



# Implementation Plan

February 2021

DOI: 10.5281 / zenodo.4604715



This project has received funding from  
the European Union's Horizon 2020 research and innovation  
programme under grant agreement No 727453



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## COORDINATION AND SUPPORT ACTION

Horizon 2020 - BG -13-2016

Grant Agreement 727453

### IMPLEMENTATION PLAN D2.10

February 2021

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## ACRONYMS

**COST** = European Cooperation in Science and Technology

**CSA** = Coordination and Support Action

**EASME** = Executive Agency for Small and Medium-sized Enterprises

**EATIP** = European Aquaculture Technology and Innovation Platform

**EC** = European Commission

**EFTP** = European Fisheries Technology Platform

**EIT** = European Institute of Innovation & Technology

**EMFF** = European Maritime and Fisheries Fund

**EMODNET** = European Marine Observation and Data Network

**EMUNI** = Euro-Mediterranean University

**ENI CBC-MED** = European Neighbourhood Instrument Cross Border Cooperation in the Mediterranean

**EOSC** = European Open Science Cloud

**ESFRI** = European Strategy Forum on Research Infrastructures

**ESIF** = European Structural and Investment Funds

**ESOF** = European Science Open Forum

**EUMOFA** = European Market Observatory for Fisheries and Aquaculture products

**EUSAIR** = European Strategy for the Adriatic-Ionian Region

**FAO** = Food and Agriculture Organization

**FARNET** = Fisheries Areas Network

**GFCM** = General Fisheries Commission for the Mediterranean

**GSO BlueMed WG** = Group of Senior Officials BlueMed Working Group

**IMTA** = Integrated MultiTrophic Aquaculture

**Interreg** = European Union's instrument supporting cooperation across borders

**IOC/UNESCO** = Intergovernmental Oceanographic Commission / United Nations Educational, Scientific and Cultural Organization

**LIFE** = European Union's funding Programme for the Environment and Climate Action

**MCSA/RISE** = Marie Skłodowska-Curie Actions / Research and Innovation Staff Exchange

**MPA** = Marine Protected Areas

**MRE** = Marine Renewable Energy

**MSP** = Maritime Spatial Planning

**MSY** = Maximum Sustainable Yield

**S3** = Smart Specialization Strategies

**SEA-EU** = European University of the Seas

**SEMED** = Start-up Europe Med

**SRIA** = Strategic Research and Innovation Agenda

**UfM** = Union for the Mediterranean

**UNEP/MAP** = United Nations Environment Programme / Mediterranean Action Plan

**UNIMED** = Mediterranean Universities Union

**WESTMED** = Western Mediterranean Blue Economy Initiative

**WRAP** = Waste and Resources Action Programme



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## SCOPE

The governance of our common Mediterranean Sea in the present circular scenario requires an adaptable co-owned plan of actions, interconnecting science and innovation to policy, citizens and the environment, and addressing multiple dimensions, from local to international.

The **BlueMed Implementation Plan** provides a **medium-term operational tool to develop sustainable Blue Economy in the Mediterranean area**. By conveying practical inputs, it accompanies trajectories from the local to global scale.

### SCOPE OF THE BLUEMED IMPLEMENTATION PLAN FROM LOCAL TO GLOBAL SCALE

- UNITED NATIONS DECADE OF OCEAN SCIENCE FOR GLOBAL SUSTAINABLE DEVELOPMENT
- CROSS-BASINS EXCHANGE OF VISIONS AND APPROACHES (HORIZON EUROPE PARTNETSHIP ON BLUE ECONOMY)
- UNION FOR THE MEDITERRANEAN STRATEGIC POLICIES
- EUROPEAN R&I PROGRAMMING (HORIZON EUROPE MISSIONS)
- ALIGNMENT OF NATIONAL MARINE AND MARITIME STRATEGIES
- REGIONAL SMART SPECIALIZATION STRATEGIES RIS3





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## BLUEMED PROCESS



- **May 2014**  
BlueMed Initiative setup in the framework of the EU Blue Growth Strategy
- **December 2014**  
BlueMed Vision Document endorsed at the Competitive Council
- **October 2015**  
Venice Declaration launching the BlueMed SRIA
- **November 2015**  
UfM Declaration on the Blue Economy adopted
- **October 2016**  
BlueMed Coordination and Support Action begins
- **May 2017**  
Valletta Declaration on strengthening Euro-Mediterranean cooperation through Research and Innovation undersigned
- **February 2018**  
Group of Senior Officials BlueMed Working Group established
- **December 2018**  
BlueMed Strategic R&I Agenda updated
- **April 2019**  
BlueMed SRIA priorities agreed through collaborative work led by countries and consultation with key stakeholders
- **November 2019**  
Pilot Action for a healthy plastic-free Mediterranean Sea launched From BlueMed Priorities to Actions
- **January 2020**  
BlueMed Implementation Plan released and endorsed
- **December 2020**  
National consultations with research committers
- **January 2021 and beyond**  
BlueMed Implementation Plan promoted and operationalized



**250**  
PEOPLE ENGAGED  
IN THE BLUEMED  
COMMUNITY



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## INTRODUCTION



The **BlueMed Research and Innovation Initiative**<sup>1</sup> is an intergovernmental regional-scale initiative launched in 2014 during the Italian Presidency of the European Union, aiming to advance a shared vision for a healthier, productive, resilient, better-known and valued Mediterranean Sea. It addresses research and innovation through a multi-disciplinary approach, linking economy, environment and humans, to build sustainable Blue Growth by means of networks of actors and international science diplomacy efforts. Since 2017, with the signature of the Valletta Declaration<sup>2</sup>, the Initiative is formally joined by 16 EU and non-EU Mediterranean countries and steered by the Euro-Mediterranean Group of Senior Officials BlueMed Working Group (GSO BlueMed WG), co-chaired by the European Commission and the co-chair of the Union of the Mediterranean and supported by the Secretariat of the Union of the Mediterranean.

The GSO BlueMed WG endorsed at first the **BlueMed Strategic Research and Innovation Agenda**<sup>3</sup> (SRIA) and then this **BlueMed Implementation Plan**<sup>4</sup>

Revolving around four pillars of key challenges (Table 1), the BlueMed SRIA is an **excellent framework** for the Mediterranean countries to develop and **align** their marine and maritime Research and Innovation agendas.



- 1 [www.blueded-initiative.eu/](http://www.blueded-initiative.eu/)
- 2 [www.blueded-initiative.eu/valletta-declaration/](http://www.blueded-initiative.eu/valletta-declaration/)
- 3 [www.blueded-initiative.eu/wp-content/uploads/2018/12/BLUEMED-SRIA\\_Update\\_2018.pdf](http://www.blueded-initiative.eu/wp-content/uploads/2018/12/BLUEMED-SRIA_Update_2018.pdf)
- 4 [www.blueded-initiative.eu/wp-content/uploads/2020/07/blueded-preliminary-implementation-plan\\_version-complete.pdf](http://www.blueded-initiative.eu/wp-content/uploads/2020/07/blueded-preliminary-implementation-plan_version-complete.pdf)



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**Table 1.** The four pillars (Knowledge, Economy, Technology and Cross-cutting) and related key challenges of the BlueMed R&I Agenda

BLUEMED KEY CHALLENGES		
KNOWLEDGE	ECONOMY	TECHNOLOGY
A. Mediterranean Sea ecosystems: characterize present dynamics, services, resources, vulnerability and resilience to natural and anthropogenic pressures	A. Innovative businesses based on marine bio-resources in the Mediterranean	A. Smart, greener and safer maritime transport and facilities in the Mediterranean
B. Mediterranean Sea: forecast changes of the basin under climate and anthropogenic pressures and develop services in the field of sustainable adaptation to climate change and plans for mitigation	B. Ecosystem-based management of Mediterranean aquaculture and fisheries	B. Observing systems and operational oceanography capacities in the Mediterranean
C. Hazards and protection of coastal areas and open sea in the Mediterranean	C. Sustainable tourism and cultural heritage in the Mediterranean	C. Innovative offshore industrial platforms including marine renewable energy and co-use
D. Innovative blue growth trajectories: biotechnologies, food, and the deep sea and offshore resources	D. Maritime clusters in the Mediterranean	D. Marine and coastal natural and cultural heritage in the Mediterranean: discovering, protecting and valuing
	E. Governance of maritime space and marine resources in the Mediterranean	
<b>Cross-cutting enablers for Blue Jobs and Blue Growth</b>		



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To reach the objectives that will contribute to address the challenges identified in the BlueMed SRIA, a common plan based on actions needs to be implemented.

The **BlueMed Coordination and Support Action (CSA)**, which is the EC funded project supporting the development of the BlueMed Initiative, led the process to engage the community of stakeholders belonging to Mediterranean countries in the co-design and drafting of the Implementation Plan.

The **level of participation reached was large and can be considered one of the major strengths of the process**, which contributed to create a cohesive BlueMed Community.

**This document presents the priority goals sketched in Table 2 and addresses thematic and structuring activities to be developed** in order to ignite a transformative process at Mediterranean level. It is the result of a participatory and inclusive process, giving all stakeholders in all Mediterranean countries the chance to **co-design actions and activities**, discussing implementation options and potentials.

It has been and will continue to be disseminated to relevant research and innovation funders and committers.

In this regard, the active role of all contributors continues to be thus crucial, also to promote, propose, discuss and agree on actions to be undertaken in the next 3 to 5 years. At the same time, the **leadership of countries is essential** in the years to come, being proactive in triggering the necessary steps towards the implementation of the actions. The **BlueMed Operational Network of Funders** set-up in the framework of the BlueMed CSA has equally a crucial role in **ensuring the future execution of the Implementation Plan beyond the lifetime of the BlueMed CSA**.

**Table 2.** Sketch of the BlueMed Priorities. The BlueMed Pilot Initiative Healthy Plastic-free Mediterranean Sea launched in 2019 is under implementation in the framework of Priority 1.

BLUEMED PRIORITY GOALS	
<b>THEMATIC</b>	Understanding Pollution Impacts, Mitigation, and Remediation in the Mediterranean Sea
	Support solutions for sustainable production and consumption of food from the sea
	Preparing to climate change and define adaptation / mitigation measures
	Linking tourism, tourists and environment
	Effective maritime spatial planning in the Mediterranean
	Greening vessels, facilities and services
	Towards an observing system of systems
	Exploring the potential of blue-biotech
	Promote the role of Marine Renewable Energies (MRE) in the energy transition phase
<b>CROSS-CUTTING</b>	Open data, open science, open innovation
	Building capacity, blue skills and blue professionals
	Strengthen synergies among science, industry, policy-makers and society
	From traditional maritime economy to blue growth activities





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## SOCIETAL CHALLENGES IN THE MEDITERRANEAN AND POLICY SYNERGIES WITH OTHER INITIATIVES/STRATEGIES

The **BlueMed SRIA** and the derived **BlueMed Implementation Plan** are policy-driven and policy-oriented instruments aimed at inform, support and impact on a wide range of International and EU policy instruments and processes. These include:

- **EC R&I Framework Programme 2021-2027 Horizon Europe** and specifically the Mission Starfish 2030: Restore our Ocean and Waters and the Partnership 'A climate neutral, sustainable and productive blue economy'.
- The Mediterranean component of the **UN Decade of Ocean Science for Sustainable Development 2021-2030**<sup>5</sup>.
- **Sustainable Development Goals of the UN 2030 Agenda**, focusing on SDG14-Life below Water but also targeting SDG12- Sustainable Consumption and Production and SDG17-Partnerships for Sustainable Development.
- The new **EU Green Deal** proposed by the Commission and the **EU strategy on adaptation to climate change**.
- The **UN Convention on Biological Diversity** and the **EU Biodiversity Strategy for 2030**.
- The **Ocean Governance** policies and conventions and in particular the **Maritime Spatial Planning EU Directive** and **UNEP Regional Framework on MSP and ICZM**.
- **Regional and Territorial Frameworks, Strategies and Initiatives** (e.g. Barcelona Convention, WestMED, EUSAIR, UfM WG on Blue Economy and Climate, CPMR).
- The **EU Integrated Maritime Policy**, the **Blue Growth Strategy** and the **Roadmap** in preparation on **sustainable blue economy in the EU**.
- The **EU Circular Economy Package**<sup>6</sup> adopted in 2015 and the specific strategy adopted on plastics in a circular economy perspective in 2018.
- The **EU R&I initiative FOOD2030**, on Food and Nutrition Security (FNS), the broader **EU strategy "from Farm to Fork"**, and the **FAO-GFCM Initiatives** MedFish4Ever and FishForum.
- The **EU Offshore Renewable Energy Strategy**.
- The **EU Strategy for more Growth and Jobs in Coastal and Maritime Tourism**.

<sup>5</sup> <https://en.unesco.org/ocean-decade>

<sup>6</sup> [https://eur-lex.europa.eu/resource.html?uri=cellar:8a8ef5e8-99a0-11e5-b3b7-01aa75ed71a1.0012.02/DOC\\_1&format=PDF](https://eur-lex.europa.eu/resource.html?uri=cellar:8a8ef5e8-99a0-11e5-b3b7-01aa75ed71a1.0012.02/DOC_1&format=PDF)



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## PLANNED JOINT ACTIONS



A set of **Strategic Joint Actions** is proposed to **implement 13 priorities**, including **thematic** and **cross-cutting**, as **from 2021 and beyond**.

The **main objective** of the described **Joint Actions** that have been designed taking into account the **multiple synergies** needed to effectively develop them, is **to address the respective priorities and promote activities for cooperation and collaboration between Mediterranean countries**, towards the **capitalisation and alignment of marine research programmes and strategies** to fulfil the **objectives of the BlueMed Initiative**.

## HOW TO READ THE TEXT



- Priority number
- SRIA key challenge(s) the priority is connected
- Title of the Priority
- Statement summarizing the relevance of the Priority
- Operational receipt to reach a priority goal
- A set of Strategic Actions, i.e. larger and medium-long term initiatives and activities, with specific scientific or structural content, that require strong commitment and additional dedicated resources from Research Funders. For each Strategic Action, it is reported:
- A set of Promotional Actions that are feasible to be possibly achieved with minor joint effort or have been already achieved with the support of the BlueMed CSA within the project's lifetime (see Table 4).

# Implementation Plan

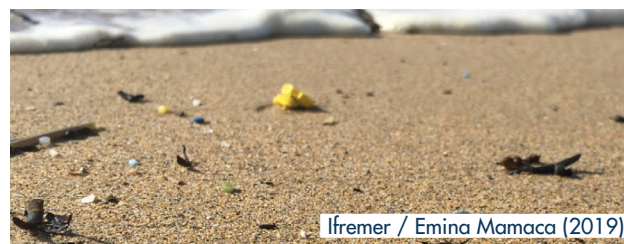
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## PRIORITY 1 UNDERSTANDING POLLUTION IMPACTS, MITIGATION, AND REMEDIATION IN THE SEA

*Support the proper management and improvement of the marine environment and connected activities from filling the knowledge gaps to identifying recycling and mitigation solutions, in the perspective of the blue circular economy and the Green Deal. Improve in parallel the understanding on the functioning of the Mediterranean Sea ecosystem.*

- Develop coastal and marine potential hazard/pollution sources maps to identify hot spots and areas that are particularly exposed to the impact of multiple stressors and propose possible solutions.
- Define distribution, concentration and provenance of all forms of garbage at the sea surface, in the water column, at the sea floor and in the coastal- estuarine environments; rise awareness through literacy and citizen-science.
- Quantify the impact, in terms of economic activities, jobs, well-being of citizens and ecosystems, of plastic waste; reduce its generation, prevent littering and exploit opportunities from collection and recycling.
- Explore and propose solutions to reduce the input of pollutants from atmosphere, land and sea, linking with monitoring/mitigation technology actions.
- Measure and identify emerging chemical compounds from terrestrial sources, determining contaminants dispersal in all marine matrices; characterize sources, pathways, fate and effects on marine ecosystems; develop early warning tools.
- Fill gaps in understanding the Mediterranean Sea dynamics (biogeographic patterns, biodiversity, and ecosystem functions using novel monitoring, e.g. satellite, marine drones, molecular / genetic tools) to develop new end-to-end models forecasting the carrying capacity of the Mediterranean ecosystems with respect to pollution impact and effects.

<b>Strategic Action / 1</b>	<b>Scale up of the BlueMed Pilot Action on Healthy Plastic Free Mediterranean Sea.</b>		
<b>Indicative starting time</b>	2021		
<b>Proposed funding programmes and instrument</b>	Horizon Europe Mission Starfish2030, in a Multi- Programme Framework (e.g. EMFF, Interreg, ENI CBC-MED, LIFE) & National Pilot Hubs & Summit of the Two Shores.		
<b>Suggested timeframe</b>	1 - 5 years	<b>Tentative budget</b>	1 M - 10 M€

<b>Strategic Action / 2</b>	<b>Joint JPI-Oceans Action on ‘Science for Good Environmental Status’.</b>		
<b>Indicative starting time</b>	2021		
<b>Proposed funding programmes and instrument</b>	Co-fund call (variable geometry).		
<b>Suggested timeframe</b>	<1 year	<b>Tentative budget</b>	50 k - 1 M€



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## **PRIORITY 2**

### **SUPPORT SOLUTIONS FOR SUSTAINABLE PRODUCTION AND CONSUMPTION OF FOOD FROM THE SEA**

*The economic driver "Food" is one of the shared Mediterranean cultural roots. Improvements in the fisheries and aquaculture sectors are necessary with the aim to make these economic activities more environmentally and economically sustainable. The concept of Sustainable Food Consumption contrasts with the increase of the demands of food, e.g. during touristic season, and the increase of food waste; it requires new practices leading to improved society behaviours, better consumer practices, implementing the European Strategies 'From farm to fork', Food 2030, and at global level the relevant UN-Sustainable Development Goals.*

- Identify and protect marine biota and its biodiversity from the anthropogenic stressors as the way to achieve healthy marine ecosystems that can offer a new source of proteins for human consumption.
- Develop Mediterranean aquaculture: new management tools, ecosystem-based approach, tackling pathogens; develop conceptual models for Integrated MultiTrophic Aquaculture (IMTA).
- Study and evaluate the best processes to adapt and diversify aquaculture activities (species and systems) and capacities in a changing environment, including for small and medium-scale farms.
- Rethink the approach to the management of by-products and by-catch from fisheries and aquaculture in the production chain. Revaluation of artisanal fisheries in relation to their sustainability, product quality and high employment.
- Recover fishery resources to levels of Maximum Sustainable Yield (MSY) and apply an ecosystem approach to fisheries management, taking also into account an effective management of Marine Protected Areas (MPAs).
- Comprehensive analysis of the management and conservation alternatives that are best adapted to sustainability in a climate change and alien species diffusion scenarios.
- Develop innovative methods and tools for monitoring and governing Mediterranean aquaculture and fisheries, in line with existing policies.
- Achieve sustainable consumption and improve the behaviour of society for a better consumption practice.





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<b>Strategic Action / 1</b>	<p><b>Biodiversity and Resources to reverse</b> in the medium term <b>the degraded marine biodiversity and ecosystems, targeting ecosystem approach to fishery management, integrated multitrophic aquaculture and responsible consumption.</b></p> <p>(relationship with the work under the European Framework Directives and with priorities P1, P3, P5, P7 and all cross-cutting ones).</p>		
<b>Indicative starting time</b>	2021		
<b>Proposed funding programmes and instrument</b>	Enhance/capitalize on calls for projects as Blue Labs, EU funding calls and Research organizations; ESIF/EMFF, FAO supporting actions.		
<b>Suggested timeframe</b>	1 - 5 years	<b>Tentative budget</b>	50 k - 1 M€

<b>Strategic Action / 2</b>	<p><b>To launch a Call of calls on e.g.:</b></p> <ul style="list-style-type: none"> <li>• Fishing and aquaculture eco-label products,</li> <li>• Research on multi-modal platforms (including offshore wind farms and aquaculture, linking with P9 on Marine Renewable Energies),</li> <li>• Essential Fish Habitat Approach, Impact of Trawling, etc.</li> </ul>		
<b>Indicative starting time</b>	2021		
<b>Proposed funding programmes and instrument</b>	Enhance/capitalize on calls for projects as Blue Labs, EU funding calls and Research organizations; ESIF/EMFF.		
<b>Suggested timeframe</b>	1 - 5 years	<b>Tentative budget</b>	50 k - 1 M€



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February 2021



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## PRIORITY 3 PREPARING TO CLIMATE CHANGE AND DEFINE ADAPTATION AND MITIGATION MEASURES

*The Mediterranean has been recognized as a climate change vulnerability “hotspot” by the IPCC. There is a need to fill gaps in scientific knowledge with regards to understanding regional climate change and its impacts on the ecosystems and the services they provide. Hence, enhancing knowledge on social and ecological vulnerabilities, as well as adaptation mechanisms can be achieved by exploiting and improving observation capacities and transdisciplinary collaborations. Contribution is expected on EU and global policies, including UN-Sustainable Development Goals.*

- Make a comprehensive assessment of climate and anthropogenic related risks in the Mediterranean Sea ecosystem and human environment from the coastal zone to the deep ocean, including extreme climate events, acidification, sea level rise, flooding and sprawling of invasive species, as well as a Pan-Mediterranean assessment on the condition of freshwater reserves (available quantity, quality, depth beneath surface), and their level of exploitation.
- Develop, enhance and deliver user-friendly tools for disseminating climate information related to Mediterranean atmosphere, coastal and deep ocean areas.
- Standardize and expand coastal-monitoring systems, including through the development of operational observing platforms across the Mediterranean region, to maintain updated data and information for improving early warning systems and decision matrices, while assessing and controlling progressive coastal and geological processes. This will complement capabilities in addressing marine disasters, such as tsunamis, extreme climatic events, storms and coastal slides and enhance adaptation potential to climate change effects, such as sea level rise.
- Develop climate adaptation and mitigation strategies coupling Climate Change and Blue Growth activities in the Mediterranean coast.
- Explore links and positive feedbacks between increased flooding and desertification vulnerabilities with escalating coastal subsidence, salt wedge penetration and increasing fresh water consumption. Identify sustainable freshwater consumption practices and promote innovative desalinization practices in areas with lack of freshwater minimizing negative impacts on shallow marine ecosystems.





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<b>Strategic Action / 1</b>	<b>Integrated Programme</b> to increase knowledge on <b>the impact of global change on Mediterranean marine ecosystems</b> (food webs, biodiversity, habitats) and on the related key social and economic drivers, by exploiting appropriate observing systems ( <i>linking with other Priorities: P2 on Sustainable food production and consumption, P4 on Observing Systems, P5 on Tourism, P7 on Transport and transport routes</i> ).		
<b>Indicative starting time</b>	2022		
<b>Proposed funding programmes and instrument</b>	Horizon Europe – Mission Areas: Adaptation to climate change including societal transformation, Climate-neutral and smart cities, Healthy oceans, seas, coastal and inland waters. Targeted cross- Missions R&I actions, European Investment Bank Blue Sustainable Ocean Strategy (Blue SOS), LIFE Call.		
<b>Suggested timeframe</b>	1 - 5 years	<b>Tentative budget</b>	> 10 M€





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## PRIORITY 4 TOWARDS AN OBSERVING SYSTEM OF SYSTEMS

*Marine and coastal observation is essential to better understand the complex marine ecosystem and its functioning; to measure and assess its evolution under different stressors and manage resources sustainably; to provide sound information for decision-making; to identify risks and set-up a rapid response to hazards. Combined with an improved accessibility to open multidisciplinary and high-quality data for scientists and other key stakeholders, observing systems are a key element to ensure the development of a sustainable blue economy and preserve biodiversity and marine resources. Moreover, sharing new technologies; participating in joint monitoring of the marine environment and promoting the use of existing data are good ways to strengthen the collaboration between EU and non-EU Mediterranean countries and share the commitment for sustainable development in the region.*

Achieving an integrated Mediterranean observing system should capitalize on already existing networks and consortia at European/Mediterranean levels and contribute to the building of a digital twin of the ocean. It will take advantage of new technologies, particularly ICT (Big Data Analysis, Cloud Service Platforms...) and the involvement of a broad range of stakeholders including scientists, public authorities, private companies, NGOs and citizens.

A high-performance observation system will be valuable to support marine policies by providing essential information for sound decision-making (e.g. MSP, biodiversity preservation, pollution reduction, adaptation and mitigation of climate change...).

<b>Strategic Action / 1</b>	<b>Regional Task Force on Coastal Observing Systems</b> for defining laboratories of reference; setup a coordinated network of coastal multidisciplinary observing stations; reinforce the access to land-based facilities and strengthen Transnational Access calls to facilitate access for non-EU scientists.		
<b>Indicative starting time</b>	March 2021		
<b>Proposed funding programmes and instrument</b>	Cross-border cooperation Programme, Horizon Europe, EMFF, Interreg Med.		
<b>Suggested timeframe</b>	>5 years	<b>Tentative budget</b>	1 M - 10 M€

<b>Strategic Action / 2</b>	<b>Cooperation Programme for environmental data collection and sharing</b> between marine economic sectors, environmental authorities, research sectors, and citizens.		
<b>Indicative starting time</b>	March 2021		
<b>Proposed funding programmes and instrument</b>	Interreg Med, Cross-border cooperation Programme, EMFF, HE.		
<b>Suggested timeframe</b>	>5 years	<b>Tentative budget</b>	1 M - 10 M€





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## PRIORITY 5 LINKING TOURISM, TOURISTS AND ENVIRONMENT

*Develop sustainable and low environmental footprint solutions is the precondition for preserving the natural and cultural heritage in the long term. The transition towards a more sustainable tourism needs to be implemented with the support of socio-economic research and the exploitation of prospects offered by the digitalization to support decisions making, including the “European Strategy for more Growth and Jobs in Coastal and Maritime Tourism”. Since tourism is a key asset of Mediterranean coastal regions, and one of the most affected by the COVID-19 pandemic, while exerting high pressures on the coastal and marine environment, this integrated goal calls for co- tackling the following:*

- *Preparing to climate change and emergencies and define adaptation/mitigation measures;*
  - *Reducing the coastal risk of disasters and their effects;*
  - *Technology solutions for the Mediterranean natural and cultural heritage including augmented reality and underwater/seafloor remote observations;*
  - *Building capacity, blue skills and blue professional.*
- Promote synergies between tourism and other productive activities encouraging networking with other economic sectors and among destinations.
  - Develop monitoring and evaluation systems of tourism flows, assessing carrying capacities of destinations, to support an efficient management of tourism flows and impacts leading to an effective governance of a greener and sustainable tourism industry.
  - Develop methodology, tools and systems for assessing environmental impacts of tourism and its drivers in the Mediterranean area focusing on coastal urbanization trends (tourist ghost cities) and related pressures to improve protection of coastline ecosystems.
  - Focus on big data analytics and ICT technologies and services to strengthen access to sustainable development policies, more efficient use of natural resources and cultural heritage, and management of infrastructures in coastal and marine areas.
  - Train a new generation of marine technicians/scientists to conduct research on the protection and valorization of the marine cultural heritage, including 3D and 4D rendering and augmented observation.



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<b>Strategic Action / 1</b>	<b>Digital ecosystems for coastal tourism destinations to support the design of policies:</b> from opportunities' mapping to intelligence production.		
<b>Indicative starting time</b>	2023		
<b>Proposed funding programmes and instrument</b>	Cross-border cooperation Programme / R&I action & COST Action.		
<b>Suggested timeframe</b>	1 - 5 years	<b>Tentative budget</b>	50 k - 1 M€







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## PRIORITY 6 EFFECTIVE MARITIME SPATIAL PLANNING IN THE MEDITERRANEAN

*MSP is about promoting the rational use of the sea and improving decision-making; it is an essential part of the governance of the maritime space in the Mediterranean Sea. It is at the base of any socio-economic development and conservation effort. 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, aquaculture, maritime transport, dredging/sand extraction and coastal tourism, but it also applies to offshore and deep-sea environments and activities. 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. Implying 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, as well as it requires synergies among science, industry, policy-makers and society.*

Promote coherence between terrestrial and maritime planning, 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.

- Address transboundary maritime spatial planning issues to understand problems and opportunities (social, economic, environmental), strengthen knowledge on environmental pressures across borders and raise awareness on a better definition of maritime zones in the Mediterranean as an important enabling factor for shared and sustainable blue growth.
- Raise awareness, develop better understanding of MSP needs and drivers and test solutions for planning and management of deep-sea spaces and resources of the Mediterranean in a transboundary framework.
- Develop better understanding and capability to quantify cumulative effects/impacts of anthropogenic pressures on environmental components and resources, to support MSP scenarios development and robust planning decisions, in close connection with MSFD objectives and measures and other conservation measures (i.e. potential areas for new MPAs, improved connectivity of the MPA network, transboundary offshore protected areas, reduced impact on existing MPAs from other maritime uses).

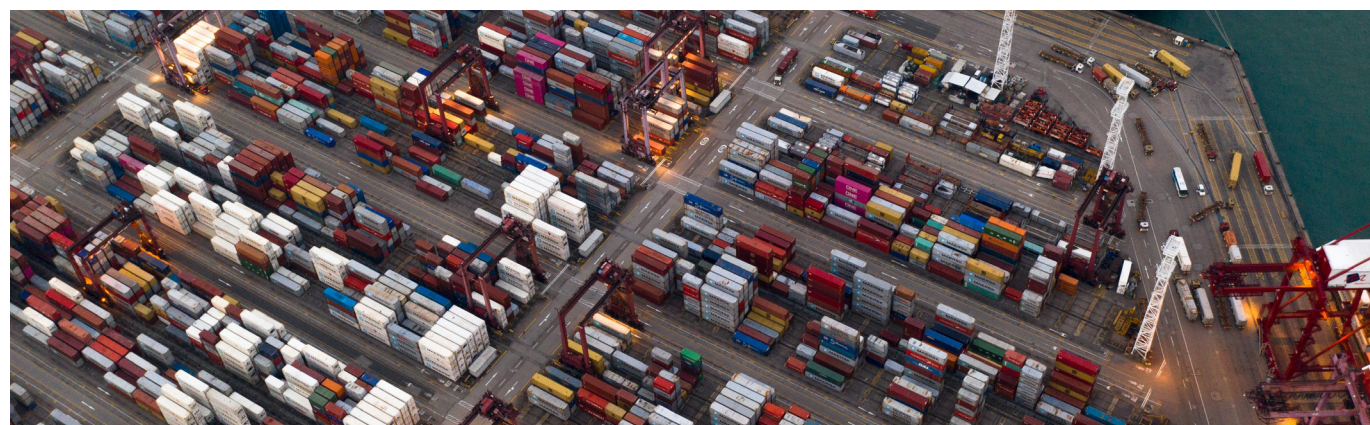


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- Define approaches and tools to identify the trade-offs between ecological dynamics and socio-economic needs, taking into account marine ecosystems goods and services and their environmental, economic and social value, to inform and improve adaptive planning and management scenarios.
- Build a "Knowledge Catalogue" for MSP in the Mediterranean and promote the connection of existing Geoportals, from national to EU to International, on environment and human activities.
- Promote innovative technologies, services and coastal ecological engineering solutions for a sustainable management and resulting protection of coastal areas from coastal erosion, flooding and pollution.
- Support Maritime Spatial Planning and Integrated Coastal Zone Management through research on multi-level governance and management of multi-stakeholder processes, improving the dialogue with civil society, in a science to policy approach.

<b>Strategic Action / 1</b>	<b>Mediterranean MSP Knowledge Catalogue</b> (MSPKC, a dedicated web and collaborative catalogue collect and share metadata for MSP-relevant datasets, portals and tools).		
<b>Indicative starting time</b>	2020		
<b>Proposed funding programmes and instrument</b>	EMFF, ENI CBC-MED, Interreg.		
<b>Suggested timeframe</b>	<1 year	<b>Tentative budget</b>	50 k - 1 M€

<b>Strategic Action / 2</b>	Monitoring, supporting, adapting the implementation process of MSP in the Mediterranean, in connection with EC-DG Mare, UNEP-MAP, UNESCO-IOC, Mediterranean Countries.		
<b>Indicative starting time</b>	2020		
<b>Proposed funding programmes and instrument</b>	BlueMed-CSA task, EMFF, HE, Interreg, National Funds (variable geometry).		
<b>Suggested timeframe</b>	1 - 5 years	<b>Tentative budget</b>	50 k - 1 M€







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CNR-INM / Elena Ciappi (rendering, 2020)

## PRIORITY 7 GREENING VESSELS, FACILITIES AND SERVICES

*Develop innovative solutions to reduce the environmental footprint of commercial as well as tourism-oriented maritime transports and port infrastructures in line with the European Commission's long-term strategy for a climate neutral society by 2050 and the Marine Strategy Framework Directive. Monitor the effectiveness of the implemented strategies and contribute to the proposal of new regulations.*

- Implement multidisciplinary integrated methodologies to evaluate the impact of ships and harbours on the environment at transnational level, exploit new technologies and tools to monitor pollution.
- Towards zero emission ships and harbors: support the use of LNG, methanol, hydrogen, biofuels, the electrification of ships and ports, the use of fuel cells, the design of solar and wind power generation, the optimization of energy management, the research on new materials and technologies for drag, biofouling and noise reduction.

Develop new vessel concepts, i.e. flexible, modular and high efficiency ships, using new materials (e.g. high strength, reduced weight, smart, etc.) and advanced design and production techniques, with lower manufacturing, construction, installation, dismantling and recycling costs from the perspective of the circular economy.

- Design and develop innovative green infrastructure solutions and tailored software to improve the sustainability of logistics and ports.
- Towards efficient Motorways of the Sea (MoS) and their connections among Ports: improve traffic monitoring system, develop feasibility studies, identifying main obstacles, and innovative methodologies/tools for the efficient functioning of the existing MoS and the establishment of new ones.
- 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.



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<b>Strategic Action / 1</b>	<b>BlueMed labelled cross-cutting best practices to address underwater noise.</b>		
<b>Indicative starting time</b>	2023		
<b>Proposed funding programmes and instrument</b>	JPI-Oceans, Horizon Europe (PPP on Zero Emission waterborne transport and PPP on A climate neutral, sustainable and productive blue economy), Interreg MED, Eranet Cofund "Martera".		
<b>Suggested timeframe</b>	<1 year	<b>Tentative budget</b>	1 M - 10 M€

<b>Strategic Action / 2</b>	<b>Joint BlueMed-WestMED Action on 'Emission Control Area Implementation'.</b>		
<b>Indicative starting time</b>	2021		
<b>Proposed funding programmes and instrument</b>	Life.		
<b>Suggested timeframe</b>	1 - 5 years	<b>Tentative budget</b>	1 M - 10 M€

<b>Strategic Action / 3</b>	<b>Multidisciplinary R&amp;D to implement tailor made solutions for ports of different type and size towards zero impact infrastructures, services and operations (e.g. sustainable building, clean energy generation and storage, bunkering, waste management). Definition of regulations for docking in Mediterranean ports.</b>		
<b>Indicative starting time</b>	2021		
<b>Proposed funding programmes and instrument</b>	Interreg, Horizon Europe (PPP on Zero emission waterborne transport), Connecting Europe Facility (CEF) Transport.		
<b>Suggested timeframe</b>	1 - 5 years	<b>Tentative budget</b>	50 k - 1 M€





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## PRIORITY 8 EXPLORING THE POTENTIAL OF BLUE- BIOTECH

*The marine environment is a potential key provider of biotechnological novelty. The high biodiversity of Mediterranean marine organisms might have a high potential for applications in biotechnology, materials and engineering. To generate new products and services, the biotechnological potential of the marine resources needs to be bridged with their exploration and exploitation. This implies to fill a frontier knowledge gap at the crossroads of biotechnology, food production, and sustainable use of bio-resources with socioeconomic impacts in several fields, exploiting convergences with biotech infrastructures, and access the still-untapped marine biotechnological resources on a larger scale.*

- 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, functional ingredients for human health, industry and environmentally-applicable molecules or organisms.
- Fostering collaborative research through transdisciplinary fields of expertise (e.g. genomics, data bases, outreach, economics) to evaluate blue biotechnologies for their economic impact as a growing field, and promote: (i) the concept of industry-academia partnerships as a win-win collaboration system; (ii) education through training the next generation of marine biotechnologists.
- Create, improve, share, implement dedicated regulatory frameworks and policies on the use and exploitation of Mediterranean Sea bio-resources and/or biomasses for biotechnological purposes, and to share such common policies and practices among all the actors of blue-biotech in the Mediterranean area.

<b>Strategic Action / 1</b>	<b>Panoramed Innovation Project on Blue Bioeconomy towards a strategic Alliance for Blue Bioeconomy in the Mediterranean.</b>		
<b>Indicative starting time</b>	2020 (on-going).		
<b>Proposed funding programmes and instrument</b>	Interreg-MED, Panoramed Call for Strategic Project.		
<b>Suggested timeframe</b>	1 - 5 years	<b>Tentative budget</b>	50 k - 1 M€



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## PRIORITY 9 PROMOTE THE ROLE OF MARINE RENEWABLE ENERGIES (MRE) IN THE ENERGY TRANSITION PHASE

*In order to develop MREs in the Mediterranean and to improve their competitiveness, it is necessary to strengthen research efforts and to fill remaining technological gaps preventing to fully exploit the potential of sea and wind. In this domain, challenges to be tackled are: design integrated multi-purpose platforms that can serve both energy and other maritime sectors; enhance knowledge of MREs environmental interactions and raise awareness among industries, research sector and civil society to increase public understanding and MRE projects acceptance; provide regulatory frameworks and clearly evaluate available marine renewable resources; strengthen capacity building and the development of specialised skills.*

For accompanying the development of large demonstration projects to sustain commercial MREs - including Floating Offshore Wind Turbine which is particularly relevant in the Mediterranean and besides technological R&D on biofouling, corrosion, anchoring, energy storage and transport, two strategic actions addressing Mediterranean specific issues are proposed.

<b>Strategic Action / 1</b>	<b>Launch studies on the interactions of MREs with marine natural and socio ecosystems:</b> identify the physical-biological coupling in the changes induced by the MRE projects, develop instrumentation adapted to the monitoring, model the reef effect locally and globally and the interactions with avifauna.		
<b>Indicative starting time</b>	2022		
<b>Proposed funding programmes and instrument</b>	Horizon Europe (e.g. PPP on A climate neutral, sustainable and productive blue economy), Interreg MED.		
<b>Suggested timeframe</b>	1 - 5 years	<b>Tentative budget</b>	1 M - 10 M

<b>Strategic Action / 2</b>	<b>Set-up a R&amp;D programme on multi-purpose platforms</b> combining green energies production and storage (hydrogen, etc.) with fishing and aquaculture, tourism, offshore research, marine life and environmental monitoring, maritime surveillance and pollution monitoring. Include the Modelling of economic impacts and interactions with other maritime uses and activities.		
<b>Indicative starting time</b>	2022		
<b>Proposed funding programmes and instrument</b>	Horizon Europe (e.g. PPP on A climate neutral, sustainable and productive blue economy), Interreg MED.		
<b>Suggested timeframe</b>	>5 years	<b>Tentative budget</b>	1 M - 10 M€





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## PRIORITY 10 OPEN DATA, OPEN SCIENCE, OPEN INNOVATION

*Open data and knowledge is essential to create a common understanding of Mediterranean challenges and to support smart and innovative data applications in marine-related economic activities. Sharing information about health, evolution and functioning of Mediterranean basin's marine and coastal ecosystems will benefit researchers, public policy makers and the private sector.*

Establishing a shared basis on a Mediterranean scale will help to better preserve biodiversity, manage marine resources sustainably, adapt and anticipate the responses to global change. Achieving this needs to progress in open and rapid access to monitoring and observing data (cf. priority 4), to promote and to regulate transparency with regard to the results of research conducted or 'owned' by public / private companies and institutions, and public authorities.

A holistic approach across disciplines, across sectors and across countries is encouraged paying attention to standardization and interoperability. Building such a Mediterranean "Blue Cloud" will contribute to reach the objective of having a digital twin of the ocean. It should be coordinated with existing infrastructures and programmes (e.g. at European level) and will take advantage of opportunities offered by innovative ICT (big data cloud services platforms...).

<b>Strategic Action / 1</b>	<b>Blue Economy Mediterranean Observatory MedBlueNet</b> (integrated data service connected with Emodnet and Copernicus).		
<b>Indicative starting time</b>	2021		
<b>Proposed funding programmes and instrument</b>	Horizon Europe, alignment and coordination with relevant initiatives and bodies (Emodnet, Copernicus, Eurostat, Medstat, EOSC, ESFRI).		
<b>Suggested timeframe</b>	>5 years	<b>Tentative budget</b>	1 M - 10 M€

<b>Strategic Action / 2</b>	<b>Creation of a Mediterranean European Open Innovation Network in blue technologies.</b>		
<b>Indicative starting time</b>	2021		
<b>Proposed funding programmes and instrument</b>	DG Growth, Interreg, ENPI, UfM.		
<b>Suggested timeframe</b>	>5 years	<b>Tentative budget</b>	50 k - 1 M€



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## PRIORITY 11 BUILDING CAPACITY, BLUE SKILLS AND BLUE PROFESSIONALS

*The human element is a crucial factor to responsibly unlock the Blue Growth potential of the Mediterranean Sea and an overarching condition to achieve the region's economic, knowledge and technology priorities, in terms of research and innovation. Enhancing ocean literacy and closing the skills gap between education on offer and the labour market is vital for the sustainability and attractiveness of the blue sectors.*

- Develop a network of research centres capable to train new professionals on sampling, recording and working on marine environmental, engineering and scientific level. Establish a coordinated network of marine institutes, universities, stations, observatories and public and private companies for aligning high-education curricula, designing joint MSc, PhD programs, short-term scientific exchanges, to preparing the next generation of blue-economy scientists, technologists and entrepreneurs. The goal shall be reached in the framework of international cooperation and through coordinated transboundary networks.
- Develop an electronic platform for e-mentoring of young start-uppers in blue growth acting like a virtual incubator to create a lively ecosystem of entrepreneurs of innovation.
- Exploit new digital technologies for training purposes, including Virtual or Augmented Reality, gamification, as well open online education platforms and storytelling tools.

**Actions can be thematic and targeted with an overarching goal to increase cooperation between academia, society and industry.**

- For managers. Co-develop training courses and knowledge exchange activities to improve the level of institutional, technical and human capacities at national level for the implementation of Maritime Spatial Planning and Maritime Governance.
- For citizens. Promote capacity building to increase resilience to natural disasters of Mediterranean countries, including knowledge of historical events such as earthquakes, coastal slides, tsunami and coastal flooding.
- For operators. Improve Mediterranean training centres and capacities to carry out projects for safety in oil & gas and MREs offshore operations, including knowledge of environmental risks and new technologies.
- For researchers. Train a new generation of marine technicians/scientists to conduct research on the protection of the marine cultural heritage.



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<b>Strategic Action / 1</b>	<b>Cross-discipline Programme on the human element @ Sea</b> to enhance the education and curricula of human resources via brain circulation.		
<b>Indicative starting time</b>	<b>2022</b>		
<b>Proposed funding programmes and instrument</b>	Joint effort by: EC, UfM, UNIMED, EMUNI, SEA-EU, IOC/UNESCO, in the framework of the UN-Decade of Ocean Science for Sustainable Development with the support of tailored platforms, e.g. BlueGeneration Project Job Portal.		
<b>Suggested timeframe</b>	> 5 years	<b>Tentative budget</b>	1 M - 10 M€







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## PRIORITY 12 STRENGTHEN SYNERGIES AMONG SCIENCE, INDUSTRY, POLICY MAKERS, AND SOCIETY

*Achieving strong synergies between all Blue Economy Stakeholders in the Mediterranean is an important aspect of a sustainable blue economy in particular when considering the geo-political complexity of the Area. Stronger synergies will enhance knowledge transfer among knowledge sectors. Scientific outcomes would be incorporated by other sectors through actions' co-design, thus impacting in terms of economic development, jobs, and well-being of citizens. Continuous interaction among relevant stakeholders shall be enhanced and guaranteed, also in compliance with relevant Sustainable Development Goal.*

- Develop participatory approaches to take decisions by improving the dialogue with civil society, considering its importance (e.g. awareness, inputs, transparency, participation, consensus and support) and its specific technicalities (e.g. engagement at local level, language, ambassadors).
- Take full consideration of long-lasting effects of historical human interventions on coastal systems including river diversions, damming, digging of canals, and construction of hard structures for coastal defence, landfills with toxic materials and spread of pollution through time.
- Provide scenarios of environmental change, investigating the impacts on biodiversity and ecosystems goods and services, of alternative socioeconomic development pathways, policy options and blue growth scenarios.
- Enhance awareness at both civil and political levels of the degradation of the marine environment, which presents crucial security challenges in terms of disruption of national economies, displacement of people, degeneration of national identities and loss of lives.
- Include citizens' science in monitoring and sampling strategies while increasing awareness on the biases intrinsically related to citizen's science, which is hindered for example beyond the visible horizon or in dark deep water.
- Coordinated approach addressing coastal management and conservation of anthropogenic villages/ecosystems involving local communities.



# Implementation Plan

February 2021



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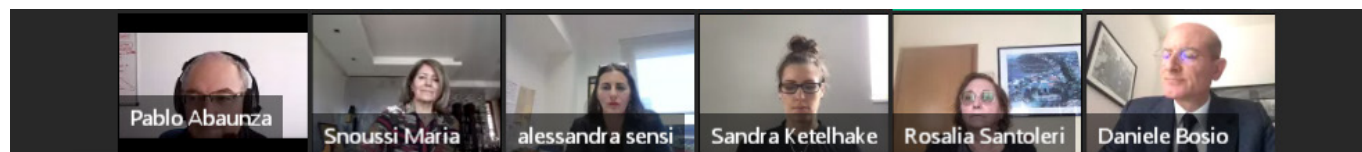
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<b>Strategic Action / 1</b>	<b>The BlueMed citizens' science action</b> (linking with P4-Strategic Action / 2).		
<b>Indicative starting time</b>	2021		
<b>Proposed funding programmes and instrument</b>	Countries / local administration and UfM labelled project.		
<b>Suggested timeframe</b>	<1 year	<b>Tentative budget</b>	<50 k€

<b>Strategic Action / 2</b>	<b>The BlueMed Platforms' Constellation</b> (multi-level cross-stakeholders' hubs).		
<b>Indicative starting time</b>	2023		
<b>Proposed funding programmes and instrument</b>	European Partnership – A climate neutral, sustainable and productive Blue Economy / Expert Groups + ESIF/S3 + ENI CBC-MED Capitalization.		
<b>Suggested timeframe</b>	1 - 5 years	<b>Tentative budget</b>	50 k - 1 M€





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## PRIORITY 13 FROM TRADITIONAL MARITIME ECONOMY TO BLUE GROWTH ACTIVITIES

*Clusters can facilitate the exchange of knowledge, communication and best-practices between stakeholders and potentially boost economic growth and rapid technological development in the Mediterranean region, enabling also the exchange of good practices between the two shores of the Mediterranean Sea and among different stakeholders. The availability of data is a major ingredient for the transition towards smart and responsible blue growth; innovative business approaches should be envisaged including circular economy to adapt to the blue bioeconomy and zero-waste economy.*

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

<b>Strategic Action / 1</b>	<b>Mediterranean Forum on Blue Innovation.</b>		
<b>Indicative starting time</b>	October 2021 (to meet the launch of Horizon Europe).		
<b>Proposed funding programmes and instrument</b>	Integrated EASME + SEMED + Countries actions.		
<b>Suggested timeframe</b>	> 5 years	<b>Tentative budget</b>	1 M - 10 M€

<b>Strategic Action / 2</b>	<b>Exchange of staff' Pilot Programme between key and less developed marine and maritime players.</b>		
<b>Indicative starting time</b>	2022		
<b>Proposed funding programmes and instrument</b>	Alignment of Secondment Programmes at country level + MCSA/RISE + Private foundations' support.		
<b>Suggested timeframe</b>	< 1 year (exchanges should be minimum a two-weeks period)	<b>Tentative budget</b>	50 k - 1 M€



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## PROMOTIONAL ACTIONS

Table 4 below presents a set of Promotional Actions that are feasible to be achieved with minor joint effort or have been already achieved with the support of the BlueMed CSA within the project's lifetime (marked with ✓). Please see Table 3 for a guide to read the table below.

Table 4. List of Promotional Actions of the 13 BlueMed Priorities				
Priority 1	<b>Promotional Action / 1</b>	<b>e-training course on marine litter.</b> ✓		
	Proposed instrument	BlueMed CSA task.		
	Indicative starting time	July 2020	Budget	< 50 k€
	<b>Promotional Action / 2</b>	<b>BlueMed &amp; JPI-Oceans joint workshop on 'Science for Good Environmental Status'.</b> ✓		
	Proposed instrument	BlueMed CSA task, promoted by Italy and Co-champions, in coordination with JPI-Ocean Secretariat.		
	Indicative starting time	December 2020	Budget	< 50 k€
	<b>Promotional Action / 3</b>	<b>BlueMed Pilot hackathon: pushing best ideas from the community.</b>		
Proposed instrument	BlueMed CSA task in partnership with innovation enterprises and networks.			
Indicative starting time	March 2021 (launch)	Budget	< 50 k€	
Priority 2	<b>Promotional Action / 1</b>	<b>Capacity building activity on artisanal fisheries connecting with the possible scale-up of the BlueMed Start-up Action LabMaf.</b>		
	Proposed instrument	BlueMed task.		
	Indicative starting time	2021	Tentative budget	< 50 k€
	<b>Promotional Action / 2</b>	<b>Workshop to share BlueMed information about production of food from the sea, consumption and security.</b>		
	Proposed instrument	European Maritime Day Workshop in alignment with relevant projects.		
	Indicative starting time	2021	Tentative budget	< 50 k€
	<b>Promotional Action / 3</b>	<b>Coordination Workshop entitled "It's time to align! Food production, security and consumption from the Sea" to develop Strategies and Plans designed for sustainable fishing, aquaculture and seafood</b> via alignment and coordination with WestMED, EUSAIR, GFCM- FAO; WRAP; UfM, FARNET, EATIP, EFTP, EUMOFA, and coordination for eco- label aquaculture and fishing products.		
	Proposed instrument	Joint BlueMed taskforce, MedFish4ever Initiative and GFCM-FAO.		
	Indicative starting time	2021	Tentative budget	< 50 k€
	<b>Promotional Action / 4</b>	<b>Exchange of best practices and dissemination between Mediterranean countries on good food practices to society (reduce consumption and tourism food waste, co-design new strategies to preserve and freeze products, etc.).</b>		
	Proposed instrument	BlueMed task in alignment with an ongoing relevant project and a Communication event (e.g. engaging renowned Chefs from several Mediterranean countries).		
	Indicative starting time	March 2021	Tentative budget	50 k - 1 M€





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**Table 4.** List of Promotional Actions of the 13 BlueMed Priorities

Table 4. List of Promotional Actions of the 13 BlueMed Priorities				
Priority 3	<b>Promotional Action / 1</b>	<b>Climate-KIC Start-ups.</b>		
	Proposed instrument	EIT Climate-KIC call.		
	Indicative starting time	2021	Tentative budget	50 k - 1 M€
	<b>Promotional Action / 2</b>	<b>Towards a Climate Change Mediterranean Sea Capital of the Year.</b>		
Priority 4	Proposed instrument	Joint BlueMed, UNEP / MAP & UfM task.		
	Indicative starting time	2021	Tentative budget	< 50 k€
	<b>Promotional Action</b>	<b>Mediterranean Conference on marine and coastal observation.</b>		
	Proposed instrument	Copernicus, JPI Oceans, EMFF, UNEP/MAP.		
Priority 5	Indicative starting time	Annual meeting, starting 2021	Tentative budget	< 50 k€ (for one meeting)
	<b>Promotional Action / 1</b>	<b>ICT services for post COVID-19 blue tourism in the Mediterranean region.</b> ✓		
	Proposed instrument	Blue RoSED, BlueMed, MISTRAL and WestMed joint Workshop.		
	Indicative starting time	November 2020	Tentative budget	< 50 k€
Priority 5	<b>Promotional Action / 2</b>	<b>Connecting multiple actors for integration:</b> Panoramad, UNWTO, EU Sustainable Tourism Group.		
	Proposed instrument	Mobilization of National Pivots linking with the European Tourism Convention.		
	Indicative starting time	2021	Tentative budget	< 50 k€
	<b>Promotional Action / 3</b>	<b>Beyond commodities: Exploit tourism as vehicle for environmental-friendly behaviours.</b>		
Priority 6	Proposed instrument	Stakeholders' (e.g. ship companies) Conference.		
	Indicative starting time	2021	Tentative budget	< 50 k€
	<b>Promotional Action / 1</b>	<b>UNESCO / IOC-DG MARE MSPglobal Initiative – Pilot on the Western Mediterranean.</b>		
	Proposed instrument	BlueMed CSA task, UNESCO / IOC-DG MARE.		
Priority 6	Indicative starting time	2019 (on-going)	Tentative budget	< 50 k€
	<b>Promotional Action / 2</b>	<b>OECD-UNESCO / IOC-BlueMed joint Conference on Ocean Economy and Innovation: Linking economy potential and marine ecosystem health through Maritime Spatial Planning.</b> ✓		
	Proposed instrument	BlueMed CSA task, UNESCO/IOC, National funds.		
	Indicative starting time	September 2020	Budget	< 50 k€
Priority 6	<b>Promotional Action / 3</b>	<b>Training course on:</b> • "Science-Policy-Society interactions in ecosystem-based marine resources management and planning". ✓		
	Proposed instrument	BlueMed CSA task, in collaboration with Interreg MED Biodiversity Protection Community and UNESCO/IOC.		
	Indicative starting time	2021	Tentative budget	< 50 k€
	<b>Promotional Action / 4</b>	<b>Joint capitalization with Projects ADRION- Portodimare and MED-Pharos4mpas.</b> ✓		
Priority 6	Proposed instrument	BlueMed CSA task, in collaboration with Portodimare and Pharos4mpas Projects.		
	Indicative starting time	2020	Budget	< 50 k€



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**Table 4.** List of Promotional Actions of the 13 BlueMed Priorities

Table 4. List of Promotional Actions of the 13 BlueMed Priorities				
Priority 7	<b>Promotional Action / 1</b>	<b>Multidisciplinary, trans-Mediterranean training course on green technologies for shipping.</b>		
	Proposed instrument	BlueMed CSA task / specific call (EMFF, Horizon Europe) Pharos4mpasProtection Community Protection Community.		
	Indicative starting time	2021	Tentative budget	< 50 k€
	<b>Promotional Action / 2</b>	<b>BlueMed-Waterborne joint meeting on "Low Carbon Sustainable and Intelligent Marine Technology".</b>		
	Proposed instrument	BlueMed.		
	Indicative starting time	2021	Tentative budget	< 50 k€
Priority 7	<b>Promotional Action / 3</b>	<b>Scale up of the BlueMed Start-up Action BlueBoatsMed.</b>		
	Proposed instrument	Media campaign and participation on conferences.		
	Indicative starting time	2021	Tentative budget	< 50 k€
Priority 8	<b>Promotional Action / 1</b>	<b>Thematic conference on Mediterranean Blue Biotech.</b>		
	Proposed instrument	Joint BlueMed and Ocean4Biotech COST Action operational thematic conference, BioBased Industries Joint Undertaking (BBIJU).		
	Indicative starting time	2021	Tentative budget	< 50 k€
	<b>Promotional Action / 2</b>	<b>Training course on Blue Biotechnologies and Blue Bio-economy aiming at the creation of blue careers.</b> ✓		
	Proposed instrument	Joint BlueBio COFUND and BlueMed CSA task.		
Priority 8	Indicative starting time	March 2021	Tentative budget	< 50 k€
	<b>Promotional Action / 1</b>	<b>Competence and Training Centre on Marine Renewable Energies.</b>		
	Proposed instrument	Co-fund centre, promotion of this activity and relevant lobbying actions to be led by co-champion countries. DG-MARE / EASME Blue skills call, Erasmus+.		
	Indicative starting time	2021	Tentative budget	1 M - 10 M€
	<b>Promotional Action / 2</b>	<b>Mediterranean Conference on Marine Renewable Energies.</b>		
Priority 9	Proposed instrument	Thematic conference sponsored by private industries and cities / local communities active in the field, support from relevant maritime clusters. Relevant lobbying actions to be led by co-champion countries.		
	Indicative starting time	Annual meeting, starting April 2021	Tentative budget	< 50 k€ (for one meeting)
	<b>Promotional Action / 1</b>	<b>Mediterranean Blue Data Conference towards an open data approach to share best practices within / among countries.</b>		
Priority 10	Proposed instrument	Copernicus, Horizon Europe, UNEP/MAP, UfM, Eurostat.		
	Indicative starting time	Annual meeting, starting 2021	Tentative budget	< 50 k€ (for one meeting)
	<b>Promotional Action / 2</b>	<b>Blue Mediterranean Open Access Journal.</b>		
	Proposed instrument	Co-fund open access journal with willing partners / countries. Promotion of this activity and relevant lobbying actions led by supporting co-champion countries. Engage the support of the EC and other relevant bodies/initiatives/national funds.		
	Indicative starting time	Bi-annual publication, starting 2021	Tentative budget	50 k - 1 M€



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**Table 4.** List of Promotional Actions of the 13 BlueMed Priorities

<b>Priority 11</b>	<b>Promotional Action / 1</b>	<b>BlueMed &amp; IOC / UNESCO joint meeting on marine literacy.</b>		
	Proposed instrument	BlueMed task and IOC / UNESCO Programme.		
	Indicative starting time	2022	Tentative budget	< 50 k€
	<b>Promotional Action / 2</b>	<b>Launch a BlueMed Hackathon focused on skills' innovation and communication.</b>		
	Proposed instrument	Joint BlueMed & DG-MARE event (e.g. back-to-back BlueInvest Med).		
	Indicative starting time	March 2021	Tentative budget	50 k - 1 M€
	<b>Promotional Action / 3</b>	<b>SEALINES BlueMed Start-up Action training series for young workers.</b>		
Proposed instrument	EASME DG-MARE / Blue Skills Call & BlueGrowth Summer School.			
Indicative starting time	2021	Tentative budget	50 k - 1 M€	
<b>Priority 12</b>	<b>Promotional Action / 1</b>	<b>Showcasing the role of BlueMed Young Communication Ambassadors.</b> ✓		
	Proposed instrument	BlueMed CSA workshop at ESOF Conference and BlueMed CSA Final Conference.		
	Indicative starting time	September 2020 and February 2021	Budget	< 50 k€
	<b>Promotional Action / 2</b>	<b>Blue Cafes</b> (targeting citizens).		
	Proposed instrument	Joint BlueMed countries and relevant associations task, e.g. in the framework of the European Researchers' Night or the initiative <i>European Maritime Day in your country</i> .		
Indicative starting time	September 2020 / May 2021	Tentative budget	< 50 k€	
<b>Priority 13</b>	<b>Promotional Action / 1</b>	<b>Match-making event to exploit the opportunities of the BlueInvest Platform</b> bringing together innovators to sit and talk on investment opportunities with innovators, the financial community and stakeholders of traditional maritime economy to boost the economic potential of the Mediterranean Sea while protecting its marine resources.		
	Proposed instrument	BlueMed networking event with a "speed-dating" format, with the collaboration of the BlueMed Operational Network of Research Funders and the BlueInvest Platform.		
	Indicative starting time	2022	Tentative budget	50 k - 1 M€
	<b>Promotional Action / 2</b>	<b>Test the transition on adaptation to climate change and sea-level rise in coastal areas, and long-term strategy re-design of coastal infrastructures.</b>		
	Proposed instrument	Academy-Industry-Policy makers joint brainstorming event.		
Indicative starting time	2021	Tentative budget	< 50 k€	



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## MONITORING AND KEY PERFORMANCE INDICATORS (KPIs)

To cope with the ambition of the BlueMed Initiative and assess the progress in the development of a sustainable and innovative blue economy in the Mediterranean area it is essential to have suitable tools to monitor the implementation process.

A methodology based on indicators in relation with the typologies of activities promoted in the Implementation Plan, which will produce different effects in different time scales, has been developed. This mechanism will allow to periodically monitor the progress and measure the impacts of the planned joint actions presented in the Implementation Plan. Two types of indicators will be used for this **monitoring process**:

- Indicators providing information on the way Strategic Joint Actions are undertaken and will measure the resources and efforts used for their implementation including the different levels of cooperation (e.g. total number of calls successfully launched).
- Indicators assessing tangible and visible results produced by the actions (e.g. number of training courses organized and linked with the BlueMed framework).

An **impact evaluation** in the long term is also foreseen. With a horizon of 3-5 years, it is intended to evaluate the benefits produced by the actions launched in the wake of BlueMed on the Mediterranean environment, ecosystems, economy, policy frameworks and society. This evaluation can take into account for example the changes on specific economic sectors or the emergence of new cooperation networks. Although all transformative changes occurring in the Mediterranean and maritime environment cannot automatically and directly be linked to BlueMed, the result of such analysis is expected to generate added value to the region and gives information on the effect of the actions proposed in this Implementation Plan.

*Some preliminary BlueMed impact evaluation's indicators are presented in the following table for priorities P1 - P12.*

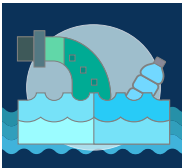
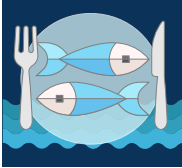



**blueMed**  
Mediterranean Sea top priorities for research and innovation

sustainable food production	understanding pollution impacts, mitigation and remediation	preparing to climate change and define adaptation and mitigation measures
linking tourism, tourists and environment	effective maritime spatial planning	greening vessels, facilities and services
towards an observing system of systems	open data, open science, open innovation	building capacities, blue skills and blue professionals
exploring the potential of blue biotech	promote the role of marine renewable energies in the energy transition phase	strengthen synergies among science, industry policy-makers and society
from traditional maritime economic to blue growth activities		



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**Table 5.** Non-exclusive list of indicators proposed for impact evaluation of the 13 BlueMed Priorities






 <p><b>P1</b></p>	<ul style="list-style-type: none"> <li>• Surface of coastal and marine protected areas in km<sup>2</sup>.</li> <li>• Surface of marine mammal protected areas in km<sup>2</sup>.</li> <li>• Number of patents in the field of climate change mitigation technology development related to plastics recycling.</li> <li>• Number of visitor on BlueMed Pilot action website page dedicated to the Pilot Action on a Healthy Plastic-free Mediterranean Sea.</li> <li>• Concentration of key harmful contaminants measured in the relevant matrix (biota, sediment, seawater) Trends in the amount of litter washed ashore and/or deposited coastlines.</li> <li>• Actual levels of contaminants that have been detected and number of contaminants which have exceeded maximum regulatory levels in commonly consumed seafood.</li> <li>• Number of new regulations on pollution limitation/prevention/control.</li> </ul>
 <p><b>P2</b></p>	<ul style="list-style-type: none"> <li>• Fisheries technology development.</li> <li>• Economic value of fisheries, as a percentage of GDP Fishery fleet, total number of vessels.</li> <li>• Fisheries capture of marine fishes in tonnes.</li> <li>• Economic value of aquaculture, as a percentage of GDP Aquaculture production, in tonnes.</li> <li>• Proportion of fish stock within safe biological limits Number of fish threatened species.</li> <li>• Number of fishers and fish farms.</li> </ul>
 <p><b>P3</b></p>	<ul style="list-style-type: none"> <li>• Total number of patents in the field of climate change mitigation technology development.</li> <li>• Trend in abundance, temporal occurrence, and spatial distribution of non-indigenous species, particularly invasive, non-indigenous species, notably risk areas.</li> <li>• Number of new regulations in the field of climate change mitigation and adaptation.</li> </ul>
 <p><b>P4</b></p>	<ul style="list-style-type: none"> <li>• Number of non-EU scientist who have access to European marine RIs.</li> </ul>
 <p><b>P5</b></p>	<ul style="list-style-type: none"> <li>• Employment in tourism.</li> <li>• Proportion of bathing sites awarded the Blue Flag out of total coastal bathing sites.</li> </ul>





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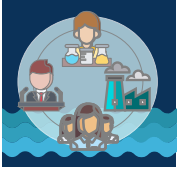

**Table 5.** Non-exclusive list of indicators proposed for impact evaluation of the 13 BlueMed Priorities

 <p><b>P6</b></p>	<ul style="list-style-type: none"> <li>• Length of coastline subject to physical disturbance due to the influence of man-made structures.</li> </ul>
 <p><b>P7</b></p>	<ul style="list-style-type: none"> <li>• Number of patents in the field of climate change mitigation technologies related to maritime transportation</li> <li>• Vessels' operational pollution, in million tones.</li> <li>• Annual mean of fuel consumption by ships of over 5000G.</li> <li>• Annual mean concentration of fine particulate matter of less than 2.5 microns of diameter (PM2.5) in coastal urban areas.</li> </ul>
 <p><b>P8</b></p>	<ul style="list-style-type: none"> <li>• Number of firms active in biotechnology.</li> </ul>
 <p><b>P9</b></p>	<ul style="list-style-type: none"> <li>• R&amp;D public investments for renewable energy.</li> <li>• Number of national renewable energy incentives.</li> <li>• Share of fossil fuels in total primary energy supply.</li> <li>• Total renewable capacity energy, in MW.</li> </ul>
 <p><b>P10</b></p>	<ul style="list-style-type: none"> <li>• Number of scientific publications in the field of marine science in open access.</li> </ul>



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**Table 5.** Non-exclusive list of indicators proposed for impact evaluation of the 13 BlueMed Priorities

 <p><b>P11</b></p>	<ul style="list-style-type: none"> <li>• Share of population with tertiary education.</li> <li>• Number of universities delivering trainings in marine sciences.</li> <li>• Total number of Master degrees in marine sciences.</li> <li>• Total number of Master degrees in marine sciences.</li> <li>• Share of population holding a PhD marine sciences.</li> <li>• Total number of vocational trainings in links with technical blue skills development.</li> </ul>
 <p><b>P12</b></p>	<ul style="list-style-type: none"> <li>• Number of Blue Living Labs and other innovation ecosystems linking science and industry.</li> </ul>
 <p><b>P13</b></p>	<ul style="list-style-type: none"> <li>• Ongoing work to develop valid indicators for P13.</li> </ul>

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Leading such a monitoring and impact evaluation requires a certain amount of efforts and resources. In order to be as efficient as possible, to optimize the remaining time and limit additional financial and human resources related to this exercise, it is suggested that actions' leaders/committees and main stakeholders who will implement Strategic Joint Actions could be directly in charge of the monitoring and impact evaluation exercise for the Strategic Joint Action(s) they will be supervising.





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