

RESEARCH AND INNOVATION INITIATIVE FOR BLUE JOBS AND GROWTH IN THE MEDITERRANEAN AREA - THE BLUEMED INITIATIVE.

1. Executive Summary

The BLUEMED initiative, jointly developed and agreed between Cyprus, Croatia, France, Greece, Italy, Malta, Portugal, Slovenia, and Spain and facilitated with the support of the European Commission, aims to advance a shared vision for a more healthy, productive, resilient, better known and valued Mediterranean Sea. This initiative seeks to promote the social well-being, prosperity of both local and EU citizens now and for future generations and to boost economic growth and jobs.

The initiative shall result in a common strategy concerning :

- Innovative and multi-disciplinary research to address the Mediterranean coastal and marine ecosystem management;
- Development of new marine-related technologies that are adapted for the specific needs of the Mediterranean Sea, to boost the safe and sustainable economic growth of the maritime sectors in the EU and beyond, as well as conserving and valorising of marine cultural heritage;
- An interoperable, fully integrated multiplatform observing and forecasting capability supporting the conservation of biodiversity, forecasting and management of risks and emergencies at the coast and at sea;
- The EU citizens' awareness of the importance of a sustainable and prosperous Mediterranean Sea for the surrounding countries and for Europe as a whole;
- Implementation of the EU Integrated Maritime Policy¹ by providing knowledge-based support to policy decisions towards ensuring the sustainable growth of the EU Mediterranean marine and maritime economy.

The initiative will be jointly taken forward by:

- Improving the sharing and joint exploitation of existing data, knowledge, capacities, project outcomes and bilateral/multilateral research and innovation initiatives and frameworks related to the Mediterranean;
- Fostering cooperation between public and private sectors to maximize the leverage effects from research investments in marine and maritime issues and their influence on public policy at regional, national and EU level;
- Promoting joint actions including coordination, planning and programming of relevant research and innovation activities related to the Mediterranean at regional, national and EU levels;
- Supporting researcher careers, training and mobility, and the development of skills in relevant sectors to ensure the necessary highly qualified workforce capable of underpinning a prosperous and sustainable Blue economy *in primis* within the EU Member States bordering the Mediterranean Sea;
- Advocating public understanding of the value of the blue economy in the Mediterranean.

¹ With particular and explicit reference as well to the EU Marine Strategy Framework Directive, the EU Maritime Spatial Planning Directive, the EU Flooding Directive, the EU Common Fisheries Policy

These challenges identified and the outlined recommendations provide a sound basis for further development of the initiative within a Strategic Research Agenda.

2. Rationale and background of this initiative

The BLUEMED initiative, jointly developed and agreed between Cyprus, Croatia, France, Greece, Italy, Malta, Portugal, Slovenia, and Spain, facilitated and supported by the European Commission, aims to advance a shared vision for a more healthy, productive, resilient, as well as a better known and valued Mediterranean Sea. This initiative seeks to promote the social well-being prosperity of both local and EU citizens now and for future generations and to boost economic growth and jobs. The foundation the success of the BLUEMED initiative is a strong coordination between research, industry and policy at national, regional and EU level.

Several meeting during 2014 supported discussion and consensus building among the Countries involved as well as consultation with stakeholders including industry representatives private and public associations. The initiative addresses cross-cutting marine and maritime strategic research themes, around which joint innovation programmes can be constructed. Explicit reference is made to the principles of the European Union's Integrated Maritime Policy, as well as the sea-related European Directives, and it is fully consistent with the aims of the EU Blue Growth strategy and other relevant policies adopted by the European Union².

The initiative is also coherent with the EurOCEAN 2014 Rome Declaration³ which supports the vision and the objectives of the BLUEMED initiative as a regional action which promotes an integrated approach to managing maritime space and resources.

2.1. Why such an initiative?

The Mediterranean Sea is a semi-enclosed basin with high environmental diversity, abrupt changes in ecological habitat and with unique biotic and abiotic characteristics which interconnect with human and economic activities.

Its richness of biota has no counterpart in other European Seas. The Mediterranean bears 30% of the EU sea-borne trade in volume from or into its more than 450 ports and terminals and a quarter of worldwide sea-borne oil traffic. It is the second market in the world for cruise ships. Its coasts house more than 150 million inhabitants, a large part of them leaving in coastal cities, a figure which doubles during the tourist season. Tourism is also boosted by the regions unique natural and cultural heritage containing over 400 UNESCO sites and a large number of Marine Protected Areas. Half of the EU's fishing fleet along with vessels originating from non EU Countries operate in the Mediterranean and fisheries are augmented by increasing marine aquaculture production.

The Mediterranean Sea is undergoing rapid changes in response to closely interlinked natural and anthropogenic pressures. Climate change influences its physical dynamics and hydrological structure, while nutrient and pollutant loads are flowing from growing urbanization, land and coastal activities. Increasing

² Innovation in the Blue Economy: realising the potential of our seas and oceans for jobs and growth - COM(2014) 254/2 of 13/05/2014; Blue Growth opportunities for marine and maritime sustainable growth – COM(2912) 494 of 13/09/2012; Declaration of the European Ministers responsible for the Integrated Maritime Policy and the European Commission, on a Marine and Maritime Agenda for growth and jobs “ The Limassol Declaration”, 7 Oct 2012.

³ “Setting a vision for seas and ocean science: Delivering impact, global leadership and sustainable blue growth for Europe”, 9 Oct 2014, accessible at http://eurocean2014.eu/wp-content/uploads/2013/10/Rome-Declaration_FINAL.pdf.

maritime traffic also leads to safety concerns, potential pollution and the introduction of invasive alien species. Fishing stocks remain unsustainable. The marine heritage of the area and its ecosystem services are also at risk. In addition the geo-political complexity of the area adds further difficulties concerning the establishment of favourable framework conditions to support the growth of a blue economy (e.g. in trans-border cooperation in sea-related activities, including maritime spatial planning).

Within this frame, a tailor-made common marine and maritime R&I programme is urgently required to enable the achievement solid knowledge-based sustainable and long lasting “Blue Growth” in the area.

This calls for an integrated approach across the different sectors and disciplines and a long-term oriented, strategic coordination of R&I activities *in primis* between the European Countries bordering the Mediterranean Sea coasts and the whole EU. Such synergies and complementarities between sectors and countries will provide added value to regional, national and EU investment, avoid duplication and reduce fragmentation.

The achievement of economic, environmental and societal sustainability of a Blue Growth in the Mediterranean Area is the main target. To this end, understanding and forecasting the evolution of ecological, social and economic processes in the region of the Mediterranean Sea is required. This must take into consideration the proper functioning of the vulnerable marine ecosystems and sea-related economic sectors, including shipbuilding, maritime transportation, energy, exploration, exploitation of seabed resources, aquaculture, fishery, blue biotechnologies, tourism, ports, maritime security and safety.

Policy makers, researchers, industry representatives and end-users of the 9 EU Member States referred to above have jointly defined the R&I needs and opportunities, formulated the actions to be undertaken, in a harmonized process that will also include governance and implementation. The large portfolio of the capacities within EU Mediterranean countries are considered and their excellence valorised, as well as the efforts already in place to implement relevant EU directives. The R&I actions proposed have been selected on the basis of their socio-economic impacts, their feasibility and to complement what was already funded within previous EU Research Framework Programmes, and in particular following the projects selected within the FP7 “Oceans of Tomorrow” calls.

2.2. Development of the initiative

The process of developing this initiative has consisted of many steps, including numerous meetings. The starting point has been on the one hand the mapping of existing/ongoing regional, national and European projects/initiatives by the Countries involved together with the participation of experts, major public and private stakeholders including maritime clusters, and policy makers (ref *Annex 1, the assessment work performed by each Country*); on the other hand, the identification of the knowledge and technology/innovation gaps and of the “boundary conditions” that allow these gaps to be addressed (*Annex 2*).

The documents produced have also taken into account the recommendations put forward by the SEAS-ERANET Project, other major finished or ongoing EU funded R&I projects and the inputs from the important pertinent European Technology Platforms and private associations (e.g. EATiP, Waterborne, Cruising).

The present BLUEMED Vision Document will form the basis for developing a related Strategic R&I Agenda, to be presented to major marine and maritime public and private stakeholders as well as policy makers for further feedback.

3. A Mediterranean Vision

This initiative aims to advance a shared vision for a healthier, more productive, resilient, better known and valued Mediterranean Sea. This initiative seeks to promote the social well-being and prosperity of both local and EU citizens now and for future generations and to boost economic growth and jobs.

3.1 Objectives

This will be achieved through creating new knowledge, technologies and services, as well as fostering human capacity and infrastructures capacity building, related to the Mediterranean marine and maritime sectors. The initiative focuses on:

- supporting the implementation of EU Policies and Directives related to marine and maritime issues in the Mediterranean including better ecosystem assessments and forecasts and deeper understanding of vulnerability, risk and intervention. It also includes, better maritime spatial planning and knowledge-based support to management and decision-making towards the sustainable growth of the EU Mediterranean maritime economy in response to the societal and environmental challenges;
- promoting innovative multi-disciplinary research that will generate the knowledge needed to increase ecosystems resilience; provide new tools to mitigate the impacts from global climate change and the multiple environmental stressors in the Mediterranean Sea, and to protect and/or restore vulnerable marine ecosystems;
- developing new marine based technologies to boost safe and sustainable economic growth of the European maritime sectors, the conservation and valorisation of marine cultural heritage;
- creating an interoperable, fully integrated observing and forecasting capability. This will be based on open data structures⁴ and also foster easy access to them;
- promoting EU citizens' awareness and literacy on the importance of a sustainable prosperous Mediterranean Sea for the surrounding countries and for Europe as a whole;
- training a new generation of scientists, engineers and entrepreneurs and workers that are able to tackle complex ecological, economic and societal problems from an holistic perspective, while supporting learning, tertiary education, development and transfer of technologies and knowledge for new and qualified "jobs of the sea".

3.2 Key Challenges identified (not in a priority order) and to be addressed:

3.2.1 Key enabling technologies and capacity creation

- Promote ship technology and safety design for smart maritime transport in the Mediterranean - including unmanned vehicles for monitoring and maintenance of infrastructures - to guarantee environmental sustainable performance, as well as maritime surveillance and security;
- Promote the competitiveness of Mediterranean maritime technology networks and clusters as driving force of the EU Blue Growth, and particularly in "greening" vessels, ports and other maritime platforms;
- Promote multi-purpose offshore platforms and demonstrators combining renewable energy production, aquaculture, maritime surveillance and environmental monitoring;

⁴ INSPIRE Directive compliant and aligned with initiatives like EMODnet, COPERNICUS and GEOSS, etc

- Protect and unveil marine cultural heritage through the deployment of existing and new technologies (e.g. innovative robotic systems for submarine archaeology);
- Harmonize observing systems and operational oceanography capacities in the Mediterranean in order to improve interoperability monitoring, security, and safety of people and goods at sea;
- Foster integration of blue and land activities with sustainable tourism growth, including citizens' participation (e.g. jelly/litter-watch, recreational activities at sea).

3.2.2 Key enabling support knowledge

- Explore the vulnerability and adaptability of Mediterranean Sea ecosystems and protect biodiversity and reduce the effects of invasive alien species, and support Marine Protected Areas in their role to maintain biodiversity;
- Improve regional and sub-regional scenarios for climate changes and impacts, including adaptation measures at coasts;
- Map the deep sea ecosystems and identify their vulnerability to the exploitation of seabed resources;
- Achieve a uniform assessment of major marine geo-hazards of the area, in particular seismicity, for an effective management and protection of coastal population and infrastructures, using multipurpose observatories and early warning/defence systems;
- Address the sources, distribution and evolution of emerging pollutants within the marine environment and promote appropriate remediation actions.

3.2.3 Key sectorial enablers

- Support sustainable exploitation of the Mediterranean biodiversity for bio-based innovative industries and services (e.g. for producing food, pharmaceuticals, materials, energy)⁵;
- Pursue the ecosystem-based management of aquaculture and fisheries, including small scale fishery and mollusk production, in a multispecies context impacted by climate change, in line with the EU Common Fisheries Policy⁶ and UN/FAO General Fishery Commission for the Mediterranean indications;
- Achieve a uniform assessment of the natural and anthropogenic pressures on the coastal zones, and propose mitigation and restoration/adaptation measures, according to the Maritime Spatial Planning and Integrated Coastal Zone Management principles;
- Promote a multidisciplinary study on land-sea interactions and the anthropogenic processes leading to pollution and risks, linking the marine Good Environmental Status to human safety, health and wellbeing;
- Develop sustainable tourism, improving a knowledge-based approach to marine and coastal spatial planning and to the management of coastal destination and maritime activities. Also and providing services and technologies to boost the growth of local SMEs.

⁵ In line with the *Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity*, Oct 2010

⁶ REGULATION (EU) No 1380/2013 of the European Parliament and of the Council of 11 December 2013

4. Recommendations

- Plan and work with key public and private players and decision makers to define Mediterranean Sea relevant R&I actions that will tackle local social and economic challenges and boost the creation of new jobs;
- Create awareness amongst EU citizens of the importance of a sustainable prosperous Mediterranean for the surrounding countries and for Europe as a whole;
- Consider education, training and public engagement as fundamental activities to improve and develop new skills, to spread the ocean literacy and to develop education and training schemes oriented towards Blue Growth careers including exchanges of researchers, technicians and the further development of skills to support sea based activities;
- Continue using the building block approach towards progressively opening the participation to other countries (including non-EU Member states).