When: At least one each 6 months.</td>
</tr>
<tr>
<td>Promotion and possibly implementation of actions coordinated and jointly undertaken by different countries, with a “variable geometry” approach</td>
<td>Research organizations</td>
<td>How: Development of strategies and plans for pollution monitoring, data exchange, mitigation and remediation of impacts. When: To be assessed.</td>
</tr>
<tr>
<td>Identifies priorities for prevention and remediation action plan</td>
<td>Addressing key GAPs and developing a framework that looks also at land-sea interaction. Focus on policy aspects.</td>
<td>How: Working groups. When: At least one each 6 months.</td>
</tr>
<tr>
<td>Start-Up actions</td>
<td>Blue Labs EU funding calls Research organizations</td>
<td>How: Calls. When: Each year.</td>
</tr>
<tr>
<td>Assessment and promotion of the capitalisation and valorisation under the BLUEMED umbrella of ongoing and future projects</td>
<td>CSO BLUEMED Working Group EU Advisory Groups Research organizations</td>
<td>How: To be defined. One ongoing action is the BLUEMED Pilot: Towards Plastic-free, Healthy Mediterranean Sea. When: To be assessed.</td>
</tr>
<tr>
<td>Lobbying actions</td>
<td></td>
<td>How:</td>
</tr>
<tr>
<td>Training and capacity building initiatives</td>
<td>Research organizations</td>
<td>How: Courses, training days, workshops.</td>
</tr>
<tr>
<td>Implementation Working Groups (IWG) on specific sectors</td>
<td>CSO BLUEMED Working Group EU Advisory Groups Research organizations</td>
<td>How:</td>
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ANNEX 1: BLUEMED FICHES FOR THE 13 PRIORITIES

FICHE 2
SUPPORT SOLUTIONS FOR SUSTAINABLE PRODUCTION AND CONSUMPTION OF FOOD FROM THE SEA
CO-CHAMPION COUNTRIES: SPAIN & EGYPT

Background

This priority, together with the related goals, fully supports the economic driver “Food” being at the same time one of the shared Mediterranean cultural root. It also promotes some improvements in the fisheries and aquaculture sectors with the aim to make these economic activities more environmentally and economically sustainable.

Overfishing represents a threat for marine ecosystem biodiversity, and present food provision levels cannot be considered sustainable. Pragmatic actions are thus needed to preserve marine living resources while guaranteeing employment opportunities and even fostering new jobs creation.

This can be achieved by developing innovative aquaculture strategies, technologies and practices, and by supporting and managing the transition from industrial overexploitation of marine resources to the adoption of sustainable fishing strategies.

Securing high quality and safe food supplies is an obvious key goal for all nations, particularly taking into account the way climate-induced extreme weather events, pollution and other natural and anthropogenic phenomena, are already affecting food production in the Mediterranean region.

The importance of the concept of Sustainable Food Consumption nowadays related to the increase of the demands of food, e.g. tourism, and the increase of food waste, implies a new perspective to be consider due to new practices to be applied, considering the application of better society behaviors or the establishment of better consumer practices.

It is crucial to invest in research and innovation in order to safely exploit marine resources for long-term, resilient and secure food production. It is a priority to work at Mediterranean level because fish stocks and aquaculture species/practices are mostly specific of the Med. In alignment with the GFCM and EATiP agendas, the goal supports the implementation of the CFP, the Food Strategy 2030, and relevant UN-SDG.

Mapping and discussing implementation options and potentials of this priority

Recent and ongoing relevant projects

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<td>Call: EASME/EMFF/2017/1.2.1.12 - Sustainable Blue Economy</td>
<td>• Prevent marine littering from aquaculture activities; • Have better monitoring schemes in place; • Remove and recycle litter from the aquaculture facilities both before litter enters the sea and for litter already existing at sea.</td>
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<td>PLASTIC BUSTERS MPAS</td>
<td><a href="https://plasticbustersmpas.interreg-med.eu/">https://plasticbustersmpas.interreg-med.eu/</a></td>
<td>Contribute to maintaining biodiversity and preserving natural ecosystems in pelagic and coastal MPAs, by defining and implementing a harmonized approach against ML.</td>
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<tr>
<td><strong>Aquaculture infrastructures for excellence in European fish research towards 2020</strong> (AQUAEXCEL2020)</td>
<td>H2020-INFRAIA-2014-2015 – Research and innovation action</td>
<td>9,708,867€</td>
<td><a href="http://www.aquaexcel2020.eu/">http://www.aquaexcel2020.eu/</a></td>
<td>The project integrates a large group of leading European aquaculture research facilities and aims to advance aquaculture research and innovation in Europe. One of its key aspects will be to provide subsidised access to top-class aquaculture facilities, as well as numerous highly pertinent services for researchers from academia and industry.</td>
</tr>
<tr>
<td><strong>CONFISH</strong></td>
<td>INTERREG</td>
<td>560,000€</td>
<td><a href="https://confish.interreg-med.eu/">https://confish.interreg-med.eu/</a></td>
<td>The project aims to design a Mediterranean-based network that relies on robust social framework and innovative evolutionary science for future implementation of bottom up approach into fishery management. The overarching goal is to promote knowledge transfer between evolutionary scientists and local fishery stakeholders towards sustainable fisheries management.</td>
</tr>
<tr>
<td><strong>FishMPABlue2</strong></td>
<td>INTERREG Programme MED 2014-2020</td>
<td>2,975,000.00€</td>
<td><a href="https://fishmpablue-2.interreg-med.eu/">https://fishmpablue-2.interreg-med.eu/</a></td>
<td>The FishMPABlue 2 project addresses and proposes solutions to existing and potential conflicts. It involves key actors in the planning of conservation measures and fishery regulation processes in a context of sustainable governance involved in Blue Economy.</td>
</tr>
<tr>
<td><strong>TAPAS</strong></td>
<td>H2020-SFS-2015-2</td>
<td>6,918,512.50€</td>
<td><a href="http://tapas-h2020.eu/about/">http://tapas-h2020.eu/about/</a></td>
<td>TAPAS aims to consolidate the environmental sustainability of European aquaculture by developing tools, approaches and frameworks to support EU Member States in establishing a coherent and efficient regulatory framework, implementing the Strategic Guidelines for the sustainable development of European aquaculture and delivering a technology and decision framework for sustainable growth.</td>
</tr>
</tbody>
</table>
| **MedAID** | H2020-SFS-2016-2 | 6,999,996.25€ | http://www.medaid-h2020.eu/ | MedAID aims to increase the overall competitiveness and sustainability of the Mediterranean marine fish farming aquaculture sector, throughout the whole value chain. Its objectives will be achieved:  
- To identify the main technical, environmental, economic and social challenges,  
- By addressing those technical, environmental, economic and social challenges that the sector currently faces,  
- By developing innovative knowledge and tools to improve the performance of the production systems. |
<table>
<thead>
<tr>
<th><strong>ParaFishControl</strong></th>
<th><strong>Call:</strong> H2020–SFS–2014–2</th>
<th><strong>EU Contribution:</strong> 7.800.000€</th>
<th><strong>Website:</strong> <a href="http://www.parafishcontrol.eu/">http://www.parafishcontrol.eu/</a></th>
<th>The overarching goal of ParaFishControl is to increase the sustainability and competitiveness of the European aquaculture industry by improving our understanding of fish-parasite interactions and by developing innovative solutions and tools for the prevention, control and mitigation of the most harmful parasitic species affecting the main European farmed fish species.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Advanced Tools and Research Strategies for Parasite Control in European farmed fish</strong></td>
<td><strong>Duration:</strong> 01 April 2015 – 31 March 2020</td>
<td><strong>SRIA Action:</strong> D2.4</td>
<td></td>
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</tr>
<tr>
<td><strong>STREAMLINE</strong></td>
<td><strong>Call:</strong> H2020–BBI–JT1–2018</td>
<td><strong>EU Contribution:</strong> 3.197.397€</td>
<td><strong>Website:</strong> <a href="https://cordis.europa.eu/project/rcn/222679/factsheet/en">https://cordis.europa.eu/project/rcn/222679/factsheet/en</a></td>
<td>The objective of the STREAMLINE project is to solve challenges that prevent more sound exploitation of the aquatic resources. This will be obtained by developing, sorting technologies, storage solutions and decision tools that will secure an efficient, sustainable supply system for by-catches, as well as for solid and liquid side-streams from aquaculture, fisheries and the aquatic processing industries to biorefining operations.</td>
</tr>
<tr>
<td><strong>Optimal utilization of seafood side-streams through the design of new holistic process lines</strong></td>
<td><strong>Duration:</strong> 01 May 2019 – 30 April 2023</td>
<td><strong>SRIA Action:</strong> D2.1 / D2.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>AquaIMPACT</strong></td>
<td><strong>Call:</strong> H2020–BG–2018–1</td>
<td><strong>EU Contribution:</strong> 6.149.963,14€</td>
<td><strong>Website:</strong> <a href="https://cordis.europa.eu/project/rcn/218338/factsheet/en">https://cordis.europa.eu/project/rcn/218338/factsheet/en</a></td>
<td>AquaIMPACT is a major effort to integrate the fields of fish breeding and nutrition to increase the competitiveness of EU's aquaculture of Atlantic salmon, rainbow trout, gilthead seabream and European seabass, to ensure food and nutrition security and to satisfy consumer demands for high-quality seafood with limited environmental impact.</td>
</tr>
<tr>
<td><strong>Genomic and nutritional innovations for genetically superior farmed fish to improve efficiency in European aquaculture</strong></td>
<td><strong>Duration:</strong> 01 January 2019 – 31 December 2022</td>
<td><strong>SRIA Action:</strong> D2.1 / D2.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PerformFISH</strong></td>
<td><strong>Call:</strong> H2020–SFS–2016–2</td>
<td><strong>EU Contribution:</strong> 6.997.060,74€</td>
<td><strong>Website:</strong> <a href="http://performfish.eu/">http://performfish.eu/</a></td>
<td>The overarching objective of PerformFISH is to increase the competitiveness of Mediterranean aquaculture by overcoming biological, technical and operational issues with innovative, cost-effective, integrated solutions, while addressing social and environmental responsibility and contributing to “Blue Growth”.</td>
</tr>
<tr>
<td><strong>Consumer driven Production: Integrating Innovative Approaches for Competitive and Sustainable Performance across the Mediterranean Aquaculture Value Chain</strong></td>
<td><strong>Duration:</strong> 01 Mayo 2017 – 30 April 2022</td>
<td><strong>SRIA Action:</strong> D2.4</td>
<td></td>
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</tr>
<tr>
<td><strong>SMARTFISH</strong></td>
<td><strong>Call:</strong> H2020–SFS–2017–1</td>
<td><strong>EU Contribution:</strong> 5.976.764,51€</td>
<td><strong>Website:</strong> <a href="https://cordis.europa.eu/project/rcn/212401/factsheet/en">https://cordis.europa.eu/project/rcn/212401/factsheet/en</a></td>
<td>The objective of SMARTFISH is to develop, test and promote a suite of high-tech systems for the EU fishing sector, to optimize resource efficiency, to improve automatic data collection for fish stock assessment, to provide evidence of compliance with fishery regulations and to reduce ecological impact.</td>
</tr>
<tr>
<td><strong>Smart fisheries technologies for an efficient, compliant and environmentally friendly fishing sector</strong></td>
<td><strong>Duration:</strong> 01 January 2018 – 31 December 2021</td>
<td><strong>SRIA Action:</strong> D2.2 / D2.3</td>
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</tr>
<tr>
<td>Project</td>
<td>Description</td>
<td>SRIA Action</td>
<td>Call</td>
<td>EU Contribution</td>
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<tr>
<td>IFASA 2</td>
<td>Insects for a sustainable aquaculture</td>
<td>D2.1 / D2.4</td>
<td>H2020-SMEInst-2018-2020-2</td>
<td>1.750.000€</td>
</tr>
<tr>
<td>EASY FEED</td>
<td>Eco-aquaponics systems – 100% sustainable and profitable EU fish-farming</td>
<td>D2.1 / D2.4</td>
<td>EASME/EMFF/2017/1.2.1.12</td>
<td>438.563,00€</td>
</tr>
<tr>
<td>DEMO-BLUESMARTFEED</td>
<td>Demonstration project of a smart technology for monitoring the delivery of feed for a sustainable aquaculture</td>
<td>D2.4</td>
<td>EASME/EMFF/2017/1.2.1.12</td>
<td>740.615,00€</td>
</tr>
<tr>
<td>ALTERNFEED</td>
<td>Substitution of fish flour and fish oil by sustainable products and alternative by-products</td>
<td>D2.1 / D2.4</td>
<td>Fundación Biodiversidad, Convocatoria Pleamar 2018</td>
<td>59.203,76€</td>
</tr>
</tbody>
</table>

Fish feed manufacturers and fish farmers are seeking innovative ways to increase the nutritional value of their products while reducing the environmental impact of their supply chain. Insect protein stands out as one of the best solutions to address this need and drive the development of sustainable aquaculture.

Create more realistic assessments and projections of changes in fisheries resources by utilizing new biological knowledge. Advice on how to secure long-term sustainability of EU fish stocks. Provide recommendations on how to stabilize the long-term profitability of European fisheries. Develop a public, internet-based resource tool box.

EASY FEED will validate the use of an innovative aquaculture organic feed formula, based on locally grown quinoa and spirulina, to reduce the aquaculture sector’s dependence on marine resources.

DEMO-BLUESMARTFEED will validate the SICA technology (Smart System for Feeding Control) to monitor and optimise aquaculture feed supply, hence reducing feed waste.

The aim of this proposal is to validate the SICA technology (Smart System for Feeding Control) in two real environments (offshore cages) in Spain and Greece.

ALTERNFEED arises from the need to evaluate sustainable alternatives to the use of flour and fish oil or krill in the manufacture of fish feed by evaluating several alternative ingredients such as insects meal, as a quality protein source, and a compound of microalgae, as an important source of protein or lipids depending on the parameters.
### ALGADIET: Development and optimisation of new functional feeds based on the substitution of fish flours by micro and macroalgae for turbot fattening.

**SRIA Action:** D2.1 / D2.4

**Call:** Fundación Biodiversidad. Convocatoria Pleamar 2018

**Duration:** 2018 – 2020

**EU Contribution:** 177,056,89€

**Website:** [https://www.programapleamar.es/proyectos/titulo-del-proyecto-desarrollo-y-optimizacion-de-nuevos-piensos-functional-basados-en-la](https://www.programapleamar.es/proyectos/titulo-del-proyecto-desarrollo-y-optimizacion-de-nuevos-piensos-functional-basados-en-la)

The general objective of this project is the development and optimisation of new functional feeds based on the partial substitution of fish flours by meal from micro and macroalgae biomasses for use in the growth of turbot (*Scophthalmus maximus*), based on the principles of sustainability and environmental protection in aquaculture.

### SEAFOODTOMORROW: Nutritious, Safe and Sustainable Seafood for Consumers of Tomorrow

**SRIA Action:** D2.1 / D2.4

**Call:** H2020-BG-2017-1

**Duration:** 01 November 2017 – 31 October 2020

**EU Contribution:** 6,996,032,25€

**Website:** [https://seafoodtomorrow.eu/](https://seafoodtomorrow.eu/)

SEAFOODTOMORROW aims to validate and optimize commercial solutions for improving the socioeconomic and environmental sustainability of the seafood production and processing industry, while contributing to product quality and safety. Activities will focus on the sustainable production and processing of nutritious and safe seafood products through the demonstration and first application in the market of eco-innovative, sustainable solutions of marine and aquaculture-derived food products and nutrients.

### Programmes and initiatives of relevance, including research and data infrastructures

**INTERNATIONAL STRATEGIES AND PROGRAMMES**

- JERICO Research Infrastructure: [http://www.jerico-ri.eu/](http://www.jerico-ri.eu/)
- Any other relevant UfM Ministerial (transport, energy, sustainable urban development, etc.), related strategies, programmes and projects [https://ufmsecretariat.org/what-we-do/water-environment/](https://ufmsecretariat.org/what-we-do/water-environment/)
## EUROPEAN STRATEGIES AND PROGRAMMES

- **Strategic Guidelines for the sustainable development of EU aquaculture:** [https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52013DC0229&from=EN](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52013DC0229&from=EN)
- **The Common Fisheries Policy (CFP):** [https://ec.europa.eu/fisheries/cfp/](https://ec.europa.eu/fisheries/cfp/)

### Target sectors and groups

#### Technology platforms (European, national, regional):
- European Fisheries Technology Platform: [http://eftp.eu/](http://eftp.eu/)

#### Maritime Clusters

#### Intergovernmental bodies:
- Union for Mediterranean (UfM): [https://ufmsecretariat.org/](https://ufmsecretariat.org/)
- Worldwide Responsible Accredited Production: [http://www.wrapcompliance.org/sp](http://www.wrapcompliance.org/sp)

#### Research bodies, businesses and local authorities
- Sustainable Fish: [https://www.sustainablefish.org/](https://www.sustainablefish.org/)
- European Environmental Agency: [https://www.eea.europa.eu/](https://www.eea.europa.eu/)
- European Topic Center on Inland, Coastal and Marine Waters: [https://www.eionet.europa.eu/etcs/etc-icm](https://www.eionet.europa.eu/etcs/etc-icm)
- Slow food international: [https://www.slowfood.com/](https://www.slowfood.com/)
- Institute for Advanced Sustainability Studies: [https://www.iass-potsdam.de/en](https://www.iass-potsdam.de/en)
## Funding options and agencies

**European funding:**

- Interreg Mediterranean Programme: https://interreg-med.eu/
- JERICO: http://www.jerico-ri.eu/

**International funding:**


## Activities to promote the SRIA Implementation

<table>
<thead>
<tr>
<th>Examples of activities</th>
<th>Content and objective</th>
<th>How and timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Champion countries must choose those activities that suit best the priority addressed</td>
<td>Champion countries describe in more detail the content and specific objective of a given activity</td>
<td>Champion countries explain how the activity can be carried out and timeframe within the IP (2020-2023)</td>
</tr>
</tbody>
</table>

**Networking and engagement of economic sectors and national Blue Growth communities**

- Maritime Clusters.
- Research organizations (e.g. JERICO).
- European Commission.

**How:** Workshops for detailed stakeholders.

**When:** At least one per year.

**Alignment and coordination**

- GSO BLUEMED Working Group.
- Alignment and coordination with other initiatives as WESTMED or EUSAIR.
- Alignment and coordination with other associations or organizations (GFCM-FAO; WRAP; UfM; etc.).
- Alignment and coordination with EU organizations (FARNET; EATIP; EFTP; EUMOFA, etc.).
- Coordination for eco-label aquaculture and fishing products (Marine Stewardship Council (MSC); Friends of the Sea (FoS); Aquaculture Stewardship Council (ASC)).

**How:** Meetings.

**When:** At least one each 6 months.

**Promotion and possibly implementation of actions coordinated and jointly undertaken by different countries, with a “variable geometry” approach**

- Implemented by the Advisory Groups: Aquaculture Advisory Council; Mediterranean Advisory Council or GFCM-FAO.
- Research organizations: collaborate in the development of Strategies or Plans of future Horizon Europe.
- Replicate or promote Italian-Tunisian collaboration on harmonisation of methods for seafood quality control.

**How:** Development of the Strategies and Plans designed for sustainable fishing, aquaculture and seafood.

**When:**

**Start-Up actions**

- Blue Labs.
- EU funding calls.
- Research organizations.
- Fishing and aquaculture eco-label products.
- Call for research on multi-modal platforms, offshore wind farms and aquaculture.

**How:** Calls.

**When:** Each year.
<table>
<thead>
<tr>
<th>Examples of activities</th>
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<th>How and timeframe</th>
</tr>
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</tr>
</tbody>
</table>

**Assessment and promotion of the capitalisation and valorisation under the BLUEMED umbrella of ongoing and future projects**
- GSO BLUEMED Working Group participating in different meetings in relationship with food.
- EU Advisory Groups (Aquaculture, Fishing, Seafood) which includes BLUEMED initiative in the agendas.
- Research organizations.
- BLUEMED participation in calls about food production (future Horizon Europe, Interreg, etc.).

How:

When:

**Lobbying actions**
- Actions to highlight the role of food production into BLUEMED.

How:

When:

**Training and capacity building initiatives**
- Intergovernmental bodies.
- Research organizations.
- Training/workshop for the exchange of best practices between Mediterranean countries on ideas to reduce food waste.
- Capacity building activity on artisanal fisheries (to be elaborated with Slovenian colleagues).
- Exchange of best practices between countries on fishing waste management on board (Malta seeking for how other countries deal with it).

How: Courses, training days, workshops.

When: At least one per year.

**Implementation Working Groups (IWG) on specific sectors**
- GSO BLUEMED Working Group.
- EU Advisory Groups (Aquaculture, Fishing, Seafood).
- Research organizations.

How: Meetings.

When: At least one each 6 months.

**Communication and engagement**
- GSO BLUEMED Working Group.
- EU Advisory Groups (Aquaculture, Fishing, Seafood).
- Research organizations.
- Dissemination of good food practices to society.
- Dissemination and science communication idea on collaborating with renowned Chefs to explain the nutrition potential of the seas – Med Network of Universities (Italy to give further details).

How: News, social networks (Twitter, Facebook, Instagram...).

When: Social networks need to provide continually information.
Annex 1: BlueMed fiches for the 13 priorities

Fiche 3
Preparing to climate change and define adaptation/mitigation measures
Co-champion countries: Greece & Morocco

Background

The Mediterranean has been characterised as a climate change vulnerability “hotspot” by the IPCC. Most countries are already experiencing high temperatures and increased humidity or drought coupled with increasing water scarcity, forest fires and the possibility of desertification. Climatic changes are expecting to have major impacts on the ecosystems and the provision of ecosystem services but also on human safety as well as global and national economies. For example, vulnerability of ecosystems as well as agricultural systems would critically rise by increased water-scarcity, and this would affect food production. On the other hand, the ocean is by far the largest water reservoir on the Earth but the marine water is salty. In addition, numerical models predicting the water vapour transport from the ocean on land could be considered as part of research activities in the framework of Blue Growth.

Furthermore, the Mediterranean accepts approximately one third of the global international tourists, and the number is expected to increase in the forthcoming years, but climate change is expected to have an effect in tourists’ needs and expectations, which may result in the diminishing competitiveness of certain destinations, affecting local, regional and national economies.

There are still gaps in research and innovation with regard to understanding climate phenomena, hence developing the appropriate mitigation and adaptation strategies. However, it is evident that the economic and social cost of inaction will clearly be far higher than the cost of action. Climate change adaptation is a major crosscutting issue. It requires increased knowledge, technological and social innovation and policy shifts and the Mediterranean, as a region needs to tackle this in a unified way, as there are important adaptation gaps, behavioural and economic barriers that hinder the effectiveness of measures.

The ability to cope and adapt differs across populations, economic sectors and regions within Mediterranean and the most vulnerable are the ones facing the most difficulty in adopting the necessary measures. The pledges made in the framework of the Paris Agreement need to be upheld.

At a national level, stakeholders need to urgently develop and implement strategies to conserve and safeguard marine ecosystems, without which there can be no blue growth in the long term. Actions can be taken in accordance with the strategic objectives and priorities identified during the 19th meeting of the contracting parties to the Barcelona Convention regarding Regional Climate Change Adaptation measures as well as other regional frameworks such as the EU strategy on Adaptation to Climate Change which was adopted in 2013, the Arab Framework Action plan on Climate Change (elaborated by LAS) and the proposals of the UfM Climate Change expert group. The MedECC network of Mediterranean Experts on Climate and environmental Change could also be of reference.

Mapping and discussing implementation options and potentials of this priority

Recent and ongoing relevant projects

<table>
<thead>
<tr>
<th>PROJECT</th>
<th>DESCRIPTION</th>
<th>OBJECTIVES</th>
</tr>
</thead>
</table>
| CO-EVOLVE | Promoting the co-evolution of human activities and natural systems for the development of sustainable coastal and maritime tourism | Call: ERDF (European Regional Development Fund)  
EU Contribution: 3.000.000,00€  
Website: https://co-evolve.interreg-med.eu | Aims at analyzing and promoting the co-evolution of human activities and natural systems in touristic coastal areas, facing effects due to climate change and allowing sustainable development of touristic activities, in coexistence and synergy with other uses of the coastal and marine space and resources, based on the principles of integrated Coastal Zone Management and Maritime Spatial Planning. |
<table>
<thead>
<tr>
<th><strong>Call</strong></th>
<th><strong>EU Contribution</strong></th>
<th><strong>Website</strong></th>
<th><strong>Description</strong></th>
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<tbody>
<tr>
<td><strong>MPA-ADAPT</strong></td>
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<td>Guiding Mediterranean MPAs through the climate change era: building resilience adaptation. <strong>Call:</strong> “Interreg V-B Mediterranean” Operational Programme for the 2014-2020. <strong>Duration:</strong> 2016-2019. <strong>EU Contribution:</strong> 1.904.257 €. <strong>Website:</strong> <a href="https://mpa-adapt.interreg-med.eu/">https://mpa-adapt.interreg-med.eu/</a>. MPAs through the climate change era: building resilience adaptation (2016-2019) aims to: 1) Raise awareness of the role of effective MPAs for enhancing resilience to climate change and safeguarding ecosystem services as well as contributing to adaptation measures; 2) Strengthen capacity of MPAs to plan for and respond to climate change impacts based on a better understanding of climate risk and vulnerability; 3) Showcase how climate change can be integrated into planning and management of Mediterranean MPAs. Five MPAs from three Mediterranean countries act as pilot sites for the development of climate change adaptation action plans and their integration into existing management framework.</td>
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<tr>
<td><strong>ClimVar &amp; ICZM</strong></td>
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<td>Integration of climatic variability and change into national strategies to implement the ICZM Protocol in the Mediterranean. <strong>Call:</strong> Global Environmental Facility. <strong>Duration:</strong> 2012-2015. <strong>EU Contribution:</strong> 9.200.000€. <strong>Website:</strong> <a href="https://pap-thecoastcentre.org/projects/cv.html">https://pap-thecoastcentre.org/projects/cv.html</a>. ClimVar &amp; ICZM UNEP-MA Project (Integration of climatic variability and change into national strategies to implement the ICZM Protocol in the Mediterranean) project (2012–2015) aimed at: 1) strengthening knowledge on regional climate variability and change and on their impacts, defining their specific characteristics in the Mediterranean region; 2) Improving capacity building and establish mechanisms for exchange of data and information for integration of climate variability and change into concrete ICZM policies, plans and programmes.</td>
</tr>
<tr>
<td><strong>MEDACC Life Project</strong></td>
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<td>Demonstration and validation of innovative methodology for regional climate change adaptation in the Mediterranean area. <strong>Call:</strong> LIFE ENV/ES/000536. <strong>Duration:</strong> 2018. <strong>EU Contribution:</strong> 1.266.208 €. <strong>Website:</strong> <a href="http://medacc-life.eu/es">http://medacc-life.eu/es</a>. MEDACC Life Project (2018) aimed to develop innovative solutions for adapting agroforestry and urban systems to the impacts of climate change in the Mediterranean area (Catalonia). A series of adaptation measures have been put into practice in the fields of agriculture, forest management and water management. The results of the project contribute to quantifying how adaptation can reduce the vulnerability of natural systems and human activities to climate change and assessing the economic and environmental costs associated with the application (or not) of these adaptation measures.</td>
</tr>
<tr>
<td><strong>LIFE Blue Natura</strong></td>
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<td>LIFE program. <strong>Duration:</strong> 01 November 2016 – 31 October 2019. <strong>EU Contribution:</strong> 2.513.792 €. <strong>Website:</strong> <a href="http://life-bluenatura.eu/es/inicio/">http://life-bluenatura.eu/es/inicio/</a>. LIFE Blue Natura: represents an ambitious and innovative initiative to quantify blue carbon and protect coastal habitats in Andalusia.</td>
</tr>
<tr>
<td>Project</td>
<td>Call</td>
<td>EU Contribution</td>
<td>Description</td>
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<tr>
<td><strong>Enhancing Regional Climate Change Adaptation in the Mediterranean Marine and Coastal Areas</strong></td>
<td>Global Environmental Facility</td>
<td>4,891.894 €</td>
<td>Enhancing Regional Climate Change Adaptation in the Mediterranean Marine and Coastal Areas (Financed by GEF). The Project objective was to assist countries to increase the resilience of the Mediterranean marine and coastal areas to the impacts of climate change with the view to influencing wider development processes in the region.</td>
</tr>
<tr>
<td><strong>BRIdges</strong></td>
<td>H2020 European Commission Project</td>
<td>6,999,996,25 €</td>
<td>BRIGAID is a 4-year project (2016-2020) under EU Horizon2020, aimed to effectively bridge the gap between innovators and end-users in resilience to floods, droughts and extreme weather</td>
</tr>
<tr>
<td><strong>COASTAL</strong></td>
<td>H2020-SC2-RUR02-2017</td>
<td>n.a.</td>
<td>The overarching objective of COASTAL is to improve the rural-coastal synergies in strategic business and policy decision making and collaboration between coastal and rural actors. This is achieved by developing, demonstrating and applying a generic toolset and performance indicators by combining a multi-actor approach with system dynamics modelling. This allows us to understand the interactions with market, demographic, environmental and climate forecasts, and quantify the positive and negative externalities. By combining local knowledge and scientific expertise in a co-creation process the COASTAL project engages actors and stakeholders at all levels to improve coastal-rural interdependence and collaboration by identifying problems and setting up evidence-based business roadmaps and policy solutions, focusing on economic growth, marine spatial planning, and environmental protection, including inland water quality.</td>
</tr>
<tr>
<td><strong>CIGESMED</strong></td>
<td>FP7 ERA-NET</td>
<td>Website: <a href="http://www.cigesmed.eu">http://www.cigesmed.eu</a></td>
<td>The project’s goal is to understand the links between natural and anthropogenic pressures and ecosystem functioning to define and maintain the Good Environmental Status (GES) of the Mediterranean Sea, by studying the typical, complex and not well-known habitats built by calcareous encrusting algae, the coralligen</td>
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<tr>
<td>Project</td>
<td>Call</td>
<td>EU Contribution</td>
<td>Website</td>
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<tr>
<td><strong>ALIEM</strong>&lt;br&gt;Action to limit the spread of invasive species introduced into the Mediterranean</td>
<td>ERDF, 2014-2020 INTERREG V-A</td>
<td>1.840.194.99 €</td>
<td><a href="http://interreg-maritime.eu/">http://interreg-maritime.eu/</a> – <a href="http://interreg-maritime.eu/it/web/aliem/progetto">http://interreg-maritime.eu/it/web/aliem/progetto</a></td>
</tr>
<tr>
<td><strong>BeRTISS</strong>&lt;br&gt;BalkanMed real time severe weather service</td>
<td>INTERREG Balkan-Med</td>
<td>1.063.941.03 €</td>
<td><a href="http://www.interreg-balkanmed.eu/approved-project/14/">http://www.interreg-balkanmed.eu/approved-project/14/</a></td>
</tr>
<tr>
<td><strong>BlueCoast</strong>&lt;br&gt;Climate-Smart Coastal Practices for Blue governance</td>
<td>The Interreg IPA CBC Programme “Greece – Albania 2014 – 2020</td>
<td><a href="http://bluecoast-cbc.eu/index.php/project/">http://bluecoast-cbc.eu/index.php/project/</a></td>
<td>BLUECOAST objective is to provide applicable plans &amp; pro-active methods based on long-term conservation goals and climate change adaptation policy, in order to increase C. caretta ecosystem resilience. It will address the major stresses at land &amp; sea, driven by human impact and climate change integrating habitats resilience into the broader regional socioeconomic development. (Greece and Albania).</td>
</tr>
<tr>
<td><strong>CLIMEPORT</strong>&lt;br&gt;Mediterranean Ports’ Contribution to Climate Change Mitigation</td>
<td>INTERREG IVB – INTERREG IV - Transnational programmes</td>
<td>1.610.454.00 €</td>
<td><a href="https://trimis.ec.europa.eu/project/mediterranean-ports-contribution-climate-change-mitigation">https://trimis.ec.europa.eu/project/mediterranean-ports-contribution-climate-change-mitigation</a></td>
</tr>
<tr>
<td>Project Name</td>
<td>Call</td>
<td>EU Contribution</td>
<td>Description</td>
</tr>
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</tr>
<tr>
<td>IONian Integrated marine Observatory</td>
<td>European Territorial Cooperation Programme, Greece–Italy 2007–2013, ERDF and National Funds</td>
<td>1.688,734,00€</td>
<td>The IONIO project is aimed at designing and implementing a “IONian Integrated marine Observatory” that will provide environmental information and meteo-oceanographic measurements about the Southern Adriatic and Northern Ionian (SANI) Programme Area.</td>
</tr>
<tr>
<td>MED-JELLYRISK</td>
<td>2007 - 2013 Mediterranean Sea Basin ENPI CBC, ERDF</td>
<td></td>
<td>The Mediterranean coasts are facing increasing jellyfish outbreaks resulting from a wide variety of human activities including maritime transport, exploitation of living resources, discharges together with the impact of climate change. The MED-JELLYRISK is the first CBC (Cross-Border Cooperation) project assessing the socio-economic impacts of jellyfish blooms and the implementation of mitigation countermeasures.</td>
</tr>
<tr>
<td>The OrientGate</td>
<td>South East Europe Transnational Cooperation Programme</td>
<td>3.354,355,00€</td>
<td>The project aims to implement concerted and coordinated climate adaptation actions across South Eastern Europe (SEE). A structured network for integration of climate knowledge into policy and territorial planning.</td>
</tr>
</tbody>
</table>
Programmes and initiatives of relevance, including research and data infrastructures

- The 19th meeting of Contracting Parties (COP19) of the Barcelona Convention endorsed in 2016 the ‘Regional Climate Change Adaptation Framework for the Mediterranean Marine and Coastal Areas’. The document aims at building a common regional strategic approach to increasing climate resilience and adaptation capacity.

- In February 2016, the 19th Ordinary Meeting of the Contracting Parties to the Barcelona Convention (COP19) adopted the Mediterranean Strategy for Sustainable Development (MSSD) 2016-2025, as a strategic guiding document for all stakeholders and partners to translate the 2030 Agenda for Sustainable Development (2030 Agenda) at the regional, sub-regional and national levels. The MSSD recognizes climate change as a priority issue for the socio-economic development and environmental sustainability of the Mediterranean and calls for increasing scientific knowledge, raising awareness, and developing technical capacities to progress towards a green, low-carbon and climate-resilient Mediterranean region.

- The Mediterranean Expert Group on Climate and Environmental Change (MedECC) was launched during a side event organized at the Conference ‘Our Common Future under Climate Change’ (CFCC) in Paris, (France) in July 2015. MedECC is an open and independent network of more than 400 scientists working towards a regional science-policy interface for climatic and other environmental changes across the Mediterranean.

- Mediterranean climate Variability and predictability (MeddCLIVAR) serves as a scientific network to promote better communication among different scientific disciplines and to develop a multidisciplinary vision of the evolution of the Mediterranean climate through studies that integrate atmospheric, marine, and terrestrial climate components at time scales ranging from paleo-reconstructions to future climate scenarios.

- The Foundation Euro-Mediterranean Center on Climate Change (CMCC) is a non-profit research institution established in 2005. CMCC’s main mission is to investigate and model the future of our economic and economic systems, with special emphasis on impacts of climate change and related collective actions to address mitigation challenges. https://www.cmcc.it/

- MedWet - Wetlands for a sustainable Mediterranean region (https://medwet.org/). Established in 1991, the Mediterranean Wetlands Initiative brings together 27 Mediterranean and peri-Mediterranean countries that are Parties to the Convention on Wetlands (Ramsar, Iran, 1971). Palestine and a number of organizations and wetland centres are also part of the MedWet Initiative. The different entities of the MedWet Initiative, as established in its Terms of Reference, are: i) The Mediterranean Wetlands Committee, ii) The MedWet Steering Group, iii) The MedWet Scientific and Technical Network, iv) The MedWet Secretariat. The MedWet/STN is working through five Specialist Groups (SGs) in the key areas where there is a need to improve the knowledge and managerial capacity related to wetland conservation and sustainable use. Among the five Key Areas is Climate change: to investigate the implications of climate change for the functioning and management of wetlands and their resources; this group will evaluate the impact of climate change on wetlands and water resources and assess both carbon stocks in Mediterranean wetlands and the role of coastal wetlands in the mitigation of the consequences of rising sea levels.


- Any other relevant UfM Ministerial (transport, energy, sustainable urban development, etc.), related strategies, programmes and projects https://ufmsecretariat.org/what-we-do/water-environment/
<table>
<thead>
<tr>
<th>Target sectors and groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Climate change adaptation is a major crosscutting issue requiring increased knowledge, technological and social innovation, as well as policy shifts throughout the EU and the Mediterranean. The Commission has already set out a clear vision for achieving climate neutrality, which includes improving the productivity of aquatic and marine resources, reducing the increasing energy efficiency of the fishing sector and increasing of shore energy production. In addition, adaptation measures for the coastlines and coastal populations should be included in National MSPs. In order to achieve this in the Mediterranean level there is a need for the co-operation of several sectors and Intergovernmental and National Bodies and groups. NGOs are also an important target group, as they have a better contact with the public and most of them have Climate Change issues on their Agenda.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Intergovernmental Bodies</th>
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</thead>
<tbody>
<tr>
<td>EC-DG Mare (<a href="https://ec.europa.eu/maritimeaffairs/home_en">https://ec.europa.eu/maritimeaffairs/home_en</a>) and MSP Member States Expert Group (MSEG);</td>
</tr>
<tr>
<td>DG Clima (<a href="https://ec.europa.eu/clima/index_en">https://ec.europa.eu/clima/index_en</a>);</td>
</tr>
<tr>
<td>UNEP/MAP (<a href="http://web.unep.org/unepmap/">http://web.unep.org/unepmap/</a>) and its Regional Centers (e.g. PAP-RAC, SPA-RAC, INFO-RAC, REMPEC);</td>
</tr>
<tr>
<td>Intergovernmental Panel on Climate Change (IPCC) (<a href="https://www.ipcc.ch/">https://www.ipcc.ch/</a>);</td>
</tr>
<tr>
<td>Major Economies Forum on Energy and Climate (MEF);</td>
</tr>
<tr>
<td>Union for Mediterranean (UfM) (<a href="https://ufmsecretariat.org/">https://ufmsecretariat.org/</a>);</td>
</tr>
<tr>
<td>GFCM (<a href="http://www.fao.org/gfcm/en/">http://www.fao.org/gfcm/en/</a>);</td>
</tr>
<tr>
<td>European Environment Agency (EEA) (<a href="https://www.eea.europa.eu/">https://www.eea.europa.eu/</a>);</td>
</tr>
<tr>
<td>European Topic Center on Inland, Coastal and Marine Waters (ETC/ICM) (<a href="https://www.eionet.europa.eu/etcs/etc-icm">https://www.eionet.europa.eu/etcs/etc-icm</a>);</td>
</tr>
<tr>
<td>International Council for the Exploration of the Sea (ICES) (<a href="https://www.ices.dk/">https://www.ices.dk/</a>);</td>
</tr>
<tr>
<td>Organisation for Economic Co-operation and Development (OECD) (<a href="http://www.oecd.org/science/">http://www.oecd.org/science/</a>);</td>
</tr>
<tr>
<td>International Energy Agency (IEA) (<a href="https://www.iea.org/">https://www.iea.org/</a>);</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Sectoral Associations and Technology Platforms</th>
</tr>
</thead>
<tbody>
<tr>
<td>European MSP Platform: <a href="https://www.msp-platform.eu/">https://www.msp-platform.eu/</a>;</td>
</tr>
<tr>
<td>European Aquaculture Technology and Innovation Platform (<a href="http://eatip.eu/">http://eatip.eu/</a>);</td>
</tr>
<tr>
<td>European Fisheries Technology Platform (<a href="http://eftp.eu/">http://eftp.eu/</a>);</td>
</tr>
<tr>
<td>Waterborne Technology Platform (<a href="https://www.waterborne.eu/">https://www.waterborne.eu/</a>);</td>
</tr>
<tr>
<td>Observatoire Méditerranéen de l'Énergie (OMÉ) (<a href="http://www.ome.org/">http://www.ome.org/</a>);</td>
</tr>
<tr>
<td>European Community Shipowners Association (ECSA) (<a href="https://www.ecsa.eu/">https://www.ecsa.eu/</a>).</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Industries</th>
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<tbody>
<tr>
<td>Energy Sector;</td>
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<tr>
<td>Shipping Sector;</td>
</tr>
<tr>
<td>Aquaculture/Fisheries Sector;</td>
</tr>
<tr>
<td>Agriculture Sector;</td>
</tr>
<tr>
<td>Tourist operators;</td>
</tr>
<tr>
<td>Water resources managers.</td>
</tr>
</tbody>
</table>
Funding options and agencies

The EU finances adaptation to climate change in Europe through a wide range of instruments, aligned with the Europe 2020 Strategy towards smart, sustainable and inclusive growth. The Multiannual Financial Framework 2014-2020 will ensure that at least 20% of the European budget is climate-related expenditure (to be approved by the European Parliament). The EU also finances climate change adaptation outside its borders.


<table>
<thead>
<tr>
<th>Regional Projects and the Relevant Countries Included</th>
<th>GEF (GEF Trust Fund)</th>
<th>GEF (SEFA)</th>
<th>GEF (SCCF)</th>
<th>AFD/FFEM</th>
<th>GEF (GEF Trust Fund)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regional (Egypt, Jordan)</td>
<td>4.0</td>
<td></td>
<td></td>
<td></td>
<td>0.59</td>
</tr>
<tr>
<td>Regional (Africa)</td>
<td></td>
<td>1.2</td>
<td>1.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regional (Albania, Algeria, Libya, Morocco,</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Montenegro, Tunisia)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Global (Mauritania)</td>
<td></td>
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</tr>
</tbody>
</table>

Funds and funding agencies:

- UfM.
- Horizon 2020.
- Life European Project (DGENV) and CEPSA (Private company, Spain) (Life blue Natura).
- Interreg IV B Med.
- European Territorial Cooperation Programme.
- European Climate Change Programme.
- Private Sector/Industries/Enterprises. For example, tools that exist in the Central Banks to motivate companies to adapt environmental policies.
## Activities to promote the SRIA Implementation

<table>
<thead>
<tr>
<th>Examples of activities</th>
<th>Content and objective</th>
<th>How and timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Champion countries must choose those activities that suit best the priority addressed</td>
<td>Champion countries describe in more detail the content and specific objective of a given activity</td>
<td>Champion countries explain how the activity can be carried out and timeframe within the IP (2020-2023)</td>
</tr>
</tbody>
</table>

### Networking and engagement of economic sectors and national Blue Growth communities

- Participation in Climate – KIC Hub actions.
- Participation in MEDECC Events.
- Participate and align with next climate change related events.
- Private sector/Industries, through motivation by the states/central banks.

**How:**
- Educational Activities, promotion of innovative ideas, online courses.
- Connect Science with industry.
- Industry as funders as end users.
- Private sector wants concrete ideas to see that something is tangible.
- Scenarios on climate change with Blue economy.

**When:**

### Alignment and coordination

- BlueMed GSO working group.
- MEDECC.
- CEN–CENELEC Coordination Group ‘Adaptation to Climate Change’ (ACC-CG).
- The Directorate-General for Climate Action (DG CLIMA).
- IPCC.
- UFM.
- UNEP.

**How:**
- Meetings and activities for the identification of priority topics / actions and of options for joint implementation. Research to strengthen dialogue and institutional capacities.
- Targeted research and innovation regarding climate change impact on food webs, biodiversity, marine habitats and therefore on fisheries and aquaculture is a key point (link to fiche 2).
- The link between climate change (sea level rise...) and tourism is of priority concern in the region. Addressing these issues will need appropriate observing systems.
- Therefore, Infrastructure needs to explore new research topics (more scientific effort)

**When:**
- 2019 – 2023

### Promotion and possibly implementation of actions coordinated and jointly undertaken by different countries, with a “variable geometry” approach

- Advisory Groups.
- Research organizations.
- Interact.

**How:**

**When:**

### Start-Up actions

- Climate-KIC Start ups.
- Mediterranean Climate Change Adaptation Awards”.

**How:**

**When:**

### Assessment and promotion of the capitalisation and valorisation under the BLUEMED umbrella of ongoing and future projects

- GSO BLUEMED Working Group.
- EU RTD.

**How:**

**When:**
<table>
<thead>
<tr>
<th>Examples of activities</th>
<th>Content and objective</th>
<th>How and timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td>[Champion countries must choose those activities that suit best the priority addressed]</td>
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<td>[Champion countries explain how the activity can be carried out and timeframe within the IP (2020-2023)]</td>
</tr>
</tbody>
</table>

**Lobbying actions**
- Climate Action Network.
- Corporate Europe Observatory.
- Search new funding opportunities (e.g. philanthropic foundations that could give awards on innovation).

**How:**

**When:**

**Training and capacity building initiatives**
- Research organizations.
- Specialised schools and master courses.

**How:**

**When:**

**Implementation Working Groups (IWG) on specific sectors**
- BLUEMED GSO.
- EU Advisory Groups.
- UNEP groups.
- Research organisations and Universities.

**How:**

**When:**

**Communication and engagement**
- GSO BLUEMED Working Group.
- EU Advisory Groups.
- Research organizations.
- Local Authorities.
- Non-governmental organizations.

**How:**
- Climate change day similar to researchers’ night.
- Climate capital of Europe.
- Climathon: Propose an activity within Climathon 2020 related to the Med Sea, realised simultaneously in all capitals with the presence of BLUEMED (may be the Ambassadors).

**When:**
Background

Blue Growth demands for a holistic approach, integrating knowledge on oceanic dynamics, ecosystem structuration and functioning, and economy and societal needs. For a complete picture, there is also a strong need for assessing marine and coastal vulnerability and sustainability of ecosystem services. Among the pre-requisites for this approach is the open access to multidisciplinary data, which requires proper support for acquisition of high quality qualified data through the net increase and evolution of ocean observing systems. Therefore, observation is key to provide knowledge and support environmental status assessment while at the same time; it can also stimulate new services and Blue Growth.

However, a number of variables that are known to be important for monitoring of environmental conditions are still not properly observed, and in some cases the technology is not fully developed yet; and when it is developed, in certain cases, it is not accessible to southern countries. Long-term observations with prescribed methodology are available only in few parts of the Mediterranean, even though they are indispensable for a proper assessment of changes occurring in the marine environment, especially in coastal areas, which are deeply affected by current challenges and which concentrate a high proportion of human density and economic activities.

The importance of these challenges has led the United Nations to proclaim a Decade of Ocean Science for Sustainable Development (2021-2030) and to state that scientific understanding of the ocean’s responses to pressures and management action is fundamental for sustainable development. Ocean observations and research are also essential to predict the consequences of change, design mitigation and guide adaptation. This strong link between the health of our seas and oceans is critical to the economic, social and environmental well-being has also been emphasized by the Leaders of the G7 at 2018 G7 Summit. In line with this statement, the Future of the Seas and Oceans Working Group has recognized the importance of ocean observing and monitoring activities.

There is therefore a clear need for more comprehensive and accessible data sets, in order to analyse and monitor risks in the Mediterranean Sea using advanced data-capturing techniques, and to unlock the Med-specific knowledge and innovation potential. In situ and remote observations of the sea are both essential ingredients for monitoring, security, safety and surveillance, but also to provide essential data for value addition and provision of novel services. This data can be used for early detection, mitigation and monitoring of both natural and human disasters as well as to provide other relevant services.

Marine and coastal observation and monitoring systems do not cover all of EcAp’s ecological objectives and IMAP indicators, including common indicators related to the biological and ecological component, hydrography and those related to climate change. Significant efforts must be made in order to standardize the internal procedures as well as to make data observation timely visible, accessible and exploitable. A similar effort needs to be made to improve data sharing, especially on digital platforms. Moreover, a truly holistic approach and long-term vision should include both the strengthening of existing observing systems and the design of future augmented observatories that would take advantage of innovative cost effective technologies such as those driving the ongoing “omics revolution” in biology or the Internet of the Things (IoT).

An interesting win-win scenario is emerging where ocean observations for environmental management, for monitoring the health of the marine ecosystem, and for marine safety and surveillance could also serve, in their non-confidential elements, to feed the research and economic sectors for added value and societal benefits at no additional data acquisition costs. In an evolving knowledge-based society, open access to key technologies, high quality data, modelling and satellite observations, are perceived to be key ingredients to support sustainable blue growth, especially in the coastal areas where many essential economic activities are occurring at the national scale. This goes hand in hand with the process of extracting essence from data, maximising their value by providing a wide range of downstream services that are fitting to the user needs at various scales.

Permanent standardized observatories that can cost effectively measure the variability of the marine ecosystem in all its interconnected components down to the coastal areas can be shaped to serve research, monitoring and industry, supporting the BlueMed challenges. Coordinating the observing system of systems and promoting open data practices, being a research and innovation enabler by definition, is relevant for the Mediterranean Sea and requires actions, conditions and opportunities involving EU and non-EU countries (with a stronger focus dedicated to identified sectors and key areas such as: coastal zones, fisheries, aquaculture, port areas, pollution including marine litter).
Priority short term actions can be identified based on existing knowledge and capitalizing on consortia and projects' achievements. Among them are: the need to improve procedures for the data sharing at the relevant scales; the need for data integration because these data are currently being exploited most often with sectoral orientation (fishing, pollution, infrastructures, etc.); the need for better development/processing of raw data for optimization of their use. In this context, the content of this fiche and the suggested actions at the end of the document are strongly linked to the work realized in the framework of Fiche 10 on Open Data, Open Science, and Open Innovation.

### Mapping and discussing implementation options and potentials of this priority

#### Recent and ongoing relevant projects

The need to facilitate access and exchange of oceanographic information and data has led to the creation of several international initiatives from the scientific community in the field of marine observations (e.g. the Global Ocean Observing System; the IOC’s International Oceanographic Data and Information Exchange, born in 1961; the International Ocean Discovery Program, Science Plan 2013-2023; the Global Ocean Ship-Based Hydrographic Investigation Program).

In the framework of the BLUED MED CSA’s work, Research Infrastructures have been classified into five categories. Please refer to BLUED MED Deliverable D3.3 for further details. The following paragraphs aim at highlighting the gaps that need to be tackled by the activities that will be implemented by BLUED MED Implementation Plan to tend towards an integrated Observing System of Systems in the Mediterranean.

#### Research vessels and equipment

There is already a good level of collaboration among European countries with several existing programmes aiming at facilitating access to research vessels for scientists, and improving coordination and networking (EUROFLEETS/ERVO/OFEG). However, there are still big differences in fleet operation mechanisms among countries. Most of the research vessels operating in the Mediterranean Sea are owned by European countries. Moreover, the access to certain areas of the sea is restricted by national jurisdictions due to a lack of political agreements.

#### Marine based facilities

Several European networks (MonGOOS/EuroGOOS/DANUBIUS-RI) of observing platforms and bi-lateral initiatives (O-LIFE) exist and function efficiently.

A mixture of EU funding projects, INTERREG and ENPI CBC Med and dedicated funds from single countries have enabled the setting up of infrastructures mainly at national and bilateral scales, capacity building and sharing of technologies for marine observations and modelling, including the involvement of non-EU partners (like ODYSSEA).

At French level, the Infrastructure for Coastal and Littoral Research (IR-ILICO) can be an example of a successful project aiming at gathering eight different observation networks and services to better understand coastal ecosystems, which are deeply affected by climate change and which concentrate a high proportion of human economic activities. At European level, JERICO-NEXT aims at creating a strong network of European research infrastructures dedicated to coastal observation. This project aims at encouraging the harmonization of methods and tools in the domain to obtain joint measures and quality data at European scale. The involvement and participation of non-EU countries to this type of initiatives must be encouraged and strengthened.

Collaboration between the private sector and the scientific community can be improved to ensure long-term series of observations and data sharing.

Studying new contaminants, new cumulative impact of contamination and new sources of pollution requires the reuse of essential ocean variables (initially collected for other purposes). This new uses of “ancient” data must require precaution considering “original” objectives and conditions of sampling and measuring.

There is still a restricted integration of modelling facilities into observational networks.

Further multi-purposes offshore platforms could be developed. For example, the implantation of three pilot floating offshore windfarms in the Gulf of Lion (from 2021) could be an opportunity to establish permanent and high frequency observatories.
Land based facilities

Land based facilities are already well organized in Europe, and secured by the ESFRI label in some cases (EMBRC-ERIC). However, there is a lack of laboratories in the South, and scientists may have to go far away from home to access RIs. This difficulty can be compounded by visa issues and southern scientists sometimes encounter difficulties to visit labs in the North shore. Moreover, there is a lack of visibility and awareness on RIs opportunities and services. For example, regarding European RIs, 20% of TNA is made accessible to southern countries, but most of the time, this is ignored. However, there is still need for optimising existing RIs in southern Mediterranean countries. Scientific collaboration and cooperation is still strongly oriented north-south and the need for south-south scientific collaboration and cooperation is one of the keys for the optimization of southern RIs.

The quantity of emerging pollutants and new contaminants is increasing, and there is a lack of knowledge about them, about their impacts, their evolution and there is a lack of land-based facilities specifically dedicated to this kind of studies.

Moreover, there is lack of awareness on climate change in the southern shore, this topic is not always considered as a research priority. Work should be done to encourage the development of facilities and studies on topics related to climate change such as erosion and coastal risks.

Satellites and spatial data

Several European programmes already exist (e.g. Copernicus/ORFEO/SPOT/EUMETSTAT Polar System/Earth Explorer ESA programmes) but difficulties for the south eastern Med countries to access these services are unresolved. The exploitation of Earth Observations into added value applicative services is a lucrative challenge especially with the advent of important satellite platforms such as the Sentinel constellation. Merging of satellite data to numerical models and in situ observations are the essence of operational oceanography targeting to serve a range of users (institutional, public and private) and providing the data backbone for research, environmental assessments, security and surveillance as well as the marine economic sector.

Data

Several well structured mechanisms exist in Europe (such as EMODnet/Copernicus/SeaDataNet), where the culture of data sharing is relatively well spread. The quest to make data access open and widespread is the challenge of COPERNICUS Programme. While the access of essential regional scale data is supported by the EC through COPERNICUS, a framework to enhance national scale observing systems in the coastal areas is necessary, aiming to create COPERNICUS-like systems at country scale under a common system of systems linking to the mother COPERNICUS service.

Moreover, interactions between the scientific community and the private sector needs to be reinforced in order to access and reuse data collected by the private sector and vice-versa.

The sharing of data between the two shores of the Mediterranean, and the quantity and quality of data is not homogeneous in the whole basin (lack of data coverage and absence of data sharing culture in the southern shore). Work should be done to encourage political commitments to enable the harmonization of data standards and interoperability between the two shores.

Alongside these large-scale programmes, which benefit from strong institutional support, many project exist at a smaller scale, ran by various types of stakeholders (public bodies, private companies, NGOs) and including acquisition of data that can valuable for the assessment of the status of the marine ecosystem.
<table>
<thead>
<tr>
<th>PROJECT</th>
<th>DESCRIPTION</th>
<th>OBJETIVES</th>
</tr>
</thead>
<tbody>
<tr>
<td>EUROFLEETS+</td>
<td>Call H2020</td>
<td>Integrating and opening existing national and regional research infrastructures of European interest. EUROFLEETS+ prioritises support for research on sustainable, clean and healthy oceans, linking with existing ocean observation infrastructures, and supports 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.</td>
</tr>
<tr>
<td></td>
<td>EU Contribution: € 9,999,360.58</td>
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<tr>
<td></td>
<td>Duration: 01 February 2019 - 31 January 2023</td>
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<tr>
<td></td>
<td>Website: <a href="https://www.eurofleets.eu">https://www.eurofleets.eu</a></td>
<td></td>
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<tr>
<td>ILICO</td>
<td></td>
<td>The French seashore and coastal research infrastructure ILICO (Infrastructure de Recherche Littorale et Côtière) was established in 2016 with the support of Ministry of Higher Education, Research and Innovation. ILICO is a notable example of national infrastructure and interinstitutional efforts to observe and understand coastal and ocean environments and ecosystems as a whole. ILICO brings together observation mechanisms involving the collection of samples and the deployment of various measuring instruments. Long-term monitoring allows for the understanding and prediction of large-scale coastal processes and phenomena which can impact on coastal and littoral zones (for example quantifying the impact of specific extreme or intermittent events such as tsunamis or cyclones).</td>
</tr>
<tr>
<td></td>
<td>Website: <a href="https://www.ir-ilico.fr/en">https://www.ir-ilico.fr/en</a></td>
<td></td>
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<tr>
<td>JERICO-NEXT</td>
<td>Call: H2020–EU.14.1.2.</td>
<td>The objective of JERICO-NEXT consists in strengthening and enlarging a solid and transparent European network in providing operational services for the timely, continuous and sustainable delivery of high quality environmental data and information products related to marine environment in European coastal seas. It includes an enable free and open access to data, enhance the readiness of new observing platform networks by increasing the performance of sensors, showcase of the adequacy of the so-developed observing technologies and strategies.</td>
</tr>
<tr>
<td></td>
<td>EU Contribution: 9,998,876.47 €</td>
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</tr>
<tr>
<td></td>
<td>Website: <a href="http://www.jerico-ri.eu/">http://www.jerico-ri.eu/</a></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Duration: 01/09/2015 – 31/09/2019</td>
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</tr>
</tbody>
</table>
### INTERNATIONAL STRATEGIES AND PROGRAMMES

- **Global Ocean Observing System (GOOS)** is a programme executed by the Intergovernmental Oceanographic Commission (IOC) of the UNESCO, providing a sustained collaborative system of ocean observations, encompassing in situ networks, satellite systems, governments, UN agencies and individual scientists. It includes a multinational Steering Committee to provide oversight, scientific Expert Panels to guide system requirements, and Observation Coordination Groups that implement global unified network execution. The GOOS Project Office facilitates the collaboration between these different governance bodies.

- **International Oceanographic Data and Information exchange**: since 1961, facilitating the exchange of oceanographic data and information between participating MS, and by meeting the needs of users for data and information products. It:
  - Facilitates & promotes discovery, exchange and access to marine data;
  - Encourages long term archival preservation documentation management and services of marine data;
  - Develops or uses existing best practices for the discovery, management, exchange of, and access to marine data and information;
  - Assists MS to acquire the necessary capacity to manage marine research and observation data and information;

- **Global Ocean Ship-Based Hydrographic Investigation Program**: Joint WMO-IOC Technical commission for oceanography and marine meteorology – brings together scientists with common interests in physical oceanography, carbon cycle, marine biogeochemistry and ecosystems and other users and collectors of hydrographic data to develop a globally coordinated network of sustained hydrographic sections as part of the global ocean/climate observing system. JCOMM coordinates, develops and recommends standards of procedures for a fully integrated marine observing, data management and service system.

- **International Ocean Discovery Program, Science Plan 2013-2023**: International marine research collaboration to explore Earth’s history and dynamics using ocean-going research platforms to recover data recorded in seafloor sediments and rocks and to monitor subsea floor environments.

### EUROPEAN STRATEGIES AND PROGRAMMES

- **Copernicus Marine Environment Monitoring System 2015-2025** – COPERNICUS Programme includes a Space Component and several Thematic Services, among which the Marine Environment Monitoring Service (CMEMS). Information from satellites and in situ observation are used for daily analyses and forecasts of the state of ocean and sea. COPERNICUS Programme also comprises the deployment of Data and Information Access Services (DIAS), namely cloud-based platforms providing centralised access to COPERNICUS data and information, also including processing tools.

- **JPI Oceans** – aims at aligning efforts and funding in marine research between MS and associated countries through joint calls. ‘Observing, modelling and predicting oceans state and processes’ is one of its priorities.

### Target sectors and groups

Key marine observations are needed by different users and stakeholders for research, monitoring and industry.

The target is to observe the sea to better understand the complex marine ecosystem and its functioning (research), to measure and assess its evolution under different stressors and manage resources sustainably (monitoring and management), to provide essential information for decision making and to identify risks and alert hazards (surveillance, security and policy), and to create win-win situations for the use of the same data by economic operators by providing the data backbone needed for a knowledge-based marine economic sector, supplying the data driven services, and promoting smart, innovative added value products to boost blue growth.

Moreover, the understanding and preservation of marine ecosystems concern all sectors and stakeholders whose activities take place in the Mediterranean Sea and it seems important to involve them more closely in observation activities.

It is also necessary to reach out to the non-EU Mediterranean countries: to promote the use of existing data sources; to support the uptake and sharing of new technologies; to participate in the joint monitoring of the marine environment, and to share the commitment for sustainable development.
Intergovernmental Bodies

- UNEP/MAP (http://web.unep.org/unepmap/) and its Regional Centers (e.g. PAP-RAC, SPA-RAC, INFO-RAC, REMPEC).
- IOC-UNESCO (http://msp.ioc-unesco.org/).
- Union for Mediterranean (UfM) (https://ufmsecretariat.org/).
- GFCM (http://www.fao.org/gfcm/en/).

Maritime Clusters

- European Network of Maritime Clusters (ENMC) (https://enmc.eu/about-us/).
- Pole Mer Mediterranee (https://www.polemermediterranee.com/).

NGOs

- WWF MED (http://mediterranean.panda.org/).
- MEDPAN (https://medpan.org/).
- IUCN Mediterranean (https://www.iucn.org/).

Private companies

Collaboration possible with very diverse economic sectors which lead their activities in the Mediterranean Sea (fisheries, ferry companies, energy companies and MREs platforms, shipping companies).

Funding options and agencies

European funding:

- **CMEMS** – Copernicus Marine Environment Monitoring Service.
- **Horizon 2020** – especially under Pillar 1 ‘Excellent Science’ with Research Infrastructures’ thematic and under Pillar 3 ‘Societal Challenges’ with the ‘food security, sustainable agriculture, marine and maritime research and the bio-economy’ thematic.

- **Horizon Europe** – in particular under Pillar 1 ‘Research Infrastructures’; Pillar 2 ‘Global challenges and Industrial Competitiveness’ – Cluster ‘Food and natural resources’, and within the Mission ‘Healthy Oceans, Seas, Coastal and Inland Waters’.
- **Union for the Mediterranean**.
- **UNEP/MAP**.
- **JPI Oceans**.

- Private foundations.
- Competent ministries and regional/local authorities through specific calls.
- Maritime cluster:
  - European Network of Maritime Clusters (ENMC) (https://enmc.eu/about-us/).
  - Pole Mer Mediterranee (https://www.polemermediterranee.com/).
### Activities to promote the SRIA Implementation

<table>
<thead>
<tr>
<th>Examples of activities</th>
<th>Content and objective</th>
<th>How and timeframe</th>
</tr>
</thead>
</table>
| **Networking and engagement of economic sectors and national Blue Growth communities** | • Encourage economic sector, private stakeholders, NGOs, MPAs, citizen science projects, to be involved in the collection of marine and coastal data. All those observation efforts made by the diverse stakeholders involved in Blue Growth activities need to be coordinated through common methodology and shared guidelines.  
  • Goal: strengthen synergies between research, economic and other maritime actors, promote the adoption of open data practices.  
  • Ensure support and funding of observing systems on the long term. | • Mediterranean Programme in collaboration with fisheries to collect data during fishing trips;  
  • Annual Mediterranean Conference dedicated to marine and coastal observation – gathering all the different sectors mentioned in the adjacent column;  
  • Encouragement of FerryBox-like projects, establishment of new routes and involvement of new companies. |
| **Alignment and coordination**                                                          | • Alignment and coordination with EUROFLEETS+ on the way to develop a dedicated programme to the Mediterranean Sea, with a specific MedEUROFLEETS Plan of Action;  
  • Alignment and coordination with Copernicus Programme, promotion of Copernicus model with non-EU countries;  
  • Alignment and coordination with ESFRI. | Meetings and activities for the identification of priority topics/actions and of options for joint implementation. Research to strengthen dialogue and institution capacities. |
| **Promotion and possibly implementation of actions coordinated and jointly undertaken by different countries, with a “variable geometry” approach** | • Develop transnational joint observing systems, through a network of marine based facilities and multidisciplinary stations able to address environmental threats and pollution, and related hazards (...). Target: monitor and understand ecosystem changes, improving alerts and anticipate risks (marine food chain disruptions, impact from pollution, contaminants...).  
  • Promote the adoption of open data practices. | International networking; dedicated assessments to quantify and locate non-local sources of pollution; study connective pathways of pollutants. |

**When:**  
1) 2020-2023.  
2) One conference per year, starting 2021.  
3) 2020-2023.
### Examples of activities

**Champion countries must choose those activities that suit best the priority addressed.**

#### Start-Up actions

<table>
<thead>
<tr>
<th>Examples of activities</th>
<th>Content and objective</th>
<th>How and timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Importance to define what we want to observe and to use observation as a tool to achieve and implement other BLUEMED thematic goals identified as priorities (pollution, climate change, seafood, tourism, greening transports).</td>
<td>Importance to define what we want to observe and to use observation as a tool to achieve and implement other BLUEMED thematic goals identified as priorities (pollution, climate change, seafood, tourism, greening transports).</td>
<td>How: N/A</td>
</tr>
<tr>
<td>Actions to highlight the importance of marine and coastal observation within the Horizon Europe Mission of Healthy Oceans, Seas, Coastal and Inland Waters, and to promote dedicated calls.</td>
<td>Actions to highlight the importance of marine and coastal observation within the Horizon Europe Mission of Healthy Oceans, Seas, Coastal and Inland Waters, and to promote dedicated calls.</td>
<td>How: Dedicated meetings and participation to relevant working groups.</td>
</tr>
<tr>
<td>Importance to better observe land sea (river inputs, sediment fluxes, pollutants) and atmospheric interfaces; Connect observation of physical and biochemical parameters to biodiversity observations.</td>
<td>Importance to better observe land sea (river inputs, sediment fluxes, pollutants) and atmospheric interfaces; Connect observation of physical and biochemical parameters to biodiversity observations.</td>
<td>How: Programme to develop common modelling tools between land and sea. Develop trainings to teach young scientists how to use them.</td>
</tr>
<tr>
<td>Set up a regional task force composed of experts and relocatable observing system components to services and assist bordering countries with expertise and infrastructure to be deployed for dedicated joint activities.</td>
<td>Set up a regional task force composed of experts and relocatable observing system components to services and assist bordering countries with expertise and infrastructure to be deployed for dedicated joint activities.</td>
<td>How: Define laboratories of reference and bring them together on key specific domains of activity; Set-up a coordinated network of coastal multidisciplinary observing stations; Reinforce the access to land-based facilities and strengthen TNA calls (especially by facilitating their access for non-EU scientists).</td>
</tr>
<tr>
<td>Organization of a Mediterranean Conference dedicated to marine and coastal observation (already mentioned above).</td>
<td>Organization of a Mediterranean Conference dedicated to marine and coastal observation (already mentioned above).</td>
<td>How: Conference.</td>
</tr>
</tbody>
</table>

**When:**
- **Start-Up actions:** N/A
- **Assessment and promotion of the capitalisation and valorisation under the BLUEMED umbrella of ongoing and future projects:** N/A
- **Lobbying actions:** 2020–2023.
- **Training and capacity building initiatives:** Starting end of 2021.
- **Implementation Working Groups (IWG) on specific sectors:** N/A
- **Communication and engagement:** One conference per year, starting 2021.
Tourism is a key sector in most of the Mediterranean coastal regions. The Mediterranean can take advantage of its valuable natural and cultural assets. Its heritage reflects a millenary history.

The climate of the area is favorable to the exercise of tourist activities throughout the year. Touristic economy is therefore of high importance for many countries. As income generator tourism also provides a valuable income for supporting preservation and conservation of natural as well as cultural heritage.

However, tourism often exerts high pressures on the coastal and marine environment, especially during seasons of high visitation, when the population of some areas increases by threefold or more (for example, Slovenia, Malta). Increased number of daily users (tourists and locals) led to high pressure on natural and cultural assets, causing abuse and destruction of those resources. In many cases, countries depend on the import of essential resources for accommodating typical tourist needs (e.g. food, drinks, energy, etc.) which significantly reduces economic benefits of tourism, while maintaining high pressure on natural and cultural resources.

By providing incomes and jobs to the local population, this sector is also considered as strategic by many coastal regions. However, tourism often exerts high pressures on the coastal and marine environment, especially during seasons of affluence when the population of some areas increases dramatically.

Thus, reducing negative impacts of tourism on natural, social and economic environment will allow for preserving the natural and cultural heritage on the long term. This priority supports the implementation of the “European Strategy on sustainable tourism for blue job in Maritime and Coastal tourism.

The transition towards a more sustainable tourism will need innovative approach and the support of socio-economic research. Connecting coastal tourism with other branches of maritime economy (e.g. pescatourism) or with the inland can be of great potential.

Very interesting prospects are also offered in this sector by the fast development of ICT. This makes possible to experiment innovation in a very short term as well as provide infrastructure for monitoring tourism’s impacts; thus allowing the empirically supported decisions making for tourism sector.

### Recent and ongoing relevant projects

<table>
<thead>
<tr>
<th>PROJECT</th>
<th>DESCRIPTION</th>
<th>OBJECTIVES</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALTER ECO</td>
<td>Alternative tourist strategies to enhance the local sustainable development of tourism by promoting Mediterranean identity</td>
<td>The Mediterranean is under threat due to the inappropriate practice and development associated with mass tourism. As a consequence areas of high tourist attraction in coastal cities are reaching their limit on carrying capacity, with a direct impact not only on the urban environment but on key elements that define MED Culture. In this context, ALTER ECO enhances the local sustainable development of tourism by promoting Mediterranean Identity through the implementation of alternative tourist strategies in 6 pilots co–designed and implemented by public and private stakeholders.</td>
</tr>
</tbody>
</table>

**Call:** ERDF (European Regional Development Fund)

**Duration:** 01/11/2016 – 31/07/2019

**EU Contribution:** 2,293,630.00 €

**Website:** https://alter-eco.interreg-med.eu
The project provides the opportunity of testing, in representative MED cities, used as LIVING LAB, existing methodologies and tools arisen in previous high impact projects in the field of sustainable tourism or proposed by key stakeholders, with the aim of reaching holistic and realistic tourist strategies at local and regional level that allow transferability in the MED territory. Project results will support policy makers to make more informed and integrated decisions for the governance and management of tourism in the Mediterranean and at the same time will enhance the coordination of actions between public and private stakeholders towards the implementation of the raised strategies in order to create new business opportunities.

<table>
<thead>
<tr>
<th><strong>BLUEISLANDS</strong></th>
<th><strong>BLUEMED</strong></th>
<th><strong>CASTWATER</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Seasonal variation of waste as effect of tourism</td>
<td>Call: ERDF (European Regional Development Fund)</td>
<td>Call: ERDF (European Regional Development Fund)</td>
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<tr>
<td><strong>Call:</strong></td>
<td>Call: ERDF (European Regional Development Fund)</td>
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<td><strong>EU Contribution:</strong></td>
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<td><strong>Duration:</strong></td>
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<tr>
<td>Blue Islands Project brings together 14 partners from 8 countries in a systematic effort to properly identify, address and mitigate the effects of the seasonal variation of waste generation on MED islands as an effect of tourism. The issue has been a vexing problem for years but it has never before been approached methodically. The quantity and composition of waste generated over a twelve-month period on nine MED islands will be measured and the correlation between the quantified waste generated and both the number of tourists and the presence of litter in the coastal environment will be examined. At the same time, the existing waste management structure and followed respective practices will be assessed.</td>
<td>Aims to plan/test/coordinate Underwater Museums, Diving Parks and Knowledge Awareness Centres in order to support sustainable and responsible tourism development and promote Blue growth in coastal areas and islands of the Mediterranean.</td>
<td>CASTWATER is the first MED project to support sustainable tourism policies &amp; practices on water efficiency in coastal areas. The transnational challenge is to reduce the impact of tourism activities on environmental heritage and to improve management of water resources. The project’s overall objective is to support sustainable tourism water management in Med coastal areas, by improving the monitoring and assessment of the water sustainability performance of the tourism sector.</td>
</tr>
<tr>
<td>Project</td>
<td>Call</td>
<td>EU Contribution</td>
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<tr>
<td>COASTING</td>
<td>ERDF</td>
<td>1.054.612,50€</td>
</tr>
<tr>
<td>CO-EVOLVE</td>
<td>ERDF</td>
<td>3.000.000,00€</td>
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<tr>
<td>CONSUME-LESS</td>
<td>ERDF</td>
<td>2.635.000€</td>
</tr>
<tr>
<td>DESTIMED</td>
<td>ERDF</td>
<td>2.500.000 €</td>
</tr>
<tr>
<td><strong>EMbleMatiC</strong></td>
<td><strong>HERIT-DATA</strong></td>
<td><strong>INHERIT</strong></td>
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<td><strong>Call:</strong> ERDF (European Regional Development Fund)</td>
<td><strong>Call:</strong> ERDF (European Regional Development Fund)</td>
<td><strong>Call:</strong> ERDF (European Regional Development Fund)</td>
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<tr>
<td><strong>Duration:</strong> 01/11/2016 – 31/10/2019</td>
<td><strong>Duration:</strong> 01/02/2018 – 31/01/2022</td>
<td><strong>Duration:</strong> 01/02/2018 – 31/01/2022</td>
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<tr>
<td><strong>EU Contribution:</strong> 2.975.571,49€</td>
<td><strong>EU Contribution:</strong> 4.195.515,20€</td>
<td><strong>EU Contribution:</strong> 5.612.660,00 €</td>
</tr>
<tr>
<td><strong>Website:</strong> <a href="https://emblematic.interreg-med.eu">https://emblematic.interreg-med.eu</a></td>
<td><strong>Website:</strong> <a href="https://herit-data.interreg-med.eu">https://herit-data.interreg-med.eu</a></td>
<td><strong>Website:</strong> <a href="https://inherit.interreg-med.eu">https://inherit.interreg-med.eu</a></td>
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<tr>
<td>The objective of the EMbleMatiC project is to create and test a new and radically different tourism offer based on the features of these mountains and to create an alternative to the traditional holiday on the beach. This project goes even further. It is not concerned with creating a generic tourism product, but rather with piloting a new way of conceiving tourism: one which combines the development and protection of natural environments, by applying a more sustainable and responsible management of tourism flows and a greater involvement of inhabitants and local actors.</td>
<td>HERIT-DATA plans to develop of a sustainable and responsible tourism management towards cultural heritage in MED regions, in particular by taking advantage of technology and innovation in management tools (Smart Cities), as well as other policy and social measures. The partners will develop, test and transfer a series of knowledge and solutions (Models, Strategy, Artificial Intelligence &amp; Big Data based-on platform and App, etc.) in line with the current sectoral changes and characteristics of smart destinations, able to collect, generate, integrate and analyse information and transform it into behaviour changes, according to ICZM recommendations.</td>
<td>INHERIT will promote sustainable tourism alleviating seasonality and tackling the surpassing of the hosting capacity, by designing and implementing a “bottom-up” protection approach relying on self-regulation and monitoring by local society and tourism stakeholders. The INHERIT protection approach will involve all the key stakeholders (at MED, national, regional and local level) in its studying, testing and capitalisation activities, to deliver: - A MED-wide policy strategy and protection measures addressing the negative effects of intensive tourism flows.</td>
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<tr>
<td>Project Name</td>
<td>Description</td>
<td>Call</td>
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<tr>
<td>MEDCYCLETOUR</td>
<td>MEDiteranean Cycle route for sustainable coastal TOURism</td>
<td>ERDF (European Regional Development Fund)</td>
</tr>
<tr>
<td>MEDFEST</td>
<td>MED Culinary heritage experiences: how to create sustainable tourist destinations</td>
<td>ERDF (European Regional Development Fund)</td>
</tr>
<tr>
<td>MITOMED+</td>
<td>MITOMED+ Models of Integrated Tourism in the MEDiterranean Plus</td>
<td>ERDF (European Regional Development Fund)</td>
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</tbody>
</table>

**MEDCYCLETOUR**

Sparkling emerald seas, kilometers of golden sand, wonderful food and ancient cities... it’s not hard to find reasons to go cycling along the Mediterranean! Unfortunately, in the 8 countries covered by this project, the potential of cycling tourism has not yet been realised even though it prolongs the tourism season, reduces the environmental impact of travelling and can bring tourists to less visited areas. EuroVelo 8 – Mediterranean Route is a long-distance cycle route that connects the whole Mediterranean from Cyprus to Cádiz. The overall objective of the project is to use this route as a tool to influence regional and national policies in favour of sustainable and responsible tourism, providing transnational solutions in coastal areas across the Mediterranean.

**MEDFEST**

MEDFEST is tackling the challenge of diversifying traditional ‘sun & sea’ tourist destinations, with new and sustainable products based on rich and renowned culinary heritage of the Mediterranean. In so doing, we will increase the sustainability and quality of life in MED space. Our objective is to create tools and instruments for designing new sustainable culinary experiences, which will be offered to visitors to: 1) diversify the tourism sector in terms of products and its seasonality; 2) bring tourism development to the coastal hinterland; 3) safeguard culinary heritage for future generations.

**MITOMED+**

MITOMED+ is multi-module project combining Testing and Capitalization (M2-M3). It is a follow up of the previous MITOMED project (MED Maritime), which has been working to promote the integrated management of M&C tourism by improving the knowledge of data, products, services through a set of indicators based on the NECSTouR model. MITOMED+ takes farther these results aiming to improve the coordination of strategies between territories at transnational level regarding the development of the M&C tourism through cooperation and joint planning between regions.
<table>
<thead>
<tr>
<th>Project Name</th>
<th>Call: ERDF (European Regional Development Fund)</th>
<th>EU Contribution:</th>
<th>Website:</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ShapeTourism</strong></td>
<td>New shape and drives for the tourism sector: supporting decision, integrating plans and ensuring sustainability</td>
<td><strong>EU Contribution:</strong> 598,536.50€</td>
<td><a href="https://shapetourism.interreg-med.eu">https://shapetourism.interreg-med.eu</a></td>
<td>Shapetourism improves the tourism knowledge framework, providing analysis and operational tools to pinpoint an integrated methodology to shape and drive tourism sustainable growth, particularly for Cultural Destinations. It supports policymakers and private operators to achieve: attractiveness, growth and sustainability, taking into account the major challenges of global competition. Starting from the capitalization of scientific studies and from tourism established patterns, the project gears towards the balance between divergent public and private interests with the final scope to drive tourism development to a holistic, highly operational and sustainable approach.</td>
</tr>
<tr>
<td><strong>SIROCCO</strong></td>
<td>Sustainable InterRegional cOastal &amp; Cruise maritime tourism though COoperation and joint planning</td>
<td><strong>EU Contribution:</strong> 600,000.00 €</td>
<td><a href="https://sirocco.interreg-med.eu">https://sirocco.interreg-med.eu</a></td>
<td>Addressing this challenge is hindered by three factors:1) existing knowledge is insufficient &amp; data gaps still exist;2) coastal regions struggle to fully capture benefits generated by cruise tourism; 3) coordination of strategies and policies at regional &amp; transnational level is limited. SIROCCO has the ambition of tackling those problems by providing: 1. An integrated view of the current state of Mediterranean cruise tourism (as a whole and per segment) and its impacts (environmental, economic, and societal). 2. A foresight of Mediterranean cruise tourism for the following decades. 3. Evidence-based, transferable recommendations on developing sustainable &amp; responsible Cruise Value Chains in the MED. 4. Coordinated strategies &amp; policies at regional and transnational level regarding the development of a sustainable and responsible cruise maritime/coastal tourism.</td>
</tr>
<tr>
<td><strong>TOURISMED</strong></td>
<td></td>
<td><strong>EU Contribution:</strong> 2,157,900.00 €</td>
<td><a href="https://tourismed.interreg-med.eu">https://tourismed.interreg-med.eu</a></td>
<td>TOURISMED is a project aimed at testing and transferring a fishing tourism business model in the coastal territories of Italy, Cyprus, Greece, Albania, France and Spain as a way to promote a sustainable approach to tourism, while fostering the preservation of the marine ecosystem and the traditional fishing culture of the MED region.</td>
</tr>
<tr>
<td><strong>SECNET</strong></td>
<td>Cross-border institutional cooperation for the improvement of port security</td>
<td><strong>EU Contribution:</strong> 6,996,032.25€</td>
<td><a href="https://www.ita-slo.eu/en/secnet">https://www.ita-slo.eu/en/secnet</a></td>
<td>SECNET aimed at improving the institutional competence of the Program Area’s ports and to lay the groundwork for coordinated and permanent port security at the cross-border level thanks to the use of innovative ICT tools.</td>
</tr>
<tr>
<td>Programme</td>
<td>Call</td>
<td>EU Contribution</td>
<td>Website</td>
<td>Description</td>
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<tr>
<td>Riviera4seasons2</td>
<td>ERDF (European Regional Development Fund)</td>
<td>714,174.25€</td>
<td>-</td>
<td>Riviera4seasons2 aimed at improving cultural tourism experiences in the Adriatic region.</td>
</tr>
<tr>
<td>QNeST: Quality Network on Sustainable Tourism</td>
<td>ERDF (European Regional Development Fund)</td>
<td>1,465,662.95€</td>
<td>-</td>
<td>QNeST aimed at promoting and fulfilling the economic potential of the common and exceptional features of the cultural, traditional and environmental heritage of the Adriatic–Ionian area.</td>
</tr>
<tr>
<td>Tourism 4.0</td>
<td>ERDF (European Regional Development Fund)</td>
<td>-</td>
<td><a href="https://tourism4-0.org/">https://tourism4-0.org/</a></td>
<td>Tourism 4.0: enriched tourism experiences, aims at developing ICT platform for monitoring tourism impacts and developing empirical support for strategic and business decision making in tourism.</td>
</tr>
<tr>
<td>Face to Face: Meet an Ancient Cypriot</td>
<td>INTEGRATED/0916/0029 /</td>
<td>999,998.17 €</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>ReCult – Religious Cultural Pathways</td>
<td>Interreg/Greece–Cyprus Integrated Project</td>
<td>1,918,370.00 €</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Ecotourism</td>
<td>European Project Leonardo da Vinci (LdV)</td>
<td>210,880.00 €</td>
<td>-</td>
<td>The project aimed to improve the skills and competences of people in the tourism sector by introducing an ecotourism training programme in Cyprus, Estonia, Lithuania and Spain, while at the same time encouraging ecotourism development in project countries in particular and Europe in general.</td>
</tr>
</tbody>
</table>

Programmes and initiatives of relevance, including research and data infrastructures

EUROPEAN STRATEGIES

"COSME":
COSME is the EU programme for the Competitiveness of Enterprises and Small and Medium-sized Enterprises (SMEs). It supports SMEs in four areas:
- Facilitate access to finance for SMEs through the "Loan Guarantee Facility" and the "Equity Facility for Growth".
- Improving access to markets (notably thanks to the services provided by the Enterprise Europe Network).
- Improving framework conditions for the competitiveness and sustainability of Union enterprises, notably thanks to the Tourism Action Plan.
- Promoting entrepreneurship and entrepreneurial culture, notably thanks to the Erasmus for young entrepreneurs’ exchange scheme.
“Creative Europe Programme”:
The Creative Europe programme helps cultural and creative organisations to operate transnationally, the circulation of works of culture as well as the mobility of cultural players. Bringing together 3 pre-existing programmes (Culture, MEDIA and MEDIA Mundus), “Creative Europe” is made of 3 parts:
- The “Culture sub-programme” for cultural & creative sectors.
- The “Media sub-programme” for the audio-visual industries.
- The Cross-sectoral strand for joint projects between the cultural & creative sectors and the audio-visual industries.

“Erasmus+”:
“Erasmus+” aims to boost skills and employability, as well as modernising Education and Training. In addition to the new sport action and the Youth in Action programme, it brings together 6 other pre-existing programmes:
- the Lifelong Learning Programme (Erasmus, Leonardo da Vinci, Comenius and Grundtvig)
- Erasmus Mundus, Tempus, Alfa, Edulink and the programme for cooperation with industrialised countries

EaSI programme:
The “Employment and Social Innovation” (EaSI) programme promotes a high level of quality and sustainable employment, guaranteeing adequate and decent social protection, combating social exclusion and poverty, and improving working conditions. It brings together:
- PROGRESS (Programme for Employment and Social Solidarity).
- EURES (European job mobility).
- EaSI Guarantee Financial Instrument (dedicated to microfinance and social entrepreneurship finance).
For details on its structure & procedures, see EaSI website and brochure.

European Fund for Strategic Investments
The European Fund for Strategic Investments (EFSI) is an initiative launched jointly by the European Commission and the EIB Group (European Investment Bank and European Investment Fund) to help overcome the current investment gap in the EU by mobilising private financing for strategic investments.
EFSI may support, among other things:
- Strategic infrastructure including digital, transport and energy.
- Education, research, development and innovation.
- Expansion of renewable energy and resource efficiency.
- Support for smaller businesses and midcap companies.

European Regional Development Fund
The European Regional Development Fund (ERDF) is one of the five “European Structural and Investment Funds” (ESIF). Under ESIF rules, each Member State has to draw up a strategic plan indicating its 2014–2020 objectives & investment priorities for the use of these Funds. Once the European Commission’s observations adequately considered, this plan becomes a “Partnership Agreement”. Member States also have to draw up “Operational Programmes” breaking down priorities listed in the Partnership Agreement into concrete actions. “Operational Programmes” (OP) are implemented by Managing Authorities set up by the Member States (at national, regional or another level). The ERDF aims to strengthen economic and social cohesion in the European Union by correcting imbalances between its regions. It may provide essential support to improve the competitiveness and quality of tourism at regional and local levels, notably in areas in (industrial / rural) decline or those undergoing urban regeneration.
ERDF support may go to 11 “thematic objectives and investment priorities” in line with the Europe 2020 policy priorities. The most relevant for the tourism sector probably are:
- Research and innovation (N°1).
- Information and Communication Technologies (N°2).
- Competitiveness of Small and Medium-Sized Enterprises (N°3).
- Shift to a low-carbon economy (N°4).
- Environmental protection and resource efficiency (N°6).
- Employment and support for labour mobility (N°8).
- Education, skills and lifelong learning (N°10).
Cohesion Fund

The Cohesion Fund (CF) is one of the five “European Structural and Investment Funds” (ESIF). Under ESIF rules, each Member State has to draw up a strategic plan indicating its 2014–2020 objectives investment priorities for the use of these Funds. Once the European Commission’s observations adequately taken into account, this plan becomes a “Partnership Agreement”. Member States also have to draw up “Operational Programmes” breaking down priorities listed in the Partnership Agreement into concrete actions. “Operational Programmes” (OP) are implemented by Managing Authorities set up by the Member States (at national, regional or another level). In order to reduce economic and social disparities and to promote sustainable development, the Cohesion Fund is aimed at Member States whose Gross National Income (GNI) per inhabitant is less than 90 % of the EU average. According to the investment and infrastructure needs specific to each Member, the CF may support Investment in the environment, including areas related to sustainable development and energy which present environmental benefits.

European Social Fund

The European Social Fund (ESF) is one of the five “European Structural and Investment Funds” (ESIF). Under ESIF rules, each Member State has to draw up a strategic plan indicating its 2014–2020 objectives investment priorities for the use of these Funds. Once the European Commission’s observations adequately taken into account, this plan becomes a “Partnership Agreement”. Member States also have to draw up “Operational Programmes” (OP) breaking down priorities listed in the Partnership Agreement into concrete actions. These OPs can cover entire Member States and/or regions or be cooperation programmes involving more than one country. “Operational Programmes” are implemented by Managing Authorities set up by the Member States (at national, regional or another level). The ESF aims in particular to improve employment and (workers) mobility as well as the level of professional qualifications in the EU.

EAFRD

The “European Agriculture Fund for Rural Development” (EAFRD) aims, among other things, at promoting economic development in rural areas. Funds for rural development are allocated by Managing Authorities appointed by the Member States. Depending on the needs and choices of each Member State, support may be granted to:

- The diversification of farmers into non-agricultural activities.
- The development of non-agricultural SMEs in rural areas and engaged in sustainable.
- Responsible tourism.
- The restoration / upgrading of the cultural and natural heritage of villages and rural landscapes

EMFF

Replacing the European Fisheries Fund, the European Maritime and Fisheries Fund (EMFF) has among its priorities to increase employment and territorial cohesion in coastal and inland communities depending on fishing and aquaculture. This should be achieved by:

The promotion of economic growth, social inclusion, creation of jobs and supporting labour mobility in these communities; the diversification of activities within fisheries and into other sectors of maritime economy.

Each Member State is allocated a share of the total Fund budget in relation with the size of its fishing industry. It then draws up an “Operational Programme”, saying how it intends to spend the money. Once the programme approved by the Commission, it is up to the Managing Authority set up by each Member State (at national or regional) to implement it.

Managing authorities responsible for the implementation of EMFF operational programmes delegate a number of tasks to “Fisheries Local Action Groups” (FLAGs). These partnerships between fisheries actors and other local private/public stakeholders design local development strategies. FLAGs also manage a budget to support technically and financially the implementation of their local strategy via specific projects.

Under these local strategies, funding is available in particular for cultural fisheries and maritime cultural heritage. This can cover tourism-related projects, such as eco-tourism, pesca-tourism and fishing tourism33, local gastronomy (fish and seafood restaurants), accommodation, tourist trails, diving, etc.

“LIFE”

LIFE is the financial instrument supporting environmental and nature conservation projects throughout the EU. The priority areas of its sub-programme for environment are:

- Environment and Resource Efficiency.
- Nature and Biodiversity.
- Environmental Governance and Information.
The priorities areas of its sub-programme for climate action are:

- Climate Change Mitigation (contributing to reduce greenhouse gas emissions).
- Climate Change Adaptation (contributing to increase resilience to climate change).
- Climate Governance and Information.

“Horizon 2020”

Bringing together three previous programmes / initiatives, “Horizon 2020” is the EU Framework Programme for Research and Innovation (2014–2020). It is made of “programme sections” (also called “pillars”), some being divided in sub-sections. The most interesting sections for tourism probably are:

“Excellent Science”

Sub-section MSCA ("Marie Skłodowska-Curie Actions") for career development and training of researchers – with a focus on innovation skills – in all scientific disciplines through worldwide and cross-sector mobility.

“Industrial Leadership”

Sub-section programme LEIT ("Leadership in Enabling and Industrial Technologies"), among other things, for greater competitiveness of the European cultural and creative sectors by stimulating ICT innovation in SMEs Technologies.

“Societal Challenges”

Sub-section programme “Europe in a changing world – Inclusive, innovative and reflective societies”, hereafter Reflective, to address in particular the issues of memories, identities, tolerance and cultural heritage.

“SME instrument”

For high-potential SMEs to develop ground-breaking innovative products, services or processes able to face global market competition.

The ‘Cyprus Breakfast’ programme

The ‘Cyprus Breakfast’ programme was created by the Cyprus Tourism Organisation (CTO), the Travel Foundation UK and the Cyprus Sustainable Tourism Initiative (CSTI) through the Cyprus Destination Partnership programme. The aim of the programme is to promote local gastronomy and enhance authenticity in the hotels in Cyprus. The hotels through the use of local products highlight the flavours and aromas of Cyprus and invite their guests to experience our gastronomic richness and hospitality.

UfM Ministerial Declaration on Blue Economy (2015: a new one upcoming in 2021)

UfM Ministerial Declaration on Environment and Climate Change” (2014; a new one upcoming in 2020)

UfM Working Group on Blue Economy
https://ufmsecretariat.org/ufm–working-group-blue-economy/

Any other relevant UfM Ministerial (transport, energy, sustainable urban development, etc.), related strategies, programmes and projects
https://ufmsecretariat.org/what-we-do/water-environment/
Key target groups are tourism directly and indirectly related organizations from public and private sector. As in figure 1, BlueMed initiative must address the needs and facilitate the capacity of the tourism ecosystem. To do so, by far most important action is to set up a credible and effective system for monitoring tourism’s impacts (both positive and negative) and correlate the impacts with tourism target segments as well as with the carrying capacity of local environment as well as key stakeholders. Based on empirically proven tourism impacts key tactic and strategic action may be developed which will support the blue growth in the Mediterranean region.

Intergovernmental Bodies

- World Tourism Organization - UNWTO (https://www.unwto.org/).
- WTTC - World Travel and Tourism Council (https://www.wttc.org/).
- IOC-UNESCO (http://msp.ioc-unesco.org/).
- Union for Mediterranean (UfM) (https://ufmsecretariat.org/).

Sectoral Associations

- ETC – European Travel Commission (https://etc-corporate.org/).
- NECSTouR – Network of European Regions for a Sustainable and Competitive Tourism (https://necstour.eu/).
- European tourism association (https://www.etoa.org/).
- Virtual Tourism Observatory (https://ec.europa.eu/growth/tools-databases/vto/).
- Enterprise Europe Network: tourism and cultural heritage (https://een.ec.europa.eu/).
- Europark Federation (https://www.europarc.org/sustainable-tourism/).

Maritime Clusters

- European Network of Maritime Clusters (ENMC) (https://enmc.eu/about-us/).
## Funding options and agencies

Funding options for tourism related research is largely based on national and European research projects. Possible European funding can be absorbed through:

- LIFE.
- COSME.
- Creative Europe Programme.
- Employment and Social Innovation.
- Interreg and MED programmes.
- S4.
- ESPON.
- UNWTO.
- National research agencies.
- ERC funding schemes.
- Tourism industry research funding.

## Activities to promote the SRIA Implementation

<table>
<thead>
<tr>
<th>Examples of activities</th>
<th>Content and objective</th>
<th>How and timeframe</th>
</tr>
</thead>
</table>
| **Networking and engagement of economic sectors and national Blue Growth communities** | Sharing key information about the ongoing projects, knowledge, infrastructure and stakeholders involved with the blue growth.  
- UNWTO.  
- EU Sustainable Tourism Group.  
- Green destinations. | How: Working groups meetings, conferences and online communication platform for sharing knowledge.  
| **Funding** | Support of strategic initiatives aimed at setting up the key enabling technology for monitoring and big-data based analytics. | How: Regional SRIA implementation fund; either as a special Mediterranean development fund or as a share of the existing funding schemes.  
When: 2020 – 2023 (at least one per year). |
| **Alignment and coordination** | Synchronizing ideas and resources towards common goals of the SRIA and prevention of double funding misuse of knowledge, time and other resources. This will result in increasing the invested R&D euro. | How: SRIA platform with detailed database about project ideas, ongoing projects, funding opportunities, key outcomes of completed projects.  
| **Promotion and possibly implementation of actions coordinated and jointly undertaken by different countries, with a “variable geometry” approach** | - CSA.  
- Promotion of START UP’s.  
- BlueBoats MED.  
- Share results, issues, gaps.  
When: |
| **Start-Up actions** | Testing innovative ideas at the TLR 1 – 6 levels and set them ready for market implementation. | How: Special development fund supported by public sector and industry.  
When: 2021. |
### Examples of activities

[Champion countries must choose those activities that suit best the priority addressed]

<table>
<thead>
<tr>
<th>Content and objective</th>
<th>How and timeframe</th>
</tr>
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<tbody>
<tr>
<td>[Champion countries describe in more detail the content and specific objective of a given activity]</td>
<td>[Champion countries explain how the activity can be carried out and timeframe within the IP (2020–2023)]</td>
</tr>
</tbody>
</table>

### Assessment and promotion of the capitalisation and valorisation under the BLUEMED umbrella of ongoing and future projects

- Digital Ecosystems for Coastal tourism destinations - Mapping the opportunities. Methods to facilitate the capacity of the tourism ecosystem to direct and promote a sustainable and competitive coastal tourism.
- The research and innovation program should develop digital ecosystems able to produce Intelligence for the design of policies capable of responding to the concrete needs of coastal destinations and businesses. In particular, the innovative research pathway should allow:
  - The realization of a map of opportunities able to analyse and interpret the interconnections between attractions, territory, production system and changing patterns in tourism demand behaviour. It will therefore have to support territorial systems and businesses with new perspectives of development of destinations and local tourism products as well as business management practices, providing at the same time operational tools to improve competitive and sustainable positioning.
  - Pilot projects have already been launched in Italy with the involvement of both private associations (e.g. Chambers of Commerce) and public stakeholders at regional level. The ongoing activity could serve as a base for the deployment and the sharing of the outcomes and the critical issues emerged.

<table>
<thead>
<tr>
<th>How</th>
<th>When</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mapping the opportunities.</td>
<td>2020.</td>
</tr>
</tbody>
</table>

### Lobbying actions

Supporting systematic and institutional (regional, national, local) support for SRIA.

<table>
<thead>
<tr>
<th>How</th>
<th>When</th>
</tr>
</thead>
<tbody>
<tr>
<td>Setting the implementation agenda and networking with existing groups.</td>
<td>2020–2023.</td>
</tr>
</tbody>
</table>

### Training and capacity building initiatives

<table>
<thead>
<tr>
<th>How</th>
<th>When</th>
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<td></td>
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</table>

### SRIA Community and Implementation Working Groups (IWG) on specific sectors

- SRIA communities (platforms) should be supported after the BlueMed project is completed with enough funding to support development and implementation of at least one R&D project per Fishe.

<table>
<thead>
<tr>
<th>How</th>
<th>When</th>
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</thead>
<tbody>
<tr>
<td>Founded as a special working group body within EU or other territorial authority, with enough impact to provide political and financial support.</td>
<td></td>
</tr>
</tbody>
</table>

### Communication and engagement

<table>
<thead>
<tr>
<th>How</th>
<th>When</th>
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</table>
ANNEX 1: BLUEMED FICHES FOR THE 13 PRIORITIES

FICHE 6
EFFECTIVE MARITIME SPATIAL PLANNING IN THE MEDITERRANEAN
CO-CHAMPION COUNTRIES: ITALY & TURKEY / SUPPORTING COUNTRIES: SPAIN, EGYPT

Background

MSP is about promoting the rational use of the sea and improving decision-making. It is well recognized how “Governance of the maritime space” is at the base of any socio-economic development and conservation effort. Imposing a paradigmatic change in the management of the commons, it requires multidisciplinary R&I, both in terms of conceptual approaches and analysis and in terms of dedicated technologies to support the governance on the field, including surveillance. Indeed, the Mediterranean Sea presents specific governance needs, due to its morphology and its geopolitical situation. It is in the interest of all Mediterranean countries to seek to balance sectoral interests and use space more efficiently, thereby contributing to the long-term sustainable use of marine resources.

The increase in maritime activities and the development of new initiatives in the Mediterranean naturally lead to competition between maritime activities or between such activities and the environment. This is particularly true for coastal areas and ports where a variety of maritime activities take place, such as fishing, mariculture, maritime transport, dredging/sand extraction and marine and coastal tourism, but it also applies to offshore environments and activities.

The topic is fully transversal, affecting all blue economy sectors and environmental objectives. By clearly defining areas for specific purposes, especially human activity, investors in specific areas can be more easily attracted, ultimately improving citizens’ well-being.

A number of actions are already ongoing at national and sea basin scale (e.g. MSFD implementation, update of Barcelona Convention Regional Frameworks, Integrated coastal management projects, discussions and agreements on disputed areas) requiring scientific and knowledge support: they can provide concrete results in short time. Beside the direct implementation of the MSP Directive, the potential policy impact of this goal is clearly very high and is linked with all existing strategies at regional and sub-regional scale. Regional and international cooperation – including on legal and political issues – and stakeholder engagement are crucial for MSP to be effective. A long-term plan is needed.

The process that brought to the last update of the BLUEMED SRIA (http://www.bluemed-initiative.eu/wp-content/uploads/2018/12/BLUEMED-SRIA_Update_2018.pdf), involving CSA partners and national pivots, through the BLUEMED Platforms, identified for Goal E-E2 the following nine Actions:

- **E2.1** Improve the knowledge on the **land-sea nexus** to properly address planning, considering co-existence of coast and sea uses and environmental objectives; particular emphasis should be placed on substantially improving the connection between marine traffic with port location/activities and the main supply chains on land (train and free-way networks as well as water ways where appropriate).
- **E2.2** Develop **coastal ecological engineering solutions and measures** taking into account also pressures derived from economical drivers on land.
- **E2.3** Define and study approaches and tools to identify the trade-offs between ecological dynamics and socio-economic needs, taking into account marine ecosystems goods and services and their environmental, economic and social value, in order to inform and improve adaptive planning and management scenarios.
- **E2.4** Use **integrated decision tools** to select appropriate sites for offshore installations, to ensure that they meet energy and environmental requirements.
- **E2.5** Address **transboundary maritime spatial planning** issues to understand problems and opportunities (social, economic, environmental) and strengthen knowledge on environmental pressures across borders.
- **E2.6** Develop tools/software to assess the **cumulative impacts of human activities**, including the role of land–based stressors, to ensure an eco-sustainable exploitation of marine resources, considering social and economic aspects.
- **E2.7** Promote innovative technologies and services for a sustainable management and resulting protection of coastal areas from coastal erosion, flooding and pollution.
- **E2.8** Implement **managing solutions and conservation plans**, including networks of Marine Protected Areas and their surroundings, for coastal to deep-sea ecosystems, taking into account their relationship with natural and anthropogenic changes (such as artificial reefs) in the environment while ensuring and promoting ecosystems services; best practices on adaptation and resilience.
- **E2.9** Develop **best practices for deep-sea adaptive management** based on open data from diverse stakeholders and a common/shared and long-term vision.

Text in blue identifies Actions selected by countries as the “Most relevant actions identified to reach the selected goal” during the SRIA prioritization process.
### Mapping and discussing implementation options and potentials of this priority

#### Recent and ongoing relevant projects

<table>
<thead>
<tr>
<th>PROJECT</th>
<th>DESCRIPTION</th>
<th>OBJETIVES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ADRIPLAN</strong></td>
<td>ADRIatic Ionian maritime spatial PLANning</td>
<td>ADRIPLAN aims to deliver a commonly agreed approach to cross-border MSP in the Adriatic-Ionian region. The project developed proposals and recommendations for MSP on the Adriatic-Ionian Macroregion and on two Focus Areas represented by the Northern Adriatic Sea (Focus Area 1) and the Southern Adriatic – Northern Ionian Sea (Focus Area 2).</td>
</tr>
<tr>
<td><strong>SUPREME</strong></td>
<td>SUpporting maritime spatial Planning in the Eastern Mediterranean</td>
<td>Support the implementation of Maritime Spatial Planning in EU Member States within their marine waters in the Eastern Mediterranean, including the Adriatic, Ionian, Aegean and Levantine Seas. Launch and carry out concrete and cross-border MSP initiative between Member States in the Eastern Mediterranean.</td>
</tr>
<tr>
<td><strong>SIMWESTMED</strong></td>
<td>Supporting Implementation of Maritime Spatial Planning in the Western Mediterranean region</td>
<td>SIMWESTMED focused on two key objectives: Supporting the implementation of Maritime Spatial Planning in EU Member States; Launching and carry out concrete and cross-border MSP initiatives between Member States. To address these objectives the activities undertaken focused on the following issues: Initial assessment, Cooperation on MSP in Western Mediterranean, MSP process, Methodology for a transboundary MSP, Spatial demands and future trends, Data and information’s requirements for MSP, Tools and methods supporting MSP, Stakeholder’s engagement.</td>
</tr>
<tr>
<td><strong>MUSES</strong></td>
<td>Multi-use of European seas</td>
<td>The Multi–Use in European Seas (MUSES) project is a Horizon 2020 funded project that is exploring the opportunities for Multi–Use in European Seas across five EU sea basins (Baltic Sea, North Sea, Mediterranean Sea, Black Sea and Eastern Atlantic).</td>
</tr>
<tr>
<td><strong>PORTODIMARE</strong></td>
<td>geoPortal of Tools &amp; Data for sustainable Management of coastal and marine Environment</td>
<td>PORTODIMARE project aims at creating a common platform (Geoportal) for data, information and decision support tools focused on coastal and marine areas of the Adriatic-Ionian Region. The Geoportal integrates and further develops existing databases, portals and tools developed within previous EU projects by local and national administrations and by other initiatives. Through this approach, most of the available knowledge and resources will be efficiently organized and made accessible through a single virtual space, thus supporting coordinated, regionally/ transnationally coherent and transparent decision-making processes, with the perspective of remaining operative and being expanded well beyond the project conclusion.</td>
</tr>
<tr>
<td>Project Name</td>
<td>Call</td>
<td>EU Contribution</td>
</tr>
<tr>
<td>------------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>GEF Adriatic Project</td>
<td>GEF ID No. 9545</td>
<td>1.817.900,00 USD</td>
</tr>
<tr>
<td>MSP Med</td>
<td>UNEP</td>
<td>n.a.</td>
</tr>
<tr>
<td>PHAROS4MPAS</td>
<td>Interreg MED Programme 2014–2020</td>
<td>1.179.496,57 €</td>
</tr>
<tr>
<td>AQUASPACE</td>
<td>H2020-EU.3.2.</td>
<td>1.179.496,57 €</td>
</tr>
<tr>
<td><strong>Coconet</strong></td>
<td>Towards COast to COast NETworks of marine protected areas (from the shore to the high and deep sea), coupled with sea-based wind energy potential</td>
<td><strong>Call:</strong> FP7-KBBE – Specific Programme “Cooperation”: Food, Agriculture and Biotechnology</td>
</tr>
<tr>
<td><strong>SRIA Action:</strong></td>
<td>E2.4 / E2.6</td>
<td><strong>Duration:</strong> February 2012 – January 2016</td>
</tr>
</tbody>
</table>

| **MANTIS** | Marine protected Areas Network Towards Sustainable fisheries in the Central Mediterranean | **Call:** EU DG MARE 2014/41 “Marine protected areas: network(s) for enhancement of sustainable fisheries in the EU Mediterranean waters | **EU Contribution:** 630.000,00 € | **Website:** http://jadran.izor.hr/mantis/index.html |
| **SRIA Action:** | E2.3 / E2.8 | **Duration:** December 2015 – April 2019 | **The main objectives of the project are to:** | 1. Review and integrate the knowledge produced in previous national and EU funded projects on the space-time dynamics of fisheries resources and on Ecosystem Approach to Fishery in the Central Mediterranean. 2. Investigate how a network of marine managed areas (MMAs) can contribute to improve sustainable fisheries in the Central Mediterranean focusing on two case studies, the Strait of Sicily and the Northern Adriatic. |

| **ECOAST** | New methodologies for an ecosystem approach to spatial and temporal management of fisheries and aquaculture in coastal areas | **Call:** ERA-net | **EU Contribution:** 2.273.800,00 € | **Website:** http://www.e-coast.eu/wp/ |
| **SRIA Action:** | E2.6 | **Duration:** March 2016 - December 2018 | **ECOAST aimed to identify, develop and test new methodologies for spatial and temporal management of fisheries and aquaculture in coastal areas. The overall approach assessed the impact of fisheries and aquaculture on coastal ecosystems, as well as synergies and conflicts between human activities. Building on previous methodologies and experiences the project evaluated marine spatial planning in seven coastal case study areas with different ecological and socio-economic characteristics: Adriatic Sea, Ionian Sea, Black Sea, Tyrrhenian Sea, Baltic Sea, Norwegian fjords and North-East Atlantic coast.** |

| **IDEM** | Implementation of the MSFD to the DEep Mediterranean Sea | **Call:** DG ENV | **EU Contribution:** 960.000,00 € | **Website:** http://www.msfd-idem.eu/ |
| **SRIA Action:** | E2.9 | **Duration:** April 2017 - March 2018 | **The project IDEM (Implementation of the MSFD to the DEep Mediterranean Sea) aims to support the next phase of MSFD implementation, in particular to achieve, by the end of the project, a regionally coherent, coordinated and consistent initial environmental assessment and determination of GES, as well as the definition of sets of environmental targets for the Mediterranean deep Sea (below 200 m of depth). Beside this, IDEM aims at understanding, quantifying and mapping drivers, anthropogenic pressures and impacts, current knowledge and spatial coverage of data regarding the MSDF indicators in the Mediterranean deep sea. These represent crucial steps towards developing a comprehensive set of environmental targets and associated indicators/criteria that can be used to extend the concept of Good Environmental Status (GES) to the deep sea.** |
### COASTAL
Co-creating evidence-based business roadmaps and policy solutions for enhancing coastal-rural collaboration and synergies

**SRIA Action:** E2.1, E2.6, E2.7

**Call:** H2020-SC2-RUR02-2017

**Duration:** May 2018 – April 2022

**EU Contribution:** n.a.

**Website:** [www.h2020-coastal.eu](http://www.h2020-coastal.eu)

The overarching objective of COASTAL is to improve the rural-coastal synergies in strategic business and policy decision making and collaboration between coastal and rural actors. This is achieved by developing, demonstrating and applying a generic toolset and performance indicators by combining a multi-actor approach with system dynamics modelling. This allows us to understand the interactions with market, demographic, environmental and climate forecasts, and quantify the positive and negative externalities.

By combining local knowledge and scientific expertise in a co-creation process the COASTAL project engages actors and stakeholders at all levels to improve coastal-rural interdependence and collaboration by identifying problems and setting up evidence-based business roadmaps and policy solutions, focusing on economic growth, marine spatial planning, and environmental protection, including inland water quality.

### DEKOSIM
Center for Marine Ecosystem and Climate Research

**Call:** Ministry of Development, Turkey

**Duration:** 2012–2022

**National Contribution:** 3 M€

**Website:** Dekosim.ims.metu.edu.tr

DEKOSIM is an interdisciplinary centre of excellence funded by the Turkish Ministry of Development, established at the Institute of Marine Sciences of the Middle East Technical University. The main objective is to create an infrastructure that focuses on interdisciplinary research linking physical, chemical, biological and geological marine research. DEKOSIM aims to achieve scientific excellence in marine ecosystem and climate research and provide highest-quality services to Blue Growth Sectors.

### METU BLUE GROWTH CENTER

**Call:** Middle East Technical University

**Duration:** 2018–

**Website:** ims.metu.edu.tr

The main aim of the METU Blue Growth Center is to develop and implement Blue Growth activities both at the local in Turkey but also at the wider regional level in Eastern Mediterranean and the Black Sea. The center focuses on converting knowledge base from monitoring and integrated modelling systems to services and products that can be exploited by public and industry sectors.

A pilot MSP project proposal has been prepared together with governmental offices to develop a methodology for ecosystem based sea-use management to be used to develop national MSP regulations.

Other projects may be of interest, tackling specific sea uses (e.g. energy, fisheries, maritime transport, sustainable tourism), including conservation, with spatial and integrated planning and management consequences.

Taking into account results of the above projects, ongoing policy implementation processes, blue growth trends and MSP-related challenges in the Mediterranean, the list and specific content of priority actions will be revised and upgraded during the deployment of the Implementation Plan, to inform the Final Implementation Plan (September 2020). National MSP processes should be finished by March 2021, in this way, the BLUEMED implementation plan and national processes should be aligned in objectives and actions. However, MSP national processes are not in the same stage in each country, e.g. Spain is in early stage of MSP compared to France, for this reason it is important taking the experience of the recent and ongoing MSP European projects and the objectives of BLUEMED which require scientific and knowledge support, such as R&I, in terms of dedicated technologies to support the governance on the Mediterranean Sea.
Key issues identified are:

- **Coherence between terrestrial and maritime planning** is a key, improving the understanding at proper spatial scales of Land-Sea Interactions (LSI), integrated management of land and maritime activities and resources and reducing impacts to the marine environment (ref. to E2.1).

- Transboundary MSP / Cooperation (e.g. Awareness and better definition of maritime zones in the Mediterranean, E2.5 Address transboundary maritime spatial planning issues to understand problems and opportunities and strengthen knowledge on environmental pressures across borders; transboundary offshore protected areas).

- Better understanding and capability to quantify cumulative effects/impacts of anthropogenic pressures on environmental components and resources, to support MSP scenarios and decisions, in close connection with the MSFD process and Programme of Measures, and conservation measures (i.e. potential areas for new MPAs, improved connectivity of the MPA network, reduced impact on existing MPAs from other maritime uses) (ref. to E2.6, E2.8, E2.4).

- Awareness and better understanding of MSP needs, drivers and solutions for planning and management of **deep sea spaces and resources** (Mediterranean deep sea covers ca. 80% of the MED area, but most areas are still largely unexplored), in close connection with transboundary governance issues (ref. to E2.9, E2.5).

- Define and study approaches and tools to identify the trade-offs between ecological dynamics and socio-economic needs (e.g. environmental accounting) (ref. to E2.3).

- **Data for MSP** (connection of existing Geoportals (from national to EU to Intl.) on environment and human activities. Build a “Knowledge Catalogue” for MSP (ref. from E2.1, E2.9).

- **Stakeholder engagement** should be effective to ensure best practices in marine spatial planning of maritime sectors to contribute to the long-term sustainable use of the marine resources (ref. to E2.9).

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**Programmes and initiatives of relevance, including research and data infrastructures**

**INTERNATIONAL STRATEGIES AND PROGRAMMES**

- Sustainable Development Goals Agenda (UN, 2015), and in particular SDG14 (“Life below water”) (https://sustainabledevelopment.un.org/sdg14).
- ACCOBAMS Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and contiguous Atlantic Area (http://www.accobams.org/).
- Any other relevant UfM Ministerial (transport, energy, sustainable urban development, etc.), related strategies, programmes and projects https://ufmsecretariat.org/what-we-do/water-environment/
ANNEX 1: BLUEMED FICHES FOR THE 13 PRIORITIES

### EUROPEAN STRATEGIES AND PROGRAMMES


### MACRO-REGIONAL STRATEGIES AND PROGRAMMES


### Target sectors and groups

Effective Maritime Spatial Planning is a key enabling factor for sustainable Blue Growth in the Mediterranean and elsewhere (COM(2012)494; COM(2014)254; SWD(2017) 128 final) and is also a key tool to promote the achievement of environmental objectives (e.g. MSFD, Barcelona Convention, SDG14), by reducing single and cumulative impacts from coastal and sea uses.

As such, all sectors of sea economy are potentially involved, together with public administrations, research, NGOs and the civil society.

### Intergovernmental Bodies

- UNEP/MAP (http://web.unep.org/unepmap/) and its Regional Centers (e.g. PAP-RAC, SPA-RAC, INFO-RAC, REMPEC).
- IOC-UNESCO (http://msp.ioc-unesco.org/).
- Union for Mediterranean (UM) (https://ufmsecretariat.org/).
- GCFC (http://www.fao.org/gfcm/en/).

### Sectoral Associations and Technology Platforms

- European MSP Platform (https://www.msp-platform.eu/).
- European Aquaculture Technology and Innovation Platform (http://eatip.eu/).
- European Fisheries Technology Platform (http://eftp.eu/).
- Waterborne Technology Platform (https://www.waterborne.eu/).
- Observatoire Méditerranéen de l’Energie (OME) (http://www.ome.org/).

### Maritime Clusters

- European Network of Maritime Clusters (ENMC) (https://enmc.eu/about-us/).
- Pole Mer Mediterranée (https://www.polemerrméditerranée.com/).

### NGOs

- WWF MED (http://mediterranean.panda.org/).
- MEDPAN (https://medpan.org/).
- IUCN Mediterranean (https://www.iucn.org/).
## International Programmes

- Interreg-IPA CBC IT-AL-MO ([https://www.italy-albania-montenegro.eu/](https://www.italy-albania-montenegro.eu/)).
- ENI CBC MED (in particular Priority 8.4.4. “Incorporate the Ecosystem-Based management approach to ICZM into local development planning, through the improvement of intra-territorial coordination among different stakeholders”) ([http://www.enpicbcmed.eu/enicbcmed-2014-2020](http://www.enpicbcmed.eu/enicbcmed-2014-2020)).
- GEF ([https://www.thegef.org/](https://www.thegef.org/)).
- Horizon Europe (in particular under Pillar 2 “Global Challenges and Industrial Competitiveness” – Cluster “Food and natural resources” and within the Mission “Healthy Oceans, Seas, Coastal and Inland Waters”) ([https://ec.europa.eu/info/horizon-europe-next-research-and-innovation-framework-programme_en](https://ec.europa.eu/info/horizon-europe-next-research-and-innovation-framework-programme_en)).

## Activities to promote the SRIA Implementation

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<tr>
<th>Examples of activities</th>
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<th>How and timeframe</th>
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### Networking and engagement of economic sectors and national Blue Growth communities

- Participation in the National and Regional Trainings on MSP organised in the framework of the Western Mediterranean Pilot Project under MSPglobal Initiative (UNESCO/IoC).
- National Workshop (Italy) on Blue Growth and Maritime Zones (TBC).

**How:** Workshops for national authorities and stakeholders.

**When:**
- Autumn 2019; Summer 2020.
- Early 2020.

### Alignment and coordination

- GSO BLUEMED Working Group.
- Alignment and coordination with Westmed on initiatives and projects on MSP. To be discussed with Westmed Presidency / vice-Presidency and the Steering Committee.
- Alignment and coordination with EUSAIR on initiatives and projects on MSP. To be discussed with Pillar 1 and Pillar 3 coordinators and with the EUSAIR Facility Point.
- Alignment and coordination with UNESCO/IoC on the MSPglobal Initiative, and in particular with the Western Mediterranean Pilot Project.
- Alignment and coordination with UNEP/MAP on the process to adopt and implement the “Conceptual Framework for MSP in the Mediterranean”.
- Alignment and coordination with Dg Mare MSEG and MSP Platform Technical Assistance.

**How:** Meetings and activities for the identification of priority topics / actions and of options for joint implementation. Research to strengthen dialogue and institutional capacities.

**When:** 2019 – 2023.
### Activities to promote the SRIA Implementation

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**Promotion and possibly implementation of actions coordinated and jointly undertaken by different countries, with a “variable geometry” approach**

<table>
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**Start-Up actions**

<table>
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**Assessment and promotion of the capitalisation and valorisation under the BLUEMED umbrella of ongoing and future projects**

- Participation of BLUEMED as Observer in the new project/s (call EMFF-2019-1.2.1.8) on MSP implementation in the Mediterranean.
- Participation of BLUEMED at the Final Conference of the project ADRION-PORTODIMARE (geoPortal of Tools & Data for sustainable Management of coAsTal and maRine Environment).
- Participation of BLUEMED at the Capitalization Phase of the project MED-PHAROS4MPAS (Blue Economy and Marine Conservation: Safeguarding Mediterranean MPAs in order to achieve Good Environmental Status).
- Capitalization within BLUEMED of the results of ongoing activities on MSP of the Italian Cluster on Blue Growth “BIG”: Trajectory “Sustainability and economic uses of the sea” and ITEM Project.

|------|-------|

**Lobbying actions**

- Actions to highlight the role of Effective Maritime Spatial Planning within the Horizon Europe Mission on Healthy Oceans, Seas, Coastal and Inland Waters, and to promote dedicated calls.
- Actions to highlight the role of Effective Maritime Spatial Planning to Interreg and ENI CBC Managing Authorities, also via the Regional Strategies and Initiatives cited above, and to promote dedicated calls.

|--------------------------|---------------------|

**Training and capacity building initiatives**

- Training on “Ecosystem-Based Management in/for MSP”, jointly organised with MED-PANACEA 2 project (TBC).
- Training course on “Science-Policy-Society interactions in marine resource management”, jointly organised with COST (European Cooperation in Science and Technology).
- Training course about MSP for non-EU countries, also exploring potentials from the new EMFF Blue Skills calls.

| How: Co-organisation and participation in training courses and capacity building events. | When: Summer 2020. • March 2020. • TBD. |
|-----------------|------------------------------------------|-----------------------------------------|
### Examples of activities

**Champion countries must choose those activities that suit best the priority addressed.**

### Content and objective

**Champion countries describe in more detail the content and specific objective of a given activity.**

### How and timeframe

**Champion countries explain how the activity can be carried out and timeframe within the IP (2020-2023).**

<table>
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<th>Implementation Working Groups (IWG) on specific sectors</th>
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</thead>
<tbody>
<tr>
<td>Communication and engagement</td>
<td>How:</td>
<td>When:</td>
</tr>
<tr>
<td>- Thematic Event on MSP on R&amp;I needs for Effective MSP in the Mediterranean, at the BLUEMED Final Conference.</td>
<td>Dedicated Session at Bluemed Final Conference / Website, social networks (twitter, facebook, instagram...).</td>
<td>September 2020 / Social media during the whole process.</td>
</tr>
<tr>
<td>- News, announcements, new materials, etc.</td>
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</tr>
</tbody>
</table>
Shipping and ports are significant economic drivers in the Mediterranean Sea, which represents 30% of global sea-borne trade by volume, is the world’s second largest market for cruise ships and hosts over 450 ports and terminals. It is therefore a necessity to develop green activities and innovative solutions to reduce the environmental footprint of commercial as well as tourism-oriented maritime transports and port infrastructures.

The development of new concepts and efficient ships, using new materials, advanced design, production techniques, with lower manufacturing, construction, installation, dismantling and recycling costs, in the perspective of circular economy, would be a strong source of employment and would generate new skills for professionals. These actions are required to reduce the pollution emitted at sea (i.e. towards lower emissions and noise reduction) and at ports (i.e. towards ship electrification and sustainable new infrastructures). Innovative smart and clean technologies will also considerably improve the health and wellbeing of coastal/port areas inhabitants and professionals using vessels and port facilities.

A realistic plan of action can be established for the next few years on green and smart ship, smart grid harbour, low emission in CO2, NOx, SOx, etc., LNG then hydrogen energy propulsion. Those actions are important to combat climate change due to increasing GES. Synergies can be established between this cluster of goals and ongoing international strategies and stakeholders’ associations (e.g. SeaEurope). For example, a proposal supported by several countries to establish a potential Emission Control Area (ECA) in the Mediterranean Sea is being under study by the IMO. The implementation of such an area would address both sulfide and nitrogen oxides, and would have the greatest positive effect in reducing air pollution and bringing socioeconomic and ecological benefits.

Moreover, increasing connectivity among ports and developing efficient Motorways of the Sea can be great assets to strengthen links between Mediterranean ports’ communities and to increase economic operations.

With reference to the Bluemed SRIA the following actions, relevant for the priority “Greening vessels, facilities and services”, have been selected:

- **T-A1.1** Implement multidisciplinary integrated methodologies to evaluate the impact of ships and harbours on the environment at transnational level, in the light of the specific characteristics of the Mediterranean basin.
- **T-A1.2** Develop new vessel concepts, i.e. flexible, modular and high efficient ships, using new materials (e.g. high strength, lightweight, smart, ...) and advanced design and production techniques, with lower manufacturing, construction, installation, dismantling and recycling costs from the perspective of the circular economy.
- **T-A1.3** Low emission alternative fuels: support the design of LNG-fuelled ships and appropriate inland, coastal and offshore infrastructures, and the research on biofuels and hydrogen.
- **T-A1.4** Exploit new technologies and tools to monitor pollution from ships on route coast and in harbours.
- **T-A1.5** Towards shipping electrification: support research on cold ironing from renewable resources, batteries and fuel cells and internal combustion engines in particular for fishing boats.
- **T-A1.6** Design and develop innovative green infrastructure solutions and tailored software to improve the sustainability of logistics and ports, with special reference to energy efficiency and externalities related to the surrounding built environment.
- **T-A1.7** Develop innovative design and management solutions for eco-friendly vessels, e.g. antifouling, greener propulsion for transport, leisure and fishing boats, fuel saving and noise reduction materials for vessel-water interface.
- **T-A1.8** Zero emission fuels: support the design and implementation of module-based hydrogen fuel cells and internal combustion engines for propulsion and power generation of ferries and other types of ships and vessels and appropriate infrastructures for producing the hydrogen from wind renewable energy doing a paradigm shift towards entirely emissions-free maritime transport.
- **T-A3.2** Towards efficient Motorways of the Sea (MoS) and their connections among Ports: develop feasibility studies, identifying main obstacles, and innovative methodologies/tools for the efficient functioning of the existing MoS and the establishment of new ones.
- **K-A2.3** Conduct in situ measurements and develop modelling (including Big-Data modelling) tools to understand the distribution, intensity and sources of underwater noise, as well as its effect on marine species.
ANNEX 1: BLUEMED FICHES FOR THE 13 PRIORITIES

Proposals for new actions

- Short term R & I actions to support the ‘zero emissions’ targets in vessels/facilities are needed. For example, the demonstration of utilization of solar energy/new photovoltaics (in vessels/ports) can be a short-term action.
- Address the problem of biofueling.
- Improve traffic monitoring system and share information to increase the overall efficiency of the transport system.

Mapping and discussing implementation options and potentials of this priority

Recent and ongoing relevant projects

Focus is on the international level, which means including mostly information of European/international projects that are relevant to the priority and to the MED area.

For the topic “Greening vessels, facilities and services” there are not specific calls under SC2 “Blue Growth”. Calls labelled BG have been issued under “Smart, green and integrated transport” (SC4) but so far have been focused mainly on underwater vehicles and technologies. Only the latest BG calls will include topics related to “Low carbon technology” and “Underwater noise”. A list of projects related to the specific actions selected from the Bluemed SRIA is reported below.

<table>
<thead>
<tr>
<th>PROJECT</th>
<th>DESCRIPTION</th>
<th>OBJETIVES</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOLISHIP</td>
<td>HOListic optimisation of SHIP design and operation for life cycle</td>
<td>Call: H2020-MG-2015  Duration: Sept. 2016 – Aug. 2020  EU Contribution: 11,431,746€  Website: <a href="http://www.holiship.eu">http://www.holiship.eu</a></td>
</tr>
<tr>
<td>LEANSHIPS</td>
<td>Low Energy And Near to zero emissions Ships</td>
<td>Call: H2020-MG-2014  Duration: May 2015 – April 2019  EU Contribution: 21,550,241€  Website: <a href="http://www.leanships-project.eu">http://www.leanships-project.eu</a></td>
</tr>
<tr>
<td>AIRCOAT</td>
<td>Air Induced friction Reducing ship COATing</td>
<td>Call: H2020-MG-2017  Duration: May 2018 – April 2021  EU Contribution: 5,299,097€  Website: <a href="https://aircoat.eu/">https://aircoat.eu/</a></td>
</tr>
<tr>
<td><strong>QUiETMED2</strong></td>
<td><strong>ProNoVi</strong></td>
<td><strong>HERCULES-2</strong></td>
</tr>
<tr>
<td>----------------</td>
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</tr>
<tr>
<td>Website: <a href="https://quietmed2.eu/">https://quietmed2.eu/</a></td>
<td>EU Contribution: 1.900.000 €</td>
<td>EU Contribution: 25.000.000 €</td>
</tr>
</tbody>
</table>
| quietMED Project aims to get better coordination among member states that share marine regions and sub-regions to increase the protection level and the conservation status of the Mediterranean Sea against the damages caused by underwater noise resulted from anthropogenic activities. quietMED project aims to improve the level of coherence and the comparability as regards Descriptor 11 (underwater noise) by enhancing cooperation among Mediterranean Sea Basin countries within the implementation of the second cycle of the Marine Strategy Framework Directive. | The objective of the ProNoVi project is to improve the numerical and experimental methods for the prediction of noise and vibrations induced by a propeller operating behind ship hull in full scale conditions, and to elaborate practical recommendations for the reduction of noise and vibration levels for single and twin-screw vessels of different size and speed range. | The HERCULES-2 project takes into account: a) the increasing availability of alternative fuels and their potential contribution to the environmental and economic performance of vessels through their use in fuel flexible engines, b) the societal target of economic production of ship propulsion power with near zero emission s, c) the importance of lifetime performance optimization for new and existing ships, in the changing operational environment of global waterborne transport. | Aris Pump Ltd. developed H2MOVE, safe small foot-print hydrogen generator to be installed into engines of marine vessels to significantly improve performances, delivering 35% less air pollution, 30% better fuel efficiency and consequently 30% fuel cost saving with a safe hydrogen technology. | H2Ports aims to boost the transition of the European port industry towards an effective low-carbon/zero-emission and safe operative model, piloting, evaluating and demonstrating new Fuel Cell technologies oriented to increase energy efficiency, decarbonisation and safety of port terminals. The pilots to be tested in the project will be the first experiences of the use of hydrogen technologies in port handling equipment in Europe.
<table>
<thead>
<tr>
<th>Project</th>
<th>Call</th>
<th>Duration</th>
<th>EU Contribution</th>
<th>Website</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poseidon Med II LNG Bunkering Project</td>
<td>CEF</td>
<td>2016 – 2020</td>
<td>n.a.</td>
<td><a href="https://www.poseidonmedii.eu/">https://www.poseidonmedii.eu/</a></td>
<td>Poseidon Med II is an EU co financed program that aims at promoting the adoption of LNG (Liquefied Natural Gas) as marine fuel in the Easter Mediterranean Sea, while making Greece an international marine bunkering and distribution hub for LNG in South Eastern Europe. Poseidon Med II is a partnership between 3 Mediterranean countries (Cyprus, Greece and Italy), which involves 6 European ports (Piraeus, Patras, Igoumenitsa, Heraklion, Limassol, Venice) and 1 LNG Terminal (Reithoussa LNG terminal). In order to promote small scale LNG services, 26 top business partners have joined forces, knowledge and experience.</td>
</tr>
<tr>
<td>PortForward</td>
<td>H2020-MG-2017–Two-Stages</td>
<td>07/18 - 12/21</td>
<td>€4 994.311</td>
<td><a href="http://www.portforward-project.eu/">http://www.portforward-project.eu/</a></td>
<td>PortForward proposes a holistic approach that will lead to a smarter, greener and more sustainable port ecosystem and which will include the following features:</td>
</tr>
<tr>
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<td></td>
<td>• The introduction of an Internet of Things (IoT) concept for port assets (infrastructure, vehicles, cargo, people).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• The socio-economic analysis of the port interface with its surrounding area and the port–city, as well as the rest of the logistics value chain.</td>
</tr>
<tr>
<td>GAINN4MOS</td>
<td>H2020</td>
<td>01/15 - 09/19</td>
<td></td>
<td><a href="http://www.gainnprojects.eu/gainn4mos/">http://www.gainnprojects.eu/gainn4mos/</a></td>
<td>GAINN4MOS Action aims to improve the Motorways of the Sea network in 6 Member States by carrying out engineering studies of ships retrofitting and/or new buildings and port LNG infrastructures and bunkering stations and a large set of pilot projects.</td>
</tr>
<tr>
<td>LNGHIVE2 Infrastructure and Logistics Solutions</td>
<td>co-funding CEF Transport</td>
<td>09/18 – 02/22</td>
<td>3 Million €</td>
<td><a href="https://trimis.ec.europa.eu/project/lnghive2-infrastructure-and-logistics-solutions">https://trimis.ec.europa.eu/project/lnghive2-infrastructure-and-logistics-solutions</a></td>
<td>LNGHIVE2 aims at offering holistic solutions to the new requirements of the shipping and the rail sectors. The main benefit will be in terms of completion of the adaptation of all LNG regasification plants in Spain and ensuring that all sizes of bunkering barges and ships can load LNG at Spanish plants.</td>
</tr>
<tr>
<td>CORE LNGas hive Core Network Corridors and Liquefied Natural Gas</td>
<td>co-funding</td>
<td>01/14 – 12/20</td>
<td></td>
<td><a href="http://corelngashive.eu/en/">http://corelngashive.eu/en/</a></td>
<td>The Action, CORE LNGas hive, aims at supporting the deployment of LNG infrastructure for maritime transport and ports operations along the Spanish and Portuguese sections of the Atlantic and Mediterranean Core Network Corridors in line with the corresponding Corridor Work Plans. It includes a group of studies and real-life pilot deployments.</td>
</tr>
</tbody>
</table>
Nearly all EU projects on ship electrification and fuel cells have specific application to the Northern basins, mainly Baltic sea, and do not include Mediterranean partner. Some examples are reported below.

<table>
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<tr>
<th>PROJECT</th>
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<tr>
<td><strong>HySeas III</strong></td>
<td>Realising the world’s first sea-going hydrogen-powered RoPax ferry and a business model for European islands</td>
<td>The HySeas III project will bring to market the world’s first zero emission, sea-going ferry that will be powered by hydrogen from renewable sources. It builds on the pioneering experience of the coordinator (Ferguson Marine), which previously developed the first diesel/electric hybrid ferry in 2013 and involves the leading European supplier of hydrogen fuel cell modules (Ballard Power Systems).</td>
</tr>
<tr>
<td><strong>MARANDA</strong></td>
<td>Marine application of a new fuel cell powertrain validated in demanding arctic conditions</td>
<td>In MARANDA project an emission-free hydrogen fueled PEMFC based hybrid powertrain system is developed for marine applications and validated both in test benches and on board the research vessel Aranda, which is one of about 300 research vessels in Europe. Special emphasis is placed on air filtration and development of hydrogen ejector solutions, for both efficiency and durability reasons. In addition, full scale freeze start testing of the system will be conducted.</td>
</tr>
<tr>
<td><strong>Port-Liner</strong></td>
<td>Zero emission* ships for inland waterways</td>
<td>The Action is part of a Global Project aiming to promote the uptake of zero emission shipping based on electric propulsion, targeting inland waterway vessels. As first step, six inland waterway vessels for container transport, with full electrical propulsion, fed by batteries (1.6 MW) containerized in E-Power boxes will be built and put into operation.</td>
</tr>
<tr>
<td><strong>FLAGSHIPS</strong></td>
<td>Clean waterborne transport in Europe</td>
<td>The FLAGSHIPS project raises the readiness of zero-emission waterborne transport to an entirely new level by demonstrating two commercially operated hydrogen fuel cell vessels.</td>
</tr>
</tbody>
</table>

Other relevant recent projects are SONIC and AQUO (FP7) for the topic “underwater radiated noise”, Tram (H2020) for the topic “modular ships”.
Programmes and initiatives of relevance, including research and data infrastructures

INTERNATIONAL STRATEGIES AND PROGRAMMES

- International Convention for the Prevention of Pollution from Ships (MARPOL Convention):
  - MARPOL Annex I – Prevention of Pollution by Oil.
  - MARPOL Annex IV - Prevention of Pollution by Sewage from Ships.
  - MARPOL Annex V – Prevention of Pollution by Garbage from Ships.
- International Convention for the Safety of Life at Sea (SOLAS).
- Guidelines for the control and management of ships’ biofouling to minimize the transfer of invasive aquatic species - Biofouling Guidelines (resolution MEPC.207 (62)).
- Ports:
- UfM Ministerial Declaration on Blue Economy (2015; a new one upcoming in 2021)
- UfM Ministerial Declaration on Environment and Climate Change” (2014; a new one upcoming in 2020)
- UfM Working Group on Blue Economy
  https://ufmsecretariat.org/ufm-working-group-blue-economy/
- Any other relevant UfM Ministerial (transport, energy, sustainable urban development, etc.), related strategies, programmes and projects
  https://ufmsecretariat.org/what-we-do/water-environment/

EUROPEAN POLICIES

- EU Commission: Towards clean, competitive and connected mobility: the contribution of Transport Research and Innovation to the Mobility package, SWD (2017) 223.
- Strategic Transport Research and Innovation Agenda roadmap:
  - Cooperative, connected and automated transport (2019).
  - Transport electrification (2016).
  - Vehicle design and manufacturing (2016).
  - Low-emission alternative energy for transport (2016).
  - Network and traffic management systems (2016).
  - Smart mobility and services (2016).
  - Infrastructure (2016).

MACRO-REGIONAL STRATEGIES AND PROGRAMMES


EUROPEAN INITIATIVES AND AGENDAS

### Target sectors and groups

- Union for the Mediterranean (UfM, https://ufmsecretariat.org/).
- International Towing Tank Conference (ITTC, https://ittc.info/).
- Marine and shipping registers (certification).
  - RINA, https://www.rina.org/it
  - Lloyds, https://www.lr.org/
  - Bureau Veritas, https://www.bureauveritas.fr/
  - Det Norske Veritas, DNV, https://www.dnvgl.com/
- Port Authorities.
- Coastal Guards.

### Clusters

- Pole Mer Mediterranee, https://www.polemermediterranee.com/

### Funding options and agencies

- Horizon 2020:
  - Smart, green and integrated transport (SC4).
  - ERANET- Cofound: MARTERA.
- European Maritime and Fisheries Fund (EMFF).
- Interreg Programmes:
  - ADRION (https://www.adrioninterreg.eu/).
  - IT-FR Marittimo (http://interreg-maritime.eu/).
  - IT-HR (https://www.italy-croatia.eu/).
  - IPA CBC IT-AL-MO (https://www.italy-albania-montenegro.eu/).
  - Grece-Italy (https://greece-italy.eu/what-is-interreg-v-a-greece-italy-programme/).
- CEF Transport – Connecting Europe Facility (CEF) for transport.
- World Bank – blue economy programmes.
### Activities to promote the SRIA Implementation

**Examples of activities**

[Champion countries must choose those activities that suit best the priority addressed]

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#### Networking and engagement of economic sectors and national Blue Growth communities

| Strengthening the cooperation with national and regional clusters. | How: Organization of workshops on specific topics. | When: At least one per year. |

**Alignment and coordination**

| • Coordination with Waterborne to align the agendas.  
• Coordination with Eusair activities related to Pillar 2 Connecting the Region.  
• Coordination with the JPI-OCEANS to foster the inclusion of technological topics related to waterborne transport in the JPI agenda, aligned with the actions of the Bluemed SRIA and/or for the creation of a specific JPI action.  
• Coordination with Westmed.  
• Contribute to the ECA (emission control area) implementation. | How:  
• Joint meetings specifically organized/invitation to participate to the next Bluemed.  
• Meetings/participation to the meetings of the other initiatives, TP, etc. | When: Sept. 2019–Sept. 2020. |

**Promotion and possibly implementation of actions coordinated and jointly undertaken by different countries, with a “variable geometry” approach**

| Noise from maritime transport: a cross-cutting issue also related to observing systems, marine spatial planning and maritime sector. Build on existing initiatives such as MSFD reports and DG-ENV funded QUIETMED to develop a cross—cutting Bluemed-labelled best practice, integrating observing, planning and sectoral approaches/representatives in a few selected pilot areas (short term). | How:  
• Annual report.  
• Bidirectional exchange of results and experiences, through dedicated workshops and meetings.  

**Start-Up actions**


**Assessment and promotion of the capitalisation and valorisation under the BLUEMED umbrella of ongoing and future projects**

| • Monitor the results of the listed projects.  
• Monitor the activities of future projects that will be funded in the next BG calls.  
• Promote the submission of projects for new BG calls by consortia within the Bluemed community. | How:  
• Annual report.  
• Bidirectional exchange of results and experiences, through dedicated workshops and meetings.  

**Lobbying actions**

| • Maintain the link with the national delegates/At Ministerial level, implementing effective and targeted communication strategies.  
• Consider the impact of military vessels and activities on the environment. Correlation with EDA –SRIA and promote dual use activities (greener vessels and operations but also monitoring activities carried out by military vessels). | How: Meetings at National level. | When: As soon as possible, regularly. |
## Examples of activities

Champion countries must choose those activities that suit best the priority addressed.

### Content and objective

Champion countries describe in more detail the content and specific objective of a given activity.

### How and timeframe

Champion countries explain how the activity can be carried out and timeframe within the IP (2020-2023).

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>• Support the creation of high level trans-Mediterranean training courses.</td>
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<tr>
<td>• Promote the courses that already exist.</td>
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<tr>
<td>Implementation Working Groups (IWG) on specific sectors</td>
<td>How: Participation to IWG</td>
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<tr>
<td>Regulation of ballast water, and other shipping-based inputs are regulated at IMO level but Bluemed can contribute towards monitoring the implementation of new regulation.</td>
<td></td>
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<tr>
<td>Communication and engagement</td>
<td>How: Participation of Bluemed to the future Transport Research Arena (TRA) Conference. Organization of the “Bluemed annual conference” to monitor the results of ongoing projects and evaluate over time the impact of Bluemed.</td>
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<tr>
<td>Disseminate the results of ongoing projects and discuss publicly the priorities and impacts of Bluemed initiative.</td>
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<tr>
<td></td>
<td>When: Starting from April 2020 and then each year. Starting from July 2020 and then each year.</td>
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Fiche 8

**EXPLORING THE POTENTIAL OF BLUE-BIOTECH**

**RELATED GOALS:** E-A2. GENERATING NEW PRODUCTS AND SERVICES

**CO-CHAMPION COUNTRIES:** ITALY & TUNISIA

### Background

The marine environment is the largest ecosystem of our planet and it is a key provider of goods and services to the human society. Beyond the food resources currently exploited on a daily basis, the marine environment has also been identified as a potential key provider of biotechnological novelty, both under the form of bioactive compounds and potentials for bio-mimicry. There is a general consensus that marine organisms might host metabolites and bio-solutions very different from those of terrestrial organisms, which might have a high potential for applications in biotechnology, materials and even engineering.

The Mediterranean Sea is unique in its physical, chemical and biological characteristics. Additionally, it is considered one of the marine environments exposed to the highest anthropogenic pressure due to the large populations present along its coasts and the heavy maritime traffic while being at the same time a hot-spot for unique biological diversity.

Despite this, a large gap remains between the biotechnological potential of the resources present in the marine environment, and especially in the Mediterranean Sea, and their exploration and exploitation. While direct economical 'weight' of blue biotech is proportionally small today (with a high number of emerging topics with low TRL), it may have a great potential on the long term. Recent advances in genomics and other (bio)molecular techniques are providing all necessary tools to access the still-untapped marine biotechnological resources on a larger scale and, consequently, enabling exploitation of the true promise of the blue biotechnology.

Fiche 8 aims at supporting initiatives filling the “Blue Biotech” knowledge gap. This goal is at the crossroads of biotechnology, food production, and sustainable use of bio-resources with socioeconomic impacts in several fields. Convergences are clear with European biotech infrastructures and a number of other initiatives.

### Goals

**EA2.1 Improve the knowledge of the Blue-Biotech**

Increase and improve the knowledge on the Mediterranean Sea as a source of new molecules and compounds deriving from marine microbes, algae, seaweeds and invertebrates to be used for new drugs (e.g., antibiotics, antioxidants, immunomodulators, antivirals, antidiabetics anticancer compounds), functional ingredients for human health (e.g., polysaccharides, mineral, vitamins, proteins) and industry (e.g., pigments) and environmentally-applicable molecules or organisms (e.g., bioremediating microbes or agents).

**EA2.2 Study and define the economic potential of Marine Biotechnology**

Evaluate Blue Biotechnologies for their economical impact as a growing field, and promote the concept of industry-academia partnerships as a win-win collaboration system.

**EA2.3 Support the development of Marine Biotech**

Foster collaborative research through transdisciplinary fields of expertise (e.g. genomics, data bases, outreach) and promote education through training the next generation of marine biotechnologists.

**EA2.4 Implementing or create shared policies within the Mediterranean basin for a sustainable exploitation of marine bio-resources and/or biomasses**

Create, improve or implement dedicated policies on the use and exploitation of Mediterranean Sea environment and life for biotechnological purposes, and to share such common policies and practices among all the actors of blue-biotech in the Mediterranean area.
**ANNEX 1: BLUEMED FICHES FOR THE 13 PRIORITIES**

## Mapping and discussing implementation options and potentials of this priority

### Recent and ongoing relevant projects

<table>
<thead>
<tr>
<th>PROJECT</th>
<th>DESCRIPTION</th>
<th>OBJETIVES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASSEMBLE</strong>&lt;br&gt;Association of European Marine Biological Research Laboratories Expanded</td>
<td>Call: H2020-INFRAIA-1-2016-2017&lt;br&gt;Duration: October 2017-September 2020</td>
<td>EU Contribution: € 9,999,911,47&lt;br&gt;Website: <a href="http://www.assembleplus.eu/">http://www.assembleplus.eu/</a></td>
</tr>
<tr>
<td><strong>BAMMBO</strong>&lt;br&gt;Biologically Active Molecules of Marine Based Origin</td>
<td>Call: FP7-KBBE-2010-4&lt;br&gt;Duration: March 2011-March 2014</td>
<td>EU Contribution: € 2,992,421&lt;br&gt;Website: <a href="http://www.bammbo.eu">http://www.bammbo.eu</a></td>
</tr>
<tr>
<td><strong>BlueGenics</strong>&lt;br&gt;From gene to bioactive product: Exploiting marine genomics for an innovative and sustainable European blue biotechnology industry</td>
<td>Call: FP7-KBBE&lt;br&gt;Duration: August 2012-July 2016</td>
<td>EU Contribution: € 5,999,869&lt;br&gt;Website: <a href="http://bluegenics.eu">http://bluegenics.eu</a></td>
</tr>
<tr>
<td><strong>CIRCLES</strong>&lt;br&gt;Controlling mIcRobiomes CircuLations for bEtter food Systems</td>
<td>Call H2020-SFS-2018-1&lt;br&gt;Duration: November 2018-October 2023</td>
<td>EU Contribution: € 9,999,964.88&lt;br&gt;Website: <a href="https://circlesproject.eu/">https://circlesproject.eu/</a></td>
</tr>
<tr>
<td><strong>EMBRIC</strong>&lt;br&gt;European Marine Biological Research Infrastructure Cluster to promote the Blue Bioeconomy</td>
<td>Call H2020-EU.1.4.1.1.&lt;br&gt;Duration: June 2015-May 2019</td>
<td>EU Contribution: € 9,041,611&lt;br&gt;Website: <a href="http://www.embric.eu">www.embric.eu</a></td>
</tr>
<tr>
<td><strong>ERA-NET MarineBiotech</strong></td>
<td>Call FP7-KBBE&lt;br&gt;Duration: December 2013-November 2017</td>
<td>EU Contribution: € 1,999,838&lt;br&gt;Website: <a href="http://www.marinebiotech.eu">www.marinebiotech.eu</a></td>
</tr>
<tr>
<td><strong>EUROFLEETS+</strong></td>
<td>Call H2020</td>
<td>EU Contribution: € 9,999,360.58</td>
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<tr>
<td>An alliance of European marine research infrastructure to meet the evolving needs of the research and industrial communities</td>
<td>Duration: 01 February 2019 – 31 January 2023</td>
<td><a href="https://www.eurofleets.eu">Website</a></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>GIAVAP</strong></th>
<th>Call FP7-KBBE-2010-4</th>
<th>EU Contribution: € 5,596,607</th>
<th>GIAVAP adapts genetic engineering techniques to various algal strains of economic interest focusing on carotenoid and PUFA production and the overexpression of peptides of commercial value. In parallel it will develop cultivation technologies, harvesting and extraction methods for lipids, carotenoids and proteins using existing model algae strains that will then be adapted to suitable improved strains. Furthermore products will be tested for energy, pharmaceutical, nutritional or medical applications for economic evaluation of the production processes and their economic exploitation.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Genetic Improvement of Algae for Value Added Products</td>
<td>Duration: January 2011–December 2013</td>
<td><a href="https://cordis.europa.eu/project/rcn/97420_en">Website</a></td>
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<tr>
<th><strong>INMARE</strong></th>
<th>Call: H2020-EU.3.5.</th>
<th>EU Contribution: € 5,999,557,13</th>
<th>INMARE unifies multidisciplinary expertise and facilities, including advanced technologies to access and sample unique marine biodiversity hot-spots; state-of-the art technologies for construction of metagenomic libraries; innovative enzyme screening assays and platforms; cutting-edge sequence annotation pipelines and bioinformatics resources; high-end activity screening technology; bioanalytical and bioprocess engineering facilities and expertise, nanoparticle-biocatalysts; high-quality protein crystallization and structural analysis facilities and experts in IP management for biotechnology.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial Applications of Marine Enzymes: Innovative screening and expression platforms to discover and use the functional protein diversity from the sea</td>
<td>Duration: April 2015–March 2019</td>
<td><a href="http://www.inmare-h2020.eu/">Website</a> Contract Nr 634486</td>
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<thead>
<tr>
<th><strong>LYPOYEASTS</strong></th>
<th>Call FP7-KBBE-2007-1</th>
<th>EU Contribution: € 911,111</th>
<th>This project develops a versatile fermentation platform for the conversion of lipid feed stocks into diverse added-value products. It will develop the oleaginous yeast Yarrowia lipolytica into a microbial factory by directing its versatile lipid metabolism towards the production of different industrially valuable compounds.</th>
</tr>
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<tbody>
<tr>
<td>Mobilising the enzymatic potential of hydrocarbonoclastic bacteria and the oleaginous yeast Yarrowia lipolytica to create a powerful cellular production platform for lipid-derived industrial</td>
<td>Duration: August 2008–July 2011</td>
<td><a href="http://www.lipoyeasts.ugent.be">Website</a></td>
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<thead>
<tr>
<th><strong>MaCuMBA</strong></th>
<th>Call FP7 Cooperation, KBBE</th>
<th>EU Contribution: € 8,999,948.00</th>
<th>The objective of the MaCuMBA project is to uncover the untold diversity of marine microbes using cultivation-dependent strategies. Furthermore, MaCuMBA aims to improve the isolation rate and growth efficiency of marine microorganisms from conventional and extreme habitats by applying innovative methods and using automated high-throughput procedures.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marine Microorganisms: Cultivation Methods for Improving their Biotechnological Applications</td>
<td>Duration: August 2012 – July 2016</td>
<td><a href="www.macumbaprotect.eu">Website</a></td>
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<tr>
<td>Project</td>
<td>Title</td>
<td>Call</td>
<td>Duration</td>
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<tr>
<td>MAMBA</td>
<td>Marine metagenomics for new biotechnological applications</td>
<td>Call FP7-KBBE-2008-2B</td>
<td>July 2009-June 2013</td>
</tr>
<tr>
<td>MAREX</td>
<td>Exploring marine resources for bioactive compounds: from discovery to sustainable production and industrial applications</td>
<td>Call FP7-KBBE-2009-3</td>
<td>August 2010-July 2014</td>
</tr>
<tr>
<td>MarPipe</td>
<td>Improving the flow in the pipeline of the next generation of marine biodiscovery scientists</td>
<td>Call H2020-EU.1.3.1</td>
<td>November 2016-October 2020</td>
</tr>
<tr>
<td>MG4U</td>
<td>Marine Genomics for Users</td>
<td>Call: FP7</td>
<td>January 2011 – June 2013</td>
</tr>
<tr>
<td>Micro B3</td>
<td>Microbial Biodiversity, Bioinformatics and Biotechnology</td>
<td>Call FP7-KBBE</td>
<td>January 2012-December 2015</td>
</tr>
<tr>
<td><strong>NoMorFilm</strong></td>
<td><strong>Call</strong></td>
<td><strong>EU Contribution:</strong></td>
<td><strong>Website:</strong></td>
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<tr>
<td>Novel marine biomolecules against biofilm. Application to medical devices</td>
<td>H2020–EU.3.2.</td>
<td>€ 7.651.315</td>
<td><a href="http://www.normorfilm.eu">www.normorfilm.eu</a></td>
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</tbody>
</table>

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<thead>
<tr>
<th><strong>Ocean Medicines</strong></th>
<th><strong>Call</strong></th>
<th><strong>EU Contribution:</strong></th>
<th><strong>Website:</strong></th>
<th><strong>Description</strong></th>
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<tbody>
<tr>
<td></td>
<td>H2020–EU.1.3.3.</td>
<td>€ 360.000</td>
<td><a href="http://www.oceanmedicines.eu">www.oceanmedicines.eu</a></td>
<td>Ocean Medicines is a network of academic, research centres and SMEs across Europe. The aim is to establish a network of collaboration and knowledge-exchange between industrial and academic partners to further develop lead compounds from marine microorganisms having anticancer or anti-infective effects that have already been identified by the consortium.</td>
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<tr>
<th><strong>PharmaSea</strong></th>
<th><strong>Call</strong></th>
<th><strong>EU Contribution:</strong></th>
<th><strong>Website:</strong></th>
<th><strong>Description</strong></th>
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<tbody>
<tr>
<td>Increasing Value and Flow in the Marine Biodiscovery Pipeline</td>
<td>FP7–KBBE</td>
<td>€ 9.465.907</td>
<td><a href="http://www.pharma-sea.eu">www.pharma-sea.eu</a></td>
<td>The PharmaSea project focuses on obstacles in marine biodiscovery research, development and commercialization and brings together a broad interdisciplinary team of academic and industry researchers and specialists to address and overcome these.</td>
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<tr>
<th><strong>PolyModE</strong></th>
<th><strong>Call</strong></th>
<th><strong>EU Contribution:</strong></th>
<th><strong>Website:</strong></th>
<th><strong>Description</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Novel POLYsaccharide Modifying enzymes to Optimise the potential of hydrocolloids for food and medical applications</td>
<td>FP7–KBBE–2007–2A</td>
<td>€ 5.999.948</td>
<td><a href="http://polymode.eu">http://polymode.eu</a></td>
<td>The PolyModE project convenes an international, interdisciplinary, and intersectorial consortium to identify, characterise, and optimise novel polysaccharide modifying enzymes, and to develop robust fermentation strategies for their largescale production, to exploit the potential of biopolymers for food, pharmaceutical, cosmetic, and technical applications.</td>
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<tr>
<th><strong>SeaBioTech</strong></th>
<th><strong>Call</strong></th>
<th><strong>EU Contribution:</strong></th>
<th><strong>Website:</strong></th>
<th><strong>Description</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>From sea-bed to test-bed: harvesting the potential of marine biodiversity for industrial biotechnology</td>
<td>FP7–KBBE</td>
<td>€ 7 461 716</td>
<td><a href="http://spider.science.strath.ac.uk/seabiotech/">http://spider.science.strath.ac.uk/seabiotech/</a></td>
<td>SeaBioTech is an EU–FP7 project designed and driven by SMEs to create innovative marine biodiscovery pipelines as a means to convert the potential of marine biotechnology into novel industrial products for the pharmaceutical (human and aquaculture), cosmetic, functional food and industrial chemistry sectors.</td>
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<tr>
<th><strong>SUNBIOPATH</strong></th>
<th><strong>Call</strong></th>
<th><strong>EU Contribution:</strong></th>
<th><strong>Website:</strong></th>
<th><strong>Description</strong></th>
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</thead>
<tbody>
<tr>
<td>Towards a better sunlight to biomass conversion efficiency in microalgae</td>
<td>FP7–KBBE–2009–3</td>
<td>€ 2.998.182</td>
<td><a href="http://cordis.europa.eu/project/rcn/92954_en.html">http://cordis.europa.eu/project/rcn/92954_en.html</a></td>
<td>SUNBIOPATH - towards a better sunlight to biomass conversion efficiency in microalgae – is an integrated program of research aimed at improving biomass yields and valorisation of biomass for two Chlorophycean photosynthetic microalgae, Chlamydomonas reinhardtii and Dunaliella salina.</td>
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<tr>
<th><strong>TASCMAR</strong></th>
<th><strong>Call</strong></th>
<th><strong>EU Contribution:</strong></th>
<th><strong>Website:</strong></th>
<th><strong>Description</strong></th>
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</thead>
<tbody>
<tr>
<td>Tools And Strategies to access to original bioactive compounds from Cultivation of MARine invertebrates and associated symbionts</td>
<td>H2020–EU.3.2.</td>
<td>€ 6.755.950,25</td>
<td><a href="http://www.tascmar.eu">http://www.tascmar.eu</a></td>
<td>TASCMAR project aspires to develop new tools and strategies in order to overcome existing bottlenecks in the biodiscovery and industrial exploitation of novel marine derived biomolecules (secondary metabolites and enzymes) with applications in the pharmaceuticals, nutraceuticals, cosmeceuticals and fine chemicals industries.</td>
</tr>
</tbody>
</table>
### Chibio

**Development of an integrated biorefinery for processing chitin rich biowaste to specialty and fine chemicals**

**Call:** KBBE.EU.3.4–01.

**Duration:** November 2011 – November 2014

**EU Contribution:** € 2,904,425.00

**Website:** www.chibiofp7.fraunhofer.de

Chibio project is adopting the integrative and sustainable approach of a biorefinery, i.e. the complete utilisation of crustacean shell waste by consecutive material and energetic utilisation process steps, in order to extract special chemicals.

### BIOVecQ

**Biotechnologie marine vecteur d’innovation et de qualité/ Marine biotechnology vector of innovation and quality**

**Call:** EIVP-(IT-TN) PS1.3_08.

**Duration:** February 2013 – May 2016

**EU Contribution:** € 1,549,790.40

**Website:** www.biovecpt.eu

The strategic project BIOVecQ (IT-TN) established a cross-border research cooperation between experts from Tunisia and Italy on seafood quality assurance and valorization using biotechnological tools. The project contributed to stronger links with the economic sector with establishing agreements with private firms to transfer scientific results to the production sector (food/cosmetic). BIOVecQ contribute also to the creation of a new Laboratory (Blue Biotechnology & Aquatic Bioproducts-B3Aqua) startups and the harmonization of analytical procedures between Tunisian/Sicilian Labs.

### SecurAqua

**Sécurité et Qualité des Produits Aquacoles : le développement d’une voie commune tuniso-sicilienne/ Safety and quality of aquatic products: towards establishing a common Tunisian-Sicilian route**

**Call:** EIVP-(IT-TN) PS1.3.020

**Duration:** January 2014 – May 2016

**EU Contribution:** € 771,397.81

**Website:** www.securaqua.eu

The standard project SecurAqua (IT-TU) activities were conducted to establish the sanitary and nutritional statutes of farmed fish (marine and freshwater) and to bring innovation to sector. This project contributed to farmed products labeling, the creation of startups and the accreditation of B3Aqua laboratory in INSTM-Tunisia.

### Programmes and initiatives of relevance, including research and data infrastructures

**EUROPEAN INFRASTRUCTURES AND INITIATIVES**

- EMBRC (The European Marine Biological Resource Centre) is a global reference Research Infrastructure responding to the societal Grand Challenges through advanced marine biology and ecology research (www.embrc.eu).
- MIRRI (Microbial Resource Research Infrastructure) is the pan-European research infrastructure for microbial resources (https://www.mirri.org).
- ELIXIR is an intergovernmental organisation that brings together life science resources from across Europe. These resources include databases, software tools, training materials, cloud storage and supercomputers (https://elixir-europe.org).
- ESFRI (European Strategy Forum on Research Infrastructures) aims to identify the scientific needs for research infrastructures for the next 10–20 years in the context of the Lisbon agenda, and will have a major impact on marine research infrastructures and will play a role in Marine Biotechnology development in Europe.
- EU IBISBA 1.0 Industrial Biotechnology Innovation and Synthetic Biology Accelerator: EU-IBISBA it is an emerging ESFRI approved (2018), distributed European research and innovation infrastructure that will support industrial biotechnology and synthetic biology. The aim is to support and accelerate the uptake of industrial biotechnology as a key enabling technology for advanced manufacturing. To do this, IBISBA 1.0 will provide a distributed network of research infrastructure facilities to promote R&D in bioprocess development and support this bioeconomy KET (www.ibisba.eu).
The European Straits Initiative (ESI) is a multilateral cooperation launched in 2009 by Pas-de-Calais County Council (France) and Kent County Council (United-Kingdom), the lead partners on the shores of Dover Strait. ESI now brings together 11 straits, representing 24 partners. ESI works towards the recognition of the specificities of European straits in current debates and the launch of structuring projects in these territories. ESI encourages exchange of experiences between partners facing similar issues, for example through European cooperation projects (http://www.europeanstraits.eu/).

PANORAMED - Governance platform that supports the process of strengthening and developing multilateral cooperation frameworks in the Mediterranean region for joint responses to common challenges and opportunities. Panoramed will dedicate a specific call for Innovation on Blue Technology and Social Innovation themes.

Conferences
- GIM. International Symposium on the Genetics of Industrial Microorganisms. It will focus on the most recent advances in the microbial sciences related to industrially relevant microorganisms as producers of bioactive molecules, of fine chemicals, of flavors, etc., and to be used as whole cells for health and wellbeing.
- SIMGBM. Congress of the Italian Society of General Microbiology and Microbial Biotechnology. Every year brings together the Italian and international experts working on different aspects of microbiology and biotechnology.
- FISV. Congress of the Italian Federation of Life Sciences. In particular topic: Environmental Microbiology and Biotechnology; Genetics of Microorganisms.
- European Congress of Biotechnology, which is held by the European Federation of Biotechnology (EFB), a non-profit federation of National Biotechnology Associations, Learned Societies, Universities, Scientific Institutes, Biotech Companies and individual biotechnologists working to promote biotechnology throughout Europe and beyond.
- CIESM Conference – The Mediterranean Science Commission, that organizes always a dedicated session to marine microbiology & biotechnology.
- BlueProduct. Congress on alternative ingredients production from sustainable aquatic sources: Identifying opportunities for new technologies and businesses.

EUROPEAN POLICIES
- OECD SCIENCE, TECHNOLOGY AND INNOVATION. Innovation for a sustainable ocean economy (in 2030).

MACRO-REGIONAL STRATEGIES AND PROGRAMMES
- EU Strategy for the Adriatic and Ionian Region (EUSAIR), with particular reference to the Interreg ADRION (Adriatic-Ionian) projects (https://www.adriatic-ionian.eu/).

Target sectors and groups

Intergovernmental Bodies
- UNEP/MAP (http://web.unep.org/unepmap/).
- Union for Mediterranean (UMF) (https://ufmsecretariat.org/).
- GFCM (http://www.fao.org/gfcm/en/).

Clusters
- Cluster Tecnologico Nazionale “Blue Italian Growth” (BIG): BIG will answer to the main social challenges regarding marine coastal environments, blue biotechnologies, renewable sources of energy from the sea, abiotic and biotic marine resources, marine robotics, within the frame of the sustainable use of the sea.
- Bio–based business/R&D: such cluster will integrate innovative biotechnological tools and processes including waste utilisation for the development of innovative aqua-food and ingredient products.
- Blue bioenergy: this will rely on alternative aquatic and sustainable bio–resources production such as microorganisms (micro–algae, bacteria and yeast) for commodity chemical and bioenergy generation.
### Funding options and agencies

**International Programmes**
- Horizon 2020.
- BBI JU. The Bio-Based Industries Joint Undertaking (BBI JU) is a €3.7 billion Public-Private Partnership between the EU and the Bio-based Industries Consortium. Operating under Horizon 2020, this EU body is driven by the Vision and Strategic Innovation and Research Agenda (SIRA) developed by the industry.
- Horizon Europe.
- Interreg-IPA.

### Activities to promote the SRIA Implementation

<table>
<thead>
<tr>
<th>Examples of activities</th>
<th>Content and objective</th>
<th>How and timeframe</th>
</tr>
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</tr>
</tbody>
</table>

#### Networking and engagement of economic sectors and national Blue Growth communities
- Workshop on Blue Biotechnology.
- Creation of a transnational platform dedicated to blue biotechnology products.

How:
- Workshop for national and international authorities and stakeholders, to favour exchanges and to identify the topics of interest of companies and needs of consumers.
- Extending existing cross-border platforms to a transnational level.


#### Alignment and coordination
- GSO BlueMed WG.
- Alignment to the Marine Biotechnology ERA-NET (ERA-MBT) Biotechnology Strategic Research and Innovation Roadmap.
- 3) Alignment and coordination with IBISBA 1.0.

How:
- Meetings, working groups and activities to define and identify priority topics and actions and to strengthen communication and institutional collaboration.


#### Promotion and possibly implementation of actions coordinated and jointly undertaken by different countries, with a “variable geometry” approach
- Creation of startups within Blue living labs or companies.

How:
- EU, FAO or national funding calls.

When: 2021.

#### Start-Up actions
- Capitalization of the results from the “BIG” and “BIOVecQ” clusters regarding the areas of interest within BLUEMED.

How:
- Workshops and meetings.


#### Lobbying actions
- Actions to highlight the importance of Blue Growths and Biotechnologies, also by promoting new dedicated calls within EU and Regional Initiatives.

How:
- Workshops and meetings.


#### Training and capacity building initiatives
- Training course on Blue Biotechnologies and Blue Bio-economy also aiming at the creation of blue careers.

How:
- Organisation and/or participation to training courses.

ANNEX 1: BLUEMED FICHES FOR THE 13 PRIORITIES

FICHE 9
PROMOTE THE ROLE OF MARINE RENEWABLE ENERGIES (MRE) IN THE ENERGY TRANSITION PHASE
CO-CHAMPION COUNTRIES: FRANCE & TURKEY

Background

Though the Mediterranean Sea is a vast territory, several characteristics applies to it as a whole:
- Deep water even close to the shore.
- Very small tidal range and then low tidal currents (except in localised corridors).
- Many islands.
- Inhomogeneous winds distribution with localized strong wind areas.
- Evaporation basin, high amount of solar energy.

The blue energy sub-sectors that constitute a real opportunity for the Mediterranean Sea are the floating offshore wind and to a lesser extent the wave and tidal (hydrodynamic current) energies:
- Offshore Wind Energy (OWE), with bottom-fixed Wind Farm technology up to now, is the fastest growing activity in the blue economy in Europe. Among it Floating Offshore Wind Technology (FOWT) that can be deployed in Mediterranean deeper waters, has made MRE a breakthrough innovation market.
- Wave and tidal Energy: progress has been made as regards these energies demonstration. Production systems could be deployed locally, particularly for insular territories.

These two areas of MRE are very different economically:
- OWE (Offshore Wind Energy) have reached maturity: tens of billions of dollars / Euros are invested every year in the world for OWE, which allows to produce this energy at competitive costs (about 50 € / MWh) thanks to the experience curve of these technologies.
- Other oceanic MREs (waves, tidal, etc.) have been in the demonstration phase for a long time and the objective is to reduce their operating costs so that they can be applied to specific territories (islands).

It is also important to analyze the potential co-activities of MREs for designing integrated multi-purpose platforms that can serve both wind and other sectors, including aquaculture and bioenergy, for example with fisheries and aquaculture, particularly IMTA.

Other uses of offshore energy production are the decentralized production of fuels to be used for fuel cells and in electrolytic processes (methanol, hydrogen ...), the desalination processes of seawater and for aquaculture activities.

Therefore, MRE will have a direct and important impact on other key blue growth sectors such as, harbour and shipping industries, tourism, maritime surveillance, fishing and aquaculture. MRE are expected to have a great impact in terms of economic development, jobs and well-being of citizens.

Mapping and discussing implementation options and potentials of this priority

Recent and ongoing relevant projects

European collaborative projects funded by INTERREG-Med, H2020 or Med-Maritime Integrated programs are very active in related countries. They tackle various relevant challenges linked to promotion, knowledge sharing and key R&D barriers that the marine renewable energy sector is currently facing.

Some of these European collaborative projects have more of a promoting goal: for example BLUENE aims to contribute to the Blue Growth by enlightening economic opportunities generated by marine resources, ENERCOAST aims at identifying technical and non-technical solutions to increase the use of renewable energy sources technologies in marine-coastal areas, PELAGOS targets the creation of transnational Mediterranean innovative cluster in blue energy, which would be composed of seven national clusters while PRISMI promotes renewable energy sources integration for smart Mediterranean islands and MAESTRALE aims to broaden the sharing of knowledge among scientists, policy makers, entrepreneurs and citizens and encourage effective measures and investments for the blue growth.
Other European collaborative projects are more R&D-focused: they usually deal with one specific R&D aspect that is key for the future development and commercialization of blue energy technologies. For example, OSMOSE, DREAM and TILOS work on the smart electrical grid needs: OSMOSE aims for the development of an optimal system-mix of flexibility solutions for European electricity while DREAM laid the foundations for a novel “heterarchical” management approach of complex electrical power grids, providing new mechanism for consumer involvement in economic and ecological electricity use as well as stable and cost effective integration of distributed renewable resources. TILOS focuses more on smart grids for insular territories as it aims at demonstrating the optimal integration of local scale energy storage in a smart island micro grid that will also communicate with a main electricity grid in order to fully integrate renewable energy sources to the power system. Other projects focus on new concepts such as multi-purpose floating offshore systems (REPOS), modular steel jacket for offshore wind farms (JABACO) and innovative meteorological mast platform (FLOATMASTBLUE). On their side, MARINET and DTOCEAN PLUS aims at providing easier access to R&D tools, as they respectively target research infrastructure integration and easy access and design tools availability.

COCONET – towards COast to COast NETworks of marine protected areas (from the shore to the high and deep sea), coupled with sea-based wind energy potential (FP7 project). Other projects concerning big data management should be highlighted too. These projects focus on the observation of social, physical, biological and chemical parameters of Mediterranean seas in order to develop accurate management systems to increase the effectiveness and mitigate potential impacts of offshore renewable energy investments.

To be noted that the European Union, via for example its H2020 SME Instrument’s project also finances projects developed by SME’s. This is the case of Ideol in France with its Leadfloat project, Nautilus in Spain which both worked on a type of floating foundation for floating offshore wind turbine and iReact project developed by EMTECH Diastimiki, which is a smart-grid component to facilitate automated reactive load compensation in power distribution substations for Offshore and Onshore Renewable Energy Sources.

Although the EU finances many projects linked to the blue energy sector, it is key to point out that several projects are also led at national level only. This is the case for example of E-Wave in Cyprus, a project which was developed by the Oceanography Centre of the University of Cyprus and which studied the wave energy potential. In Turkey a nationally pilot project on wave energy has been established in Zonguldak (Black Sea). In France, France Energy Marine has launched and managed more than 30 R&D projects since 2012 through 4 research programs.

Another type of projects that cannot be left aside given their significant impact on the blue energy sector development in Europe are demonstration projects and pilot farms.

For what relates to the floating offshore wind sector, we can count 4 pilot farms in France, 1 in Portugal and 2 in Spain that should be in operation in the coming years: 3 of these pilot farms are located in the Mediterranean Sea (off the French coast in Gulf of Lion).

MISTRAL Mediterranean Innovation STRAtegy for transnational activity of clusters and networks of the Blue Growth.

MISTRAL_Marine Renewable Energies: https://mistral.interreg-med.eu/

PELAGOS. PELAGOS aims to establish a transnational Mediterranean Cluster in Blue Energy (BE) to accelerate the development of BE sector in Mediterranean coastal, insular and marine regions. https://pelagos.interreg-med.eu/

PHAROS4MPAs - A review of solutions to avoid and mitigate environmental impacts of offshore windfarms R https://pharos4mpas.interreg-med.eu/
<table>
<thead>
<tr>
<th>PROJECT</th>
<th>DESCRIPTION</th>
<th>OBJETIVES</th>
</tr>
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<tbody>
<tr>
<td>BLUENET</td>
<td>Creating new life for discarded fishing and aquaculture gears to prevent marine litter generation</td>
<td>BLUENET will set up a programme for recycling abandoned, lost or discarded fishing and aquaculture gear: recovering gear from the sea and using it as raw material to manufacture new gear. Spain and Italy</td>
</tr>
<tr>
<td>ENERCOAST</td>
<td>Renewable energies in the marine-coastal areas of the Adriatic- Ionian region</td>
<td>The specific objective of the ENERCOAST project is to obtain clear proposals on how to contribute to the Blue Growth with emphasis on technical and economic activities of blue energy in the Adriatic-Ionian marine-coastal area such as: solar radiation, wind power, wave and tidal current power and sea water thermal energy to be used in heat pumps.</td>
</tr>
<tr>
<td>PELAGOS</td>
<td>Promoting Innovative NETwork Sand Clusters Form Arine Renewable Energy SynerGies In Mediterranean COasts And ISlands</td>
<td>PELAGOS targets the creation of transnational Mediterranean innovative cluster in blue energy, which would be composed of seven national clusters.</td>
</tr>
<tr>
<td>PRISMI</td>
<td>Promoting RES Integration for Smart Mediterranean Islands</td>
<td>PRISMI promotes renewable energy sources integration for smart Mediterranean islands.</td>
</tr>
<tr>
<td>MAESTRALE</td>
<td></td>
<td>The project Maestrale intends to lay the basis for a Maritime Energy Deployment Strategy in the Mediterranean. Based on a survey of existing and innovative technologies, hindrances and potentials in participating countries, it aims to widen knowledge sharing among scientists, policy makers, entrepreneurs and citizens and prompt effective actions and investments for blue growth. Notwithstanding the large number of academic and technical studies in the field of renewable blue energy, there is a lack of concrete initiatives and operating plants in the MED area. To fill this gap, project partners will cooperate to detect maritime renewable energy potentials in participating countries as regards their physical, legal, technological, economic and social contexts. Among the issues to be faced, there are environmental sustainability, technological innovation, acceptability by citizens, and possible conflicts with marine ecosystems.</td>
</tr>
<tr>
<td>Project</td>
<td>Call Numbers</td>
<td>EU Contribution</td>
</tr>
<tr>
<td>---------</td>
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</tr>
<tr>
<td>OSMOSE</td>
<td>H2020-EU.3.3.4.</td>
<td>21 852 098,69€</td>
</tr>
<tr>
<td>DREAM</td>
<td>H2020-EU.2.1.5.3.</td>
<td>21 852 098,69€</td>
</tr>
<tr>
<td>TILOS</td>
<td>H2020-LCE-2014-3</td>
<td>11,008,623€</td>
</tr>
<tr>
<td>JABACO</td>
<td>European Union Research Fund for Coal and Steel</td>
<td>1.429,196€</td>
</tr>
<tr>
<td>FLOATMASTBLUE</td>
<td>H2020–EU.3.2.5. H2020–EU.3.2.3. H2020–EU.2.3.1.</td>
<td>2.048,567,51€</td>
</tr>
<tr>
<td><strong>MARINET 2</strong></td>
<td><strong>Call</strong>: H2020-EU.1.4.1.2.</td>
<td><strong>EU Contribution</strong>: 10,592,285.23€</td>
</tr>
<tr>
<td>Marine Renewable Infrastructure Network for Enhancing Technologies</td>
<td><strong>Duration</strong>: 01/01/2017-30/06/2021</td>
<td><strong>Website</strong>: <a href="http://www.marinet2.eu/">http://www.marinet2.eu/</a></td>
</tr>
</tbody>
</table>

| **DTOCEAN PLUS** | **Call**: H2020-EU.3.3.2. | **EU Contribution**: 6,689,076.50€ | OceanEnergy can play an important role in addressing one of the EU’s biggest challenges: providing clean, affordable and sustainable energy. However, ocean energy technologies are not yet mature enough to overcome all challenges related to performance, reliability, survivability, and resulting cost of energy. DTOceanPlus will accelerate the commercialisation of the Ocean Energy sector by developing and demonstrating an open source suite of design tools for the selection, development, deployment and assessment of ocean energy systems (including sub-systems, energy capture devices and arrays). This will align innovation and development processes with those used in mature engineering sectors. |
| Advanced Design Tools for Ocean Energy Systems Innovation, Development and Deployment | **Duration**: 01/05/2018 - 30/04/2021 | **Website**: [https://www.dtoceanplus.eu/](https://www.dtoceanplus.eu/) | |

| **COCONET** | **Call**: FP7-KBBE | **EU Contribution**: 9,000,000€ | CoCoNet focused on the Mediterranean and the Black Seas and its objectives were the production of: 1- Guidelines for the institution of networks of Marine Protected Areas (MPAs); 2 - Smart Wind Chart evaluating the feasibility of Offshore Wind Farms (OWFs). Both objectives call for the identification of spatially explicit marine units where the management of human activities (both in terms of protection and in clean energy production) is based on the features of natural systems, as both the ecosystem approach and marine spatial planning require. Desk-based and field studies (carried out in two pilot areas) identified these natural units as Cells of Ecosystem Functioning (CEFs): portions of the water column that are more connected with each other than with other portions. This novel concept is based on connectivity and will prove useful for any planning of the use of marine space. The data gathered during the project are stored into a multi-layered Geodatabase, an essential platform to achieve full awareness of the natural and socio-economic features of the marine environment. |
| Towards COast to COast NETworks of marine protected areas (from the shore to the high and deep sea), coupled with sea-based wind energy potential | **Duration**: 01/02/2012 - 31/01/2016 | **Website**: [https://cordis.europa.eu/project/id/287844/reporting](https://cordis.europa.eu/project/id/287844/reporting) |
| **FLOATGEN**  
Demonstration of two floating wind turbine systems for power generation in Mediterranean deep waters | Call: FP7-ENERGY  
Duration: 01/01/2013 - 31/12/2016 | **EU Contribution:**  
19.568.404€  
**Website:** https://floatgen.eu/ | The objective of the FLOATGEN project is to demonstrate the technical and economic feasibility of two different multi-megawatt integrated floating-wind turbine systems in deep waters, never applied before to Mediterranean Sea conditions, in order to extend deep offshore wind resources and demonstrate decrease of costs for electricity generation down to competitive level. The project will also assess, compare and obtain conclusions about performance of such two different combinations of wind turbine and floating structure technologies to get the knowledge to improve performance of the future replication projects of these technologies. |
| **LEADFLOAT**  
Leading the Floating Wind Market Development | Call:  
H2020-EU.3  
H2020-EU.2.3.  
H2020-EU.2.1  
Duration: 01/10/2018 - 30/09/2020 | **EU Contribution:**  
2.498.562,50€  
**Website:** https://www.ideol-offshore.com/en/leadfloat | IDEOL, a French SME created in 2010, has emerged as one of the few international leaders in floating wind, with two demonstrators built in France and Japan, relying on its patented floating platform technology, the most cost competitive solution in the market. Its team, composed by more than 40 engineers, is globally recognized as one of the best technical team with a unique know-how and innovative approach. IDEOL is already engaged in different pre-commercial and commercial projects in France, Japan and California. It is the only European technology provider and the only foreign company having convinced the Japanese government and experts. LEADFLOT aims to impose IDEOL’s solution as the market leader of floating wind by keeping its cost competitiveness advantage, leveraging on its demonstrators’ return of experience and securing early market share in key markets. It will contribute to keep Europe ahead and to positions its industry on the top of the new emerging floating-wind market over the competition from US and Japan. |
| **E-wave**  
The development of an integrated, high resolution system for monitoring the energy potential from sea waves at the Exclusive Economical Zone (EEZ) of Cyprus coupled with the well established Cyprus Coastal Ocean Forecasting System (CYCOFOS). | Duration: 03/01/2011 - 26/01/2010 | **Website:** http://www.oceanography.ucy.ac.cy/ewave/ |  |
| **MISTRAL**  
Duration: 48 months | **EU Contribution:**  
4.100.000€  
**Website:** https://mistral.interreg-med.eu/ | to promote and make effective a transnational BG ecosystem of innovation where SMEs and corporate, RTOs, higher education institutions, public sector, cooperate to:  
• Develop sustainable innovation actions,  
• Increase their innovation performance,  
• Sustain the development of the entrepreneurial spirit,  
• Increase the access and sharing of the marine knowledge. |
### PHAROS4MPAS
**Blue Economy and Marine Conservation:** Safeguarding Mediterranean MPAs in order to achieve Good Environmental Status

**SRIA Action:** E2.3 / E2.8

<table>
<thead>
<tr>
<th>Call:</th>
<th>Interreg MED Programme 2014–2020</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EU Contribution:</strong></td>
<td>1.794.965,57 €</td>
</tr>
<tr>
<td><strong>Website:</strong></td>
<td><a href="https://pharos4mpas.interreg-med.eu/">https://pharos4mpas.interreg-med.eu/</a></td>
</tr>
</tbody>
</table>

The general objective of the PHAROS4MPAs project is to enhance management effectiveness and networking for Mediterranean MPAs, in order to contribute to the conservation of marine biodiversity and natural ecosystems, taking into account the complex ensemble of human activities developed within the Blue Growth perspective and their interaction with protected areas and marine ecosystems.

Project outputs include delivering common capitalization baselines, recommendations and policy tools adapted to appropriation by the MedPAN network, MSP authorities, the European Commission, the Barcelona Convention and the various maritime sectors.

### Programmes and initiatives of relevance, including research and data infrastructures

**INTERNATIONAL PROGRAMMES AND INITIATIVES**

- **The 2030 Agenda for Sustainable Development 2016–2030** – Goal 7: Ensure access to affordable, reliable, sustainable and modern energy for all.
- **The Atlantic Strategy** – reduce Europe’s Carbon Foot Print through offshore renewable energy and associated energy grid.
- **UfM Ministerial Declaration on Blue Economy** (2015; a new one upcoming in 2021)
- **UfM Ministerial Declaration on Environment and Climate Change** (2014; a new one upcoming in 2020)
- **UfM Working Group on Blue Economy**
  https://ufmsecretariat.org/ufm-working-group-blue-economy/
- **Any other relevant UfM Ministerial (transport, energy, sustainable urban development, etc.), related strategies, programmes and projects**
  https://ufmsecretariat.org/what-we-do/water-environment/

**EUROPEAN PROGRAMMES AND INITIATIVES**

- **European Strategic Energy Technology Plan (SET PLAN)** aims to accelerate the development and deployment of low-carbon technologies. It seeks to improve new technologies and bring down costs by coordinating national research efforts and helping to finance projects. Concerning FOWE (Floating Offshore Wind Energy), SET Plan targets in its declaration of Intent to develop “cost-competitive integrated wind systems, including infrastructure that can be used in deeper waters (>50 m) at a maximum distance of 50km from the coastline with a level energy cost of less than € 120/ MWh by 2025 and less than 90€/MWh by 2030, in the interest of cost competitiveness. Given the great dynamics of development of this energy worldwide it is likely that these cost targets will be achieve more quickly and will continue to lower to reach the costs of the bottom-fixed Wind Farm, e.g. around 50€/ MWh https://setis.ec.europa.eu/system/files/setplan_wind_implementationplan_0.pdf
- **European Regional Development Fund** – supports regional and local development by co-financing investments in energy and transport infrastructures.
- **Cohesion Fund** – encourages investments, especially in the field of trans-European transport networks and investments related to energy benefiting to the environment in terms of energy efficiency:
  - Promotes the production, distribution and use of energy derived from renewable sources;
  - Supports energy efficiency and smart energy management.
- **Bioeconomy Strategy** – addresses the production of renewable biological resources and their conversion into vital products and bio-energy.
- **EU Blue Growth Strategy** – supports sustainable growth in the marine and maritime sectors as a whole. One of its objectives focuses on ocean energy.
The main objective is to produce energy at competitive costs (about 50 € / MWh), especially for OWE and at competitive costs for other MRE (waves, tides, marine bioenergy) in specific areas where the energies are expensive, as in the islands. These MREs must be accepted as new activities at sea, where there are many historical actors, and to have acceptable impacts on ecosystems (marine ecosystems, avifauna).

As a result, MREs will have a direct and significant impact on other key sectors of blue growth such as the port and maritime industries, tourism, maritime surveillance, fisheries and aquaculture. MREs should have a significant impact in terms of economic development, jobs and citizens’ well-being.

Target sectors and stakeholders can be classified in different kinds of entities: companies, public authorities, associations, professional and support organizations, which help the development of innovation. It is hence a very wide category and the project partners from the Mediterranean countries under study reference heterogeneous actors. However, some tendencies can be highlighted.

Target groups and stakeholders of the Blue Energy are mainly evaluated with medium relevance for the development of the sector and a medium–high readiness level. These actors have an important role to play in the innovation in this area.

For countries with less maturity in the field of MREs, public authorities are the key stakeholders to target. For countries with a higher MREs maturity level, the target groups will rather include private entities such as companies and professional networks/associations. It is a good projection of the market maturity and potential: in countries where there are fewer opportunities, private entity does not yet seize markets.

The most important target groups are those of the company’s energy ecosystem.

This ecosystem includes actors from several categories that are sometimes different depending on the country: in particular in the European countries, there are no longer state-owned companies while in other countries this sector is nationalized.

We can mention the following actors:

- **Energy operators** (two main categories):
  - Most of them are energy operators with long-standing positions in the field of fossil fuels (oil, gas, coals... Nuclear, hydroelectricity...). These operators exist in each Med country:
    - France: EDF, ENGIE, TOTAL;
    - Spain: IBERDROLA, UNION FENOSA;
    - Greece: IED;
    - Italy ENEL, EDI POWER;
    - Portugal: EDP;
    - Turkey: EUAŞ (Elektrik Üretim A.Ş.)
    - Etc...
  - We notice the emergence of more recent alternative energy operators, especially in the field of renewable energies:
    - Sometimes they are subsidiaries of the groups mentioned above such as EDF Energies Nouvelles in France;
    - Other times they are new companies: Quadrant Marine Energies.

- **Managers of electrical networks**:
  - Managers of electricity grids are important because renewable energies, which are by their nature highly distributed, involve new networks, such as RTE in France.

- **Energies unions**:
  - Unions or federations represent operators and lobby at national and European level. For example, in France: France Energie Eolienne (FEE), the Union of Renewable Energies (SER), etc.

- **Engineering of energy**.

Environmental NGOs also have a growing influence in the field as they promote more and more “green energies” such as WWF.

The European Parliament and the European Commission also have a prominent role in the domain. All these actors mentioned above can play an important lobbying role with European authorities.
Funding options and agencies

Investments in renewable energy depend on countries’ energy policies. MREs are part of these policies and are related to natural features and supporting industries, mainly energy and maritime, in these countries.

European policy provides guidance in this area and projects: R & D, demonstration, cooperation between interested countries (e.g. MED) contribute to strengthening the implementation of MREs.

Currently the technologies are generally mature but there is still research and innovation needed to reduce the LCOE so that these energies are competitive and less and less subsidized by public budgets.

The large-scale demonstrators are being tested; they have been helped by European funds. It is no longer necessary to launch new demonstrators. On the other hand, it is necessary to share the results of these experiences between the potentially interested countries.

Resources/ funding

Despite the strong commitment of the EU through its funding programs and the investment of some countries, there is a lack of funding for Blue Energies.

It is needed to have public funds targeting the economic development and sustainability of the technologies, in order for them to become cost-competitive.

In fact, it is key to note that the current scheme of national financing of commercial plants, such as offshore wind energy commercial plants in France, is controversial. In fact, the French government does not directly subsidise the commercial projects, however it commits to buy the produced electricity at a price higher than the current electricity market: although it has yet to be confirmed for the FOW commercial plants in the Mediterranean Sea, the committed buying price would be in the range of 90-120 €/MWh, which is 40 to 70€/MWh greater than the 50 €/MWh current market price. This constitutes a significant cost for the state, and behind it, taxpayers.

Consequently, public national financing should grand projects working on cost-reduction and cost-competitiveness of MRE, otherwise the subsidy bill for commercial plants (once in operation) will be tremendous. By enabling MRE to become cheaper, through innovation and economies of scale, funding of new commercial plants will be more affordable.

There is also a need for funding in order to assess the environment interaction and impact of MRE to improve public acceptance. A need for new and adapted infrastructures to the development of MRE has been expressed (for ports especially).

- Funds come mainly from the EU. National or regional governments could develop funding plan as well in that sector. National initiatives could be as well tax incentives
- Possibility to enhance private funding though investor confidence reinforcement (ref. policies);
- Governments have to have clear communication on the available funds and political intent.
- Investment funds could come European Bank or World Bank or other investment bank specially for non-EU countries.

Access to funding

The public commitment will stimulate private investment and foster a long-term investors’ confidence for the future of marine energy industry in MED. The countries in which investments were first and most important (Germany, Netherland, Denmark, the UK and more recently France) have changed their legislation to facilitate investment in offshore wind farms. This change is mainly about the risk reduction of investors (energy specialists) who respond to the call for tenders. This risk reduction is based on the fact that the Public authorities give the tender specifications full knowledge of the initial states (soil, wind, environment, etc.). Thus investors do not take a margin for risks. As MRE are at different stages of development, those investments are expected to finance from the early stage devices, to pilots, large scale demonstrators and commercial farms installation.

They are also required to de-risk the technologies that will be deployed at a commercial stage. In most of the European countries where MRE are currently developed/ under development, national public calls for projects were launched (England, France, Germany and Portugal). Time will be finally necessary to the production price as the experience curve (Boston Consulting Group) demonstrates: “company’s unit production costs would fall by a predictable amount—typically 20 to 30 percent in real terms—for each doubling of “experience,” or accumulated production volume”.

- Horizon 2020 – especially under Pillar 3 ‘Societal Challenges’ with the ‘secure, clean and efficient energies’ thematic;
- Horizon Europe – in particular under Pillar 2 ‘Global challenges and Industrial Competitiveness’ – Cluster ‘Food and natural resources’; Cluster ‘Climate, Energy and Mobility’ and within the Mission ‘Healthy Oceans, Seas, Coastal and Inland Waters’;
- Interreg – through dedicated and specific calls;
- Union for the Mediterranean;
• UNEP/MAP;
• JPI Oceans;
• European Investment Bank;
• Private foundations;
• Competent ministries and regional/local authorities through specific calls and the development of national funding plans for MREs;
• Maritime cluster:
  o European Network of Maritime Clusters (ENMC) (https://enmc.eu/about-us/).
  o Pole Mer Mediterranee (https://www.polemermediterranee.com/).

### Activities to promote the SRIA Implementation

#### Gaps to address

Based on the situation of MRE advancement in Europe, the main gaps currently constituting a barrier to further and smoother development of the blue energy sectors can be identified.

#### Policies

In order to reinforce investors’ confidence and allow stakeholders of the blue energy value chain to keep committing to this sector, governments should provide a clear view on their capacity ambition, project pipeline and supporting policies in their National Energy and Climate Plans (NECPs) to 2030. This would provide regulatory certainty concerning planning, design criteria and characterization of concession areas.

In the most mature countries, the government should publish a long-term calendar of the next calls for bids, which should present a significant number of coming bids, well spread in time, with sufficient capacity requirement (for example minimum 500 MW per FOWE project) to optimize connection grid and enable stakeholders to make out future economies of scale.

In countries where the blue energy sector is not as mature, it is a key that governments show their will to evaluate available marine renewable resources, proceed with mapping and characterisation of concessions areas as this would be a good start to boost the blue energy sector.

Furthermore, the governments should coordinate their schedules of deployment and supporting policies for MRE in order to maximise regional cooperation in the development of a European supply chain.

All these policy measures would allow operators and manufacturers to consider positioning themselves, plan for investments and size their production tool accordingly. Electricity distributors could also anticipate grid connection investments.

It will also be key that governments work to improve public perception about the growing share of renewable energies in household’s electricity bills and justify the fact they bid on renewable energies, which currently remain more expensive than other sources of energy such a nuclear energy in France.

The national and European regulators could also work on defining ways of solving potential conflicts about use of maritime space (ref MSP).

Finally, at European level, additional funding instruments should be earmarked to provide access to low cost financing for pilot projects and increase the funding to research and innovation focused on cost-competitiveness. Some already exist, as for example the NER 300 European programme, which is endowed with 300M€ and targets demonstrators. It has granted Floatgen in France and Windfloat Atlantic in Portugal.

#### Skills/ Human Resources

Despite the fact that different training courses exist with competences and expertise already available, there are gaps to address. As seen in the previous section, they are few training courses available that are fully dedicated to MRE sector.

We need more partnership in Med between research organizations and industry, and more Clusters such as competiveness clusters (ex Pole Mer Mediterranée).

Students should experience both research and industry during our education.

It is relevant to capacity building in next EU initiatives.
MRE training courses are needed to convert these previous skills to the requirements of MRE projects and to acquire specialised skills that are needed for those specific technologies and infrastructures.

Concerning professional lifelong learning, there is a lack of professional courses and qualifications (no high-degree but more technicians and qualified workers). We can also underline specific needs concerning skilled welders and electrician workers for offshore platform.

A dedicated competence & training centre at EU level to support the development of marine energies could be envisioned to have shared qualifications.

Finally, skills and an exchange of experience is required for the development of soft competences to enable the dialogue between the stakeholders and facilitate the decision to implement MRE project.

Research & Development

There are still many topics on which research must be done and for which innovation must be developed. Some of these R&D needs are technological but a number of them are not.

The main technological stakes are:

- Overall cost reduction;
- Connection to the electricity grid;
- Connection between turbines and the substation;
- Electricity system flexibility and storage: allowing MRE which is intermittent by nature (in particular wind energy) to be integrated;
- Suitability of the anchors and foundations to the surrounding environment: to reduce the cost of anchoring and maintaining MRE systems, it is necessary to develop and adapt MRE systems to the specificities of the locations (current, waves, nature of the sea floor, soil etc.) with solutions allowing rapid and safe interventions;
- Performance of production systems;
- Resistance of MRE systems in rough marine conditions: materials must be adapted to resist against corrosion and marine biofouling;
- Reliability and affordability of submarine electrical connection solutions;
- Protection, stability and accessibility of submarine cables;
- Optimization of the processes and means of installation and maintenance works: this is will require solutions adapted to the management of port infrastructures and the associated logistical means but also, for example, the tools that will allow to plan interventions to reduce the costs of preventive maintenance operations;
- Adaptation of shipyards and ports.

The main non-technological stakes are:

- Estimation of exploitable resources and predictability of electricity production;
- Environmental impacts and interaction;
- Socio-economic impacts and cross-sectorial interaction;
- Safety and security of construction, installation, maintenance and dismantling procedures.
- The acceptability of citizens who are doubtful or even reluctant to these energies, because there is a lack of knowledge of the impacts.

Given the technologies adapted to the Mediterranean context are still at early stage of development, R&D is still a key enabling driver of their further advancement and commercialisation.

The emphasis must also be made on demonstration projects, which enables to anticipate potential challenges and to involve additional players in the game while constituting a showcase for the industry.

Marketing

There is a lack of marketing actions in the different countries and a lack of awareness about Marine Renewable energies in general and this concerns the different stakeholders: Industries, Research and academics actors, Policy makers and the civil society.

To cover this gap, significant communication campaigns are needed to increase public understanding and facilitate the acceptance of MRE projects. Research results regarding MRE industry impacts on the environment should be notably published in order to facilitate acceptance by local communities.

Marketing, communication to public authorities and publicity are indicated as very influential and impactful factors for future developments in MRE.
<table>
<thead>
<tr>
<th>Examples of activities</th>
<th>Content and objective</th>
<th>How and timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Networking and engagement of economic sectors and national Blue Growth communities</strong></td>
<td>Champion countries must choose those activities that suit best the priority addressed.</td>
<td>Champion countries describe in more detail the content and specific objective of a given activity.</td>
</tr>
<tr>
<td>1) Develop more partnerships between research organizations and industries through clusters organization; 2) Exchange and cooperation in experience skills through tools such as transnational clusters; 3) Mediterranean Conference dedicated to MREs: last lessons learned from existing projects, harbour infrastructures and onshore solutions supporting deployment, innovations in grid and electrical connections, win/win deal for the environment, innovations in methods and key components, financing and insuring commercial-scale farms.</td>
<td>How: 1) Building national clusters in countries deeply interested by MREs; 2) Creation of a Mediterranean transnational cluster with a focus on MREs; 3) Organisation of a Conference dedicated to MREs at Mediterranean level.</td>
<td>When: 1) 2020–2023. 2) 2020–2023. 3) Each year from 2021.</td>
</tr>
<tr>
<td><strong>Alignment and coordination</strong></td>
<td>Alignment with climate change and energy European policy.</td>
<td>How: Strengthening dialogue with EU institutions and participation of MREs stakeholders to relevant events/workshops/meetings/activities taking place in Brussels in the field of climate change and Energy policy.</td>
</tr>
<tr>
<td><strong>Promotion and possibly implementation of actions coordinated and jointly undertaken by different countries, with a “variable geometry” approach</strong></td>
<td>Development of multi-purpose platform to ensure an optimal use of marine space and to reduce both ecological footprint and cost of marine activities. Example: deployment of multi-use platforms integrating wind energy, combined with desalination and potentially aquaculture. These new solutions can also combine green energy production with offshore research (scientific observation and continuous measurements), marine life and environmental monitoring, maritime surveillance and pollution monitoring.</td>
<td>How: Brainstorming meetings and answering dedicated regional, national or European calls.</td>
</tr>
<tr>
<td><strong>Start-Up actions</strong></td>
<td></td>
<td>How:</td>
</tr>
</tbody>
</table>
### Examples of activities

[Champion countries must choose those activities that suit best the priority addressed]

<table>
<thead>
<tr>
<th>Content and objective</th>
<th>How and timeframe</th>
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<tbody>
<tr>
<td>[Champion countries describe in more detail the content and specific objective of a given activity]</td>
<td>[Champion countries explain how the activity can be carried out and timeframe within the IP (2020-2023)]</td>
</tr>
</tbody>
</table>

### Lobbying actions

1. Actions to encourage national governments to provide a clear view of on their capacity ambition, project pipeline and supporting policies in their National Energy and Climate Plans to 2030;
2. In MREs most mature countries, encourage governments to publish a long-term calendar of the next calls for bids, which should present a significant number of coming bids, well spread in time, with sufficient capacity requirement;
3. In countries where the blue energy sector is not as mature yet, encourage governments to evaluate available marine renewable resources, proceed with mapping and characterisation of concessions areas;
4. **Actions to highlight the importance of MREs within the Horizon Europe Pillar 2, Cluster “Climate, Energy and Mobility” and within the Mission of Healthy Oceans, Seas, Coastal and Inland Waters, and to promote dedicated calls. These specific calls would enable, at a large scale, the in-depth study and analysis of MREs’ interactions with natural habitats:**
   - Develop a socio-ecosystem approach to the environmental and socio-economic impacts of floating wind farms;
   - Identification of the physical–biological coupling in the modifications induced by the MRE projects on the habitats. Instrumentation adapted to the monitoring of physicochemical and biological parameters. Modelling the reef effect locally and globally. Modelling the interactions with avifauna.

**How:**
1. Relevant actions and discussions to lead with competent national and regional authorities;
2. Idem;
3. Idem;
4. Dedicated meetings and participation to relevant working groups.

**When:**
1) 2020-2023.
2) 2020-2023.
3) 2020-2023.
4) 2020-2023.

### Training and capacity building initiatives

1. Develop new training courses fully dedicated to MREs following a schedule that is correlated with industrial development (2021?)
2. Build bridges for students so they can experiment both research and industry during their education;
3. Support professional lifelong learning (professional courses and technician qualifications);

**How:**
Creation of a dedicated competence and training centre at EU level to support the development of marine energies and shared qualifications.

**When:**
2021.

### Implementation Working Groups (IWG) on specific sectors

**How:**

**When:**

### Communication and engagement

Mediterranean Conference dedicated to MREs (mentioned above).
Public information on environment impacts from the MRE.

**How:**
Organization of a conference.

**When:**
Once a year, starting 2021.
FICHE 10
OPEN DATA, OPEN SCIENCE, OPEN INNOVATION
CO-CHAMPION COUNTRIES: FRANCE, MALTA & TURKEY

Background

The Mediterranean Sea, a closed basin with unique characteristics, is a common good of the riparian countries. Sharing knowledge about the health, evolution and functioning of its marine and coastal ecosystems is a challenge. Progress in this direction is necessary to ensure the preservation of its resources, develop sustainable activities, control pressures and anticipate the responses to global change.

Especially in the Mediterranean, Blue Growth therefore demands for a holistic approach, integrating oceanic dynamics, knowledge on ecosystem functioning, economy and societal needs. Open innovation, open data and open science are a key dimension to achieving blue growth. Technological development is making a great impact on Blue Growth especially through the use of artificial intelligence (AI), Internet of Things and the infrastructural backbone of Blockchain to create and network innovative products, and support the marine sector with smart and intelligent applications.

Open innovation is a way for companies to benefit from external ideas/technologies (Outside-In) and valorise internal ideas/technologies with external partners (Inside-Out) to reduce the financial risks associated to innovation, and quickly get a competitive advantage. As such it implies accelerating internal R&D and innovation along value chains through collaboration between the technological supply - and demand – side. Open innovation needs to be operational and this is done possible through networked, multi-collaborative ecosystems involving representative maritime clusters or intermediaries. Open innovation today is a well-known concept in large companies, which have developed specific mechanisms such as Big data/numerical challenges, hackathon–like initiatives.

A specific methodology for blue growth project emergence has been developed at the European level (NEPTUNE project and the innovation clubs based on STAR methodology) and could be adapted and applied at the Mediterranean level.

However, SMEs are less aware of the opportunities offered by open innovation. Innovation intermediaries or brokers, such as technology centres or competitive clusters, can help SME solution providers get closer to large industrial users to co-create new products/services through a better anticipation of their needs. In addition, there is a need to clarify intellectual and industrial property management issues potentially hampering open innovation.

Collecting marine, environmental and socio-economic data is expensive and data a valuable asset. Rapid access to reliable and accurate information is vital in addressing threats to the marine environment, developing policies and legislation to protect vulnerable areas of our coasts and oceans, understanding trends and forecasting future changes. Sharing data and knowledge is a key element in establishing a common understanding of the issues related to the marine environment and strengthening the science–policy interface. The strong link existing between data and observation infrastructures should be here underlined. Firstly marine and coastal observing systems are a key source of information and data that can be valued in many areas. Secondly, the storage, the cataloging and the availability of data require appropriate IT infrastructures.

Data provided with high and certified quality can be valued in several ways. To get the most out of data, it must be openly and freely accessible on same terms to researchers, public policy makers and the private sector which will be able to develop services based on these data. Sharing data is also a booster for innovation. Fundamental to growth and development is the concept of fair playing field allowing equal opportunities and equal competition to make new, innovative services for society from the open interoperable resources available.

The sharing of data and best practices allows technologies to progress more quickly and efficiently, while easily moving across boundaries of countries, market sector, culture, race, etc. This strategy is promoted at the European level (Inspire, European Open Science Cloud, EMODnet, Copernicus, Eurostat...). Taking measures for implementing these open approaches in the Mediterranean could be of great benefit for all the Mediterranean countries.
In an evolving knowledge-based society, access to key technologies, high quality data, modelling and satellite observations, are perceived to be key ingredients to support sustainable blue growth, especially in the coastal areas where many essential economic activities are occurring at the national scale. This goes hand in hand with the process of extracting essence from data, together with value addition by a wide range of downstream services that are fitting to the user needs, especially in the local scale application scenarios. In this context, the European Commission through DG GROW and its entrusted entities the European Environmental Agency (EEA) and Mercator Ocean International (MOI), running the Land and Marine Services respectively, are in the process of delivering under the MED7 initiative a white paper targeted to set the pace to develop Copernicus products for coastal areas. This entails products merging data from more than one Copernicus Core service, and a special framework linking Copernicus to Member State national coastal services such as in-situ coastal monitoring networks, and high-resolution models in the coastal and near shore domains.

These guidelines are fully in line with the Joint Communication on international ocean governance – EU’s response to the UN 2030 Agenda for Sustainable Development - that proposes ways the EU can step up and play a stronger role at global and regional level by shaping the way oceans are used and managed.

Open data and blue economy

The development of the blue economy relies on increased exploitation of the capacity of marine and coastal ecosystems to provide services and resources to populations. However, all human activity related to the sea generates pressures (resource exploitation, waste, modification or occupation of the space, etc.). Many examples (e.g. collapse of certain fish stocks) show the difficulty of anticipating and taking pressure control measures to ensure the sustainability of sea related economic activities.

This difficulty in sustainably managing the resources and services offered by the sea faces several challenges:

- The lack of knowledge on the state of the marine environment and its evolution, but also the difficulty of characterizing the pressures exerted by human activities on the sea and the coast;
- The complexity of the functioning of the marine “socio–ecosystem” and the interactions at work, with the consequent lack of reliable predictive models and the difficulty of building scenarios;
- The difficulty in predicting the consequences of large-scale changes at work (global warming, biodiversity erosion, etc.) that will significantly impact Blue economy sectors (sea level rise, changes in marine habitats and communities, riverine inputs, atmospheric forcing...).

Given the dynamics of the almost enclosed Mediterranean Sea, many of the questions raised must be addressed at basin or sub-basin level (e.g. MPA connectivity, plastic pollution carried by currents). At these scales, making diagnoses and taking coherent and effective management measures requires a transnational approach. These objectives cannot be achieved without a solid base of indicators and knowledge built on reliable and comparable data.

The marine environment is also characterized by:

- The need for a multidisciplinary approach, essential to understanding ecosystem functioning;
- The high cost of acquiring marine data, particularly offshore.

These considerations justify the promotion of a policy of data and knowledge sharing, whether within a community or between actors sharing different objectives. It should be also pointed that qualified data sets can be of interest to multiples actors: scientific research, public authorities, the private sector and citizens.

An open approach on data and science is therefore expected to benefit to a large panel of stakeholders and to lead to progress in terms of:

- Qualification of data due to their increased use;
- Valuation of acquisition costs;
- Harmonization, comparability of data sets;
- Acceleration of assimilation, through science and support for public policies;
- Reduction of the costs of developing a new activity at sea.
<table>
<thead>
<tr>
<th>PROJECT</th>
<th>DESCRIPTION</th>
<th>OBJETIVES</th>
</tr>
</thead>
<tbody>
<tr>
<td>SeaDataNet II</td>
<td>Call: FP7-INFRASTRUCTURES</td>
<td>SeaDataNet is the leading network in Europe, actively operating and developing a pan-European infrastructure for managing, indexing and providing access to ocean and marine datasets and data products, acquired from research cruises and monitoring activities in European marine waters and the global oceans.</td>
</tr>
<tr>
<td>SeaDataCloud</td>
<td>Call: H2020-EU.1.4.1.2.</td>
<td>SeaDataCloud aims at considerably advancing SeaDataNet services and increasing their usage, adopting cloud and HPC technology for better performance. More users will be engaged and for longer sessions by including advanced services in a Virtual Research Environment. Researchers will be empowered with a collection of services and tools, tailored to their specific needs, supporting marine research and enabling generation of added-value products.</td>
</tr>
<tr>
<td>ATTRACT</td>
<td>Call: H2020-EU.1.4.2.1</td>
<td>The ATTRACT Phase-1 project proposes a new collaboration paradigm aligned with the ‘Open Science, Open Innovation and Open to the World’ philosophy. Its objective is the identification and initial development of breakthrough detection and imaging technology concepts for expanding fundamental research frontiers and suitable for future industrial upscaling for novel applications and business. It promotes the involvement of national and pan-European Research Infrastructures and their associated research communities, industrial organizations (especially SMEs) and innovation and business specialists.</td>
</tr>
<tr>
<td>ECOPOTENTIAL</td>
<td>Call: H2020-EU.3.5.5.</td>
<td>ECOPOTENTIAL project focus its activities on a targeted set of internationally recognised Protected Areas, blending Earth Observations from remote sensing and field measurements, data analysis and modelling of current and future ecosystem conditions and services. ECOPOTENTIAL considers cross–scale geosphere–biosphere interactions at regional to continental scales, addressing long-term and large-scale environmental and ecological challenges.</td>
</tr>
<tr>
<td>EUROFLEETS2</td>
<td>Call: FP7-INFRASTRUCTURES</td>
<td>The project aimed at further consolidating the alliance of marine research centres, universities and industrialists initiated in EUROFLEETS (1), with enlargement to the Polar research fleet community. It supported research services for progress of scientific knowledge on marine environment and the sustainable management of regional seas and oceans. In particular, it organized a common access to modern and well equipped research vessels to European and international scientists on sole condition of scientific excellence, thereby contributing to the EU ambitious goals for maintaining the ocean biodiversity or understanding climate change.</td>
</tr>
<tr>
<td>Project</td>
<td>Call Code</td>
<td>EU Contribution</td>
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</tr>
<tr>
<td><strong>AQUACOSM</strong></td>
<td>H2020-EU.1.4.1.2</td>
<td>€9,999,804.75</td>
</tr>
<tr>
<td><strong>EGI–Engage</strong></td>
<td>H2020-EU.1.4.1.3</td>
<td>€9,000,000.00</td>
</tr>
<tr>
<td><strong>JERICO-NEXT</strong></td>
<td>H2020-EU.1.4.1.2</td>
<td>€9,998,876.47</td>
</tr>
<tr>
<td><strong>ODIP 2</strong></td>
<td>H2020-EU.1.4.3.2</td>
<td>€1,912,086.25</td>
</tr>
<tr>
<td><strong>NeXOS</strong></td>
<td>FP7-ENVIRONMENT</td>
<td>€5,906,479.00</td>
</tr>
<tr>
<td>Project</td>
<td>Call</td>
<td>EU Contribution</td>
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</tr>
<tr>
<td>MARINE-EO</td>
<td>H2020-EU.2.1.6.3.</td>
<td>4.378.584,38 €</td>
</tr>
<tr>
<td>ASSEMBLE Plus</td>
<td>H2020-EU.1.4.1.2.</td>
<td>9.999.911,47 €</td>
</tr>
<tr>
<td>COLUMBUS</td>
<td>H2020-EU.3.2</td>
<td>3.997.488,00 €</td>
</tr>
<tr>
<td>COMMON SENSE</td>
<td>FP7-ENVIRONMENT</td>
<td>4.664.072,00 €</td>
</tr>
<tr>
<td><strong>EOSC-Life</strong></td>
<td>Providing an open collaborative space for digital biology in Europe</td>
<td><strong>EU Contribution:</strong> 23,745,996.25 €</td>
</tr>
<tr>
<td><strong>SRIA Action:</strong> A1.1 / A1.4</td>
<td><strong>Website:</strong> <a href="https://cordis.europa.eu/project/rcn/219199/factsheet/en">https://cordis.europa.eu/project/rcn/219199/factsheet/en</a></td>
<td></td>
</tr>
<tr>
<td><strong>FIXO3</strong></td>
<td>Fixed Point Open Ocean Observatories Network</td>
<td><strong>EU Contribution:</strong> 7,000,000.00 €</td>
</tr>
<tr>
<td><strong>SRIA Action:</strong> A1.2</td>
<td><strong>Website:</strong> <a href="http://www.fixo3.eu/">http://www.fixo3.eu/</a></td>
<td></td>
</tr>
<tr>
<td><strong>EUROARGO</strong></td>
<td>Euro-Argo RI European contribution to the Argo programme</td>
<td><strong>Website:</strong> <a href="https://www.euro-argo.eu/">https://www.euro-argo.eu/</a></td>
</tr>
<tr>
<td><strong>Website:</strong> <a href="http://www.eurogeoss-fp7-project.eu/default.aspx">http://www.eurogeoss-fp7-project.eu/default.aspx</a></td>
<td></td>
<td>Strengthening the benefits for Europe of the Global Earth Observation System of Systems (GEOSS), should also facilitate the access to and integration of untapped national in-situ Earth observation data with research-based data and different sources such as Copernicus, the European research infrastructures, citizen science initiatives and others, into user oriented applications. EuroGEOSS should focus on delivering information for the achievement of the 2030 Agenda for Sustainable Development and other GEO engagement priorities in a European context.</td>
</tr>
<tr>
<td><strong>ODYSSEA</strong></td>
<td>Operating a network of integrated observatory systems in the Mediterranean sea</td>
<td><strong>EU Contribution:</strong> 8,398,716€</td>
</tr>
<tr>
<td><strong>Call:</strong> H2020-EU.3.2.5.</td>
<td><strong>Website:</strong> <a href="http://odysseaplatform.eu/">http://odysseaplatform.eu/</a></td>
<td></td>
</tr>
</tbody>
</table>
ShareMED
Sharing and enhancing capabilities to address environmental threats in Mediterranean sea

Call: Interreg MED strategic project
Website: https://governance.interreg-med.eu/

The project will capitalise on knowledge provided by previous projects and existing EU infrastructures, and will contribute to the definition of long term strategies and action plans for assessing and addressing environmental threats in the Mediterranean. SHAREMED will:

- engage stakeholders and authorities, and jointly define state-of-the-art and regional strategies;
- collate and harmonise existing info, data and knowledge and contribute to joint production of a database of coherent data;
- define common procedures and jointly produce atlas of state and hazard maps;
- integrate existing observing infrastructures in a common transnational system of systems and jointly disseminate observations through common portals;
- enhance forecast capabilities through development and implementation of coastal high resolution transnational systems;
- explore potential of new observing methodologies;
- define roadmaps, guidelines, action plans.

Programmes and initiatives of relevance, including research and data infrastructures

EUROPEAN PROGRAMMES AND INITIATIVES

Different programs, strategies, policy frameworks are related to this priority and already exist in the Mediterranean at the regional, national, European or international scale.

Open data

The need to share and facilitate access to data on the ocean and coastal environment has led to establishing collaborative international programmes from the scientific community (e.g. ARGO in physical oceanography, born in the 1990s, or OBIS in marine biology).

At the institutional level, the Barcelona Convention implemented under the umbrella of UNEP plays an important role in reporting on the state of the environment and pressures in the Mediterranean. UNEP/MAP is currently setting up an information system implemented by INFO/RAC to host data on the state of the marine environment. However, today few UNEP/MAP data can be accessed online. The work carried out within the frame of this Regional Sea Convention mainly takes the form of reports based on expertise or data that are not public.

At European level, significant efforts have been made for years to improve sharing of environmental and marine data. The most prominent programs are:

- Copernicus (https://www.copernicus.eu/en) the European Union’s Earth Observation Programme, that offers information services based on satellite Earth Observation and in situ data. CMEMS is the marine services component of Copernicus http://marine.copernicus.eu

- SeaDataNet, a distributed Marine Data Infrastructure for the management of large and diverse sets of data deriving in situ ocean observation https://www.seadatanet.org/

- WISE-marine (Water Information System for Europe), which is a portal and an infrastructure for sharing information about the marine environment at European level https://water.europa.eu/marine

- EMODnet (European Marine Observation and Data Network) that gathers data from various sources about the state of the seas and the maritime activities http://www.emodnet.eu/

Even if these programs have been initiated with different purposes (development of marine research infrastructures, environmental policy implementation, support to integrated marine policies), they are interlinked and being developed in a coordinated manner (e.g. EMODnet Physics and EMODnet Chemistry are based on the SeaDataNet infrastructure).
In terms of socio-economic data:


- Data (e.g. tourism, maritime transport) are also accessible through international sectoral organisations (e.g. World Tourism Organization) [https://www2.unwto.org/content/data](https://www2.unwto.org/content/data)

Although most of the programmes previously mentioned are open to Mediterranean southern and eastern countries, significant gaps remain in the Mediterranean:

- Huge imbalance between EU and non-EU countries (e.g.: EMODnet integrates some data sets from Southern countries, but the maps built from the data bases show mainly data on the northern part of the sea;

- Lack of homogeneity of data sets between countries (even at European level), leading to difficulties for aggregating and comparing data;

- Granularity is often not fine enough. This is particularly true for socio-economic data which are mostly available at country level. This is especially an issue for countries with several maritime borders such as France (Atlantic, Channel and Western Mediterranean, Italy (Adriatic and Western Mediterranean) or Turkey (Aegean, Eastern Mediterranean, Marmara and Black Sea).

**Open science**

In the area of Open Science, several European and international initiatives do not specifically target marine sciences, but they promote free sharing and access to data and knowledge. Open Science has been gradually recognized over the past years as a key driver for accelerating innovation and answering the main societal challenges. Among the most prominent initiatives, we can give the examples of:

- The European Open Science Cloud (EOSC), which has been initiated by the European Commission in 2016 and whose aim is to create a virtual trusted environment with open and seamless services for storage, management, analysis and re-use of research data and knowledge. The EOSC Declaration has been endorsed by more than 70 institutions [https://ec.europa.eu/research/openscience/index.cfm?pg=open-science-cloud](https://ec.europa.eu/research/openscience/index.cfm?pg=open-science-cloud)

- Plan S is an initiative for Open Access publishing launched in September 2018, supported by the European Commission and the European Research Council. The plan requires that, from 2021, scientific publications that result from research funded by public grants must be published in compliant Open Access journals or platforms. [https://www.coalition-s.org/](https://www.coalition-s.org/)

- Knowledge Exchange (KE) is a European partnership made of six organizations aiming at developing infrastructures and services to enable the use of digital technologies to improve higher education, research and to enable open scholarship: [http://www.knowledge-exchange.info/](http://www.knowledge-exchange.info/)

- The Directory of Open Access Journal (DOAJ), which hosts a community-curated list of open access journals and meeting high quality standards: [https://doaj.org/](https://doaj.org/)

- The Confederation of Open Access Repositories (COAR) is an international association with over 140 members and partners from around the world representing libraries, universities, research institutions, government funders and others. [https://www.coar-repositories.org/](https://www.coar-repositories.org/)

The culture of open science gradually increased over the past years. However, work remains to be done to promote the principles of Open Science, to encourage scientists to publish their papers in open access and to include non-EU countries in those existing networks.
Open innovation

Two projects are to be mentioned:

- **H2020-INNOSUP-2018-2020** For a better innovation support to SMEs | The future project involves the setting-up of a European Open Innovation Network in advanced technologies with a central brokerage service point, aimed at matching innovation needs/requests from large industries with innovative solutions from SME technology providers. Innovation intermediaries such as technology centres can help SME solution providers get closer to large industrial users to co-create new products/services through a better anticipation of their needs. One major role of technology centres is “to bridge the gap between internal and external know-how”. They are therefore well-positioned as innovation intermediaries in an open innovation context.

- **NEPTUNE** (New cross sectoral value chains creation across EuroPe facilitaTed by clUsters for SMEs’ iNnovation in bluE growth). In the frame of the NEPTUNE project, ESTIA is in charge of delivering a specific methodology of project emergence in interclustering and intersectoral context to animate innovation clubs. The innovation clubs can be defined as sustainable sub-workgroups addressing innovative topics. This specific proposed methodology is named STAR methodology. Following a creativity approach, in the case of NEPTUNE, the STAR methodology stimulates the emergence of Blue Growth projects and the identification of the best ones. The potential participants to NEPTUNE innovation clubs, in particular SMEs, are located all around Europe. Specifically, the SMEs are spread out in the seven countries the NEPTUNE consortium is located. In order to optimize travels, staff costs, and efficiency of the work sessions, innovation clubs will rely on the interconnection of nine physical meeting rooms (one in each NEPTUNE region) combined with the use of a dedicated software (called hereafter the STAR platform). Hence, the proposed approach allows the participants (SMEs mainly) to be distributed into different virtual thematic sub-workgroups. Furthermore, participants will be able to join the innovation clubs sessions through their own laptop from a remote place.

In order to foster innovation the European Union has created the European Institute of Innovation and Technology (EIT). EIT has in particular supported the development of “Innovation communities” bringing together businesses (industry and SMEs), research centres and universities as partners. Some of these communities are relevant to BLUEMED (e.g. Climate, Food, and Digital).

Academia and capacity building

In 2019, the EC launched the first pilot of the European Universities Initiative by funding 17 alliances to network universities in Europe for a deep level of integration involving joint curriculum design with seamless student mobility opportunities, development of complementary research facilities, and facilitating diverse degree pathways basing on the specialties of the different high class institutions composing the alliances. One of these networks led by the University of Cádiz, Spain, and comprising the University of Kiel, Germany; Western Brittany, France; Split, Croatia; and Gdansk, Poland; along with the University of Malta, are building the European University of the Sea (SEA EU). The target is to synergise resources and combine infrastructures from the partner universities to offer a broader and complete approach in marine and maritime studies, targeting to empower the future professionals with skills and excellence to meet the future challenges of the evolving marine sector.

Specialised post-graduate research and taught courses like the MSc in Applied Oceanography offered by the University of Malta (https://www.um.edu.mt/ science/geosciences/physicaloceanography/msc), and dedicated short thematic training courses are setting the scene for applicative, hands-on learning programmes spanning and merging the scientific, technical and applicative aspects of marine and maritime studies to offer students a wide-ranging integrated approach, linking science to management, putting technology at the service of users and stakeholders, and providing tools and training for more efficient service oriented applications. Such formative experiences should be also offered to the non-EU countries. These initiatives should be synergised under a common framework under for example the Med School for Applied Oceanography.

The following programmes and initiatives need also to be mentioned as they promote the openness and the coordination in the area of marine data, knowledge and innovation.

International scale:

- **International Oceanographic Data and Information exchange** since 1961 – aims at facilitating the discovery, access and exchange of oceanographic data, information and products between participating MS, and by meeting the needs of users for data and information products. It also assists MS to acquire the necessary capacity to manage marine research and observation data and information + encourages the long term archival, preservation, documentation, management and services of all marine data, products and information;
ANNEX 1: BLUEMED FICHES FOR THE 13 PRIORITIES

- **Global Ocean Ship-Based Hydrographic Investigation Program** – Joint WMO-IOC Technical commission for oceanography and marine meteorology – brings together scientists with common interests in physical oceanography, carbon cycle, marine biogeochemistry and ecosystems and other users and collectors of hydrographic data to develop a globally coordinated network of sustained hydrographic sections as part of the global ocean/climate observing system. JCOMM coordinates, develops and recommends standards of procedures for a fully integrated marine observing, data management and service system.

**European and Mediterranean scales:**

- **European Regional Development Fund** – aims at strengthening economic and social cohesion of the EU by correcting imbalances between regions. One of its key priorities is the digital agenda;

- **Copernicus Marine Environment Monitoring Service 2015-2025** – information from satellites and in situ observation used for daily analyses and forecasts of the state of ocean and sea. Its Service Evolution Strategy aims at delivering high quality products and downstream services + making CMEMS data and products widely accessible;

- **JPI Oceans** – aims at aligning efforts and funding in marine research between MS and associated countries through joint calls. Will to act as a Science-Policy Interface and to link Oceans, Human Health and Wellbeing (Open Science);

- **EU Integrated Maritime Policy** – seeks to coordinates existing policies on specific maritime sectors and one of its priorities is related to marine data and knowledge;

- **EU Blue Growth Strategy** – supports sustainable growth in the marine and maritime sectors as a whole. One of its three main components concerns the necessity to provide knowledge, legal certainty and security in the blue economy and highlights the importance to strengthen marine knowledge to improve access to information about the sea;

- **EU Digital Single Market Strategy** adopted in 2015 – aims at improving access to digital services and goods for consumers and businesses; developing an environment where digital networks and services can prosper; maximizing the growth potential of the EU digital economy. A specific objective aims at helping large and small companies, researchers, citizen and public authorities to make the most of new technologies;

- **Mediterranean Sea Policy** – aims at promoting a virtual knowledge center for marine and maritime affairs in the Mediterranean;

- **Virtual Knowledge Center** – managed by the UfM and launched in 2014 to provide a centralized platform for marine and maritime information and to improve synergies across different initiatives and projects in the Mediterranean;

- **United Nations Environment Program/Mediterranean Action Plan** – coordinating unit for the Mediterranean Action Plan Secretariat to the Barcelona Convention and its Protocols. It coordinates the efforts for information sharing and communication and is managing a spatial data infrastructures and data portal for the whole Mediterranean area;

- **INSPIRE 2007/2/EC Directive** – European countries are committed to open policies and common rules exist in the EU.

- **MSP Directive 2014/89/EU**

- **UfM Ministerial Declaration on Blue Economy** (2015; a new one upcoming in 2021)

- **UfM Ministerial Declaration on Environment and Climate Change** (2014; a new one upcoming in 2020)

- **UfM Working Group on Blue Economy**
  https://ufmsecretariat.org/ufm-working-group-blue-economy/

- Any other relevant UfM Ministerial (transport, energy, sustainable urban development, etc.), related strategies, programmes and projects
  https://ufmsecretariat.org/what-we-do/water-environment/
The access to data and knowledge as a public good and free of charge, is the basis for use and re-use of data to generate a multiplier effect and for value addition by a wide range of users, leading to the generation of knowledge and supporting service provision and economic activity.

Throughout history the sea has played a crucial role in the socio-economic development of the Mediterranean region. Today the quest for environmental security, based on the concepts of sound ocean governance, sharing of knowledge and the controlled use of resources, is the precursor for prosperity, sustainability and peace. The importance of marine resources to our wellbeing calls for the sustainable use of the sea in both open and coastal domains. There is an ever increasing responsibility on the scientific community to provide accurate and routinely updated information for a more comprehensive knowledge on the state of the sea and the marine ecosystem, to support the chain of policy, planning and decision-making undertakings, to understand and address climatic change impacts, to provide frameworks for more effective surveillance and monitoring, and furthermore to generate added value to data and support smart and innovative applications in marine-related economic activities.

Beyond the scientific community, it is important to target public authorities and bodies (agencies…), at different levels (national, regional…) whose missions include data collection and production of knowledge.

All the sectors of the Blue Economy are concerned by sharing data and knowledge about the status of the marine ecosystem, the understanding and the monitoring of the response of the ecosystem to the pressures exerted by human activities. As such, private companies operating in the field of blue economy must be involved in the process of improving data and knowledge sharing.

It is also necessary to consider the many NGOs working at different scales on environmental or economic issues related to the sea.

There is moreover a recognition of the opportunities and advantages which transpire from regional cooperation on marine research and environmental monitoring especially in a region like the Mediterranean where the multitude of jurisdictions and multiple uses of marine space calls for more stringent regulations, a holistic approach across disciplines, and collaborative management across stakeholders and across countries.

### Funding options and agencies

Most of the actions described in the following table rely on efforts produced at national, regional or local scales. For instance, data on the status of the marine environment are collected by countries. The EC needs to commit MSs to run in the long term the national scale services by dedicated secured funding and a targeted plan of action by 2030. The main challenge is to set up a framework able to foster harmonization of data and sharing of knowledge at trans-national level, not only among European countries.

- **CMEMS** – Copernicus Marine Environment Monitoring Service;
- **Horizon 2020** – especially under Pillar 1 ‘Excellent Science’ with Research Infrastructures’ thematic and under Pillar 3 ‘Societal Challenges’ with the ‘food security, sustainable agriculture, marine and maritime research and the bio-economy’ thematic;
- **Horizon Europe** – in particular under Pillar 1 ‘Research Infrastructures’; Pillar 2 ‘Global challenges and Industrial Competitiveness’ – Cluster ‘Food and natural resources’, and within the Mission ‘Healthy Oceans, Seas, Coastal and Inland Waters’;
- **Union for the Mediterranean**;
- **UNEP/MAP**;
- **JPI Oceans**.
### Activities to promote the SRIA Implementation

<table>
<thead>
<tr>
<th>Examples of activities</th>
<th>Content and objective</th>
<th>How and timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Networking and engagement of economic sectors and national Blue Growth communities</td>
<td><strong>1)</strong> Creation of a Mediterranean European Open Innovation Network in advanced technologies; Use of big data (GAFA, mobile phone companies, AIS data) for extracting socio-economic information, social networks harvesting</td>
<td>How:</td>
</tr>
<tr>
<td></td>
<td><strong>2)</strong></td>
<td>When:</td>
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<td></td>
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</tr>
<tr>
<td>Alignment and coordination</td>
<td><strong>1)</strong> Alignment and coordination with EMODnet, Copernicus and national marine core data services. Creation of MedBlueNet – integrated data service providing open access to data layers at different scales (regional and coastal) for both scientific/technical (research, environmental management, surveillance, security, industry) and non-technical (legal, socio-economic, policy) aspects;</td>
<td>How: Meetings and activities for the identification of priority topics/actions and of options for joint implementation. Research to strengthen dialogue and institution capacities. Promotion and harmonize legislation to enforce public and private actors (when operating under public contract) to provide open access to collected data.</td>
</tr>
<tr>
<td></td>
<td><strong>2)</strong> Alignment and coordination with Eurostat and Medstat to create a Blue Economy Mediterranean Observatory;</td>
<td>When: 2020-2023.</td>
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<td></td>
<td><strong>3)</strong> Alignment, coordination and further connections with other prominent initiatives such as EOSC and ESFRI.</td>
<td></td>
</tr>
<tr>
<td>Promotion and possibly implementation of actions coordinated and jointly undertaken by different countries, with a “variable geometry” approach</td>
<td><strong>1)</strong> Diverse initiatives in the field of marine citizen science (on biodiversity, litters). Encourage Trans Mediterranean political engagement for the labelling and sharing of data, through the development of joint DOI operations for example.</td>
<td>How: Supported by BLUEMED cafes-like events on the occasion of conferences, workshops and meetings.</td>
</tr>
<tr>
<td>Start-Up actions</td>
<td></td>
<td>How:</td>
</tr>
<tr>
<td>Assessment and promotion of the capitalisation and valorisation under the BLUEMED umbrella of ongoing and future projects</td>
<td></td>
<td>When:</td>
</tr>
</tbody>
</table>
### ANNEX 1: BLUEMED FICHES FOR THE 13 PRIORITIES

#### Examples of activities

Champion countries must choose those activities that suit best the priority addressed.

<table>
<thead>
<tr>
<th>Activities</th>
<th>Content and objective</th>
<th>How and timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lobbying actions</strong></td>
<td>Actions to highlight the importance of open data, open science and open innovation within the Horizon Europe Mission of Healthy Oceans, Seas, Coastal and Inland Waters, and to promote dedicated calls.</td>
<td>How: 1) Dedicated meetings and participation to relevant working groups; 2) Relevant actions and discussions to lead with competent national, European and Mediterranean authorities. Creation of joint DOI operations. When: 1) 2020-2023. 2) 2020-2023.</td>
</tr>
<tr>
<td><strong>Training and capacity building initiatives</strong></td>
<td>Mediterranean School of Applied Oceanography.</td>
<td>How:</td>
</tr>
<tr>
<td><strong>Implementation Working Groups (IWG) on specific sectors</strong></td>
<td>How:</td>
<td></td>
</tr>
</tbody>
</table>

#### Content and objective

Champion countries describe in more detail the content and specific objective of a given activity.

#### How and timeframe

Champion countries explain how the activity can be carried out and timeframe within the IP (2020-2023).
**FICHE 11**

**BUILDING CAPACITY, BLUE SKILLS AND BLUE PROFESSIONALS**

**CO-CHAMPION COUNTRIES GREECE & EGYPT**

**Background**

One crucial ingredient to unlock the Med Sea potential is clearly the human element. Human capital constitutes an overarching condition to achieving the region’s economic, knowledge and technology priorities, not least in terms of research and innovation.

Many blue economy sectors still find it hard to attract the right employees, mainly due to the skills gap that persists between the education offer and the needs of the labour market, but also as a result of poor cooperation between academia and industry, the relatively low attractiveness of blue careers and a general lack of ocean literacy. With the right deployment of measures – e.g. practice-oriented and flexible training, apprenticeships, e-mentoring, innovation hubs and networks, social enterprises, incentives for SMEs and start-ups – however, considerable improvements can be expected in the short term, matching the European Commission’s target of two million new jobs in the sector by 2020.

This goal supports the “New Skills Agenda for Europe” and the European Commission’s mission to focus its efforts on Blue Careers, Blue Labs and grants for the blue economy. It also reflects the “European Strategy for more Growth and Jobs in Coastal and Maritime Tourism”, the Westmed Initiative priorities and a good number of local and regional initiatives. Transboundary cooperation is a prerequisite for developing blue R&I capacity in the Mediterranean region and supporting it with the right skills sets.

The goal could lead to the design and establishment of a “BLUEMED Academy” to further develop “an educational critical mass and regional pool of resources”, as clearly addressed by the European Marine Board in the recommendations of the Policy Brief “Training the 21st Century Marine Professionals”. This needs to be customized to Mediterranean peculiarities and potential and be closely linked to local communities and their socio-economic needs. It can produce positive effects in a relative short time, in particular within already established blue economy sectors, with direct impact in terms of economic development, jobs and the well-being of citizens.

Fully in line with the UfM BlueSkills activity, supported in high-level fora such as the “Dialogue 5+5”, the goal can build and capitalize on the already established network of infrastructures, universities and research institutions. It can also be driven by an economy sector, connecting goals and actions across the different pillars. Networking opportunities involving EU and non-EU countries are offered by existing networks and hubs at national and international level such as by UNIMED, EMUNI, the research infrastructures EMBRC and ASSEMBLE and the IOC-UNESCO Ocean Teacher Global Academy.

### Mapping and discussing implementation options and potentials of this priority

**Recent and ongoing relevant projects**

<table>
<thead>
<tr>
<th>PROJECT</th>
<th>DESCRIPTION</th>
<th>WEBSITE</th>
<th>OBJETIVES</th>
</tr>
</thead>
<tbody>
<tr>
<td>BlueGeneration</td>
<td><strong>Call:</strong> Iceland, Liechtenstein and Norway through the EEA and Norway Grants Fund for Youth Employment</td>
<td><a href="https://bluegeneration.org/index.php/en/blue-generation-programme">https://bluegeneration.org/index.php/en/blue-generation-programme</a></td>
<td>The objective of the Blue Generation Project is to inspire and engage young people between 15 and 29 years to pursue a sustainable career in one of the following Blue Economy sectors: coastal tourism, aquaculture, ocean energy, marine biotechnology, shipbuilding, maritime transport and fisheries. At the heart of the project lies the Blue Generation Program (BCP). The BCP is an integrated outreach action organised and implemented by the project with the aim to “attract, engage and convert” young people to the vast opportunities of the Blue Economy job market. The Blue Generation Program offers well-documented information about blue career prospects in Greece, Spain, Portugal, Bulgaria and Poland, mentoring programs for those among the young who wish to actively pursue a career in Blue Economy, including skills validation tools to better cope with the needed qualifications, as well as mobility exchanges through study visits for gaining first-hand experience in various Blue economy sectors.</td>
</tr>
<tr>
<td>Project Name</td>
<td>Call:</td>
<td>EU Contribution:</td>
<td>Website:</td>
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<tr>
<td>ResponSEaible project</td>
<td>European Commission’s Horizon 2020 program</td>
<td>3.696.644 €</td>
<td><a href="https://www.responseable.eu/">https://www.responseable.eu/</a></td>
</tr>
<tr>
<td>BlueSmart Project</td>
<td>European Maritime and Fisheries Fund</td>
<td>399.493€</td>
<td><a href="https://bluesmart.hr/en/blue_smart_project/about_the_project/">https://bluesmart.hr/en/blue_smart_project/about_the_project/</a></td>
</tr>
</tbody>
</table>
• Help to design and implement successful mobilisation activities focused on education, community, governance actors and directly targeted at citizens.  
• Ensure Knowledge exchange with transatlantic partners to bring about a global approach to protecting the planet’s shared seas and ocean. |
<p>| Ariel                     | Ariel Call - FIRST CALL FOR PROPOSALS      | 904.453.12€      | <a href="https://ariel.adrioninterreg.eu/">https://ariel.adrioninterreg.eu/</a> | Promoting small scale fisheries and aquaculture transnational networking in Adriatic-Ionian macroregion Support the development of a regional Innovation system for the Adriatic-Ionian area ARIEL partners will then develop a Joint Research Agenda for small-scale fishery and aquaculture and a Chart of Innovation Services, a strategic and multidisciplinary action plan defining common priorities and research lines, areas of improvement, knowledge based solutions and actions to successfully address the major challenges linked to innovation and sustainability of fisheries and aquaculture for the coming years in the Adriatic and Ionian Sea region. |
| FUTURE 4.0                | Call: ADRION - FIRST CALL FOR PROPOSALS    | 716.399.08€      | <a href="https://future4.adrioninterreg.eu/">https://future4.adrioninterreg.eu/</a> | With specific focus on Blue Economy, the shipyard &amp; nautical logistic supply chain, the project intends to design a shared strategy to innovate companies approach to training through a Smart Learning Model enhancing shipyard competitiveness in Italy (Veneto &amp; Apulia), Croatia, Greece and Albania. The project structure foresees the definition of a Technological Map of the Shipyard &amp; Nautical Logistic supply chain thorough inclusive road mapping and foresight activity on technology and related competences. Results will be the lay for the designing of a knowledge, competence and skills training/learning hub (FUTURE4.0 platform) involving Universities and training orgs., companies and PAs. |</p>
<table>
<thead>
<tr>
<th>Project</th>
<th>Call</th>
<th>Duration</th>
<th>EU Contribution</th>
<th>Website</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOOSTing</td>
<td>Call ADRION – FIRST CALL FOR PROPOSALS</td>
<td>01/01/2016 – 31/10/2019</td>
<td>1.138.099.85€</td>
<td><a href="https://blueboost.adrioninterreg.eu/">https://blueboost.adrioninterreg.eu/</a></td>
</tr>
<tr>
<td>CLIPPER</td>
<td>Call: Regional ERDF / ESF Operational Programme 2014–2020</td>
<td>01/01/2017 – 30/06/2021</td>
<td>1.086.023.00€</td>
<td><a href="https://www.interregeurope.eu/CLIPPER/">https://www.interregeurope.eu/CLIPPER/</a></td>
</tr>
<tr>
<td>ENTREFISH</td>
<td>Call Blue Careers Call, launched by EASME – EMFF/2016/1.2.1.2 – Blue Careers in Europe</td>
<td>01/03/2017 – 28/02/2019</td>
<td>580.000,00€</td>
<td><a href="http://www.entrefish.eu">http://www.entrefish.eu</a></td>
</tr>
</tbody>
</table>

The project aims at providing results and specific guidance for the management of artisanal fisheries in MPAs through testing the process of a governance toolkit, bringing capacity building for stakeholders (MPAs managers and local fishermen groups) and supporting policy recommendations in order to set up fishery management models.

The program aims at unlocking and boosting the potential of knowledge/technology transfer, transnational and cross-sectoral cooperation of key innovation actors of traditional (primarily fisheries and ship-building) and emerging (primarily Blue technologies–including aquaculture–green shipbuilding, robotics and new materials) Blue Growth sectors by reinforcing the relationships and interactions within and among their clusters according to an open source, knowledge sharing & community based approach.

CLIPPER is an innovative interregional cooperation project that brings together seven pro-active regions to address the negative impact the global economic recession has had on Europe’s maritime sector. This sector is also suffering from growing competition from emerging countries. In particular, the project is supporting the SMEs to develop innovative business strategies focused on diversification and differentiation that help them to create jobs and growth in the Blue Growth sector.

It supports the skills of entrepreneurs, workers, university students and young graduates to foster the sustainable growth of aquaculture and fishery enterprises, through an approach based on Multidisciplinarity, inter-sectoral approach, and an intergenerational pact.
<table>
<thead>
<tr>
<th><strong>BRIdges</strong></th>
<th>The GAP for Innovations in Disaster resilience</th>
<th><strong>Call:</strong> H2020 European Commission Project</th>
<th><strong>EU Contribution:</strong> 5,999,520.50 €</th>
<th><strong>Website:</strong> <a href="http://www.brigaid.eu">www.brigaid.eu</a></th>
<th><strong>BRIGAID</strong> is a 4-year project (2016-2020) under EU Horizon2020, aimed to effectively bridge the gap between innovators and end-users in resilience to floods, droughts and extreme weather.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DEEP BLUE</strong></td>
<td>Developing Education and Employment Partnerships for a Sustainable Blue Growth in the Western Mediterranean Region</td>
<td><strong>Call:</strong> EASME/EMFF/2017/1.2.1.12 – Sustainable Blue Economy</td>
<td><strong>EU Contribution:</strong> 475,678,00€</td>
<td><strong>Website:</strong> <a href="http://mamba.habgor.ac.uk/media.php">http://mamba.habgor.ac.uk/media.php</a></td>
<td><strong>DEEP BLUE</strong> will promote collaboration between marine and maritime education, research, and training centres to strengthen relevant skills and increase capacity building for blue career development. The DEEP BLUE project aims at developing skills and building capacities throughout enhancing geopolitical dialogue and international scientific cooperation (Science Diplomacy) in the Western Mediterranean Region.</td>
</tr>
<tr>
<td><strong>BLUECloud</strong></td>
<td></td>
<td><strong>Call:</strong> H2020 European Commission Project</td>
<td><strong>EU Contribution:</strong> 5,999,520.50 €</td>
<td><strong>Website:</strong> <a href="https://www.csc.fi/-/bluecloud">https://www.csc.fi/-/bluecloud</a> <a href="https://www.blue-cloud.org/">https://www.blue-cloud.org/</a></td>
<td>The project implements a practical approach to address the potential of cloud based open science to achieve a set of services identifying also longer term challenges to build and demonstrate the Pilot Blue Cloud as a thematic EOSC cloud to support research to better understand &amp; manage the many aspects of ocean sustainability, through a set of five pilot Blue-Cloud demonstrators.</td>
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</tbody>
</table>
| **MISTRAL** | Mediterranean Innovation Strategy for transnational activity of clusters and networks of the Blue Growth | **Call:** Interreg-MED 2014–2020 | **EU Contribution:** €410,000 | **Website:** https://mistral.interreg-med.eu/ | **MISTRAL** to promote and make effective a transnational BG ecosystem of innovation where SMEs and corporates, RTOs, higher education institutions, public sector, cooperate to:  
• Develop sustainable innovation actions,  
• Increase their innovation performance,  
• Sustain the development of the entrepreneurial spirit,  
• Increase the access and sharing of the marine knowledge. |

### Programmes and initiatives of relevance, including research and data infrastructures

- **MENTOR PROGRAM BLUE GROWTH** [http://www.bluecareers.org/](http://www.bluecareers.org/)
  
The proposed Career Centre for the Eastern Mediterranean Sea (EM) and Black Sea (BS), aims to attract young people and experienced workers and fill existing skills’ gaps by supporting activities that will increase employability in key Blue sectors of the region: Maritime Transport (shipping, ports, ship-repairs and shipbuilding), cruise and nautical tourism, aquaculture and offshore oil and gas.
  
Enaleia is a social enterprise that aims to make each fisherman fish in a more efficient and eco-friendly way. It is an award-winning youth initiative, aiming to attract more people into the fishing sector, educating them and the same time, creating conditions for sustainable fishing. Our students receive all the necessary knowledge and skills by attending a full specialized and tailor-made training program. The program combines distance learning, lectures, workshops and on-the-field training by professional fishermen.
  
*4helix* Knowledge Providers: Gallery of MED transnational innovation experts *4helix+* has set up a transnational database of Knowledge Providers, i.e. Cultural and Creative Industries and ‘new innovation agents’ in view of promoting their innovation skills and expertise within a MED transnational context. A broad gallery of registered Knowledge Providers is already available for consultation, while interested experts are still in time to join (by 31 July 2020).
• **Blue Growth Master** [http://bluegrowth.inogs.it/advancedmaster/introduction](http://bluegrowth.inogs.it/advancedmaster/introduction)

   The Master in Sustainable Blue Growth is established to bring scientific excellence and technological innovation at the centre of a number of Blue Growth initiatives. The Master is jointly organized by University of Trieste and OGS to support the creation of stable and attractive blue career pathways throughout strengthening professional skills and enhancing competencies in fields related to sustainable blue growth. It will start in January 2020.

• **Bluegrowth.gr**

   Blue Growth is aiming to inspire and help young entrepreneurs realize the innovative concepts relating to marine and freshwater resources. Creative disruption in the maritime sector can introduce promising business opportunities, create new jobs, and transform traditional processes into more productive and sustainable activities.

• **BlueBRIDGE – Building Research environments fostering Innovation, Decision making, Governance and Education to support Blue growth** [https://www.bluebridge-vres.eu/about-bluebridge](https://www.bluebridge-vres.eu/about-bluebridge)

   It supports capacity building in interdisciplinary research communities actively involved in increasing scientific knowledge about resource overexploitation, degraded environment and ecosystem with the aim of providing a more solid ground for informed advice to competent authorities and to enlarge the spectrum of growth opportunities as addressed by the Blue Growth Societal Challenge.

• **SEA-EU European University of the SEA**

   part of the Erasmus + program (An alliance of 6 universities (3 of which are in Mediterranean regions) with strong marine and maritime expertise.

   - Common Fisheries Policy.
   - Mediterranean Universities Union.
   - Blue Med Initiative.
   - Blue Growth Initiative of FAO.
   - MSSD 2016–2025 and Regional Action Plan on SCP.
   - ICCAT - GBYP project on Bluefin Tuna.
   - CPMR Inter-Mediterranean Commission.
   - IMO World Maritime University.

### Target sectors and groups

- Farmers.
- Fishermen/aquaculture.
- Tourist operators.
- Local population.
- Disaster risk managers.
- Marine Transport sector.
- Health.
- Blue economy (energy, biothech, shipping).
- Territorial planning.
- Water resources managers.
- Scientists.
- Students.
- Small to Medium Enterprises.
### Funding options and agencies

- ENI-CBC.
- Interreg.
- The Interreg IPA CBC Programme.
- Horizon 2020.
- Life European Project (DGENV) and CEPSA (Private company, Spain) (Life blue Natura).
- Interreg IV B Med.
- European Territorial Cooperation Programme.
- European Regional Development Fund.
- DGMARE (EASME).

### Activities to promote the SRIA Implementation

**Examples of activities**

[Champion countries must choose those activities that suit best the priority addressed]

**Content and objective**

[Champion countries describe in more detail the content and specific objective of a given activity]

**How and timeframe**

[Champion countries explain how the activity can be carried out and timeframe within the IP (2020-2023)]

<table>
<thead>
<tr>
<th>Networking and engagement of economic sectors and national Blue Growth communities</th>
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<tbody>
<tr>
<td>Creation of clusters for knowledge sharing.</td>
</tr>
<tr>
<td>Registration in the +hellix database (until July 2020).</td>
</tr>
<tr>
<td>Participation in the Mediterranean Blue Economy Day and the Mediterranean Stakeholder Platform.</td>
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<tr>
<td>Goal: Mapping of needs and share experience to increase understanding.</td>
</tr>
<tr>
<td>How: Thematic Workshops and seminars.</td>
</tr>
<tr>
<td>When: At least annually.</td>
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<table>
<thead>
<tr>
<th>Alignment and coordination</th>
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<tbody>
<tr>
<td>GSO BLUEMED Working Group</td>
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<tr>
<td>DGMARE</td>
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<tr>
<td>SEA-EU (EU University of the Sea)</td>
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<tr>
<td>UFM Blue Skills program</td>
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<tr>
<td>BLUECloud Project</td>
</tr>
<tr>
<td>How: 1) Meetings, working groups and activities to define and identify needs. 2) Co-organise seminars/training events for professionals / students. 3) Co-organise Blue hackathon event (Blue Cloud).</td>
</tr>
<tr>
<td>When:</td>
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<thead>
<tr>
<th>Promotion and possibly implementation of actions coordinated and jointly undertaken by different countries, with a “variable geometry” approach</th>
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<tr>
<td>Advisory Groups.</td>
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<td>Research organizations.</td>
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<tr>
<td>Interact.</td>
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<td>How:</td>
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<tr>
<th>Start-Up actions</th>
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<tr>
<td>Fishing schools.</td>
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<tr>
<td>Blue Labs.</td>
</tr>
<tr>
<td>Blue Careers course.</td>
</tr>
<tr>
<td>How: Calls.</td>
</tr>
<tr>
<td>When: Annually.</td>
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<tr>
<th>Assessment and promotion of the capitalisation and valorisation under the BLUEMED umbrella of ongoing and future projects</th>
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<tbody>
<tr>
<td>Promotion of the bluemed e-training activities.</td>
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<tr>
<td>How: Bluemed Website, Social Media.</td>
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<table>
<thead>
<tr>
<th>Lobbying actions</th>
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<tbody>
<tr>
<td>Actions to highlight the importance of Sustainable blue careers.</td>
</tr>
<tr>
<td>How: Workshops and meetings</td>
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<tr>
<td>When:</td>
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</tbody>
</table>
### Examples of activities

**[Champion countries must choose those activities that suit best the priority addressed]**

<table>
<thead>
<tr>
<th>Training and capacity building initiatives</th>
<th>Content and objective</th>
<th>How and timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) BlueMed e-training.</td>
<td>[Champion countries describe in more detail the content and specific objective of a given activity]</td>
<td>How: Foster local dialogue amongst training institutions, businesses, and administrations.</td>
</tr>
<tr>
<td>3) Research organizations.</td>
<td></td>
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<tr>
<td>4) Specialized schools (e.g. fishing school, etc...).</td>
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<tr>
<td>5) Connection with the BlueMed.</td>
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<tr>
<td>6) Master Course for capacity.</td>
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<tr>
<td>7) SEA-EU.</td>
<td></td>
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</tr>
<tr>
<td>8) UFM Blue Skills Programmes.</td>
<td></td>
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<tr>
<td>9) Blue &quot;Hackathon&quot;.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Implementation Working Groups (IWG) on specific sectors

- GSO BLUEMED Working Group.
- EU Advisory Groups (Aquaculture, Fishing, Seafood).
- Research organizations.

<table>
<thead>
<tr>
<th>Communication and engagement</th>
<th>How: Meetings.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GSO BLUEMED Working Group.</td>
<td></td>
</tr>
<tr>
<td>EU Advisory Groups.</td>
<td></td>
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<tr>
<td>Research organizations.</td>
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<tr>
<td>Local Authorities.</td>
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<tr>
<td>Non-governmental organizations.</td>
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<tr>
<td>Blue-careers collectives.</td>
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<tr>
<td>SEA-EU.</td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**

1 The idea of a Blue-hackathon is taken from the Climate-KIC Climathon it is a day where in many parallel cities individuals/experts/companies organise to face and propose solutions for specific challenges. This idea expanded might work for other BlueMed Challenges also and could be achieved through the Mediterranean Stakeholder Platform, or in relation to the Blue Economy Day organised by DG MARE, and maybe lead to different Start ups or further funding ideas BlueCloud is also...
ENCOURAGING NETWORKING AMONG DIFFERENT SECTORS TO STRENGTHEN SYNERGIES, THIS GOAL IS STRONGLY CHARACTERIZED BY THE ‘ACROSS- PILLAR’ ADDED VALUE AS NEEDED (DEFAULT?) BACKGROUND METHODOLOGY OF ALL SCIENCE-TO-POLICY PROCESSES, IN PARTICULAR WHEN CONSIDERING THE GEO-POLITICAL COMPLEXITY OF THE MEDITERRANEAN.

Indeed, there is a great need to promote communication and dialogue between different stakeholders in the Mediterranean region in order to achieve the objectives of the SRIA. Developing participatory approaches to take decisions, including civil society, is crucial for social proper governance.

From one side science should know more about challenges other sectors of society are facing, from the other existing research findings should be more incorporated in other sectors of society thus impacting in terms of economic development, jobs, well-being of citizens.

This goal, for which a realistic action plan can be established for the next years, also opens up the possibility to have a leverage effect (e.g. convergence of the BLUEMED priorities with other relevant strategies, e.g. Regions).

---

**Mapping and discussing implementation options and potentials of this priority**

**Recent and ongoing relevant projects**

<table>
<thead>
<tr>
<th>PROJECT</th>
<th>DESCRIPTION</th>
<th>OBJETIVES</th>
</tr>
</thead>
</table>
| **BlueBRIDGE**  
Building Research environments for fostering Innovation, Decision making, Governance and Education to support Blue growth | Call: H2020-EU.1.4.1.3.  
- Development, deployment and operation of ICT-based e-infrastructures  
**Duration:** 2015-2018 | **EU Contribution:** € 5 295 753  
**Website:** https://www.bluebridge-vres.eu/ |

Innovating current practices in producing & delivering scientific knowledge advice to competent authorities & enlarges the spectrum of growth opportunities in distinctive Blue Growth areas.

| Support Action to initiate cooperation between the Communities of European MARine and MARitime REsearch and Science | Call: SST.2008.6.0.6.  
- Integration of Marine and Maritime Sciences in Waterborne Transport in support to the European Research Area  
**Duration:** 2009-2012 | **EU Contribution:** € 498 085  
**Website:** not available |

To identify and establish appropriate mechanisms to strengthen the cross-sectoral and interdisciplinary cooperation, key ferment for innovation, between both research communities.

| **MARIBE**  
Marine Investment for the Blue Economy | Call: H2020-EU.3.2.  
- SOCIETAL CHALLENGES  
- Food security, sustainable agriculture and forestry, marine, maritime and inland water research, and the bioeconomy.  
**Duration:** 2015-2016 | **EU Contribution:** € 1 977 951  
**Website:** http://maribe.eu/ |

Socio-economic study to identify key opportunities for synergistic collaboration between private entities.
<table>
<thead>
<tr>
<th>Project</th>
<th>Call Details</th>
<th>EU Contribution</th>
<th>Website</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>COLUMBUS</strong>&lt;br&gt;Monitoring, Managing and Transferring Marine and Maritime Knowledge for Sustainable Blue Growth</td>
<td>Call: H2020-EU.3.2. - SOCIETAL CHALLENGES - Food security, sustainable agriculture and forestry, marine, maritime and inland water research, and the bioeconomy&lt;br&gt;Dur: 2015-2018</td>
<td><strong>€ 3 997 488</strong></td>
<td><a href="http://www.columbusproject.eu/">http://www.columbusproject.eu/</a></td>
<td>To capitalise on the European Commission’s significant investment in marine and maritime research by ensuring accessibility and uptake of research Knowledge Outputs by end-users: policy, industry, science and wider society.</td>
</tr>
<tr>
<td><strong>COFASP ERANET</strong>&lt;br&gt;(Strengthening cooperation in European research on sustainable exploitation of marine resources in the seafood chains- ERANET)</td>
<td>Call: FP7-KBBE&lt;br&gt;Dur: 2015-2018</td>
<td><strong>€ 2 737 158</strong></td>
<td><a href="#">not available</a></td>
<td>To strengthen cooperation and synergies between European research programme owners and managers, focusing on the benefits and needs for the Fisheries, Aquaculture and Seafood Processing sectors.</td>
</tr>
<tr>
<td><strong>GAP2</strong>&lt;br&gt;Bridging the gap between science, stakeholders and policy makers</td>
<td>Call: FP7-SIS&lt;br&gt;Dur: 2011-2015</td>
<td><strong>€ 5 913 773</strong></td>
<td><a href="http://gap2.eu/">http://gap2.eu/</a></td>
<td>To promote and enable processes for open and effective participation of stakeholders in research and management, and demonstrate through specific examples and critical evaluation, the role and value of stakeholder driven science in the governance of fisheries and the marine environment.</td>
</tr>
<tr>
<td><strong>MAESTRALE</strong>&lt;br&gt;Mediterranean Innovation Strategy for transnational activity of clusters and networks of the Blue Growth</td>
<td>Call: Interreg-MED 2014-2020&lt;br&gt;Dur: Unknown</td>
<td><strong>not available</strong></td>
<td><a href="https://maestrale.interreg-med.eu/">https://maestrale.interreg-med.eu/</a></td>
<td>10 Blue Energy Labs developed as 40 laboratories involving research institutions, public authorities, SMEs and scientific experts. The intensive collaboration in the form of a participatory process all around the Mediterranean area; enabled the development of 20 pilot projects, for which feasibility and sustainability assessments demonstrated that Marine Renewable Energy technologies in the Mediterranean can be implemented.</td>
</tr>
<tr>
<td><strong>4Helix+</strong>&lt;br&gt;Empowering the 4 helix of MED maritime clusters through an open source/ knowledge sharing and community-based approach in favour of MED blue growth</td>
<td>Call: Interreg-MED 2014-2020&lt;br&gt;Dur: 01/02/2018 - 31/07/2020</td>
<td><strong>€ 2 193 984</strong></td>
<td><a href="https://www.cei.int/projects/4helix">https://www.cei.int/projects/4helix</a></td>
<td>Stimulating, coaching and funding creative innovation within the blue economy in the Mediterranean (MED) area, by improving the gap between the 8 Mediterranean regional maritime clusters and within their four helixes, through an open source, knowledge-sharing, and community-based approach.</td>
</tr>
<tr>
<td><strong>MISTRAL</strong>&lt;br&gt;Mediterranean Innovation Strategy for transnational activity of clusters and networks of the Blue Growth</td>
<td>Call: Interreg-MED 2014-2020&lt;br&gt;Dur: 48 months</td>
<td><strong>€4 100 000</strong></td>
<td><a href="https://mistral.interreg-med.eu/">https://mistral.interreg-med.eu/</a></td>
<td>to promote and make effective a transnational BG ecosystem of innovation where SMEs and corporates, RTOs, higher education institutions, public sector, cooperate to:&lt;br&gt;- develop sustainable innovation actions.&lt;br&gt;- increase their innovation performance.&lt;br&gt;- sustain the development of the entrepreneurial spirit.&lt;br&gt;- increase the access and sharing of the marine knowledge.</td>
</tr>
<tr>
<td>APPLY</td>
<td>COST ACTION: CA17132 - European network for argumentation and public policy analysis</td>
<td>Website: [<a href="https://www.cost.eu/actions/CA17132/#tabs">https://www.cost.eu/actions/CA17132/#tabs</a></td>
<td>Name:overview](<a href="https://www.cost.eu/actions/CA17132/#tabs">https://www.cost.eu/actions/CA17132/#tabs</a></td>
<td>Name:overview)</td>
</tr>
<tr>
<td>OPP</td>
<td>Call: COST Action: IS1403 - Oceans Past Platform</td>
<td>Website: <a href="http://www.tcd.ie/history/opp/">www.tcd.ie/history/opp/</a></td>
<td>• To measure and understand the significance and value to European societies of living marine resource extraction and production to help shape the future of coasts and oceans.&lt;br&gt;• Lowers the barriers between human, social and natural sciences.&lt;br&gt;• Multiply the learning capacity of research environments; and enable knowledge transfer and co-production among researchers and other societal actors.&lt;br&gt;• Integrating historical findings of scale and intensity of resource use into management and policy frameworks.</td>
<td></td>
</tr>
<tr>
<td>MarCons</td>
<td>Call: COST Action: CA15121 - Advancing marine conservation in the European and contiguous seas</td>
<td>Website: <a href="http://www.marcons-cost.eu/">www.marcons-cost.eu/</a></td>
<td>• Consolidate a network of scientists and stakeholders who are involved in marine conservation in European and contiguous seas,&lt;br&gt;• Promote collaboration, reduce redundancy of research efforts in conservation science and practice.&lt;br&gt;• Developing and promoting novel and relevant concepts, methods, and tools, provide support to the related European policies, and enable effective and informed decision-making for the improvement of marine conservation in the European Seas and adjacent regions,&lt;br&gt;• Advancing the science of integrated conservation planning, promoting regional coordination and transboundary conservation, proposing specific conservation actions, accounting for climatic change and biological invasions.&lt;br&gt;• Providing guidance for assessing governance issues to make marine spatially managed areas more effective,&lt;br&gt;• Bridge the gap between conservation science and policy makers and substantially contribute to the challenge of halting biodiversity loss in the European Seas by 2020.</td>
<td></td>
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</tbody>
</table>
## OCEANGOV

**Call:** COST Action: CA15217 - Ocean Governance for Sustainability - challenges, options and the role of science  

**Duration:** Start of Action - 28/09/2016  
End of Action - 27/09/2020

**Website:** www.oceangov.eu

- Strengthening regional and interdisciplinary dialogue, producing scientific output, crosscutting the natural and social sciences.  
- Creates a distinct multi-scalar and cross-sectoral platform for institutional partners across academia, policymaking and civil society, presenting inclusive spaces for transdisciplinary dialogue, capacity development and the advancement of practical toolkits that attend to science-policy gaps inherent within integrated ocean and coastal governance.

### Programmes and initiatives of relevance, including research and data infrastructures

- UNEP Strategic Partnership for the Mediterranean Sea Large Marine Ecosystem (MedPartnership) ([https://mio-ecsde.org/project/project-4/](https://mio-ecsde.org/project/project-4/)).
- Mediterranean Blue Economy Stakeholder Platform ([http://www.medblueconomyplatform.org](http://www.medblueconomyplatform.org)).
- EUSAIR ([https://www.adriatic-ionian.eu/](https://www.adriatic-ionian.eu/)).

### Target sectors and groups

- Horizon 2020 Science with and for Society (SwafS) Programme Committee.
- Horizon 2020 Food Security, Sustainable Agriculture and Forestry, Marine, Maritime and Inland Water Research and the Bioeconomy Programme Committee.
- Horizon Europe Sub-Group on Mission Area Healthy Oceans, Seas, Coastal And Inland Waters.
- Union for Mediterranean (UfM) ([https://ufmsecretariat.org/](https://ufmsecretariat.org/)).
- UNEP MAP ([https://web.unep.org/uneapmap/what-we-do/projects](https://web.unep.org/uneapmap/what-we-do/projects)).
- IUCN World Commission on Protected Areas ([https://www.iucn.org/commissions/world-commission-protected-areas/our-work/marine](https://www.iucn.org/commissions/world-commission-protected-areas/our-work/marine)).
ANNEX 1: BLUEMED FICHES FOR THE 13 PRIORITIES

- European Environmental Agency (https://www.eea.europa.eu/).
- Waterborne Technology Platform (https://www.waterborne.eu/).
- International Council for the Exploration of the Sea (ICES) (https://www.ices.dk/Pages/default.aspx).

**Funding options and agencies**
- Science with and for Society (SwafS) calls Horizon 2020.
- Blue Growth calls Horizon 2020.
- European Maritime and Fisheries Fund (EMFF).
- JPI Oceans Calls.
- ERA-NET BlueBio Cofund.
- Bio-based Industries Joint Undertaking (BBJU).
- Interreg-Med calls.
- EEA grants.
- COST.

**Activities to promote the SRIA Implementation**

<table>
<thead>
<tr>
<th>Examples of activities</th>
<th>Content and objective</th>
<th>How and timeframe</th>
</tr>
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<tbody>
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<td>[Champion countries must choose those activities that suit best the priority addressed]</td>
<td>[Champion countries describe in more detail the content and specific objective of a given activity]</td>
<td>[Champion countries explain how the activity can be carried out and timeframe within the IP (2020–2023)]</td>
</tr>
</tbody>
</table>
| Networking and engagement of economic sectors and national Blue Growth communities | • Blue Labs.  
• Regional Maritime Clusters.  
• EU Advisory Groups.  
• International Symposia. | How:  
When: |
| Alignment and coordination | BLUEMED GSO Working Group. | How:  
When: |
| Promotion and possibly implementation of actions coordinated and jointly undertaken by different countries, with a “variable geometry” approach | BLUEMED GSO Working Group  
New funding mechanism e.g. ‘JPI Mediterranean’. | How:  
When: |
| Start-Up actions | Continuation of BLUEMED CSA Start-up Actions bringing together countries from all shores of the Mediterranean. | How:  
When: |
| Start-Up actions | Continuation of BLUEMED CSA Start-up Actions bringing together countries from all shores of the Mediterranean. | How:  
When: |
<table>
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</tr>
<tr>
<td>Assessment and promotion of the capitalisation and valorisation under the BLUEMED umbrella of ongoing and future projects</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lobbying actions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Training and capacity building initiatives</td>
<td>• Mutual Learning workshops. • EU funding calls.</td>
<td>How:</td>
</tr>
<tr>
<td>Implementation Working Groups (IWG) on specific sectors</td>
<td></td>
<td>When:</td>
</tr>
<tr>
<td>Communication and engagement</td>
<td>• Continuation of BLUEMED CSA. • BLUEMED CSO Working Group. • EU Advisory Groups. • Social networks.</td>
<td>How:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>When:</td>
</tr>
</tbody>
</table>
Detection of Clustering of efforts within and across countries is a precursor to excellence and economic growth. Clusters have proven by the cooperation between their members: the exchange of scientific and technical knowledge, the development of innovative cooperative projects, the deployment of products from these projects on international markets, that they allow economic growth and rapid technological development in the Mediterranean region. They also allow the exchange of good practices between the two shores of the Mediterranean Sea.

Although it is imperative that countries in the Region move away from traditional models of economic growth to more sustainable blue activities seeking positive impact on employment, clear deficit of clusters in the Mediterranean and lack of structures and networks is detected. In particular, this goal is linked to all the three pillars of the BLUEMED SRIA as stimulating the development of new maritime activities and the establishment of new clusters will tighten links between research, economic and innovation stakeholders.

To facilitate the development of maritime clusters, financial and framework support is required from national, local and regional authorities. While establishing the action plan, whose development is actually feasible in the short term, convergences can be found with the European Network of Maritime Clusters and with the WestMED Initiative.


- E-D1.2 Promote public-private partnerships to overcome the obstacles to the flourishing of new activities e.g. in emerging markets, such as, offshore wind, greenship, smartship, smartyard, sustainable coastal tourism, mineral resources in the high seas, biotechnologies, coastal ecological engineering, satellite data services, through federation of actors of research /industry, increasing visibility, international representation.
- E-D1.3 Develop economic studies to identify the specialization of different areas and regional clusters and highlight more productive and sustainable activities.
- E-D1.4 Establish innovative methodologies to assess the impacts of different programmes and actions on the evolution of maritime sectors and economy.
- E-D2.1 Favour incubators and connect start-ups, investors, accelerators, entrepreneurs, corporate networks, universities for increasing innovative blue ecosystems.

<table>
<thead>
<tr>
<th>PROJECT</th>
<th>DESCRIPTION</th>
<th>OBJECTIVES</th>
</tr>
</thead>
<tbody>
<tr>
<td>VPS for Tidal Turbine Generators</td>
<td>Call: EASME/EMFF/2017/1.2.1.12 - Sustainable Blue Economy</td>
<td>VPS for Tidal Turbine Generators VPS for Tidal Turbine Generators will design, manufacture and test an improved tidal turbine’s pitch system - an important component enabling technology for more cost-effective tidal energy turbines. UK and Spain.</td>
</tr>
<tr>
<td></td>
<td>Duration: 01/01/2019-31/12/2020</td>
<td>EU Contribution: 992,936.00 €</td>
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<tr>
<td></td>
<td>Website: <a href="https://ec.europa.eu/easme/en/vps-tpstg-vps-tidal-turbine-generators">https://ec.europa.eu/easme/en/vps-tpstg-vps-tidal-turbine-generators</a></td>
<td>VPS for Tidal Turbine Generators VPS for Tidal Turbine Generators will design, manufacture and test an improved tidal turbine’s pitch system - an important component enabling technology for more cost-effective tidal energy turbines. UK and Spain.</td>
</tr>
</tbody>
</table>
### SpaceTech4Sea
**Implementing Aerospace Technology on Marine LNG Applications Promoting Sustainable Blue Economy Space**

- **Call:** EASME/EMFF/2017/1.2.1.12 - Sustainable Blue Economy
- **Duration:** 01/01/2019 – 31/12/2021
- **EU Contribution:** 1.065.706,00 €

Tech4Sea will demonstrate, validate and commercialise an innovative ultralight LNG fuel tank in the maritime sector, by utilising cutting-edge aerospace technologies and novel shipbuilding techniques. Greece and USA.

### GREENing the BLUE

- **Call:** EASME/EMFF/2017/1.2.1.12 - Sustainable Blue Economy
- **Duration:** 2015–2016
- **EU Contribution:** 810.151,00 €
- **Website:** [Link](https://ec.europa.eu/easme/en/greening-blue-bound4blue-wingsail-demonstration-project)

GREENing the BLUE presents the full-scale demonstration of a foldable wing sail solution based on aeronautical design, which reduces fuel use and pollutant emissions in maritime transport through wind energy co-propulsion. Spain and Germany.

### ENSAMBLE
**Expertise and Networking to Sustain Actions in Med through Blue and Local Economy**

- **Call:** H2020-ART-2017–Two-Stages
- **Duration:** 01/06/2018 - 31/05/2021
- **EU Contribution:** 19.802,512 €

ENSAMBLE will promote twinning activities among local coastal communities, and other relevant stakeholders, for the sustainable development of the fishing sector. Italy, France and Tunisia.

### EASY FEED: Eco-aquaponics systems – 100% sustainable and profitable EU fish-farming

- **SRIA Action:** D2.1 / D2.4
- **Call:** EASME/EMFF/2017/1.2.1.12 - Sustainable Blue Economy
- **Duration:** 01 January 2019 – 01 December 2021
- **EU Contribution:** 438.563,00€
- **Website:** [Link](https://easyfeed-project.eu/#)

EASY FEED will validate the use of an innovative aquaculture organic feed formula, based on locally grown quinoa and spirulina, to reduce the aquaculture sector’s dependence on marine resources.

### DEMO-BLUESMARTFEED: Demonstration project of a smart technology for monitoring the delivery of feed for a sustainable aquaculture

- **SRIA Action:** D2.4
- **Call:** EASME/EMFF/2017/1.2.1.12 - Sustainable Blue Economy
- **Duration:** 01 January 2019 – 01 December 2021
- **EU Contribution:** 740.615,00€
- **Website:** [Link](http://bluesmartfeed.eu/)

DEMO-BLUESMARTFEED will validate the SICA technology (Smart System for Feeding Control) to monitor and optimise aquaculture feed supply, hence reducing feed waste.

The aim of this proposal is to validate the SICA technology (Smart System for Feeding Control) in two real environments (offshore cages) in Spain and Greece.
<table>
<thead>
<tr>
<th><strong>AlgaeDemo</strong></th>
<th>Demonstration of large-scale seaweed cultivation at open sea and the positive effects thereof on the ocean</th>
<th>Call: EASME/EMFF/2017/1.2.1.12 - Sustainable Blue Economy</th>
<th>EU Contribution: €999,832.00</th>
<th>AlgaeDemo aims to demonstrate the sustainable, large-scale (1.4 ha) industrial cultivation of selected seaweed species at open sea, with automated seeding, harvesting and monitoring. Belgium and The Netherlands (not in the Mediterranean, but relevant).</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BLUENET</strong></td>
<td>Creating new life for discarded fishing and aquaculture gears to prevent marine litter generation</td>
<td>Call: EASME/EMFF/2017/1.2.1.12 - Sustainable Blue Economy</td>
<td>EU Contribution: €550,691.00</td>
<td>BLUENET will set up a programme for recycling abandoned, lost or discarded fishing and aquaculture gear: recovering gear from the sea and using it as raw material to manufacture new gear. Spain and Italy.</td>
</tr>
<tr>
<td><strong>OCEANETS</strong></td>
<td>Technological approaches for circular economy solutions in terms of prevention, recover, re-use and recycle of fishing gears to obtain added-value products in the textile industry</td>
<td>Call: EASME/EMFF/2017/1.2.1.12 - Sustainable Blue Economy</td>
<td>EU Contribution: €426,060.00</td>
<td>OCEANETS will develop an ICT tool to prevent fishing gear loss and optimise the recycling technologies to produce high-quality fabrics from plastic nets. Spain and Czech Republic.</td>
</tr>
<tr>
<td><strong>Cluster ACT</strong></td>
<td>Aggregation and Collaboration Tools to enhance cluster network in the maritime sector</td>
<td>COST ACTION: EASME/EMFF/2017/1.2.1.12 - Sustainable Blue Economy</td>
<td>EU Contribution: €587,533.00</td>
<td>Cluster ACT will develop a mechanism for maritime clusters’ networking and collaboration with private investors to enhance innovation and business development. Italy, Spain, Greece, Croatia and Egypt. The project involves different types of actors (clusters, research organizations, association of private investors) that will act in the maritime field, with a specific focus on the sub-sectors strongly liked to tourism in the 5 Mediterranean countries (Italy, Spain, Croatia, Egypt, Greece): leisure boating, cruising, ports and marinas.</td>
</tr>
<tr>
<td><strong>ArtReefs</strong></td>
<td>Innovative, competitive and integrated tools for sustainable coastal tourism and inclusive Blue Growth in the Mediterranean and Black seas</td>
<td>Call: EASME/EMFF/2015/1.2.1.7 – Projects in the context of the Integrated Maritime Policy in the Black Sea and/or Mediterranean Sea regions</td>
<td>EU Contribution: €167,520.00</td>
<td>The objective of the ArtReefs project is to pilot a public-private partnership, inviting cross-sectoral stakeholders across the Mediterranean and Black Sea Basins. It aims at promoting and facilitating the use of artificial reefs as effective and affordable tools to boost innovative and sustainable coastal and maritime tourism, while offering inclusive opportunities for transversal Blue Growth across a wide range of compatible activities that combine economic, social and environmental benefits.</td>
</tr>
</tbody>
</table>
### MedSkippers
**Call:** EASME/EMFF/2017/1.2.1.12 – Sustainable Blue Economy  
**EU Contribution:** 499,910,00 €  
**Website:** https://medskippers.com/project

**Duration:** 01/12/2018 - 31/11/2021

Professional skippers in the Mediterranean (MedSkippers) aims to harmonise the training and recognition of professional skippers of small commercial vessels and expand their skill set to boost the nautical charter sector. Spain, Cyprus, Greece and Morocco.

### CMES-WestMed
**Call:** EASME/EMFF/2017/1.2.1.12 – Sustainable Blue Economy  
**EU Contribution:** 499,055,00 €  

**Duration:** 01/01/2019 - 31/12/2020

Developing Education and Employment Partnerships for a Sustainable Blue Growth in the Western Mediterranean Region DEEP BLUE will promote collaboration between marine and maritime education, research, and training centres to strengthen relevant skills and increase capacity building for blue career development. Italy, Spain and Tunisia.

### DEEP BLUE
**Developing Education and Employment Partnerships for a Sustainable Blue Growth in the Western Mediterranean Region**

**Call:** EASME/EMFF/2017/1.2.1.12 – Sustainable Blue Economy  
**EU Contribution:** 475,678,00€  
**Website:** http://mamba.habgor.ac.uk/media.php

**Duration:** July 2009 - June 2013

DEEP BLUE will promote collaboration between marine and maritime education, research, and training centres to strengthen relevant skills and increase capacity building for blue career development. The DEEP BLUE project aims at developing skills and building capacities throughout enhancing geopolitical dialogue and international scientific cooperation (Science Diplomacy) in the Western Mediterranean Region.

### Programmes and initiatives of relevance, including research and data infrastructures

#### Marine Data:
The three main relevant EU initiatives are:

1. The Copernicus Marine Environment Monitoring Service (CMEMS) which provides space data and oceanographic forecasts.
2. The Data Collection Framework which supports the collection and processing of fisheries and aquaculture data. The EU contribution over the seven years of the programme will be EUR 520 million which covers 80% of the total expenditure.
3. The European Marine Observation and Data Network (EMODnet) which assembles processes and distributes all other marine data and data products and is funded via EMFF.

Other relevant data networks funded by the EU include:

- SeaDataNet (SDN) – a major pan-European infrastructure for ocean and marine data and gives access to high quality multidisciplinary data (physical oceanography, marine chemistry, geology, bathymetry, geophysics, and biology).
- SIMEDD – The system developed and maintained by Plan Bleu.
- Fisheries data is managed by GFCM (catch, fleet register), with some relevant projects such as MEDITS (bottom trawl surveys).
- CIESM, the Mediterranean Science Commission runs taxonomy and bio-invasions databases.
- Eionet (European Environment Information and Observation Network) – Environmental Data.
- PERSEUS - Oceanographic Mediterranean and Black Sea Data Management funded by the EU under FP7 Theme “Oceans for Tomorrow” – Mainly Cast Data Base with vertical profiles of physical, chemical and biological data acquired with Bottle casts (Rosette), CTD casts, and Argo floats.
Target sectors and groups

Clusters markets objectives can be deduced from the selected priorities of the SRIA and its connected actions. Main markets, either mature or emerging are:

- Naval (greenship, smartship) and nautism: Logistics and shipping focused on intelligent transport, such as energy performance, alternative fuels, security, eco-design, autonomy, multimodal, etc.
- Port infrastructures: Greenyard in order to limit the impact of port activity. Smartyard and digital: automation and process and cyber security.
- Marine energy resources especially innovative technologies for offshore wind turbines and development of co-activities (offshore aquaculture, etc.).
- Marine biological resources: Sustainable fishing, processing and marketing of fishery products, fishing gear and instrumentation and services (pesca-tourism).
- Sustainable aquaculture, formulated food, fish and shellfish hatchery, magnification (cage, basins, monitoring instrumentation).
- Blue biotechnologies: bioresources for humans (cosmetics, pharmaceuticals, agrifood) and for the energy and ecological transition (pollution control, bioremediation, bio-based materials).
- Environment and development of the coast: Ecological engineering, highlight the services provided by marine ecosystems and nature-based solutions, reduction of coastal vulnerability and increase it for resilience to extreme events.
- Sustainable coastal tourism.

Challenges must be grouped around 3 strategic transversal axes: Digital Transformation, Ecological Transition and Energy transition.

A strong recommendation to boost economic growth and competitiveness implemented by marine clusters for blue growth are:

- Each cluster must organize its innovations according to Areas of Strategic Action, ASA, these areas being markets oriented, matures or emerging markets. A number of 5-6 strategic action areas is recommended.
- All maritime clusters should agree to define the same strategic action areas, as this would strengthen collaboration between clusters. There will certainly be different contents or weight in country’ cluster because this content depends on the different economic and research contexts in each country.

Clusters could use different process to stimulate innovation:

- In order to stimulate disruptive innovation, it is interesting to favour certain organizations such as cross-fertilization of technological fields and markets, for example by organizing “maritime hackathons”, which will allow better integration of new technologies from the sectors to cluster members and their markets.
- A useful process is “open innovation” which is a way for companies to benefit from external ideas/technologies (Outside-In) and valorise internal ideas/technologies with external partners (Inside-Out) to reduce the financial risks associated to innovation, and quickly get a competitive advantage. As such it implies accelerating internal R&D and innovation along value chains through collaboration between the technological supply - and demand – side. Open innovation needs to be operational and this is done possible through networked, multi-collaborative ecosystems involving representative maritime clusters or intermediaries.

Maritime Clusters

- European Network of Maritime Clusters (ENMC) (https://enmc.eu/about-us/).
- Pole Mer Mediterranee (https://www.polemermediterranee.com/).

Intergovernmental bodies:

- Union for Mediterranean (UfM) (https://ufmsecretariat.org/).
- UNEP/MAP (http://web.unep.org/unepmap/) and its Regional Centers.
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Research bodies, businesses and local authorities

- European Environmental Agency (https://www.eea.europa.eu/).
- European tourism association (https://www.etoa.org/).

Thematic platforms

- Enterprise Europe Network: tourism and cultural heritage (https://een.ec.europa.eu/).

Funding options and agencies

Relevant funding programs as listed in WestMed:
- BLUEMED Call for Start-up Actions.
- European Commission – Annual work programme for grants and procurement.
- European Investment Bank.
- European Maritime and Fisheries Fund (EMFF).
- Horizon 2020.
- Interreg Mediterranean (Meeting on 24th October 2019, in Athens – the Interreg MED Programme projects’ communities will unfold their results).

Activities to promote the SRIA Implementation

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<tr>
<th>Examples of activities</th>
<th>Content and objective</th>
<th>How and timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Networking and engagement of economic sectors and national Blue Growth communities</td>
<td>[Champion countries must choose those activities that suit best the priority addressed]</td>
<td>[Champion countries describe in more detail the content and specific objective of a given activity]</td>
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<td>- Business-to-business meetings and research cooperation in the field of marine and maritime economic growth.</td>
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<td>[Champion countries describe in more detail the content and specific objective of a given activity]</td>
<td>[Champion countries explain how the activity can be carried out and timeframe within the IP (2020–2023)]</td>
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</tbody>
</table>
| **Promotion and possibly implementation of actions coordinated and jointly undertaken by different countries, with a “variable geometry” approach** | • Promotion in the Med and European levels through national ministries and agencies relevant for marine and maritime economic sectors.  
• Promotion through existing maritime and marine clusters and networks, particularly towards economies in transition.                  | How: Presentations of BLUEMED to the meetings, dedicated round tables, high-level meetings.  
| **Start-Up actions**                                                                  | Identification of pathways of transnational collaboration within the Mediterranean marine and maritime economic sectors. | How: Joint work on common activities and identification of gaps and opportunities.  
| **Assessment and promotion of the capitalisation and valorisation under the BLUEMED umbrella of ongoing and future projects** | • Participation of BLUEMED at the high-level Mediterranean and European meeting on blue growth.  
• Participation of BLUEMED at EurOCEAN Conferences.  
• Participation of BLUEMED at the Final Conference of the ADRION programme.  
• Participation of BLUEMED at the Capitalization Phase of the project MED-PHAROS4MPAS (Blue Economy and Marine Conservation: Safeguarding Mediterranean MPAs in order to achieve Good Environmental Status). | How: Presentations of BLUEMED to the meetings, dedicated round tables.  
| **Lobbying actions**                                                                  | Actions towards regional activities and programmes (e.g. Interreg, PRIMA), for including BLUEMED issues in their strategic agendas. | How: Bilateral meetings with high officials of programmes.  
| **Training and capacity building initiatives**                                        | • Training courses about marine and maritime economic growth for non-EU countries.  
• Initiating secondments between key and less developed marine and maritime players. | How: Organising international training activities, workshops and summer schools.  
| **Implementation Working Groups (IWG) on specific sectors**                          | Create GSO BLUEMED Working Groups and/or EU Advisory Groups.                          | How: Meetings.  
When: Annually.                                                                      |
| **Communication and engagement**                                                      | Thematic Event on marine and maritime issues in the Mediterranean, at the BLUEMED Final Conference News, announcements, new materials, etc. | How: Dedicated Session at BLUEMED Final Conference/Website, social networks (twitter, facebook, instagram, etc.).  
When: September 2020 / Social media during the whole process.                      |
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