



**Research and innovation initiative
for blue jobs and growth in the Mediterranean area**

STRATEGIC RESEARCH AND INNOVATION AGENDA

First update



*Sliema (Malta), April 2017.
Updates will be made regularly
every year*

**Authors: Members of the
Strategic Board of the BLUEMED
Initiative**

This document is the first update of the [BLUEMED Strategic Research and Innovation Agenda \(SRIA\)](#). It includes relevant information gathered after its publication and launch with the endorsement of the [Venice Declaration](#) in October 2015, including through national consultation. Since then, the following progress has been achieved:

-
- the BLUEMED Initiative has been acknowledged in the recommendations of the Union for the Mediterranean (UfM) Ministerial [Declaration on Blue Economy](#), Brussels, 17th November 2015;
 - works have been carried out to align the priorities of the BLUEMED Initiative and of the European Strategy for Adriatic and Ionian Region (EUSAIR) as from the outcomes of the BLUEMED/EUSAIR working groups meeting at Ecomondo (Rimini, Italy, 10th November 2016);
 - the BLUEMED Initiative is in the agenda of the [International Ocean Governance for the future of our oceans](#) launched on November 2016, under the action on “International ocean research, innovation and science partnerships - Advance work to include southern Mediterranean countries in the BLUEMED initiative”;
 - the BLUEMED Initiative participated to the stakeholders’ Conference organized by the European Commission and the Secretariat of the Union for the Mediterranean [‘Towards an Initiative for the Sustainable Development of the Blue Economy in the Western Mediterranean’](#) (Barcelona, Spain, 2nd February 2017);
 - with the [BLUEMED Conference – A Basin of Research and Innovation for sustainable growth](#) (Sliema, Malta, 18th - 19th April 2017) organized under the auspices of the Maltese Presidency of the Council of the European Union, the BLUEMED Initiative officially opened to non-EU countries and stimulate the connection with Mediterranean key players;
 - the BLUEMED Initiative is one of the framework of reference for the WESTMED Initiative as stated in the [Communication from the Commission to the European parliament, the Council, the European economic and social Committee and the Committee of the regions - Initiative for the sustainable development of the blue economy in the western Mediterranean](#), Brussels, 19.04.2017, COM(2017) 183 final;
 - the BLUEMED Initiative is mentioned in the [Declaration of the European Ministers responsible for the Integrated Maritime Policy on Blue Growth - Valletta Declaration](#), 20th April 2017;
 - a breakout session on the BLUEMED Initiative has been organized in the framework of the Technical-Level Meeting on Strengthening Euro-Mediterranean Cooperation through Research and Innovation on 3rd May 2017 to feed the [Declaration of the Ministerial Conference on Strengthening Euro-Mediterranean Cooperation through Research and Innovation - Valletta Declaration](#), 4th May 2017;
 - in 2016-2017, the European Commission has granted the following [BLUEMED-labelled projects](#): [BLUEMED CSA](#), [FiDaCaMS](#), [MARINE-EO](#), [Muses](#), [MedAID](#), [ODYSSEA](#), [PerformFISH](#). Other projects relevant for the BLUEMED such as ProCREW, ARCHEOSUB, BlueNET, ASSESS, and MENTOR have also been funded by the EC within the Blue Labs and Blue Careers call.

The BLUEMED Initiative has been also intensively promoted at country level.

This updated version of the SRIA will serve the [BLUEMED CSA project](#), the four years long Coordination and Support Action funded by the European Commission supporting the BLUEMED Initiative. Four thematic transnational Platforms on “Knowledge”, “Economy”, “Technology” and “Policy” will be set-up in the initial phase of the BLUEMED CSA. The Platforms are conceived as fora where effective involvement of a wide community of public and private stakeholders from different sectors will take place. An instrument to ensure constant dialogue, consultation, and coordinated action to keep the BLUEMED SRIA up to date and design the Implementation Plan, giving support in the pursue of the objectives of the BLUEMED Initiative. Key facilitators to Platforms’ operations will be the National Pivots (NPs). They are representatives appointed by the countries on the four specific platforms’ themes. NPs can be members of national public administrations, research institutions and universities, private companies, technology districts, consortia, associations, not-for profit organizations, etc. They will contribute to increasingly mobilize other relevant national stakeholders by collect and convey their message to feedback the Platforms. A successful process will depend significantly on the decisive strong support and mandate from the countries that endorsed the Venice Declaration, in committing the Implementation Plan through joint actions.

The **BLUEMED** initiative offers a shared strategic framework for working towards a healthy, productive and resilient Mediterranean Sea that is better known and valued. It is designed to tap the full potential of the marine and maritime sectors, structuring transnational cooperation to create new 'blue' jobs and to promote and improve social wellbeing, sustainable prosperity and the environmental status of the region and its surroundings.

BLUEMED is the result of joint efforts by Cyprus, Croatia, France, Greece, Italy, Malta, Portugal, Slovenia and Spain, with the support of the European Commission. On October 16 2015, the representatives of the Governments of the above-mentioned EU Member States and Romania signed the ***Venice Declaration on Mediterranean Sea Cooperation - Launching a Strategic Research Marine and Maritime Research and Innovation Agenda for Blue Growth***.

The countries **agreed** to coordinate and integrate efforts to implement the BLUEMED Initiative by actively promoting synergies and complementarities among all the involved stakeholders at local, regional and national level, as well as among Member States at European level, in order to provide added value to regional, national and EU investments by removing barriers, avoiding duplication and reducing fragmentation.

The countries **decided** to advance the strategic marine and maritime research and innovation Agenda for Blue Growth in the Euro-Mediterranean Region, aiming in particular at:

- Promoting cooperation in research and innovation between all Mediterranean countries;
- Engaging with both public and private stakeholders, including small and medium enterprises, in research and innovation actions of cooperation;
- Supporting knowledge-based policy making;
- Prioritising the implementation of cross-cutting actions with high societal impact;
- Ensuring the effective and efficient use of resources and infrastructures by Member States cooperation and joint actions;
- Developing innovative sea-related competences, particularly at technical, doctoral and first stage researchers' level.

As regard the governance, the **Strategic Board for the BLUEMED Initiative** composed by all above mentioned countries is at present coordinated by Italy together with the EC, and as vice-coordinators Greece and Portugal. Belgium is also contributing to the works.

WHY BLUEMED?

<i>30 % of global sea-borne trade by volume</i>
<i>450 ports and terminals</i>
<i>A quarter of worldwide sea-borne oil traffic</i>
<i>World's second-largest market for cruise ships</i>

<i>A coastal population of 150 million that more than doubles during the tourist season</i>

400 UNESCO sites

236 Marine Protected Areas

Among the seas of Europe, the Mediterranean has no match as regards biodiversity and the links between human activities and environmental characteristics. It is changing fast in response to both natural and anthropogenic pressures. Climate change, growing maritime traffic and pollution, overexploitation of fish stocks and invasions of alien species are among the stressors placing the region at risk. At the same time, the Mediterranean's unique features provide major local opportunities for blue growth and jobs, ranging from fisheries to tourism.

The region's geopolitical complexity may represent a constraint on implementing framework conditions favourable to blue economic growth. Joint efforts are required to successfully address present and future challenges. A global perspective, along with more vigorous transnational and international cooperation, is essential to implement effectively and efficiently tailored actions that are conducive to safe, secure and sustainable development for all.

BLUEMED'S AIMS

According to the Vision Document presented at the EU Competitiveness Council of 5 December 2014, BLUEMED pursues the following objectives:

- developing innovative marine-based technologies, methodologies and approaches with a view to boosting the sustainable economic growth of the European maritime sectors and the conservation and upgrading of the marine environment, resources and cultural heritage
- fostering innovative multidisciplinary research and cooperation activities addressing the relevant Mediterranean challenges
- providing knowledge-based support for the implementation of EU policies and directives on marine and maritime issues in the Mediterranean
- creating an interoperable, fully integrated observing and forecasting system to promote continuous long-term observation based on open data structures to guarantee easy access
- promoting public awareness and understanding of how important sustainably prosperous resources of the Mediterranean Sea for the surrounding countries and for Europe as a whole
- training a new generation of scientists, professionals, technicians and entrepreneurs able to tackle complex ecological, economic and societal challenges in a holistic way, thus creating new and qualified 'sea-based' jobs.

WHAT FORM WILL BLUEMED TAKE?

- Joint action, including coordinating, planning and programming research and innovation activities
- Bilateral/multilateral research and innovation initiatives and programming tools
- Cooperation between the public and private sectors
- Fine-tuning of data, knowledge, capacities and projects
- Effective and efficient use of resources and infrastructure
- Maximisation of the leverage effects of research investments and their influence on public policy
- Public understanding of the value of the Mediterranean blue economy
- Improved skills for a well-equipped workforce.

BLUEMED identifies the following **KEY CHALLENGES**.

Key enabling knowledge for the Mediterranean >> relevant knowledge gaps to be overcome

- A. *Mediterranean Sea ecosystems: services, resources, vulnerability and resilience to natural and anthropogenic pressures*
- B. *Mediterranean Sea dynamics: developing services in the field of sustainable adaptation to climate change and plans for mitigation*
- C. *Hazards and the protection of coastal areas in the Mediterranean*

Key sectoral enablers in the Mediterranean >> specific subsections of the blue growth path

- A. *Innovative businesses based on marine bio-resources in the Mediterranean*
- B. *Ecosystem-based management of Mediterranean aquaculture and fisheries*
- C. *Sustainable tourism in the Mediterranean*
- D. *Maritime clusters in the Mediterranean*
- E. *Maritime Spatial Planning and Integrated Coastal Zone Management in the Mediterranean*

Enabling technology and capacity creation for the Mediterranean >> innovative human potential and infrastructure required

- A. *Smart, greener maritime transport and facilities in the Mediterranean*
- B. *Observing systems and operational oceanography capacities in the Mediterranean*
- C. *Multi-purpose offshore platforms in the Mediterranean*
- D. *Marine and coastal cultural heritage in the Mediterranean: discovering, protecting and valuing*

The **STRATEGIC RESEARCH AND INNOVATION AGENDA (SRIA)** is a tool for addressing these challenges. It is designed to be a living document offering a handbook for interested implementing bodies, bearing in mind that the BLUEMED initiative:

- allows for different types of action to be taken at different levels, as regards geographical coverage, critical mass, joint funding, coordination of national/regional efforts or the use of EU instruments;
- is designed to involve relevant players and stakeholders such as national ministries, regional authorities, international organisations, organisations that undertake research, research infrastructure, academia, the private sector, non-governmental organizations and the general public;

It details the scope, level and duration of specific joint actions to be taken in order to achieve a particular goal falling within a key challenge.

SCOPE › Typology of activities, e.g. R&I initiative, knowledge transfer, technology transfer, policy initiatives, etc.

LEVEL › National, regional, EU, international (one or multiple)

DURATION › Short (less than 3 years), Medium (5-6 years), Long (10 years)

MEDITERRANEAN SEA ECOSYSTEMS: SERVICES, RESOURCES, VULNERABILITY AND RESILIENCE TO NATURAL AND ANTHROPOGENIC PRESSURES

GOAL	ACTION	SCOPE	LEVEL	DURATION
Understanding the functioning of the Mediterranean Sea ecosystem	Establish a coordinated network of marine institutes, universities, stations, observatories and companies; define standard species, habitats and ecosystem monitoring and protection protocols	R&I activities, policy measures	Regional, national, EU, international	Short
	Identify the origin of invasive or alien species and the routes of invasions, the environmental conditions conducive to invasions and their main effects on local habitats, species, and ecosystem	R&I activities	EU	Medium
	Promote and regulate transparency with regard to the results of research conducted or 'owned' by private companies and take action to make them more readily available to the public	R&I activities, knowledge sharing, policy initiatives	EU, national	Medium
	Assess inputs from atmosphere-land-sea and anthropogenic pressures leading to change in marine and coastal ecosystems; limit specific emerging risks and impact on both ecosystems and human health and wellbeing	R&I activities	Regional, national, EU	Medium
	Fill gaps in understanding the biogeographic patterns, biodiversity, fisheries and ecosystem functions and services supported by different marine ecosystems at ocean basin and management relevant scales	R&I activities	EU, Regional	Medium
Promoting sustainable exploitation of biotic and abiotic resources	Develop and implement management plans for sustainable exploitation of coastal to deep-sea biotic and abiotic resources, including gas hydrates, minerals and molecules of industrial interest	R&I activities, knowledge transfer	National, regional	Long
	Implement managing solutions and conservation plans, including networks of Marine Protected Areas, for coastal to deep-sea ecosystems, that take into account their relationship with natural and anthropogenic changes in the environment while ensuring and promoting ecosystems services	R&I activities, knowledge transfer	National, regional	Medium
	Develop environmental decision support modelling systems to sustain policy strategies, including adaptation and mitigation, for preserving the socioeconomic and environmental sustainability of marine species and habitats	R&I activities, knowledge sharing, policy initiatives	EU, national	Medium
	Describe the deep sea, mapping the topography of seabed, characterising the geomorphology and substrate types, identifying geo-habitats, and mapping sensitive habitats, with an inventory of their biodiversity, as well as Essential Fish Habitats	R&I activities	EU	Medium/long

MEDITERRANEAN SEA ECOSYSTEMS: SERVICES, RESOURCES, VULNERABILITY AND RESILIENCE TO NATURAL AND ANTHROPOGENIC PRESSURES

Cleaning the Mediterranean Sea	Identify: areas with potential conflict hot spots that are particularly exposed to the impact of multiple stressors; possible solutions	R&I activities, knowledge transfer, policy initiatives	EU, national, regional	Short
	Develop and test (bio)remediation measures in different areas/places, including the possible re-use and recycling of hazardous materials	R&I activities, knowledge transfer, policy initiatives	EU, national, regional	Short
	Implement coordination/cooperation schemes and comparable risk assessment of the effects of multiple anthropogenic pressures at different depths, including deep-sea areas; comply with regional conventions and the Marine Strategy Framework Directive	R&I activities	EU, regional	Short/medium
	Measure and identify chemical compounds and other sources of pollution, including contaminant dispersal, in different marine matrices; characterise sources, pathways and effects on marine ecosystems; develop early warning tools to detect pollutants	R&I activities	EU, national, regional	Medium

MEDITERRANEAN SEA DYNAMICS: DEVELOPING SERVICES IN THE FIELD OF SUSTAINABLE ADAPTATION TO CLIMATE CHANGE AND PLANS FOR MITIGATION

GOAL	ACTION	SCOPE	LEVEL	DURATION
Understanding and forecasting the Mediterranean Sea dynamics	Provide numerical modelling, forecasting, indicators and trends/shifts definition in the Mediterranean environmental conditions along with long-term monitoring for new products	R&I activities	EU, national	Short
	Implement downscaling models of climate change for the Mediterranean Sea and sub-basins; assess the impacts on marine ecosystems and their resources, from regional to local scales	R&I activities	EU	Short
	Perform scenarios of environmental change to provide insights into the impacts of alternative future socioeconomic development pathways, policy options and blue growth exploitation on biodiversity and nature's benefits to people	R&I activities	EU, national	Short
Preparing to climate change	Make a comprehensive assessment of climate related risks in the Mediterranean Sea region, including extreme climate events in a changing climate, sea level rise, flooding and weather extreme events, and invasive species	R&I activities	EU	Medium/long
	Assess the climate change risk on the ecosystem and human environment in the coastal zone and in the deep ocean developing climate risk monitoring programmes and services	R&I activities	EU	Short/medium
Climate services for the Mediterranean	Develop, enhance and deliver user-friendly tools for disseminating climate information related to Mediterranean atmosphere, coastal and deep ocean areas	R&I activities, knowledge transfer	EU, national	Medium

HAZARDS AND THE PROTECTION OF COASTAL AREAS IN THE MEDITERRANEAN

GOAL	ACTION	SCOPE	LEVEL	DURATION
Reducing the risk of disasters	Develop adapted sampling strategies; improve assessment of marine geo-hazards, from paleo records and from submarine terrain analysis and description of active faults and other features	R&I activities, knowledge transfer	EU	Medium
	Implement high-resolution swath bathymetry mapping; reveal detailed morphology of the seafloor and large-scale and local seismic profiling surveys; locate and study active geological features	R&I activities, policy initiatives	EU, national, international	Medium
	Develop operational platforms and decision matrix for tackling destructive tsunami events generated by different sources, e.g. seismic activity, volcanoes, landslides, atmosphere, while assessing and control progressive geological processes such as erosion or burial, and integrate the submarine environment as a resource	R&I activities, knowledge transfer	EU, national	Medium
	Implement coordinated methods and approach, to achieve a dedicated science-to-policy network on hazards in the Mediterranean	R&I activities, policy initiatives	National, international	Short

INNOVATIVE BUSINESSES BASED ON MARINE BIO-RESOURCES IN THE MEDITERRANEAN

GOAL	ACTION	SCOPE	SCALE	DURATION
Developing new technologies and tools	Engineering of new or more robust micro-algae species, eukaryotic and prokaryotic microbial communities and strains for biorefinery schemes and for greening the chemical industry	R&I activities, knowledge transfer	EU	Medium
	Optimise cultivation and metabolic/production potential (omics techniques) of known and new marine microbial species, plus their industrial up-scaling	R&I activities, knowledge transfer	EU	Medium
	Explore and exploit new metabolites and biomolecules, enzymes and genes; promote biotechnological applications and patent deposits	R&I activities, knowledge transfer	Regional	Medium
Generating new products and services	Evaluate the potential of marine litter from macro and micro-pollutants, including nanomaterials and plastics; assess its impact on marine organisms and develop in situ bioremediation actions	R&I activities, knowledge transfer	EU, regional	Short
	Integrated use of by-products and waste from fisheries and aquaculture	R&I activities, knowledge transfer	EU	Medium
	Promote new market opportunities for products derived from marine biomass, including biofuels from biomass waste, as Mediterranean-labelled products	R&I activities, knowledge transfer	EU	Long

ECOSYSTEM-BASED MANAGEMENT OF MEDITERRANEAN AQUACULTURE AND FISHERIES

GOAL	ACTION	SCOPE	LEVEL	DURATION
Develop optimal fishing strategies, technologies and practices	Develop optimal strategies, technologies and practices for sustainable exploitation and management of biological resources; take account of socioeconomic and ecosystem considerations, in line with the Common Fisheries Policy and the General Fishery Commission for the Mediterranean, and in the view of marine spatial planning	R&I activities, knowledge transfer	EU, national	Short
	Introduce new/Adapt fishing gear, reduce discards and by-catch, and reduce other effects of fishing including fuel consumption, and direct impact on seabed	R&I activities, knowledge transfer	EU, national	Medium
	Develop appropriate monitoring, assessment, management and governance regimes for sustainable fisheries, with special emphasis to small-scale and recreational fisheries and the interactions between professional and recreational fisheries	R&I activities, knowledge transfer	EU, international	Medium/long
Develop optimal aquaculture strategies, technologies and practices	Adapt aquaculture activities (species and systems) and capacities in a changing environment	R&I activities, knowledge transfer	National, EU, international	Medium/long
	Develop new strategies, technologies and practices to make aquaculture sustainable supported by the reduction of administrative burdens while promoting the investment in best technologies	R&I activities, policy initiatives, knowledge transfer	National, EU, international	Medium
	Promote the diversification of aquaculture and the use of multi-trophic marine farming systems	R&I activities, knowledge transfer	EU, international	Medium/long
	Carry out marketing campaigns to raise awareness among consumers increasing the image of aquaculture products.	R&I activities, knowledge transfer, policy initiatives	Regional, National, EU,	Short/medium

PROMOTING SUSTAINABLE TOURISM IN THE MEDITERRANEAN

GOAL	ACTION	SCOPE	LEVEL	DURATION
Linking tourism and environment	Define and assess environmental value, risk mitigation and conflicts of use by involving scientist, companies, regulators, and coastal communities	R&I activities, support to policy and training initiatives	National, EU, regional, international	Short/medium
	Develop strategies and practices to improve the wellbeing of coastal communities and their economy, and ensure the preservation of their culture/identity	R&I activities, support to policy and training initiatives	National, EU, regional, international	Short/medium
Developing smart technologies and dedicated services	Develop smart technologies and dedicated services for sustainable tourism; tackle environmental protection and human wellbeing	R&I activities, support to policy initiatives, cooperation between the public and private sectors, knowledge/technology transfer, training initiatives	National, EU	Medium
	Design and develop innovative infrastructure solutions to improve the sustainability and management of marinas, with special reference to energy efficiency	R&I activities, knowledge/technology transfer	Regional, EU, international	Medium

MARITIME CLUSTERS IN THE MEDITERRANEAN

GOAL	ACTION	SCOPE	LEVEL	DURATION
From traditional maritime economic to blue growth activities	Encourage and facilitate cluster development in the Mediterranean area through cooperation between local small and medium enterprises, large companies, scientific institutes and innovative players	Policy initiatives	National, regional	Short
	Consolidate existing infrastructure that supports the development of innovative green technologies performed by the Mediterranean clusters	Policy initiatives	National, regional	Short
	Implement training/mobility programmes to share knowledge and best business practices in maritime clusters with other regions	Policy initiatives	National, regional, international	Short

MARITIME SPATIAL PLANNING AND INTEGRATED COASTAL ZONE MANAGEMENT IN THE MEDITERRANEAN

GOAL	ACTION	SCOPE	LEVEL	DURATION
Strengthen synergies among science, industry, policymakers and society	Promote innovative devices for and approaches to limiting coastal erosion and pollution; strengthen the synergy between science, industry and policymakers, and foster joint initiatives with European marine regions	R&I activities, policy initiatives	National, regional, international	Short
	Promote the knowledge-based approach to tourism, developing educational initiatives including citizen science, e.g. jellyfish/litter-watch, recreational activities at sea	Science-policy initiatives, sharing practices	EU	Short/medium
	Develop tools/software to describe impacts on coastal environments taking into consideration the social and economic aspects	R&I activities	EU	Short/medium
Effective maritime spatial planning in the Mediterranean	Improve knowledge of the land-sea nexus and develop coastal ecological engineering solutions and measures to reach the Good Environmental Status	R&I activities, policy initiative	National, regional, international	Short
	Develop tools to assess the cumulative impact of human activities, to ensure that exploitation of marine resources is ecologically sustainable	R&I activities	EU	Short
	Identify the trade-offs between ecological dynamics and socioeconomic needs in order to improve adaptive management scenarios for resource use	R&I activities	EU	Short/medium
	Research into the governance and management of multi-stakeholder processes to support maritime spatial planning and integrated coastal zone management policies	R&I activities, policy initiatives	National, international, regional	Short
	Use integrated decision tools to select appropriate sites for offshore installations, to ensure that they meet energy and environmental requirements	R&I activities, policy initiative	National, regional, international	Medium

SMART, GREENER MARITIME TRANSPORT AND FACILITIES IN THE MEDITERRANEAN				
GOAL	ACTION	SCOPE	LEVEL	DURATION
Greening vessels and facilities	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	R&I activities, knowledge and policy initiatives	Regional, international	Medium/long
	Develop innovative design and management solutions for eco-friendly vessels, e.g. greener propulsion for transport, leisure and fishing boats, fuel saving and noise reduction materials for vessel-water interface	R&I activities, knowledge sharing and transfer, policy initiatives	National, regional	Medium
	Design and develop innovative infrastructure solutions to improve the sustainability of ports, with special reference to energy efficiency and externalities relating to the surrounding built environment	R&I activities, knowledge/technology transfer	Regional, EU, international	Medium
	Improve the rational treatment of ballast water for protection against alien species, e.g. by locating platforms at the entrances to Mediterranean waters	Science-policy initiatives, cooperation between the public and private sectors	National, regional, international	Medium
	Develop new vessel concepts, i.e. hybrid systems, with lower manufacturing, construction, installation and decommissioning costs	R&I activities	Regional, national	Long
Safer maritime transport in the Mediterranean	Develop a new generation of Decision Support System tools for emergency response to marine pollution from accidents, including analysis of the state of the damaged platform/carrier	R&I activities, knowledge and policy initiatives	Regional, international, national	Short
	Improve transport systems for smart, safe mobility in coastal zones, lagoons and restricted areas	R&I activities	EU, national, regional	Short
	Develop new tools, materials and methods to ease and improve the decision-making process in managing on-board emergency situations	R&I activities, knowledge sharing and transfer, policy initiatives	Regional, national	Short
	Develop ship detection and classification tools to interpret satellite images	R&I activities, knowledge and policy initiatives	Regional, international	Medium
	Develop innovative technologies for safer vessels, with real-time structural monitoring, the ability to navigate in sub-optimal conditions (safe return to port) and the ship's continued capacity to sail. Operate in extreme environmental situations (resilient ships) and sensitive areas, which may involve using the European Global Navigation Satellite System	R&I activities, knowledge sharing and transfer, policy initiatives	Regional, National	Medium
	Identify and implement safer, secure and clean offshore installations/devices	R&I activities	Regional, national	Long

OBSERVING SYSTEMS AND OPERATIONAL OCEANOGRAPHY IN THE MEDITERRANEAN				
GOAL	ACTION	SCOPE	LEVEL	DURATION
Towards an observing system of systems	Develop an integrated Mediterranean observing system, based on existing European networks and consortia, including European Strategy Forum on Research Infrastructures, and national/regional/local infrastructures, in line with the overall European contribution to global observing systems	R&I activities, support to policy initiatives, policy measures	National, EU, international	Short
	Ensure long time series (repeatability of observations) at key locations	Policy initiatives	National, regional, international	Short
	Implement data storage, management and sharing	R&I activities	National, EU, international	Short
	Maintain updated data and information on erosion phenomena and coastal risks, standardising and expanding coastline monitoring systems across the Mediterranean region	R&I activities	National, regional	Medium
	Develop standard methodologies to implement the Marine Strategy Framework Directive in shared waters, improving coordination and cooperation among Member States to achieve the Good Environmental Status	R&I activities, policy initiatives	National, EU	Medium
	Develop tools for scaling up the local knowledge delivered by in-situ measurements to the spatial and temporal needs of conservation problems for the implementation of the Ecosystem based Approach	R&I activities, policy initiatives	National, EU	Medium
Tailor-made sensors and platforms	Develop new ideas for robotic systems and devices to explore and work on the seabed in deep-sea areas	R&I activities, technology transfer	EU	Short
	Develop new technologies and systems to enable spatial and temporal resolution and observation parameters to be improved in the coastal region (using both <i>in situ</i> and remote tools)	R&I activities, technology transfer	EU	Short/medium
	Develop and market environmental sensors to assess human impact and implement the Marine Strategy Framework Directive	R&I activities	EU	Short/medium
	Develop Unmanned Autonomous Vehicles and related infrastructure that can extend the area - on the sea surface and underwater - for different types of operation, e.g. monitoring illegal activities, supporting search and rescue activities, helping the Civil Protection service respond to disasters, supporting offshore economic activities	R&I activities, knowledge transfer	Regional, international	Medium

MULTI-PURPOSE OFFSHORE PLATFORMS IN THE MEDITERRANEAN				
GOAL	ACTION	SCOPE	LEVEL	DURATION
Changing the rationale: one platform, multiple uses and activities	Spatialise and cross-check: offshore fixed and mobile infrastructure distribution and environmental monitoring and surveillance needs from coasts to open sea	Science-policy initiatives, cooperation between the public and private sectors	National, regional	Short
	Develop new concepts and protocols with private companies and maritime operators to maximise the use of infrastructure, ships and platforms for scientific and environmental monitoring, safety and security purposes	Science-policy initiatives, cooperation between the public and private sectors	National, regional	Short
	Develop tailor-made technologies to improve efficiency on installations for the exploitation of marine renewable energies (wind, current and waves)	R&I activities	EU	Medium
Train for blue offshore professionals	Create a Mediterranean training centre to carry out projects for safety in oil & gas operations in the offshore, including environmental risk and new technologies	Knowledge Transfer, skills building	EU, National	Medium
	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	Knowledge Transfer, skills building	EU, National	Medium

MARINE AND COASTAL CULTURAL HERITAGE IN THE MEDITERRANEAN: DISCOVERING, PROTECTING AND VALUING				
GOAL	ACTION	SCOPE	LEVEL	DURATION
Towards a shared management approach to cultural heritage in the Mediterranean	Creation of a common disclosure and data sharing policy	Policy coordination	National	Short
	Exploit large-scale seabed mapping databases to locate shipwrecks and target areas for high-resolution seabed mapping	Policy coordination	National	Short
	Explore and protect natural and cultural heritage underwater through a multidisciplinary approach, combining efforts from national programmes for stocktaking	Policy coordination	National, EU	Medium
	Establish a network for collaboration, e.g. between marine and archaeological institutions	Policy coordination	National, EU	Medium
Increase the economic impact of the Mediterranean's cultural heritage	Create a sustainable and integrated range of tourist services, e.g. circuits for scuba diving and recreational/artisanal fisheries, to make best use of the Mediterranean's cultural heritage while preserving it	Policy coordination	National	Short
	Develop advanced concept of robotic systems for submarine archaeology	R&I activities	EU	Short
	Take advantage of retrieved data and information to create a Virtual Museum of Mediterranean Submarine Archaeology	Policy coordination	National, EU	Medium
	Train a new generation of marine technicians/scientists to conduct research on the protection of the marine cultural heritage	Programmes	National	Long